SUMMARY

(In accordance with 40 CFR part 152, this summary is available for public release after registration)

STUDY TITLE

Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

AMENDED REPORT

DATA REQUIREMENTS

Not Applicable

AUTHOR(S)

J. K. Smith-Drake, C. M. Dunville, A. M. Phillips, R. A. Herman

STUDY COMPLETED ON

22-Oct-2009

Amended Report Date: 28-April-2010

PERFORMING LABORATORY

Regulatory Sciences and Government Affairs—Indianapolis Lab
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, Indiana 46268-1054

Covance Laboratories, Inc.
3301 Kinsman Blvd.
Madison, Wisconsin 53704

LABORATORY STUDY ID

080003

Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

SUMMARY

Field agronomics, composition, and expression trials of a non-transgenic control and transgenic AAD-12 soybean (DAS-68416-4) were conducted in 2008 at six sites located in Iowa, Illinois, Indiana, Nebraska, and Ontario, Canada (2 sites). This report summarizes the agronomic determinations and compositional analysis of soybean forage and grain samples from the control and transgenic soybean DAS-68416-4. Appended to this report is the expression report which summarizes the expression levels of AAD-12 and PAT proteins in the soybean tissues at the approximate growth stages, V5, V10, forage and grain samples (R3 and R8, respectively) from the control and transgenic soybean DAS-68416-4.

Agronomic determinants, including stand/population count, seedling/plant vigor, plant height, lodging, disease incidence, insect damage, and days to flowering were evaluated to investigate the equivalency of the DAS-68416-4 transgenic soybeans (with and without herbicide treatments) to the control. No meaningful differences were observed between agronomic data collected from the control and DAS-68416-4 soybean.

Compositional analyses, including proximates, minerals, amino acids, fatty acids, vitamins, anti-nutrients, and isoflavones, were conducted to investigate the equivalency of the DAS-68416-4 transgenic soybeans (with and without herbicide treatments) to the control. The composition of DAS-68416-4 soybean was either statistically indistinguishable from the near-isogenic line, <13% different from the near-isogenic line, or within the literature range for non-transgenic soybean. In conclusion, DAS-68416-4 composition was substantially equivalent to conventional soybeans.

The soluble, extractable AAD-12 and PAT proteins were measured using a quantitative enzyme-linked immunosorbent assay (ELISA) method for soybean leaf, root, forage, and grain. Average

expression values for AAD-12 ranged from 16.31 ng/mg dry weight in R3 stage root to 55.58 ng/mg in V10 leaf tissue. Average expression values for PAT ranged from 1.83 ng/mg dry weight in R3 stage root to 11.45 ng/mg in V10 leaf tissue. Expression values were similar for all the sprayed treatments as well as for the plots sprayed or not sprayed with 2,4-D and glufosinate herbicide.

STUDY TITLE

Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

AMENDED REPORT

DATA REQUIREMENTS

Not Applicable

AUTHOR(S)

J. K. Smith-Drake 317-337-3459
[jksmith.drake@dow.com]
C. M. Dunville, A. M. Phillips, R. A. Herman

STUDY COMPLETED ON

22-Oct-2009

Amended Report Date: 28-April-2010

PERFORMING LABORATORY

Regulatory Sciences and Government Affairs—Indianapolis Lab
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, Indiana 46268-1054

Covance Laboratories, Inc.
3301 Kinsman Blvd.
Madison, Wisconsin 53704

LABORATORY STUDY ID

080003

Total number of pages is 341 including 4bR1and 4cR2 and 4dR3 of 338

STATEMENT OF NO DATA CONFIDENTIALITY CLAIMS

Compound: AAD-12 and PAT

Title: Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

- STATEMENT OF NO DATA CONFIDENTIALITY CLAIMS:

  No claim of confidentiality, on any basis whatsoever, is made for any information contained in this document. I acknowledge that information not designated as within the scope of FIFRA sec. 10(d)(1)(A), (B), or (C) and which pertains to a registered or previously registered pesticide is not entitled to confidential treatment and may be released to the public, subject to the provisions regarding disclosure to multinational entities under FIFRA sec. 10(g).

Company: Dow AgroSciences LLC

Company Agent: M. S. Krieger

Title: Regulatory Manager

Signature: [illegible]

Date: 20 October 2009

THIS DATA MAY BE CONSIDERED CONFIDENTIAL IN COUNTRIES OUTSIDE THE UNITED STATES.

STATEMENT OF COMPLIANCE WITH GOOD LABORATORY PRACTICE STANDARDS

Title: Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

Study Initiation Date: 14 May 2008

This report represents data generated after the effective date of the EPA FIFRA Good Laboratory Practice Standards.

United States Environmental Protection Agency
Title 40 Code of Federal Regulations Part 160
FEDERAL REGISTER, August 17, 1989

Organisation for Economic Co-Operation and Development
ENV/MC/CHEM(98)17, Paris January 26, 1998

All aspects of this study were conducted in accordance with the requirements for Good Laboratory Practice Standards, 40 CFR 160 except for the following: at some sites documentation is incomplete by GLP standards for climatological data, irrigation data, field history, pesticide maintenance, sample weights, soil property and crop information. The test substance was not characterized according to GLP and was used prior to characterization. The statistical analysis of the data was conducted using SAS software, version 9.1, which was not validated according to GLP. In addition, GLP compliance exceptions are listed on page 3 of the Covance composition report.

M. S. Krieger
Sponsor
Dow AgroSciences LLC

13 April 2010
Date

M. S. Krieger
Submitter
Dow AgroSciences LLC

13 April 2010
Date

J. K. Smith-Drake
Study Director/Author
Dow AgroSciences LLC

28 APRIL 2010
Study Completion Date

This report has been amended. The original report was completed and signed on 22-Oct 2009. The study director's signature and date reflect the date of the report amendment.

Dow AgroSciences Quality Assurance Unit
Good Laboratory Practice Statement Page

Study ID: 080003

Title: Field Expression, Nutrient Composition, and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

Study Initiation Date: 14-May-2008 **Study Completion Date:** 22-Oct-2009
***Amended Report Date:** 28-Apr-2010

GLP Quality Assurance Inspections

Date of GLP Inspection(s)	Date Reported to the Study Director and to Management	Phases of the Study which received a GLP Inspection by the Quality Assurance Unit
09-May-2008	14-May 2008	Protocol Review
7-Jun-2008	22-Jul-2008, 4-Aug-2008	Planting (Site 080003ON2)
11-Jun-2008	12-Aug-2008	Planting (Site 080003ON1)
23-Jun-2008	29-Dec-2008, 13-Jan-2009	In-Progress Inspection Report; Planting (Site 080003NE)
1-Aug-2008	6-Aug-2008	R2 Application (Site 080003IA)
18-Aug-2008	29-Dec-2008, 13-Jan-2009	R3 sampling (Site 080003ON2)
20-Aug-2008	29-Dec-2008, 13-Jan-2009	R3 Forage Sampling for Composition & Residue (Site 080003NE)
26-Aug-2008	8-Sep-2008	Sampling (Site 080003IN)
26-Aug-2008	8-Sep-2008	Sampling (Site 080003IN)
13-Oct-2008	16-Oct-2008	Sampling (Site 080003IL)
28-Oct-2008	5-Nov-2008	R8 Grain Sampling (Site 080003IA)
6-Nov-2008	29-Dec-2008, 13-Jan-2009	Sampling – grain (Site 080003ON1)

GLP Quality Assurance Inspections

Date of GLP Inspection(s)	Date Reported to the Study Director and to Management	Phases of the Study which received a GLP Inspection by the Quality Assurance Unit
11-Dec-2008	22-Dec-2008	Field trial notebook and supporting data (Site 080003IA)
30-Dec-2008	05-Feb-2009, 06-Feb-2009	Final Trial Notebook (Site 080003ON2)
8-Jan-2009	8-Jan-2009	Final Data Review (Site 080003IL)
18-Jan-2009	03-Apr-2009, 20-Apr-2009	Field Trial Notebook and Raw data Review (Site 080003ON1)
01-Feb-2009	06-Feb-2009	Final Data Audit (Site 080003IN)
26-Feb-01-Apr-2009	22-Apr-2009, 21-Apr-2009	Field Trail Notebook and Field Book Summary (Site 080003NE)
01, 02, 05-08-Oct-2009	12-Oct-2009	Raw Data and Report Review; Test Substance and Sample Container Verification

AUDITS CONDUCTED BY COVANCE QA ARE LISTED ON THE QUALITY ASSURANCE STATEMENT PAGE 4 OF THE COVANCE SUB-REPORT IN APPENDIX E, AND THE AUDITS CONDUCTED BY DOW AGROSCIENCES (DAS) QA FOR EXPRESSION ANALYSIS ARE LISTED ON THE QUALITY ASSURANCE STATEMENT PAGE 4 OF THE DAS SUB-REPORT IN APPENDIX F.

QUALITY ASSURANCE STATEMENT:

The Quality Assurance Unit has reviewed the final study report and has determined that the report reflects the raw data generated during the conduct of this study.

TFroggatt

Tracey Froggatt
Dow AgroSciences, Quality Assurance

28-Apr-2010
Date

***The original report was completed and signed on 22-Oct-2009. The new signature and date reflect the date of the report amendment.**

Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

Summary of amendment changes:
Summary Page: Page 1**R1** of 3: the phrases AMENDED REPORT and Amended Report date were added.
Summary Page: Page 2**R1** of 3: the last two sentences of the third paragraph were changed to show the differences between the near-isogenic line and DAS-68416-4

Title page: Page 1**R1** of 338: the phrases AMENDED REPORT, Amended Report date, Total number of pages, were added.
Page 3**R1** of 338: A statement describing the original signature dates were added.
Page 4**R1** of 338: A new QA page was added
Page 4a**R1** of 338: A new QA page was added

Page 4b**R1** of 338: This page is added to describe the changes.
Page 12**R1 and 13R1** of 338: the last two sentences of the fourth paragraph were changed to show the differences between the near-isogenic line and DAS-68416-4.

Page 53**R1** of 338: the graphic for Genistin was replaced to reflect the absence of literature ranges.

Reason for Amendment:
The wording for the summary and abstract was changed to better reflect the data. The graphic for Genistin was changed to reflect the absence of literature ranges.

Impact on Study:
There is no impact on the study.

Signatures:

J.K. Smith-Drake, Study Director	11 DEC 2009 Date
K. A. Clayton, Manager	11 DEC 2009 Date
G. N. Wickremsinhe, Quality Assurance	11 Dec 2009 Date

Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

Summary of amendment changes:
Summary Page: Page 1**R2** of 3: the phrases AMENDED REPORT and Amended Report date were added.
Title page: Page 1**R2** of 338: the phrases AMENDED REPORT, Amended Report date, Total number of pages, were added.
Page 3**R2**: The report amended date and a statement describing the original signature dates were added.
Page 4**R2** and 4a**R2**: A new QA page was added
Page 4c**R2**: This page is added to describe the changes.
Page 27**R2**: Comparision of 18:3 linolenic changed.
Page 30**R2**: Isoflavone analysis of grain discussion changed.
Page 39 **R2**: 18:3 Gamma Linolenic literature values changed.
Page 40 **R2**: 18:3 linolenic literature values changed.
Page 42 **R2**: Pantothenic acid spelling corrected.
Page 43 **R2**: Isoflavone values totaled and table changed to reflect totals.
Page 53 **R2**: Table updated to reflect total isoflavone values.
Page 69 **R2**: Literature values for 18:3 Gamma linolenic and 18:3 linolenic changed.
Page 70 **R2**: Pantothenic acid spelling corrected.
Pages 106-112 **R2**: Literature values for 18:3 Gamma linolenic and 18:3 linolenic changed.
Pages 119-124 **R2**: Pantothenic acid spelling corrected.

Reason for Amendment:

Isoflavone values were reported as individual values, the values needed to be totaled for reporting. Discussion of Isoflavone results was updated to reflect the total isoflavones. 18:3 Linolenic and 18:3 gamma linolenic literature values were switched during reporting. Pantothenic spelling was corrected.

Impact on Study:
There is no impact on the study.

Signatures:

J. K. Smith-Drake, Study Director	4 FEB 2010 Date
K. A. Clayton, Manager	04 FEB 2010 Date
G. N. Wickremsinhe, Quality Assurance	04 Feb 2010 Date

Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

Summary of amendment changes:
Summary Page: Page 1**R3** of 3: the phrases AMENDED REPORT and Amended Report date were added.
Title page: Page 1**R3** of 338: the phrases AMENDED REPORT, Amended Report date, Total number of pages 341 including 4bR1, 4cR2 and 4dR3 of 338, was added.
Page 3**R3**: The report amended date and a statement describing the original signature dates were added.
Page 4**R3** and 4a**R3**: A new QA page was added
Page 4d**R3**: This page is added to describe the changes.

Page 9**R3**: The title for Figure 8 was updated.
Page 30**R3:** The description of the samples that are <LOQ changed.
Page 36**R3**: The sodium values changed to <LOQ.
Page 41**R3**: Literature values changed.
Page 43**R3**: Literature values changed.
Page 46**R3**: Figure for sodium was removed.
Page 51**R3**: Figure was updated with correct literature values.
Page 53**R3**: Figure was updated with correct literature values.
Page 68**R3**: Literature values changed.
Page 72**R3**: Literature values changed.
Pages 113**R3**-118**R3**: Literature values changed.
Pages 125**R3**-130**R3**: Literature values changed.

Reason for Amendment:

Isoflavone values should be reported as <LOQ and literature values were updated. Sodium values should be reported as <LOQ. Anti-nutrient literature values were updated. All tables and figures referencing these values were updated.
Impact on Study:
There is no impact on the study.

Signatures:

J. K. Smith-Drake, Study Director	28 APR 2010 Date
K. A. Clayton, Manager	28 APR 2010 Date
T. Froggatt, Quality Assurance	28-Apr-2010 Date

SIGNATURE PAGE

J. K. Smith-Drake
Author
Dow AgroSciences LLC

20 OCT 09
Date

C. M. Dunville
Co-Author
Dow AgroSciences LLC

21-OCT-09
Date

A. M. Phillips
Co-Author
Dow AgroSciences LLC

21-Oct-2009
Date

R. A. Herman
Co-Author
Dow AgroSciences LLC

20-oct-2009
Date

G. Shan
Peer Reviewer
Dow AgroSciences LLC

20-Oct.-2009
Date

K. A. Clayton
Global Leader, Biotechnology Regulatory Sciences
Dow AgroSciences LLC

21 OCT 2009

STUDY PERSONNEL

Title: Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

Study Director: Joelene K. Smith-Drake

Analysts: M. J. Sosa, Dow AgroSciences

A.D. Thomas, Dow AgroSciences

Site	Field Investigator
080003IA	David Bennett Bennett Agricultural Research Consulting Richland, Iowa
080003IL	Tim Boeker Alvey Agricultural Research Carlyle, Illinois
080003IN	John Bailey Alvey Agricultural Research Rockville, IN
080003NE	Matt Krause Ag Research Associates York, Nebraska
080003ON1	Sarah Neals-Bolinger Ecologistics Research Services Thorndale, Ontario
080003ON2	Jamie Parnell Vaughn Agricultural Research Services, Ltd. Branchton, Ontario

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Field Expression, Nutrient Composition Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferease (PAT)

ABSTRACT

Soybean (*Glycine max*) has been modified by the insertion of the *aad-12* gene from soil bacterium *Delftia acidovorans* and a *pat* gene from *Streptomyces viridochromogenes*. The *aad-12* encodes an aryloxyalkanoate dioxygenase-12 (AAD-12) which provides tolerance to 2,4-dichlorophenoxyacetic acid and pyridyloxyacetate herbicides. The *pat* gene encodes a phosphinothricin acetyltransferase (PAT) protein which provides tolerance to glufosinate-based herbicides and was used as a selectable marker during the transformation.

Field expression, nutrient composition, and agronomic trials of a non-transgenic control and a transgenic soybean line event DAS-68416-4 containing *aad*-12 and *pat* genes was conducted in 2008 at six sites located in Iowa, Illinois, Indiana, Nebraska and Ontario, Canada (2 sites). This report summarizes the agronomic determinations, compositional analysis of forage and grain and expression levels of AAD-12 and PAT proteins in leaf at V5 and V10 growth stages, root, forage, and grain samples from the control and DAS-68416-4 AAD-12 soybean.

Agronomic determinants, including stand/population count, seedling/plant vigor, plant height, lodging, disease incidence, insect damage, and days to flowering were evaluated to investigate the equivalency of the DAS-68416-4 transgenic soybeans (with and without herbicide treatments) to the control. No meaningful differences were observed from analysis of the agronomic data collected from control and DAS-68416-4.

Compositional analyses, including proximates, minerals, amino acids, fatty acids, vitamins, anti-nutrients, and isoflavones, were conducted to investigate the equivalency of the DAS-68416-4 transgenic soybeans (with and without herbicide treatments) to the control. The composition of DAS-68416-4 soybean was either statistically indistinguishable from the near-isogenic line, <13% different from the near-isogenic line, or within the literature range for non-transgenic

soybean. In conclusion, DAS-68416-4 composition was substantially equivalent to conventional soybeans.

The soluble, extractable AAD-12 and PAT proteins were measured using a quantitative enzyme-linked immunosorbent assay (ELISA) method for soybean leaf, root, forage, and grain. Average expression values for AAD-12 across different spray treatments ranged from 16.31 ng/mg dry weight in R3 stage root to 55.58 ng/mg in V10 leaf tissue. Average expression values for PAT across different spray treatments ranged from 1.83 ng/mg dry weight in R3 stage root to 11.45 ng/mg in V10 leaf tissue. Expression values were similar for all the sprayed treatments as well as for the plots sprayed and unsprayed with 2,4-D and glufosinate herbicides.

INTRODUCTION

Soybean (*Glycine max*) has been modified by the insertion of the *aad-12* gene from soil bacterium *Delftia acidovorans* and a *pat* gene from *Streptomyces viridochromogenes*. The *aad*-12 encodes an aryloxyalkanoate dioxygenase-12 (AAD-12) protein which provides tolerance to 2,4-dichlorophenoxyacetic acid and pyridyloxyacetate herbicides. The *pat* gene encodes a phosphinothricin acetyltransferase (PAT) protein which provides tolerance to glufosinate-based herbicides and was used as a selectable marker during transformation. Transformation of a variety "Maverick" soybean with plasmid pDAB4468, followed by conventional breeding produced the transgenic soybean event DAS-68416-4 which was the focus of this study. The purpose of this study was to determine the compositional analysis of forage and grain and to investigate the equivalency between the control and the transgenic soybeans with 2,4-D and/or glufosinate herbicide treatments and without 2,4-D and/or glufosinate herbicide treatments, also, agronomic data were collected for comparison between the control and transgenic lines. In addition, the levels of AAD-12 and PAT proteins found in soybean tissues were determined.

Field expression, composition, and agronomic trials were conducted at six test sites located within the major soybean-producing regions of the U.S and Canada. These sites represent regions of diverse agronomic practices and environmental conditions. The trials were located in Iowa, Illinois, Indiana, Nebraska and Ontario, Canada (2 sites).

EXPERIMENTAL

Test Substances

The test substance seed was DAS-68416-4 (seed of T4 lineage). Transformation of a variety "Maverick" soybean with plasmid pDAB4468, followed by conventional breeding produced the

transgenic soybean event DAS-68416-4 which was the focus of this study. The test substances and treatments are listed in the following table.

Test Entry	Source ID Number	Test Entry Description
3	YX07KX002559 and YX07KX002526	DAS-68416-4 unsprayed
5		DAS-68416-4 sprayed w/ glufosinate
7		DAS-68416-4 sprayed w/ 2,4-D
9		DAS-68416-4 sprayed w/ 2,4-D and glufosinate

Seed was characterized by qualitative ELISA for AAD12. All samples tested positive for the AAD12 protein.

Control Substance

The control substance was conventional seed of the same genetic background as the test substance line, but which did not contain the DAS-68416-4 event. The control substance used for this study is listed in the following table.

Test Entry	Event ID	Source ID Number	Test Entry Description
1	Maverick	YX07KX002114	Near-isogenic control

Test Systems

The test system for this study was soybean plants produced from the genetically modified and control soybean seed grown at locations within the major soybean growing regions of the U.S. and Canada. The six field testing facilities, Richland, IA; Carlyle, IL; Rockville, IN; York, NE; Thorndale, Ontario; and Branchton, Ontario, Canada (referred to as IA, IL, IN, NE, ON1 and ON2) (Appendix A-Table 1) represent regions of diverse agronomic practices and environmental conditions for soybeans.

The test and control soybean seed were planted at a seeding rate of approximately 112 seeds per 25 ft row with a row spacing of approximately 30 inches (75 cm). At each site, 3 replicate plots of each treatment were established, with each plot consisting of 2-25 ft rows. Plots were arranged in a randomized complete block (RCB) design, with a unique randomization at each site. Each soybean plot was bordered by 2 rows of a non-transgenic soybean of similar maturity. The entire trial site was surrounded by a minimum of 10 ft of a non-transgenic soybean of similar relative maturity.

Appropriate insect, weed, and disease control practices were applied to produce an agronomically acceptable crop. Appendix A, Table 2 lists the maintenance chemicals used at each site. Average monthly maximum and minimum temperatures along with rainfall and irrigation are shown in Appendix A, Table 3. During the field portion of this study, temperatures were below the 20th century mean in the central and east north central regions of the US (1) and excessive rainfall occurred across the central third of the country during 2008. IA, IL and IN ranked 112, 112 and 111, respectively, on a scale of 1 to 114 with 114 being the wettest. Spring of 2008 was the 42nd wettest on record.

Herbicide Applications

Herbicide treatments were applied with a spray volume of approximately 20 gallons per acre (187 L/ha). These applications were designed to replicate maximum label rate commercial practices. 2,4-D (Weedar 64) was applied as 3 broadcast over-the-top applications to test entries 7 and 9 (seasonal total of 3 lb ae/A). Individual applications were at pre-emergence and approximately V4 and R2. Individual target application rates were 1.0 lb ae/A for Weedar 64 or 1120 g ae/ha. Glufosinate (Liberty) was applied as 2 broadcast over-the-top applications to test entries 5 and 9. Application timing was at approximately V6 and R1 growth stage. The target application rate was 0.33 lb ai/A and 0.41 lb ai/A (374 and 454 g ai/ha).

Agronomic Data collection

Agronomic characteristics were recorded for all test entries within Blocks 1, 2, and 3 at each location. The following characteristics were measured:

Trait	Evaluation Timing	Description of Data	Scale
Early Population	VC-V2	Number of plants emerged in rows of each plot.	Actual count per plot
Seedling Vigor	VC-V2	Visual estimate of average vigor of emerged plants per plot	1-10 Scale based on growth of the non-transformed soybeans. 10 = growth equivalent to non-transformed, 9 = plant health is 90% as compared to the non-transformed etc.
Plant Vigor/Injury	After applications 2, 3 and 5	Injury from herbicide applications	1-10 Scale based on growth of the non-transformed soybeans. 10 = growth equivalent to non-transformed, 9 = plant health is 90% as compared to the non-transformed etc..
Plant Height	Approximately R6	Height from the soil surface to the tip of the highest leaf when extended by hand	Height in centimeters (cm) (Average of 10 plants per plot)
Lodging	Approximately R8	Visual estimate of lodging severity	Visual estimate on 0-100% scale based on the number of plants lodged
Final Population	Approximately R8	The number of plants remaining in rows of each plot	Actual count per plot, including plants removed during previous sampling
Disease Incidence	Approximately R6	Visual estimate of foliar disease incidence	Rate % of plants affected by the disease using 0-100% with 0 % being no

			damage and 100% being damaged. Record type of disease.
Insect Damage	Approximately R6	Visual estimate of insect damage	Rate % of plants affected by insects using 0-100% with 0 % being no damage and 100% being damaged. Record type of insect.
Days to 50% Flowering	Approximately R1/R2	50% Flowering	Day from planting when approximately 50% of the plants in the plot reached physiological maturity

Sample Collection

Samples for expression and composition analysis were collected as per the following table (for sampling dates for each site, see Appendix A, Table 5 and Appendix A, Table 6). Samples of forage and grain were also collected for residue analysis and will be reported in a separate report.

Expression Tissue	Growth Stage[a]	Sample Size	Samples per Entry: Control Entry 1	Samples per Entry: Test Entries 3, 5, 7, and 9
Leaf	V5	8 trifoliate leaves	1	1
Leaf	V10-12	8 trifoliate leaves	1	1
Forage	R3	3 plants[b]	1	1
Root	R3	3 plants[b]	1	1
Grain	R8-Maturity	500-g	1	1

[a] Approximate Growth Stage

[b] Plants chopped, combined (pooled).

Composition	Growth Stage[a]	Sample Size	Samples per Entry: Control Entry 1	Samples per Entry: Test Entries 3, 5, 7 and 9
Forage	R3	300-g	1	1
Grain	R8-Maturity	Remaining seeds	1	1

[a] Approximate Growth Stage

Field Sample Storage, Shipping and Processing

Each sample was assigned a unique number that was used for identification and tracking. Samples were grouped together according to matrix, treatment number, and site (sample group number or SGN).

Expression Sample Storage, Shipping and Processing

All expression samples were shipped frozen to Dow AgroSciences by overnight shipping, except for samples from Canada and Indiana, which were shipped via freezer truck. Appendix A, Table 6 contains sample identifiers along with dates of sampling, shipping, and receipt of samples at Dow AgroSciences (DAS).

Upon receipt at Dow AgroSciences, samples were inspected for physical condition and were found to be either cold or frozen and in good condition. Samples were logged into the computerized Regulatory Laboratories Information Management System (RLIMS). All expression samples were stored in temperature-monitored freezers at approximately -80 °C, being removed only for required sample preparation and analysis.

Samples of soybean tissues were prepared for expression analysis by coarse grinding, lyophilizing and fine-grinding (if necessary) with a Geno/Grinder (Certiprep, Metuchen, New Jersey). Expression data is presented in Appendix F.

Composition Sample Storage, Shipping and Processing

All composition samples, except for some shipments from Iowa, were shipped overnight on dry ice to Covance Laboratories Inc., Madison WI. Samples from Canada were shipped via freezer truck. Composition samples were stored at approximately -20 °C at Covance Laboratories Inc., Madison, WI.

Processing of soybean tissues for composition was performed at Covance Laboratories Inc. and is described in Appendix E.

Compositional Analysis

Samples of soybean forage and grain were analyzed at Covance Laboratories Inc. for composition with a variety of tests. The analyses performed for forage included ash, total fat, moisture, protein, carbohydrate, acid detergent fiber, neutral detergent fiber, calcium and

phosphorus. The analyses performed for grain included proximates (ash, total fat, moisture, protein, carbohydrate, cholesterol, total dietary fiber, acid detergent fiber), neutral detergent fiber (NDF), minerals, amino acids, fatty acids, vitamins, isoflavones and anti-nutrients. The results of the composition analysis for corn forage and grain were compared with values reported in literature [ILSI Crop Composition Database, 2006 (2); OECD Consensus Document on Compositional Considerations for New Varieties of Soybean, 2001 (3)]. A summary of the compositional data used for these comparisons can be found in Appendix B, Tables 1-9.

Statistical Treatment

Analysis of variance was conducted across the field sites for the composition and agronomic data using a mixed model (SAS Version 8; SAS Institute 1999). Entry was considered a fixed effect, and location, block within location, location-by-entry, and entry-by-block within location were designated as random effects. Analysis at individual locations was done in an analogous manner with entry as a fixed effect, and block and entry-by-block as random effects. Significant differences were declared at the 95% confidence level. Data were not rounded off for statistical analysis. The significance of an overall treatment effect was estimated using an F-test. Paired contrasts were made between the control and unsprayed AAD-12 (unsprayed), AAD-12 sprayed with glufosinate (AAD-12 + glufosinate), AAD-12 sprayed with 2,4-D (AAD-12 + 2,4-D) and AAD-12 sprayed with both glufosinate and 2,4-D (AAD-12 + both) transgenic entries using *t*-tests.

Due to the large number of contrasts made in this study, multiplicity was an issue. Multiplicity is an issue when a large number of comparisons are made in a single study to look for unexpected effects. Under these conditions, the probability of falsely declaring differences based on comparison-wise p-values is very high ($1-0.95^{\text{number of comparisons}}$). In this study there were four comparisons per analyte (75 quantitated analytes for composition and 12 analyzed observation types for agronomics), resulting in 300 comparisons made in the across-site composition analysis and 48 comparisons for agronomics. Therefore, the probability of declaring one or more false

differences based on unadjusted p-values was >99.99% for composition ($1-0.95^{300}$) and >91% for agronomics ($1-0.95^{48}$.)

One method to account for multiplicity is to adjust p-vales to control the experiment-wise error rate (probability that all declared differences are significant), but when many comparisons are made in a study, the power for detecting specific effects can be reduced significantly. An alternative with much greater power is to adjust p-values to control the probability that each declared difference is significant. This can be accomplished using False Discovery Rate (FDR) procedures (4). Therefore the p-values from the compositional analyses and the agronomics evaluations were each adjusted using FDR to improve discrimination of true differences among treatments from random effects (false positives).

RESULTS AND DISCUSSION

Agronomic Results

An analysis of the agronomic data collected from the control, AAD-12 unsprayed, AAD-12 + 2,4-D, AAD-12 + glufosinate, and AAD-12 + both herbicides was conducted. For the across-site analysis, no statistically significant differences were observed for stand count, early population, seedling vigor, injury after application (2, 3 and 5), lodging, final stand count, disease incidence or days to flowering (Table 1). For height, a significant paired t-test was observed between the control and the AAD-12 + 2,4-D spray. For insect damage, a significant paired t-test was observed between the control and the AAD-12 + both herbicides. For both height and insect damage, no significant overall treatment effects or FDR adjusted p-values were observed. Based on these results, DAS-68416-4 soybean was agronomically equivalent to the near-isogenic non-transgenic control. Results for individual locations can be found in Appendix C, Tables 1- 6.

Composition Analysis Results

A summary of the composition results across locations can be found in Table 2 - Table 9. Composition results by individual location are found in Appendix D, Tables 1-8. The sub-report from Covance Laboratories, Inc. can be found in Appendix E.

Proximate, Fiber and Mineral Analysis of Forage

The analysis of the protein, fat, ash, moisture, carbohydrate, acid detergent fiber (ADF), neutral detergent fiber (NDF), calcium and phosphorus in soybean forage samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 2 and Figure 1. No statistical differences were observed in the across-site analysis between the control and transgenic entries for the protein, fat, ash, moisture, carbohydrates, ADF, NDF, calcium or phosphorus. A comparison to literature values for proximate, fiber and minerals in soybean forage is shown in Table 2 and Figure 1. Mean ash values across sites for AAD-12 + glufosinate and AAD-12 + both herbicides was outside of the literature range as was the NDF value for AAD-12 + glufosinate and AAD-12 + 2,4-D. ADF values for all treatments including the non-transgenic control were also outside of the literature values. However, as reported above, values were not significantly different between the non-transgenic control and any transgenic entry for any proximate, fiber type, or mineral in forage. Based on these compositional constituents, the forage from DAS-68416-4 soybean was equivalent to that of the near-isogenic non-transgenic control. Results reported by individual field sites are shown in Appendix D Table 1.

Proximate and Fiber Analysis of Grain

An analysis of the protein, fat, ash, moisture, cholesterol, carbohydrate, ADF, NDF and total dietary fiber in soybean grain samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 3 and Figure 2. No statistical differences were

observed in the across-site analysis between the control and transgenic entries for the fat, ADF or total dietary fiber. However, ADF was slightly higher than the literature range for the AAD-12 + 2,4-D entry. Protein levels were significantly different in the across-site analysis based on the unadjusted p-value for the unsprayed, AAD-12 + 2,4-D, and AAD-12 + both herbicides compared with the control. However, after FDR adjustment, only the p-value for the AAD-12 + 2,4-D was significant, and overall mean protein values for all treatments were within the reported literature values, indicating that the differences were not biologically meaningful. A significant unadjusted p-value was observed in the across site analysis of ash between the control and the 2,4-D sprayed AAD-12 treatment, but no overall treatment effect or adjusted p-value was observed. Ash values were also within the reported literature values, indicating that the differences were not biologically meaningful. Moisture levels were significantly different in the across-site analysis based on the unadjusted p-value for the unsprayed, AAD-12 + 2,4-D, and AAD-12 + both herbicides compared with the control. However, the overall treatment effect was not significant for moisture, only the AAD-12 + 2,4-D treatment had a significant FDR-adjusted p-value, and the mean moisture levels for all treatments were within the literature ranges. This indicated that the differences were not biologically meaningful. Cholesterol values were all <LOQ and no literature values were reported. Carbohydrate levels were significantly different in the across-site analysis based on the unadjusted p-value for the unsprayed, AAD-12 + glufosinate, and AAD-12 + 2,4-D compared with the control. However, only the AAD-12 + 2,4-D treatment was significantly different from the control based on the FDR adjusted p-value and all treatment means were within the reported literature values, indicating equivalence to non-transgenic soybean. NDF levels were significantly different in the across-site analysis based on the unadjusted p-value for AAD-12 + glufosinate compared with the control, but this was not accompanied by a significant adjusted p-value or an overall treatment effect. NDF across-site values were slightly higher than the reported literature values for the AAD-12 + glufosinate and AAD-12 + 2,4-D entries, but the differences were <9% compared with the non-transgenic near-isogenic control. Based on these compositional constituents, the grain from DAS-68416-4 soybean was equivalent to that of non-transgenic soybean. The results reported by individual field sites are shown in Appendix D Table 2.

Mineral Analysis of Grain

The analysis of the calcium, chromium, copper, iodine, iron, magnesium, manganese, molybdenum, phosphorus, potassium, selenium, sodium and zinc in soybean grain samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 4 and Figure 3. No statistical differences were observed in the across-site analysis between the control and transgenic entries based on the unadjusted p-value for the chromium, copper, iodine, iron, manganese, molybdenum, phosphorus, selenium and sodium. Calcium had a significant difference in the across-site analysis based on the unadjusted p-value for the AAD-12 + 2,4-D but this was not associated with a significant FDR adjusted p-value or overall treatment effect, and all treatment means fell within the literature range, indicating that the difference was not biologically meaningful. Magnesium levels were significantly different in the across-site analysis for the AAD12 + both herbicides and AAD-12 + glufosinate compared with the control based on the unadjusted and adjusted p-values, respectively, but the overall treatment effect was not significant. Magnesium across site mean values were slightly lower than the reported literature values, but the differences were small (<3%) in comparison to the control and all AAD-12 entries were closer to literature values compared with the control. All AAD-12 entries had significantly higher potassium values compared with the control in the across-site analysis. However, differences were small (<5%) in comparison to the control, and the all AAD-12 entries were closer to the literature range compared with the control. A difference in zinc levels was significant in the across-site analysis based on the unadjusted p-value for AAD-12 + both herbicides, however this was not accompanied by a significant FDR-adjusted p-value and the difference was small (<4%). Based on these compositional constituents, the grain from DAS-68416-4 soybean was equivalent to that of non-transgenic soybean. The results reported by individual field sites are shown in Appendix D Table 3.

Amino Acid Analysis of Grain

An analysis of the following amino acids: alanine, arginine, aspartic acid, cystine, glutamic acid glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, and valine; in soybean grain samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 5 and Figure 4. No statistical differences were observed between the control and transgenic entries for cysteine, methionine, proline, tyrosine or tryptophan. The isoleucine level for AAD-12 + 2,4-D was significantly different from the control based on the unadjusted-value, but this was not accompanied by a significant FDR-adjusted p-value or a significant overall treatment effect. The levels of the remaining 12 amino acids were slightly lower (<7%) for two or more of the AAD-12 entries compared with the control, but all fell within the literature range for non-transgenic soybean. All amino acids for all entries were within the literature ranges, indicating that the differences were not biologically meaningful. Based on these compositional constituents, the grain from DAS-68416-4 soybean was equivalent to that of non-transgenic soybean. The results reported by individual field sites are shown in Appendix D Table 4.

Fatty Acid Analysis of Grain

An analysis of 22 fatty acids in soybean grain samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 6 and Figure 5. The fatty acids 10:0 capric, 15:0 pentadecanoic, 15:1 pentadecenoic, 20:3 eicosatrienoic, 20:4 arachidonic, 8:0 caprylic, 12:0 lauric, 14:0 myristic, 14:1 myristoleic, 17:1 heptadecenoic, 18:3 gamma linolenic, and 20:2 eicosadienoic were analyzed and the results were <LOQ. The fatty acids 16:0 palmitic, 17:0 heptadecanoic, and 20:1 eicosenoic were not significantly different between the control and the AAD-12 entries, although 20:1 eicosenoic values were lower than the reported literature values for AAD-12 + glufosinate and AAD-12 + both herbicides. However, the differences were small (<5%) in comparison to the control. The level of 16:1 palmitoleic was significantly

different between the control and the unsprayed, AAD-12 + glufosinate, AAD-12 + 2,4-D, and AAD-12 + both herbicides based on unadjusted p-values. However, only the unsprayed AAD-12 entry had a FDR-adjusted p-value that was significant for 16:1 palmitoleic. The 16:1 palmitoleic across-site value was lower for this treatment compared with the reported literature values, but the difference was small (<13%) in comparison to the near-isogenic control. The level of 18:0 stearic was significantly different between the control and the unsprayed and AAD-12 + glufosinate, based on unadjusted p-values. However, no significant differences were observed based on the adjusted p-values or the overall treatment effect, and all entries were within the reported literature values, indicating equivalence to non-transgenic soybean. The level of 18:1 oleic was significantly different between the control and the unsprayed, AAD-12 + glufosinate, AAD-12 + 2,4-D, and AAD-12 + both herbicides. However, 18:1 oleic levels were within the reported literature values for all treatments, indicating equivalence to non-transgenic soybean. The level of 18:2 linoleic was significantly different between the control and the unsprayed and AAD-12 + 2,4-D, based on unadjusted p-values. However, no significant differences were observed in the adjusted p-values or the overall treatment effect, and 18:2 linoleic levels were within the reported literature values for all treatments, indicating equivalence to non-transgenic soybean. Levels of 18:3 linolenic were significantly different between each of the AAD-12 entries and the control based on unadjusted p-values, and the adjusted p-values were also significant between the unsprayed AAD-12 and AAD-12 + both herbicide treatment compared with the control. Differences between the AAD-12 and control treatment were small (<6%) and all fell within the literature range. The level of 20:0 arachidic was significantly different between the control and the unsprayed, AAD-12 + glufosinate, AAD-12 + 2,4-D, and AAD-12 + both herbicides based on unadjusted p-values, and 20:0 arachidic also had significant differences in the across-site analysis in the adjusted p-value for the unsprayed, AAD-12 + glufosinate. However, 20:0 arachidic levels were within the reported literature values for all treatments, indicating equivalence to non-transgenic soybean. The level of 22:0 behenic was significantly different between the control and the unsprayed, AAD-12 + glufosinate, AAD-12 + 2,4-D, and AAD-12 + both herbicides based on unadjusted p-values, and the level of 22:0 behenic also had a significant difference in the across-site analysis in the adjusted p-value for the

AAD-12 + glufosinate. However, there were no differences in the overall treatment effect, and 22:0 behenic levels were within the reported literature values for all treatments, indicating equivalence to non-transgenic soybean. Of the 22 fatty acids investigated, all four AAD-12 entries were either statistically indistinguishable from the control or within literature values for 21 of the fatty acids. In one case (unsprayed AAD-12; 16:1 palmitoleic), the value was slightly under the minimum literature values and statistically different from the control (<13% lower), however, all three sprayed treatments were within the literature range. Based on these compositional constituents, the grain from DAS-68416-4 soybean was equivalent to that of non-transgenic soybean. The results reported by individual field sites are shown in Appendix D Table 5.

Anti-Nutrient Analysis of Grain

An analysis of anti-nutrients in soybean grain samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 7 and Figure 6. No statistical differences were observed between the control and transgenic entries for lectin, phytic acid, or trypsin inhibitor. These three anti-nutrients were also all within the literature ranges, indicating equivalence to non-transgenic soybean. Raffinose was significantly lower (<10%) for the AAD-12 + glufosinate treatment compared with the control based on unadjusted p-values. Raffinose was not significantly different in the across-site analysis based on the adjusted p-value or the overall treatment effect. Raffinose levels were also within the reported literature values for all treatments, indicating equivalence to non-transgenic soybean. Stachyose was significantly different between the control and the AAD-12 + glufosinate entry based on the unadjusted p-value. Stachyose levels were not significant different in the across-site analysis based on the adjusted p-value or the overall treatment effect. Stachyose levels were also within the reported literature values for all treatments, indicating equivalence to non-transgenic soybean. Anti-nutrient analysis for lectin, phytic acid, raffinose, stachyose and trypsin inhibitor were all within the reported literature values, and the two significant differences based on unadjusted p-values had lower levels of anti-nutrients for the AAD-12 treatments compared with the control. Based

on these compositional constituents, the grain from DAS-68416-4 soybean was equivalent to that of non-transgenic soybean. The results reported by individual field sites are shown in Appendix D Table 6

Vitamin Analysis of Grain

An analysis of vitamins in soybean grain samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 8 and Figure 7. No literature values were found for beta-tocopherols, delta-tocopherol, gamma-tocopherol, Vitamin A, Vitamin B5, Vitamin B6, Vitamin B12, Vitamin C, Vitamin D and niacin in soybean grain. Beta tocopherol, Vitamin A, Vitamin B12 and Vitamin D were all <LOQ. No differences were observed between the control, unsprayed AAD-12 and the treated AAD-12 for Vitamin B1, Vitamin B2, Vitamin B6, Vitamin C, Vitamin E or niacin. Of those vitamins with available literature ranges, all treatments fell within these ranges with the exception of vitamin B2 where values exceeded the range for all treatments including the near-isogenic control. Delta-tocopherol levels were significantly different between the control and the AAD-12 + glufosinate and AAD-12 + 2,4-D entries based on unadjusted p-values. However this was not accompanied by a significant adjusted p-value or overall treatment effect. Gamma-tocopherol was significantly different between the control and the unsprayed and AAD-12 + 2,4-D entries based on unadjusted, adjusted p-values. However, gamma tocopherol was <11% higher for the AAD-12 treatments compared with the near-isogenic control. Vitamin B5 levels were significantly different between the control and the AAD-12 + glufosinate entry based on the adjusted p-value. However this was not accompanied by a significant overall treatment effect. Folic acid was significantly different between the control and the unsprayed, AAD-12 + 2,4-D and AAD-12 + both herbicides based on unadjusted p-values. Folic acid also had significant differences in the adjusted p-values for two of the AAD-12 entries compared with the control. However, folic acid levels were within the reported literature values for all treatments and the AAD-12 entries differed from the near-isogenic control by <9%, indicating equivalence to non-transgenic soybean. Based on these compositional constituents, the grain from DAS-68416-4 soybean was equivalent to that of non-

transgenic soybean. The results reported by individual field sites are shown in Appendix D Table 7.

Isoflavone Analysis of Grain

The analysis of isoflavones in soybean grain samples from the control, unsprayed AAD-12, AAD-12 + glufosinate, AAD-12 + 2,4-D and AAD-12 + both herbicides was performed. A summary of the results across all locations is shown in Table 9 and Figure 8. The genistein, daidzein and glycitein results were below the LOQ for the treated samples. Diadzin levels were significantly different between the control and the AAD-12 + both herbicides entries based on unadjusted and adjusted p-values. However, the overall treatment effect was not significant. Although there are no reported literature values, the AAD-12 + both herbicides treatment was <9% different from the non-transgenic control. Genistin levels were significantly different between the control and the AAD-12 + both herbicides entries based on unadjusted and adjusted p-values. However, the overall treatment effect was not significant. Although there are no reported literature values for genistin, the AAD-12 treatments were <9% different compared with the non-transgenic control. Glycitin values were significantly different between the control and the AAD-12 + both herbicides based on unadjusted and adjusted p-values. While there were no reported literature values for glycitin, all AAD-12 entries were <13% different compared with the non-transgenic entry. In addition, all total isoflavone aglycone equivalents were within reported literature ranges. The results reported by individual field sites are shown in Appendix D Table 8.

CONCLUSIONS

Compositional, agronomic and expression data were collected on a non-transgenic near-isogenic control, an unsprayed transgenic DAS-68416-4, and transgenic DAS-68416-4 sprayed with glufosinate, 2,4-D or the combination of glufosinate and 2,4-D.

The overall agronomic data was comparable between the transgenic entries and the near-isogenic control regardless of the herbicide regime used indicating agronomic equivalence between the AAD-12 entries and the non-transgenic near-isogenic control. The composition of DAS-68416-4 soybean was either statistically indistinguishable from the near-isogenic line, <13% different from the near-isogenic line, or within the literature range for non-transgenic soybean. Thus, DAS-68416-4 soybean was found to be substantially equivalent to non-transgenic soybean.

ARCHIVING

The protocol, raw data, and the original version of the final report are all filed in the Dow AgroSciences LLC archives at 9330 Zionsville Road in Indianapolis, Indiana 46268-1054. A summary of the study amendments and deviations is presented in Appendix A Table 7.

REFERENCES

1 NOAA Satellite and Information Service: NESDIS. 2008 Annual Climate Review U.S. Summary. Retrieved 26 August 2009, from NCDC: U.S. Annual Climate. Web site:http://lwf.ncdc.noaa.gov/oa/climate/research/2008/ann/us-summary.html

2. International Life Sciences Institute: ILSI. ILSI, Crop Composition Database, version 3.0 Updated 10/01/2008. Retrieved 2009. Web site : http://www.cropcompostion.org/

3 OECD; Consensus Document on Compositional Considerations for New Varieties of Soybean: Key Food and Fee Nutrients and Anti-Nutrients. 2001.

4. Benjamini, Y., Hochberg, Y. 1995. Controlling the false discovery rate: A practical and powerful approach to multiple testing. J. Royal Statistical Soc. B, 57, 289-300.

Table 1. Summary Analysis of Agronomic Characteristics Results Across Locations for the DAS-68416-4 AAD-12 Soybean (Sprayed and Unsprayed) and Control (least squares mean)

Analyte	Overall Trt. Effect (Pr>F)[a]	Control	Unsprayed (P-value,[b] Adj. P)[c]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Stand Count (no. of plants)	(0.774)	170	172 (0.709,0.824)	175 (0.311,0.575)	173 (0.476,0.672)	175 (0.269,0.575)
Early Population (% emergence)[d]	(0.714)	76.7	77.4 (0.738,0.824)	79.1 (0.301,0.575)	79.0 (0.327,0.575)	79.4 (0.256,0.575)
Seedling Vigor[e]	(0.547)	9.72	9.39 (0.146,0.575)	9.50 (0.326,0.575)	9.44 (0.222,0.575)	9.39 (0.146,0.575)
Vigor/Injury – App. 2[e]	(0.511)	10.0	9.86 (0.461,0.671)	9.89 (0.555,0.718)	9.83 (0.378,0.611)	9.67 (0.087,0.575)
Vigor/Injury – App. 3[e]	(0.462)	10.0	10.0 (1.000,1.000)	9.89 (0.320,0.575)	9.83 (0.141,0.575)	9.89 (0.320,0.575)
Vigor/Injury – App. 5[e]	(0.431)	9.94	9.89 (0.721,0.824)	9.78 (0.289,0.575)	9.67 (0.085,0.575)	9.78 (0.289,0.575)
Height (cm)	(0.144)	101	98.1 (0.145,0.575)	99.2 (0.390,0.611)	96.1 (**0.020**[h],0.575)	97.2 (0.062,0.575)
Lodging (%)	(0.948)	17.2	18.2 (0.885,0.904)	21.3 (0.551,0.718)	20.7 (0.606,0.746)	21.7 (0.511,0.700)
Final Stand Count (no. of plants)	(0.268)	156	154 (0.770,0.840)	161 (0.335,0.575)	155 (0.817,0.853)	163 (0.127,0.575)
Disease Incidence (%)[f]	(0.422)	13.1	12.6 (0.803,0.853)	11.8 (0.456,0.671)	11.1 (0.251,0.575)	10.1 (0.091,0.575)
Insect Damage[f]	(0.332)	24.1	21.8 (0.140,0.575)	22.1 (0.204,0.575)	22.3 (0.236,0.575)	20.9 (**0.044**[h],0.575)
Flowering Days[g]	(0.452)	49.0	49.5 (0.261,0.575)	49.4 (0.395,0.611)	48.7 (0.568,0.718)	49.2 (0.668,0.801)

[a] Overall treatment effect estimated using an F-test.
[b] Comparison of the sprayed and unsprayed treatments to the control using a t-test.
[c] P-values adjusted using a False Discovery Rate (FDR) procedure.
[d] 0-100% scale; (Stand count divided by the no. of seeds planted) * 100.
[e] Visual estimate on 1-10 scale; 10 = growth equivalent to non-transformed plants.
[f] Visual estimate on 0-100% scale; 0% = no damage.
[g] The number of days from the time of planting until flowering.
[h] Statistical difference indicated by P-Value <0.05.

Table 2. Summary of the Proximate, Fiber and Mineral Analysis of Soybean Forage from All Sites (least squares mean)

	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Proximate (% dry weight)							
Protein	11.2-24.7	(0.805)	19.1	19.0 (0.881,0.930)	19.4 (0.666,0.819)	18.9 (0.744,0.860)	18.6 (0.441,0.634)
Fat	1.30-5.1	**(0.046[e])**	4.11	4.46 (0.216,0.403)	3.66 (0.107,0.254)	4.17 (0.844,0.908)	3.74 (0.186,0.360)
Ash	6.72-10.8	(0.092)	10.6	10.1 (0.567,0.767)	**11.1** (0.546,0.741)	10.2 (0.672,0.819)	**12.3** (0.051,0.151)
Moisture (% fresh weight)	73.5-81.6	(0.569)	77.8	78.5 (0.255,0.444)	78.4 (0.330,0.539)	77.8 (0.960,0.970)	77.8 (0.976,0.979)
Carbohydrates	59.8-74.7	(0.675)	66.2	66.5 (0.830,0.902)	65.9 (0.739,0.860)	66.7 (0.641,0.808)	65.3 (0.366,0.564)
Fiber (% dry weight)							
Acid Detergent Fiber (ADF)	32.0-38.0	(0.967)	**30.2**	**30.4** (0.904,0.936)	**30.6** (0.797,0.875)	**29.7** (0.746,0.860)	**30.7** (0.740,0.860)
Neutral Detergent Fiber (NDF)	34.0-40.0	(0.375)	34.4	34.7 (0.877,0.930)	**33.1** (0.397,0.596)	**32.0** (0.135,0.297)	34.5 (0.948,0.962)
Minerals (% dry weight)							
Calcium	NR	(0.246)	1.39	1.36 (0.361,0.560)	1.40 (0.664,0.819)	1.38 (0.842,0.908)	1.43 (0.178,0.352)
Phosphorus	NR	(0.957)	0.263	0.266 (0.671,0.819)	0.269 (0.442,0.634)	0.266 (0.696,0.831)	0.265 (0.754,0.860)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
NR = not reported
Bolded values are outside of the reported literature range.

Table 3. Summary of the Proximate and Fiber Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Proximate (% dry weight)							
Protein	32.0-45.5	(**0.004**[e])	39.2	38.3 (**0.009**[e],0.051)	38.8 (0.186,0.360)	37.8 **(0.0003, 0.009)**[e]	38.5 (**0.035**[e],0.122)
Fat	8.10-24.7	(0.105)	17.1	17.1 (0.877,0.930)	16.6 (0.059,0.169)	16.7 (0.142,0.305)	17.2 (0.674,0.819)
Ash	3.89-6.99	(0.315)	4.92	5.04 (0.176,0.351)	5.04 (0.175,0.351)	5.10 (**0.048**[e],0.145)	5.07 (0.099,0.240)
Moisture (% fresh weight)	4.70-34.4	(0.066)	14.9	14.1 (**0.047**[e],0.143)	14.3 (0.122,0.276)	13.7 **(0.006,0.043)**[e]	14.0 (**0.037**[e],0.124)
Cholesterol	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Carbohydrate	29.6-50.2	**(0.010**[e]**)**	38.8	39.6 (**0.046**[e],0.143)	39.6 (**0.044**[e],0.138)	40.3 **(0.001,0.011)**[e]	39.3 (0.241,0.432)
Fiber(% dry weight)							
Acid Detergent Fiber (ADF)	7.81-18.6	(0.561)	17.8	17.6 (0.772,0.868)	18.0 (0.772,0.868)	**18.8** (0.190,0.362)	18.1 (0.685,0.825)
Neutral Detergent Fiber (NDF)	8.53-21.3	(0.184)	20.1	20.8 (0.386,0.585)	**21.9** (**0.042**[e],0.134)	**21.6** (0.090,0.225)	20.3 (0.754,0.860)
Total Dietary Fiber	NR	(0.770)	31.6	31.7 (0.899,0.936)	31.7 (0.897,0.936)	32.1 (0.466,0.653)	32.5 (0.286,0.482)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
NA= statistical analysis was not performed since a majority of the data was < LOQ.
NR = not reported.
Bolded values are outside of the reported literature range.

Table 4. Summary of the Mineral Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Minerals (mg/100g dry wt.)							
Calcium	117-307	(0.102)	256	265 (0.174,0.351)	264 (0.237,0.432)	274 (**0.010**[e],0.057)	269 (0.050,0.148)
Chromium (ppb)	NR	(0.775)	145	149 (0.912,0.941)	175 (0.468,0.653)	126 (0.613,0.796)	137 (0.855,0.916)
Copper	NR	(0.887)	1.31	1.28 (0.534,0.728)	1.30 (0.788,0.873)	1.27 (0.367,0.564)	1.28 (0.461,0.649)
Iodine	NR	(0.285)	0.027	0.023 (0.430,0.632)	0.021 (0.182,0.358)	0.032 (0.348,0.551)	0.023 (0.348,0.551)
Iron	5.54-11.0	(0.917)	8.15	8.46 (0.719,0.853)	8.95 (0.353,0.552)	8.53 (0.656,0.819)	8.59 (0.608,0.796)
Magnesium	219-313	(0.082)	**210**	**212** (0.437,0.634)	**215** **(0.020,0.087)**[e]	**213** (0.143,0.305)	**215** (**0.021**[e],0.088)
Manganese	NR	(0.984)	2.56	2.60 (0.608,0.796)	2.60 (0.618,0.799)	2.58 (0.781,0.873)	2.59 (0.698,0.831)
Molybdenum (ppb)	NR	(0.845)	2165	2557 (0.353,0.552)	2462 (0.479,0.665)	2563 (0.346,0.551)	2284 (0.722,0.853)
Phosphorus	507-935	(0.675)	583	589 (0.630,0.804)	599 (0.191,0.363)	596 (0.272,0.469)	594 (0.349,0.551)
Potassium	1868-2316	**(0.0005**[e]**)**	**1801**	1876 **(0.0003,0.009)**[e]	1882 **(0.0001,0.006)**[e]	1883 **(0.0001,0.006)**[e]	**1864** **(0.001,0.019)**[e]
Selenium (ppb)	NR	(0.490)	490	523 (0.626,0.802)	520 (0.659,0.819)	511 (0.758,0.861)	418 (0.280,0.475)
Sodium	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Zinc	NR	(0.096)	5.06	5.07 (0.868,0.926)	5.19 (0.117,0.268)	5.21 (0.074,0.197)	5.25 (**0.027**[e],0.105)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
NR = not reported.
NA= statistical analysis was not performed since a majority of the data was < LOQ.
Bolded values are outside of the reported literature range

Table 5. Summary of the Amino Acid Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Amino Acids (% dry weight)							
Alanine	1.51-2.10	**(0.003[e])**	1.74	1.70 **(0.001,0.017)[e]**	1.70 **(0.004,0.033)[e]**	1.69 **(0.0003, 0.009)[e]**	1.71 (**0.014[e]**,0.067)
Arginine	2.29-3.40	**(0.007[e])**	3.15	2.97 **(0.004,0.033)[e]**	3.00 (**0.012[e]**,0.066)	2.94 **(0.001,0.015)[e]**	2.96 **(0.003, 0.026)[e]**
Aspartic Acid	3.81-5.12	**(0.007[e])**	4.52	4.41 **(0.004,0.033)[e]**	4.44 (**0.037[e]**,0.124)	4.38 **(0.0005, 0.010)[e]**	4.43 (**0.014[e]**,0.067)
Cystine	0.370-0.808	(0.254)	0.604	0.602 (0.637,0.808)	0.602 (0.787,0.873)	0.605 (0.900,0.936)	0.614 (0.110,0.260)
Glutamic Acid	5.84-8.20	**(0.002[e])**	6.98	6.76 **(0.001,0.015)[e]**	6.83 (**0.019[e]**,0.086)	6.70 **(0.0001, 0.006)[e]**	6.80 **(0.006,0.043)[e]**
Glycine	1.46-2.00	**(0.001[e])**	1.74	1.69 **(0.0004, 0.009)[e]**	1.70 **(0.002,0.023)[e]**	1.69 **(0.0001, 0.006) [e]**	1.70 **(0.001,0.017) [e]**
Histidine	0.880-1.22	**(0.003[e])**	1.09	1.06 **(0.002,0.023)[e]**	1.07 (**0.014[e]**,0.067)	1.05 **(0.0002, 0.007)[e]**	1.07 (**0.013[e]**,0.067)
Isoleucine	1.54-2.08	(0.232)	1.87	1.83 (0.100,0.241)	1.85 (0.450,0.642)	1.82 (**0.042[e]**,0.134)	1.85 (0.514,0.708)
Leucine	2.20-4.00	**(0.010[e])**	3.06	3.00 **(0.007,0.046)[e]**	3.02 (0.068,0.186)	2.98 **(0.001,0.011)[e]**	3.01 (**0.037[e]**,0.124)
Lysine	2.29-2.84	**(0.005[e])**	2.56	2.51 **(0.004,0.034)[e]**	2.52 (**0.028[e]**,0.105)	2.49 **(0.0003, 0.009)[e]**	2.52 (**0.022[e]**,0.093)
Methionine	0.431-0.681	(0.433)	0.556	0.551 (0.377,0.575)	0.549 (0.245,0.438)	0.546 (0.089,0.225)	0.554 (0.742,0.860)
Phenylalanine	1.60-2.35	**(0.008[e])**	2.02	1.97 (**0.014[e]**,0.067)	1.98 (**0.044[e]**,0.138)	1.94 **(0.0004, 0.009)[e]**	1.97 (**0.027[e]**,0.105)
Proline	1.69-2.28	(0.374)	1.91	1.85 (0.059,0.169)	1.88 (0.400,0.597)	1.87 (0.155,0.324)	1.87 (0.240,0.432)
Serine	1.11-2.48	**(0.063[e])**	1.99	1.95 (0.082,0.210)	1.95 (0.115,0.268)	1.91 **(0.006,0.043)[e]**	1.93 (**0.021[e]**,0.088)

Table 5. (Cont.) Summary of the Amino Acid Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Amino Acids (% dry weight)							
Threonine	1.14-1.89	**(0.001)[e]**	1.62	1.57 **(0.002,0.020)[e]**	1.58 **(0.008,0.048)[e]**	1.55 **(<0.0001, 0.006)[e]**	1.57 **(0.002,0.022)[e]**
Tryptophan	0.356-0.670	(0.330)	0.433	0.429 (0.593,0.787)	0.433 (0.981,0.981)	0.434 (0.904,0.936)	0.421 (0.095,0.235)
Tyrosine	1.02-1.61	(0.449)	1.36	1.34 (0.275,0.471)	1.35 (0.517,0.708)	1.33 (0.096,0.235)	1.33 (0.153,0.321)
Valine	1.50-2.44	(0.159)	1.97	1.92 (**0.032[e]**,0.116)	1.94 (0.279,0.475)	1.92 (**0.038[e]**,0.124)	1.95 (0.346,0.551)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.

Table 6. Summary of the Fatty Acid Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Fatty Acids (% total fatty acids)[a]							
8:0 Caprylic	0.148	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
10:0 Capric	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
12:0 Lauric	0.082-0.132	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:0 Myristic	0.071-0.238	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	0.121-0.125	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
16:0 Palmitic	9.55-15.77	(0.607)	10.1	10.0 (0.625,0.802)	9.78 (0.148,0.313)	9.94 (0.455,0.644)	9.85 (0.249,0.441)
16:1 Palmitoleic	0.086-0.194	**(0.029[f])**	0.097	**0.085 (0.003,0.028)[f]**	0.088 (**0.038[f]**,0.124)	0.087 (**0.027[f]**,0.105)	0.089 (**0.029[f],**0.109)
17:0 Heptadecanoic	0.085-0.146	(0.640)	0.111	0.114 (0.162,0.336)	0.113 (0.331,0.539)	0.114 (0.239,0.432)	0.113 (0.296,0.493)
17:1 Heptadecenoic	0.073-0.087	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:0 Stearic	2.70-5.88	(0.136)	4.28	4.03 (**0.048[f]**,0.145)	3.98 (**0.018[f]**,0.081)	4.05 (0.060,0.169)	4.06 (0.073,0.196)
18:1 Oleic	14.3-32.2	**(0.010[f])**	21.8	19.8 **(0.004,0.033)[f]**	19.5 **(0.001,0.017)[f]**	19.9 **(0.006,0.043)[f]**	19.9 **(0.006,0.043)[f]**
18:2 Linoleic	42.3-58.8	(0.145)	50.3	52.5 (**0.030[f]**,0.109)	51.9 (0.116,0.268)	52.6 (**0.024[f]**,0.095)	52.0 (0.087,0.222)
18:3 Gamma Linolenic	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ

Table 6. (Cont.) Summary of the Fatty Acid Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Fatty Acids (% total fatty acids)[a]							
18:3 Linolenic	3.00-12.52	**(0.022[f])**	7.83	8.23 **(0.003,0.031)[f]**	8.15 (**0.016[f]**,0.073)	8.10 (**0.034[f]**,0.119)	8.21 **(0.004,0.034)[f]**
20:0 Arachidic	0.163-0.482	**(0.023[f])**	0.307	0.284 **(0.007,0.045)[f]**	0.282 **(0.004,0.033)[f]**	0.285 (**0.009[f]**,0.052)	0.287 (**0.014[f]**,0.067)
20:1 Eicosenoic	0.140-0.350	(0.683)	0.143	0.140 (0.582,0.779)	**0.136** (0.201,0.380)	0.141 (0.794,0.875)	**0.138** (0.327,0.538)
20:2 Eicosadienoic	0.077-0.245	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.277-0.595	(0.053)	0.305	0.288 (**0.023[f]**,0.095)	0.285 **(0.008,0.048)[f]**	0.288 (**0.020[f]**,0.087)	0.288 (**0.020[f]**,0.087)

[a] Results converted from units of % dry weight to % fatty acids.
[b] Combined range from Appendix B.
[c] Overall treatment effect estimated using an F-test.
[d] Comparison of the transgenic treatments to the control using t-tests.
[e] P-values adjusted using a False Discovery Rate (FDR) procedure.
[f] Statistical difference indicated by P-Value <0.05.
NA= statistical analysis was not performed since a majority of the data was < LOQ.
NR = not reported.

Table 7. Summary of Anti-Nutrient Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Anti-Nutrient (% dry weight)							
Lectin (H.U./mg)	0.105-9.04	(0.552)	2.18	2.74 (0.333,0.540)	2.84 (0.254,0.444)	2.98 (0.176,0.351)	3.09 (0.124,0.277)
Phytic Acid	0.630-2.74	(0.725)	1.20	1.20 (0.949,0.962)	1.22 (0.673,0.819)	1.21 (0.896,0.936)	1.25 (0.253,0.444)
Raffinose	0.212-0.661	(0.111)	0.344	0.339 (0.753,0.860)	0.310 (**0.033**[e],0.118)	0.317 (0.082,0.210)	0.315 (0.062,0.173)
Stachyose	1.21-3.50	(0.217)	2.42	2.34 (0.378,0.575)	2.23 (**0.027**[e],0.105)	2.28 (0.105,0.253)	2.32 (0.231,0.425)
Trypsin Inhibitor (TIU/mg)	19.59-118.68	(0.435)	25.3	27.2 (0.204,0.383)	24.7 (0.657,0.819)	24.9 (0.748,0.860)	25.3 (0.973,0.979)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.

Table 8. Summary of Vitamin Analysis of Soybean Grain from All Sites (least squares mean)

	Lit. Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Vitamins (mg/kg dry weight)							
Beta Tocopherol	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Delta Tocopherol	NR	(0.095)	92.6	95.1 (0.142,0.305)	96.5 (**0.030**[e],0.109)	97.1 (**0.013**[e],0.067)	94.5 (0.257,0.446)
Gamma Tocopherol	NR	**(0.0004**[e]**)**	153	164 **(0.002,0.021)**[e]	158 (0.117,0.268)	169 **(0.0005, 0.006)**[e]	157 (0.174,0.351)
Beta Carotene (Vitamin A)	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin B1 (Thiamin)	1.01-2.54	(0.560)	2.10	2.14 (0.809,0.886)	1.94 (0.312,0.517)	1.97 (0.414,0.615)	2.14 (0.787,0.873)
Vitamin B2 (Riboflavin)	1.90-3.21	(0.994)	**4.49**	**4.52** (0.933,0.952)	**4.60** (0.677,0.819)	**4.52** (0.922,0.948)	**4.55** (0.817,0.891)
Vitamin B5 (Pantothenic acid)	NR	(0.183)	15.1	14.9 (0.601,0.794)	14.2 (**0.041**[e],0.134)	14.5 (0.170,0.350)	14.3 (0.065,0.178)
Vitamin B6 (Pyridoxine)	NR	(0.788)	5.50	5.51 (0.929,0.951)	5.40 (0.439,0.634)	5.40 (0.451,0.642)	5.39 (0.420,0.620)
Vitamin B12	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin C	NR	(0.338)	84.1	79.6 (0.126,0.281)	85.4 (0.639,0.808)	82.5 (0.580,0.779)	83.5 (0.838,0.907)
Vitamin D	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin E (alpha Tocopherol)	1.90-61.7	(0.182)	14.8	15.1 (0.762,0.863)	14.5 (0.611,0.796)	15.9 (0.137,0.301)	14.3 (0.439,0.634)
Niacin (Nicotinic acid,Vit. B3)	NR	(0.211)	27.4	25.3 (0.060,0.169)	25.4 (0.076,0.201)	26.9 (0.698,0.831)	26.7 (0.513,0.708)
Folic Acid	2.39-4.71	**(0.006)**[e]	3.70	3.49 (**0.011**[e],0.060)	3.56 (0.078,0.203)	3.38 **(0.0004, 0.009)**[e]	3.48 **(0.008,0.048)**[e]

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
NR = not reported.
NA= statistical analysis was not performed since a majority of the data was < LOQ.

Table 9. Summary of Isoflavone Analysis of Soybean Grain from All Sites (least squares mean)

	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
				Isoflavones (mcg/g)			
Daidzein	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Daidzin[e]	NR	0.068	1085	1103	1112	1128	1179
				(0.584,0.779)	(0.391,0.589)	(0.187,0.360)	(**0.007**,**0.045**)
Total Daidzein Equivalent	60.0-2453.5	NA	1085	1103	1112	1128	1179
Genistein	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Genistin[e]	NR	0.069	1282	1321	1327	1357	1389
				(0.292,0.490)	(0.220,0.408)	(0.052,0.152)	(**0.007**,**0.044**)
Total Genistein Equivalent	144.3-2837.2	NA	1282	1321	1327	1357	1389
Glycitein	NR	NA	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Glycitin[e]	NR	**0.032**	253	267	270	268	285
				(0.142,0.305)	(0.076,0.201)	(0.121,0.274)	(**0.002,0.021**)
Total Glycitein Equivalent	15.3-310.4	NA	253	267	270	268	285

[a] ILSI literature values from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Expressed as aglycone equivalent.
NA= statistical analysis was not performed since a majority of the data was < LOQ.
NR = not reported.
Bolded mean values are outside of the reported literature range.
Bolded P-values are significant (<0.05).

Figure 1 Proximates, fiber and minerals (percent dry-weight for all analytes, except moisture which was percent fresh-weight) in non-transgenic (control), and Event DAS-68416-4 Soybean Forage. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (OECD (2001) and ILSI Database (2008)).

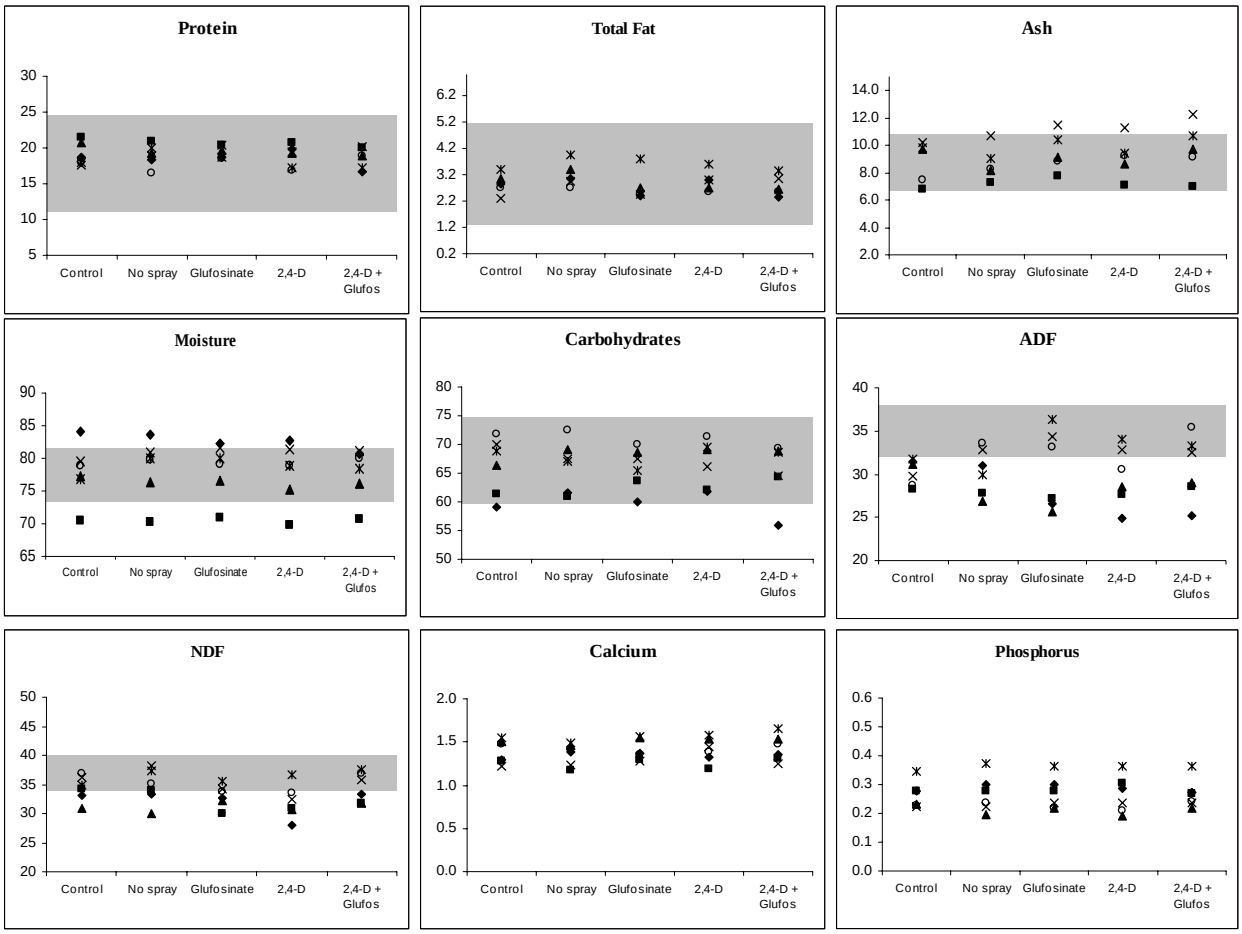


Figure 2 Proximates and fiber (percent dry-weight for all analytes, except moisture which was percent fresh-weight) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (OECD (2001); and ILSI Database (2008)). Grain was also analyzed for cholesterol, but results were less than the limit of quantitation.

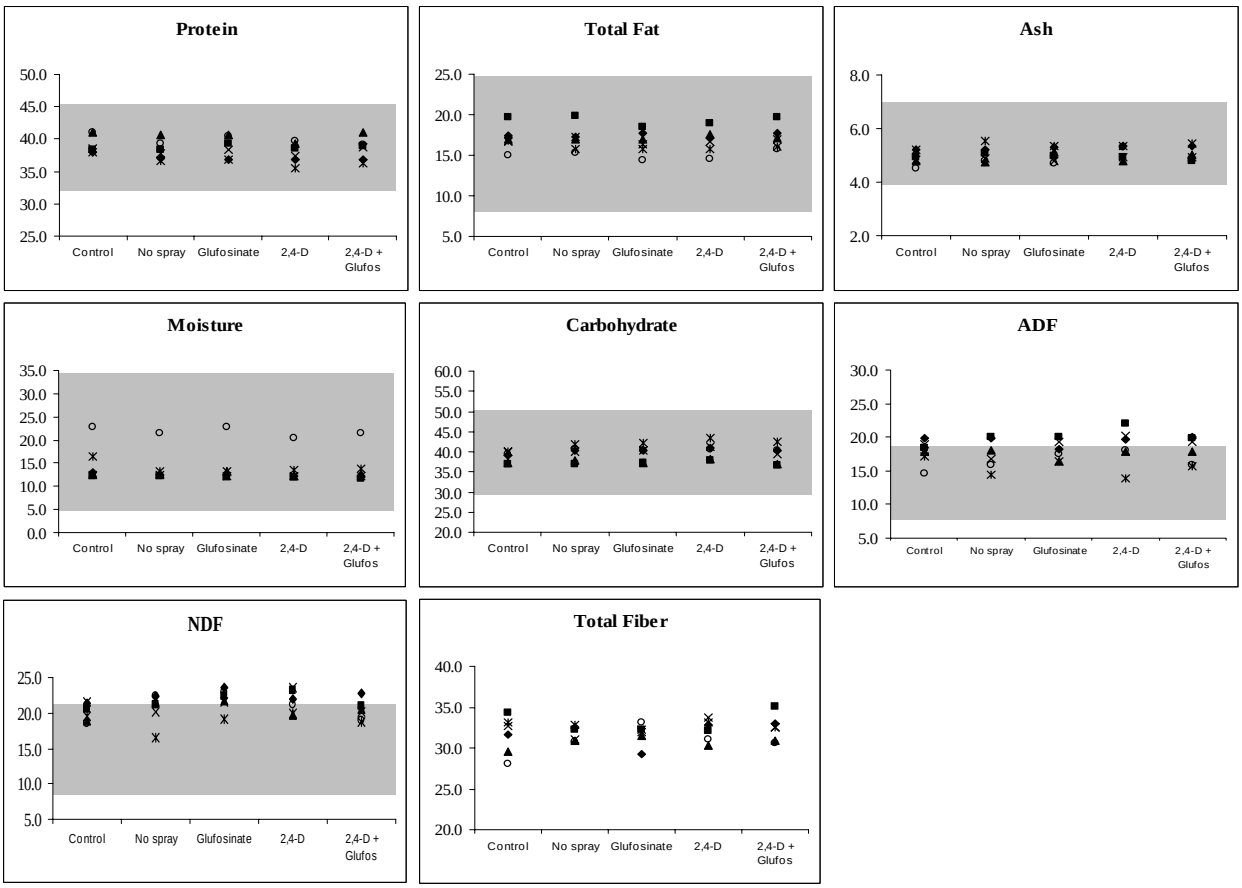


Figure 3 Minerals (mg/100g) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (ILSI Database (2008)). Grain was also analyzed for sodium, but results were less than the limit of quantitation.

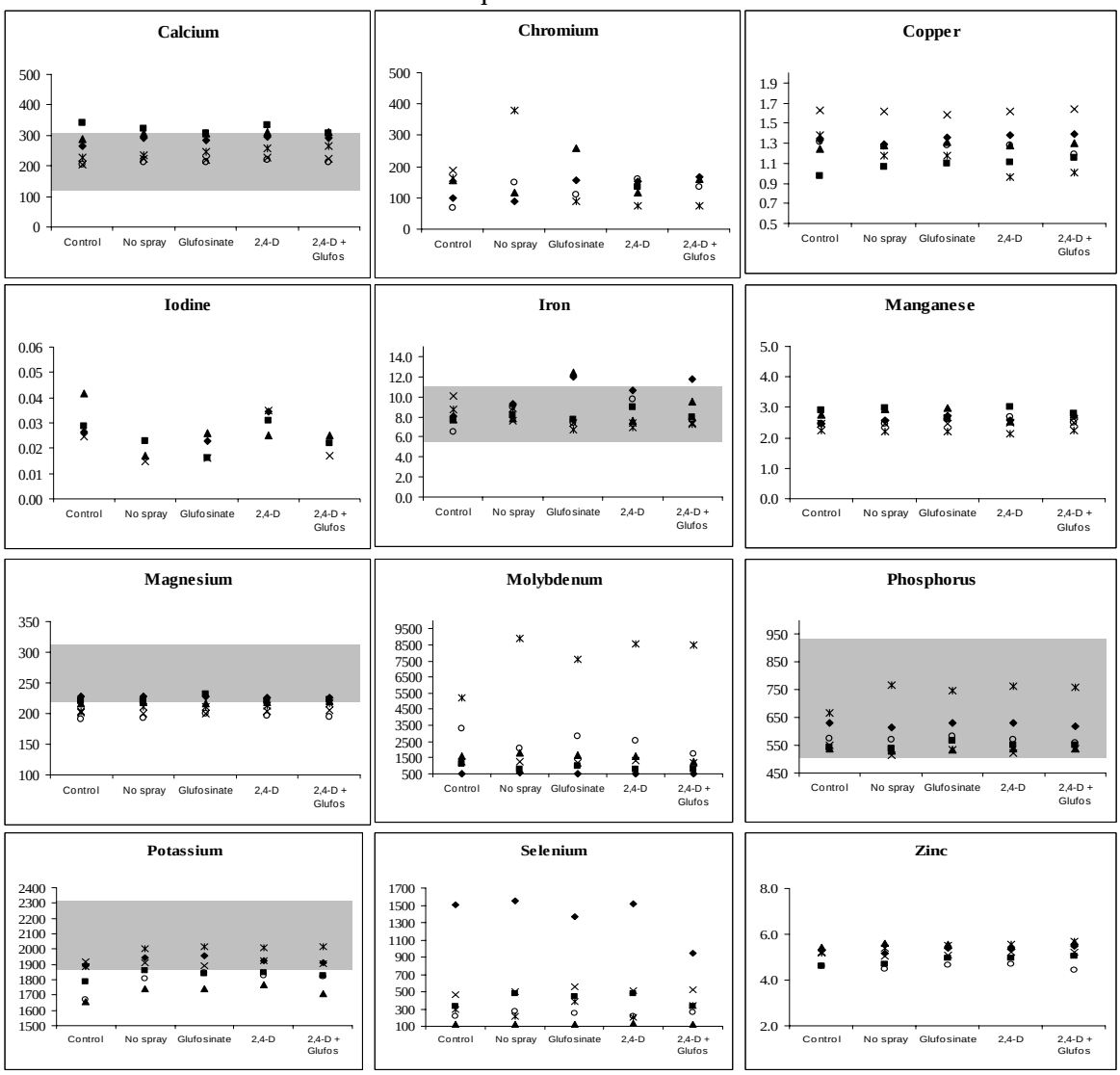


Figure 4 Amino acids (percent dry-weight) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (OECD (2001); and ILSI Database (2008)).

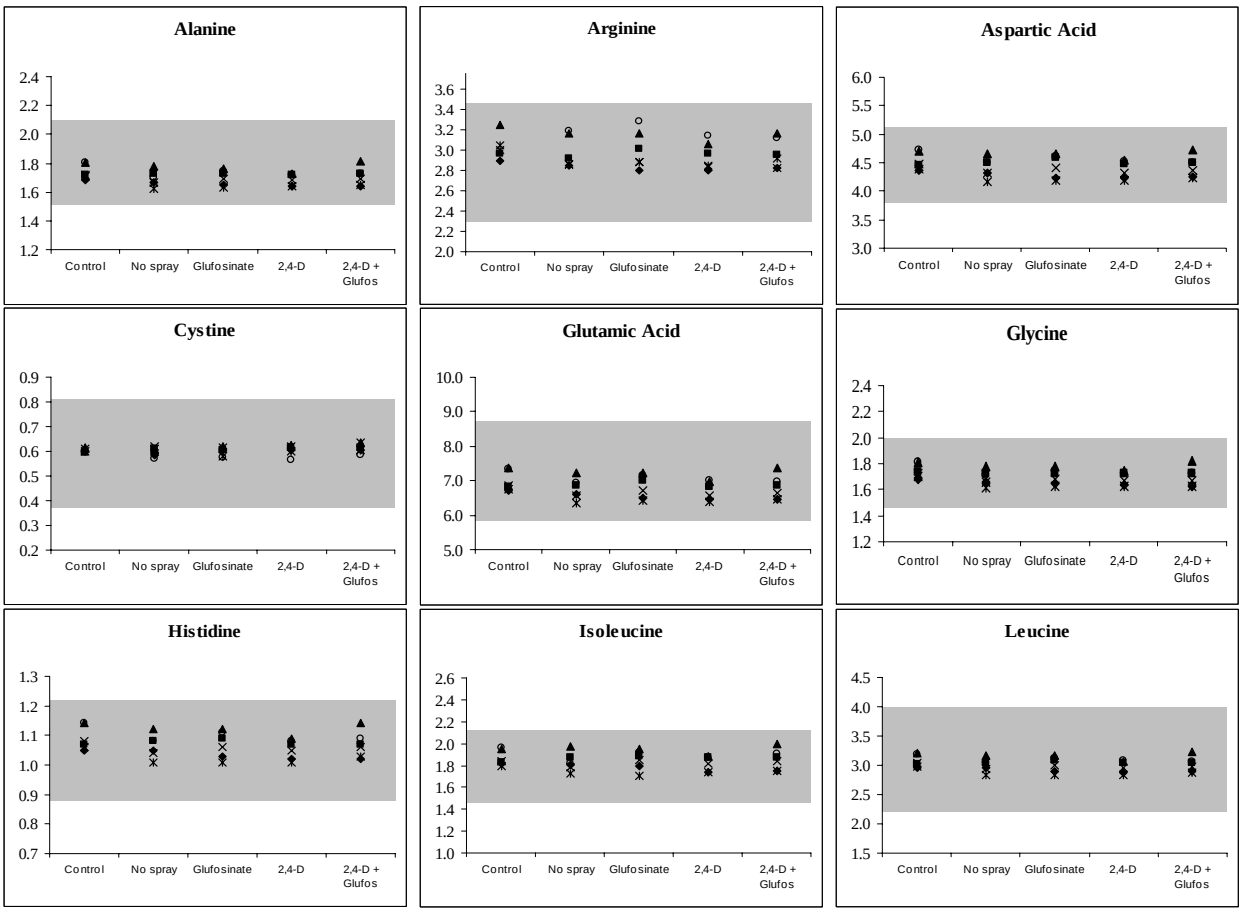


Figure 4 (Cont.) Amino acids (percent dry-weight) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (OECD (2001); and ILSI Database (2008)).

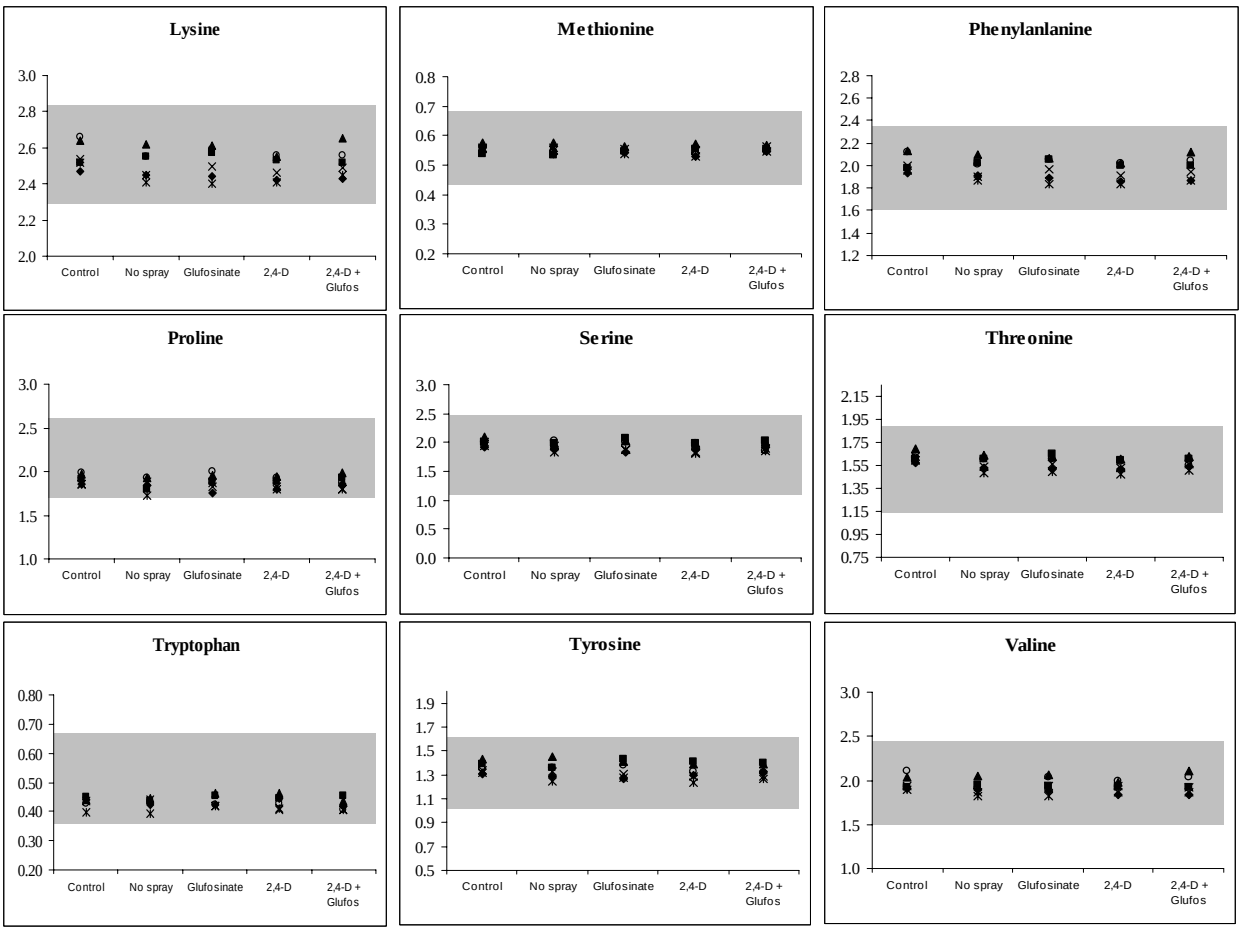


Figure 5 Fatty acids (percent of total fatty acids) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (ILSI Database (2008)). Grain was also analyzed for 8:0 Caprylic, 10:0 Capric, 12:0 Lauric, 14:0 Myristic, 14:1 Myristoleic, 15:0 Pentadecanoic, 15:1 Pentadecenoic, 17:1 Heptadecenoic, 18:3 gamma-Linolenic, 20:2 Eicosadienoic, 20:4 Arachidonic, 20:3 Eicosatrienoic, but levels were below level of quantitation.

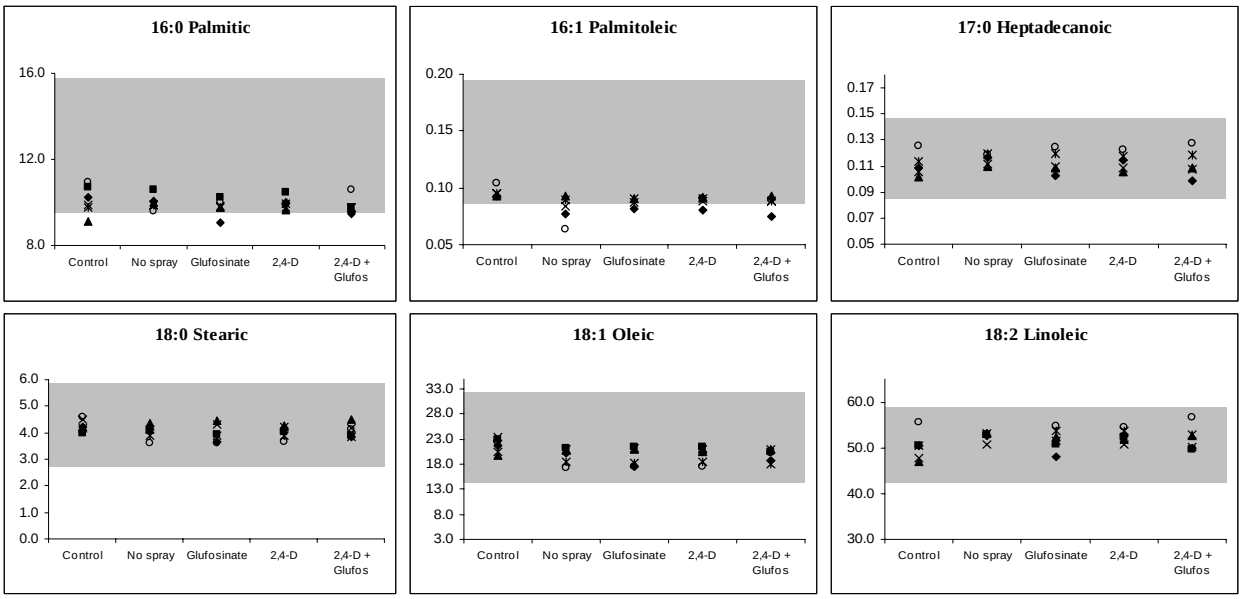


Figure 5 (Cont.) Fatty acids (percent of total fatty acids) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (ILSI Database (2008)). Grain was also analyzed for 8:0 Caprylic, 10:0 Capric, 12:0 Lauric, 14:0 Myristic, 14:1 Myristoleic, 15:0 Pentadecanoic, 15:1 Pentadecenoic, 17:1 Heptadecenoic, 18:3 gamma-Linolenic, 20:2 Eicosadienoic, 20:4 Arachidonic, 20:3 Eicosatrienoic, but levels were below level of quantitation.

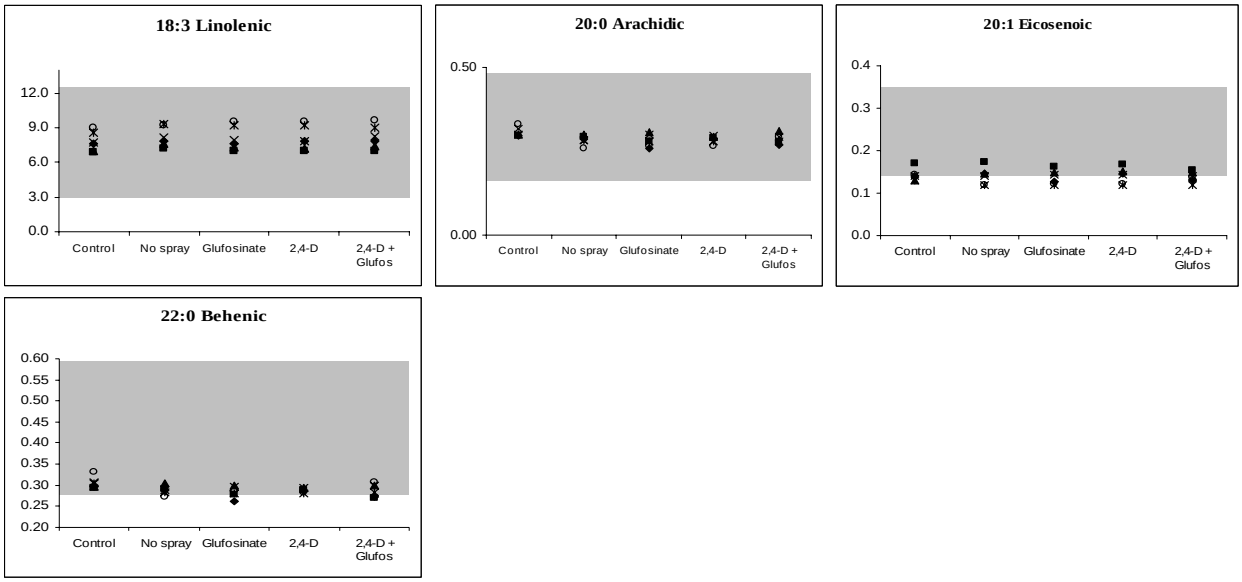


Figure 6 Anti-nutrients (% dry weight or TIU/mg for trypsin inhibitor) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (OECD (2001), and ILSI Database (2008)).

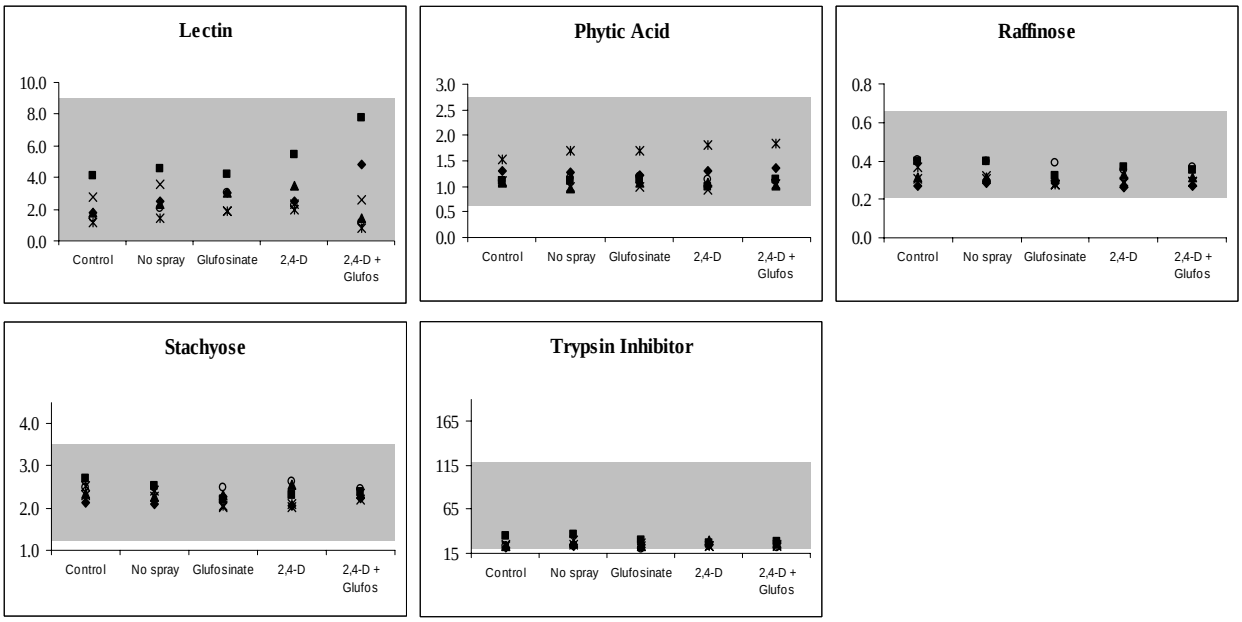


Figure 7 Vitamins (mg/kg dry weight) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (ILSI Database (2008)). Grain was also analyzed for Beta Tocopherol, Vitamin B12, A, and D, but results were less than the limit of quantitation.

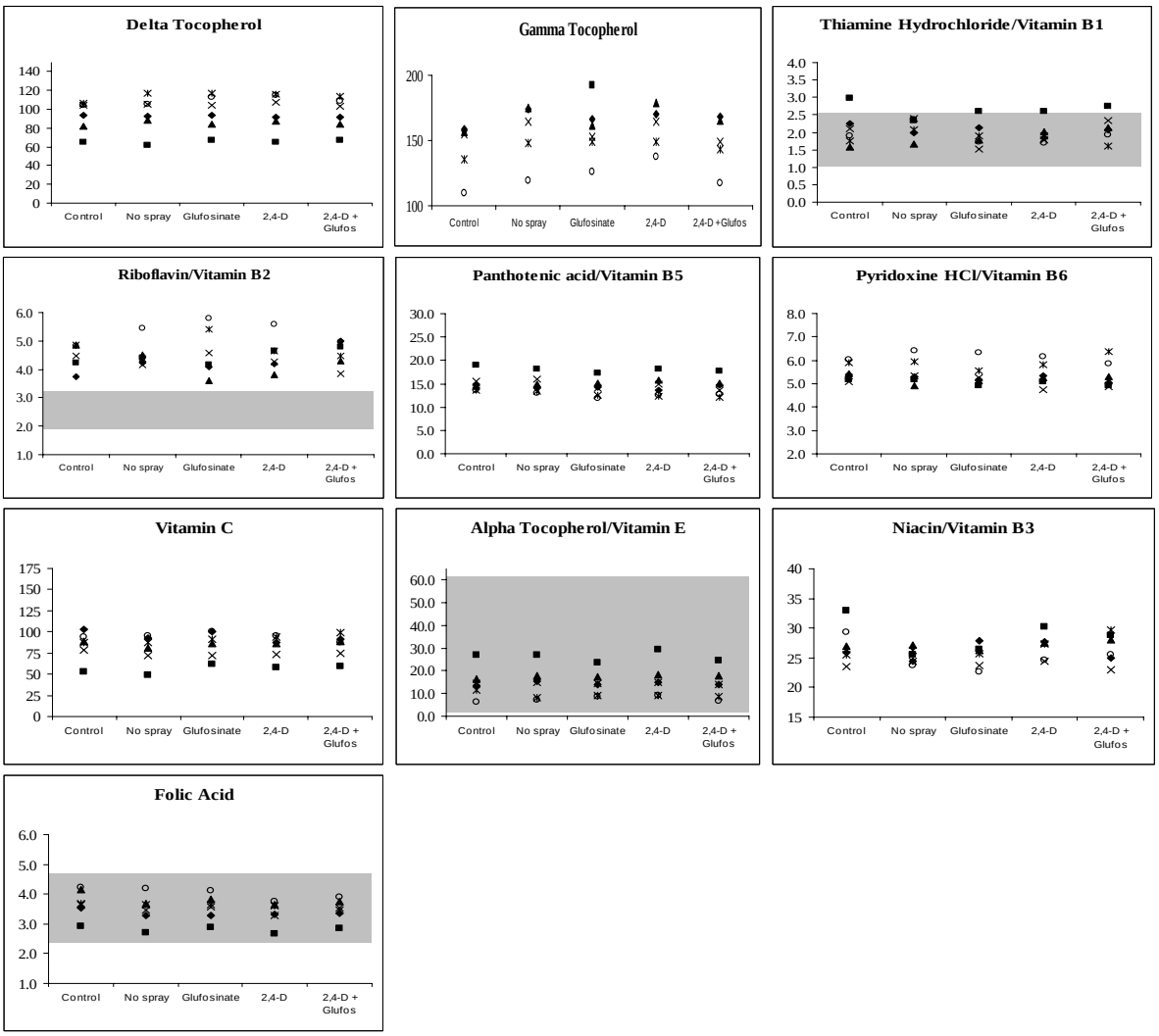
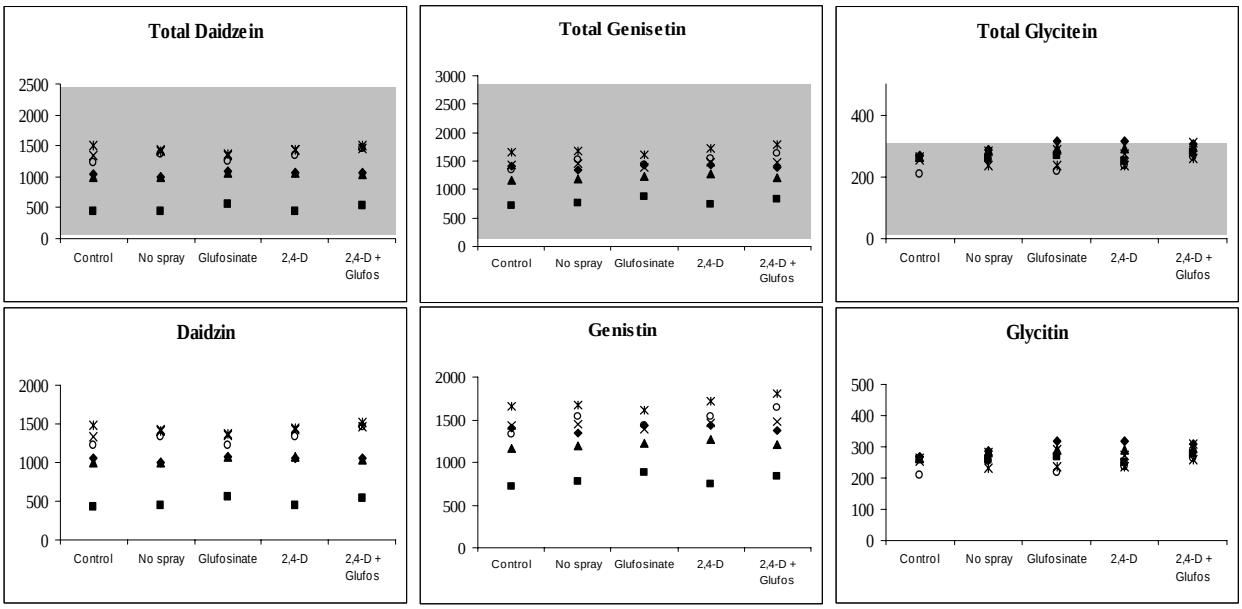


Figure 8 Isoflavones (mg/kg)) in non-transgenic (control), and Event DAS-68416-4 Soybean Grain. Values at each location shown: diamond = IA, square = IL, triangle = IN, X = NE, star = ON1, and circle = ON2. Literature ranges are shaded (ILSI Database (2008)). Grain was also analyzed for Genistein, and Glycitein but results were less than the limit of quantitation.



APPENDIX A – FIELD INFORMATION

Appendix A Table 1. Field Site Information

Site	Field Investigator	Site location Address
080003IA	David Bennett Bennett Agricultural Research Corporation	Jefferson County Richland, Iowa
080003IL	Tim Boeker Alvey Agricultural Research	Clinton County Carlyle, Illinois
080003IN	John Bailey Alvey Agricultural Research	Parke County Rockville, Indiana
080003NE	Matt Krause Ag Research Associates	York County York, Nebraska
080003ON1	Sarah Neals-Bolinger Ecologistics Research Services	Middlesex County Thorndale, Ontario Canada
080003ON2	Jamie Parnell Vaughn Agricultural Research Services, Ltd.	Waterloo Region Branchton, Ontario Canada

Appendix A Table 2. Maintenance Chemical Use

Site	Chemical	Date	Rate	Units	Purpose
IA	11-52-0	21 Jan 08	144	lb/A	Fertilizer
	0-0-60	21 Jan 08	233	lb/A	Fertilizer
	Prefix	14 Jun 08	1	Qt/A	Herbicide
IL	Gromoxone	16 Jun 08	1.0	Pt/A	Herbicide
	Authority First	16 Jun 08	4.0	Oz/A	Herbicide
	Boundary	16 Jun 08	2.0	Pt/A	Herbicide
	0-0-60	10 Jun 08	200	Lb/A	Fertilizer
IN	Basagram	16 Jul 08	1.0	Pt/A	Insecticide
	Arrow	16 Jul 08	8	Oz/A	Insecticide
NE	Dual II Magnum	24 Jun 08	1.27	Lb ai/A	Herbicide
	Sencor	24 Jun 08	0.5	Lb ai/A	Herbicide
	Lorsban 4E	14 Aug 08	1.0	Lb ai/A	Insecticide
ON1	Dual II Magnum	28 May 08	1.5	LbHa	Herbicide
	6-24-24	29 May 08	200	Kg/Ha	Fertilizer
	Roundup	06 May 08	6.7	L/ha	herbicide
ON2	Pursuit	11 Jun 08	0.42	L/Ha	Herbicide

Appendix A Table 3. Climatological Data

Site	Month 2005	Historical Temp.,°F[a] Max	Historical Temp.,°F[a] Min	Temperature,°F[a] Max	Temperature,°F[a] Min	Rainfall inches	Irrig. inches	Hist. Rainfall,[a] inches
IA	May	73.6	51.6	69.62	48.51	6.05	NA	5.53
	June	81.6	60.8	80.93	61.44	9.28	NA	4.92
	July	87.2	66.0	83.35	64.56	8.40	NA	3.31
	August	85.3	63.8	81.92	60.62	3.95	NA	4.61
	Sept.	78.3	52.5	74.81	54.14	6.71	NA	2.67
	Oct.	65.2	43.0	63.76	40.74	1.74	NA	3.77
IL	May	74.7	56.1	70.14	51.51	8.87	NA	5.09
	June	82.4	63.6	85.37	66.03	5.28	NA	4.99
	July	86.7	68.3	86.93	66.84	6.47	NA	4.15
	August	86.1	66.6	85.28	63.31	1.60	NA	3.44
	Sept.	81	58.5	79.32	58.07	5.08	NA	3.03
	October	68	46.7	68.33	45.32	3.20	NA	3.38
	November	55.8	37.1	50.93	33.67	1.71	NA	3.52
IN	May	74.6	52.2	68.25	48.55	5.67	NA	4.86
	June	81.8	60.4	82.99	63.06	9.27	NA	5.00
	July	84	63.6	83.26	63.82	6.84	NA	4.67
	August	84.4	62.7	82.15	59.54	1.13	NA	3.79
	Sept.	79.8	54.0	79.37	56.05	4.57	NA	3.32
	October	66.2	43.4	66.75	42.80	1.87	NA	3.95
NE	June	83	61	83.68	59.45	6.19	NA	3.57
	July	89	67	89.24	63.57	3.32	2.60	2.8
	August	87	65	85.56	58.65	0.14	3.80	3.05
	Sept.	80	54	79.50	50.30	5.79	1.00	2.1
	October	67	42	66.53	39.01	8.12	NA	1.78
ON1	June	74.84	53.78	76.30	57.50	3.18	NA	3.42
	July	79.34	58.28	81.70	58.06	2.38	NA	3.24
	August	77.36	56.66	78.09	58.24	0.66	NA	3.36
	Sept.	69.62	49.28	73.73	50.80	2.14	NA	3.85
	October	57.2	39.2	56.20	37.49	0.43	NA	3.06
	Nov.	44.42	30.74	57.87	37.49	0.43	NA	3.59
ON2	June	74.12	52.16	75.40	56.25	5.28	NA	3.2
	July	78.62	56.66	80.08	58.12	5.96	NA	3.61
	August	76.46	54.86	77.70	54.44	6.74	NA	3.4
	Sept.	68.36	47.12	72.19	49.65	5.21	NA	3.38
	October	56.12	37.22	57.85	36.15	2.30	NA	2.58
	Nov.	42.98	29.3	43.85	28.78	3.93	NA	3.26

[a] Historical data is 10 year averages

Appendix A Table 4. Herbicide Application Rate and Timing

Site Code	Herbicide	Treat No.	Date	Approx. Crop Stage
IA	2,4-D	1	13 Jun 08	Pre emerge
	2,4-D	2	11 Jul 08	V3-4.5
	2,4-D	3	01 Aug 09	R2
	Glufosinate	4	19 Jul 08	V4-V5
	Glufosinate	5	26 Jul 08	R2
IL	2,4-D	1	24 Jun 08	Pre emerge
	2,4-D	2	18 Jul 08	V5
	2,4-D	3	7 Aug 08	R2
	Glufosinate	4	29 July 08	R1
	Glufosinate	5	4 Aug 08	R2
IN	2,4-D	1	1 Jul 08	Pre emerge
	2,4-D	2	31 Jul 08	V4
	2,4-D	3	20 Aug 08	R2
	Glufosinate	4	6 Aug 08	V5-V6
	Glufosinate	5	14 Aug 08	R1-R2
NE	2,4-D	1	25 Jun 08	Pre emerge
	2,4-D	2	26 Jul 08	V4
	2,4-D	3	13 Aug 08	R2
	Glufosinate	4	7 Aug 08	V7
	Glufosinate	5	11 Aug 08	R1
ON1	2,4-D	1	12 Jun 08	Pre emerge
	2,4-D	2	14 Jul 08	V4
	2,4-D	3	19 Aug 08	R2
	Glufosinate	4	25 Jul 08	V7
	Glufosinate	5	7 Aug 08	R1
ON2	2,4-D	1	09 Jun 08	Pre emerge
	2,4-D	2	12 Jul 08	V4
	2,4-D	3	08 Aug 08	R2
	Glufosinate	4	24 Jul 08	V6-V10
	Glufosinate	5	01 Aug 08	R1

[a] Target application of 1120 g ae/ha for Weedar 64 (2,4-D) and 374 g ai/ha and 454 g ai/ha for Liberty (glufosinate).

Appendix A Table 5. Sampling Information

Site	Planting	Sampling	DAP[a]	Commodity
IA	11 Jun 08	15 Jul 08	34	V5 Leaf
		28 Jul 08	47	V10 Leaf
		12 Aug 08	62	R3 (Forage and Root)
		28 Oct 08	139	Grain
IL	23 Jun 08	22 Jul 08	33	V5 Leaf
		5 Aug 08	47	V10 Leaf
		17 Sep 08	90	R3 (Forage and Root)
		13 Oct 08	116	Grain
IN	01 July 08	6 Aug 08	36	V5 Leaf
		19 Aug 08	49	V10 Leaf
		26 Aug 08/ 27 Aug 08	56/57	R3 (Forage and Root)
		22 Oct 08	113	Grain
NE	23 Jun 08	30 Jul 08	37	V5 Leaf
		9 Aug 08	51	V10 Leaf
		19 Aug 08/ 20 Aug 08	93/94	R3 (Forage and Root)
		30 Aug 08	68	Grain
ON1	11 Jun 08	18 Jul 08	37	V5 Leaf
		1 Aug 08	51	V10 Leaf
		12 Sep 08/ 15 Sep 08	93/96	R3 (Forage and Root)
		6 Nov 08/ 12 Nov 08	148	Grain
ON2	07 Jun 08	22 Jul 08	45	V5 Leaf
		05 Aug 08	59	V10 Leaf
		18 Aug 08/ 19 Aug 08	72/73	R3 (Forage and Root)
		06 Nov 08/ 07 Nov 08	152/153	Grain

[a]DAP = Days after planting.

Appendix A Table 6. Dates of Sampling, Shipping, and Receipt

Site	Matrix	SGN[a]	Collection	Shipped	Received
IA	V5 Leaf	080003-043	15 Jul 08	15 Jul 08	16 July 08
	V10 Leaf	080003-044	28 Jul 08	28 Jul 08	29 July 08
	Forage	080003-045	12 Aug 08	13 Aug 08	14 Aug 08
	Root	080003-046	12 Aug 08	13 Aug 08	14 Aug 08
	Forage[b]	080003-048	12 Aug 08	13 Aug 08	14 Aug 08
	Forage[b]	080003-048	Shipped to Covance from DAS	20 Aug 08	21 Aug 08
	Grain	080003-047	28 Oct 08	29 Oct 08	30 October 08
	Grain[b]	080003-49	28-Oct-08	29 Oct 08	30 Oct 08
	Grain[b]	080003-49	Shipped to Covance from DAS	21 Nov 08	24 Nov 08
IL	V5 Leaf	080003-050	22 Jul 08	23 Jul 08	24 July 08
	V10 Leaf	080003-051	05 Aug 08	06 Aug 08	7 Aug 08
	Forage	080003-052	17 Sep 08	18 Sep 08	19 Sept 08
	Root	080003-053	17 Sep 08	18 Sep 08	19 Sept 08
	Forage[b]	080003-055	17 Sep 08	18 Sep 08	19 Sep 08
	Grain	080003-054	13 Oct 08	14 Oct 08	15 Oct 08
	Grain[b]	080003-056	13 Oct 08	14 Oct 08	15 Oct 08
IN	V5 Leaf	080003-057	6 Aug 08	6 Aug 08	7 Aug 08
	V10 Leaf	080003-058	19 Aug 08	19 Aug 08	20 Aug 08
	Forage	080003-059	26 Aug 08	26 Aug 08	27 Aug 08
	Root	080003-060	26 Aug 08	26 Aug 08	27 Aug 08
	Forage[b]	080003-062	27 Aug 08	10 Sep 08	06 Oct 08
	Grain	080003-061	22 Oct 08	22 Oct 08	23 Oct 08
	Grain[b]	080003-063	22 Oct 08	22 Oct 08	23 Oct 08
NE	V5 Leaf	080003-064	30 Jul 08	4 Aug 08	5 Aug 08
	V10 Leaf	080003-065	9 Aug 08	13 Aug 08	14 Aug 08
	Forage	080003-066	19 Aug 08	20 Aug 08	21 Aug 08
	Root	080003-067	19 Aug 08	20 Aug 08	21 Aug 08
	Forage[b]	080003-069	20 Aug 08	20 Aug 08	21 Aug 08
	Grain	080003-068	30 Oct 08	30 Oct 08	31 Oct 08
	Grain[b]	080003-070	30 Oct 08	30 Oct 08	31 Oct 08
ON1	V5 Leaf	080003-071	18 Jul 08	22 Jul 08	23 Jul 08
	V10 Leaf	080003-072	01 Aug 08	23 Sep 08	24 Sep 08
	Forage	080003-073	12 Sep 08/15 Sep 08	18 Sep 08	29 Sep 08
	Root	080003-074	12 Sep 08/15 Sep 08	18 Sep 08	29 Sep 08
	Forage[b]	080003-076	12 Sep 08/15 Sep 08	17 Nov 08	21 Nov 08
	Grain	080003-075	6 Nov 08/12 Nov 08	17 Nov 08	21 Nov 08
	Grain[b]	080003-077	6 Nov 08/12 Nov 08	17 Nov 08	21 Nov 08

Appendix A Table 6. (Cont) Dates of Sampling, Shipping, and Receipt

Site	Matrix	SGN[a]	Collection	Shipped	Received
ON2	V5 Leaf	080003-078	22 Jul 08	19 Aug 08	20 Aug 08
	V10 Leaf	080003-079	05 Aug 08	19 Aug 08	20 Aug 08
	Forage	080003-080	18 Aug 08	18 Sep 08	29 Sep 08
	Root	080003-081	18 Aug 08	19 Sep 08	29 Sep 08
	Forage[b]	080003-083	18 Aug 08/ 19 Aug 08	18 Nov 08	24 Nov 08
	Grain	080003-082	06 Nov 08/07 Nov 08	18 Nov 08	21 Nov 08
	Grain[b]	080003-084	06 Nov 08/07 Nov 08	18 Nov 08	24 Nov 08

[a] SGN = Sample Group Number.
[b] Samples for composition testing shipped directly to Covance unless otherwise noted.

Appendix A Table 7. Study Amendments and Deviations

Protocol Amendments	**Description**
1	Document a change to the agronomic data collection and shipping information
2	Analytical details for compositional analysis were added to protocol.
3	Additional details for compositional analysis were added to the protocol.
4	Analytical details for residue analysis were added to the protocol.
5	Additional details for compositional analysis were added to the protocol.

Protocol Deviations

1	Document the contractor for ON2
2	Document certificate of analysis for herbicides that were sent to the field sites for use in the study
3	Document sample preparation for ELISA analysis
4	Document sample shipment
5	Document the removal of one event from the study
6	Document the collection of agronomic data and the removal of OECD and PMRA guidelines
6a	Correct Deviation 6 with agronomic collection properties
7	Document the standards for the Expression analysis
8	Document the standards for the Expression analysis and the LOD/LOQ
9	Deviation for sample shipment and collection
10	Deviation to remove herbicides as test substance and application rates and timing
11	Deviation for sample collection
12	Documentation calculation of days to flowering and removing growing degree days and moisture of seed
13	Documentation of use of commercial seed for border and control

Field Site Deviations

IA	Application timing for second application to third application was 8 days and not the stated 12 days
IN	Freezers were monitored once a week and not once a day as stated in the protocol
NE	Rows were planted at 110 seeds per row because of the low amount of seeds shipped
NE	Field notebook was not returned within the 6 weeks specified in the protocol
ON1	Due to weather samples did not dry for threshing
ON1	Leaf samples were not taken from all three blocks
ON1	Personnel records are missing
ON1	Ratings for Days to flowering and days to maturity were not recorded
ON1	Sampling for R3 took place over two days due to weather
ON2	Early population and vigor were collected at V3-4 stages
ON2	V5 expression samples were collected when plants were at the V6-7 stage
ON2	V4 application was delivered at V6-7

Appendix A Table 7 (Cont) Study Amendments and Deviations

ON2	V5 and V10-12 samples were not taken from all three blocks
ON2	Grain samples were collected over two days due to equipment malfunction
ON2	Water volume was adjusted for the test substance volume prior to application

APPENDIX B – COMPOSITION LITERATURE RANGES

Appendix B Table 1. Summary of Literature Values for Proximates in Soybean Forage

Tissue/Component[1]	OECD	ILSI
Proximate (% DW)		
Moisture (% FW)	NA	73.5-81.6
Protein	11.2-17.3	14.38-24.71
Total Fat	3.1-5.1	1.302-5.132
Ash	8.8-10.5	6.718-10.782
Carbohydrates (calculated)	NA	59.8-74.7
Fiber (% DW)		
Neutral Detergent Fiber (%)	34-40	NA
Acid Detergent Fiber (%)	32-38	NA
Minerals (% DW)		
Calcium	NA	NA
Phosphorus	NA	NA

NA – Literature Values Not Available
[1] FW=Fresh Weight; DW=Dry Weight

Appendix B Table 2. Summary of Literature Values for Proximates in Soybean Grain

	OECD	ILSI
Proximate (% DW)		
Moisture (% FW)	NA	4.7-34.4
Protein	32-43.6	33.19-45.48
Total Fat	15.5-24.7	8.1-23.56
Ash	4.5-6.4	3.89-6.99
Carbohydrates (calculated)	31.7-31.8	29.6-50.2
Cholesterol	NA	NA
Fiber (% DW)		
Neutral Detergent Fiber	10.0-14.9	8.53-21.25
Acid Detergent Fiber	9-11.1	7.81-18.61
Total Dietary Fiber	NA	NA

NA – Literature Values Not Available
[1] FW=Fresh Weight; DW=Dry Weight

Appendix B Table 3. Summary of Literature Values for Amino Acids in Soybean Grain

Amino Acids	**OECD (% DW)**	**ILSI (% DW)**
Aspartic Acid	NA	3.81-5.12
Threonine	1.4-1.89	1.14-1.86
Serine	NA	1.11-2.48
Glutamic Acid	NA	5.84-8.20
Proline	NA	1.69-2.28
Glycine	NA	1.46-2.00
Alanine	NA	1.51-2.10
Cystine	0.45-0.67	0.370-0.808
Valine	1.5-2.44	1.60-2.20
Methionine	0.5-0.67	0.431-0.681
Isoleucine	1.76-1.98	1.54-2.08
Leucine	2.2-4.0	2.59-3.62
Tyrosine	NA	1.02-1.61
Phenylalanine	1.6-2.08	1.63-2.35
Lysine	2.5-2.66	2.29-2.84
Histidine	1.0-1.22	0.88-1.18
Arginine	2.45-3.1	2.29-3.40
Tryptophan	0.51-0.67	0.356-0.502

NA – Literature Values Not Available
[1] DW=Dry Weight

Appendix B Table 4. Summary of Literature Values for Isoflavones in Soybean Grain

Isoflavones (mcg/gDW)	**OECD**	**ILSI**
Daidzein	NA	60-2453.5
Glycitein	NA	15.3-310.4
Genistein	NA	144.3-2837.2
Daidzin	NA	NA
Glycitin	NA	NA
Genistin	NA	NA

NA – Literature Values Not Applicable

Appendix B Table 5. Summary of Literature Values for Fatty Acids in Soybean Grain

Fatty Acids	**ILSI (% Total FA)**
8:0 Caprylic	0.148
10:0 Capric	NA
12:0 Lauric	0.082-0.132
14:0 Myristic	0.071-0.238
14:1 Myristoleic	0.121-0.125
15:0 Pentadecanoic	NA
15:1 Pentadecenoic	NA
16:0 Palmitic	9.55-15.77
16:1 Palmitoleic	0.086-0.194
17:0 Heptadecanoic	0.085-0.146
17:1 Heptadecenoic	0.073-0.087
18:0 Stearic	2.70-5.88
18:1 Oleic	14.3-32.2
18:2 Linoleic	42.3-58.8
18:3 gamma-Linolenic	NA
18:3 Linolenic	3.00-12.52
20:0 Arachidic	0.163-0.482
20:1 Eicosenoic	0.140-0.350
20:2 Eicosadienoic	0.077-0.245
20:4 Arachidonic	NA
20:3 Eicosatrienoic	NA
22:0 Behenic	0.277-0.595

NA – Literature Values Not Available
[1] DW=Dry Weight
FA – Fatty Acids

Appendix B Table 6. Summary of Literature Values for Vitamins in Soybean Grain

Vitamins (mg/kg)	ILSI
Thiamine Hydrochloride (mg/kg)	1.01-2.54
Riboflavin/Vitamin B2 (mg/kg)	1.90-3.21
Niacin/Vitamin B3 (mg/kg)	NA
Pyridoxine HCl (mg/kg)	NA
Folic Acid (mg/kg)	2.39-4.71
Pantothenic acid (mg/kg)	NA
Vitamin B12 (mg/kg)	NA
Vitamin D (mg/kg)	NA
Vitamin C (mg/kg)	NA
Vitamin A (mg/kg)	NA

NA – Literature Values Not Available

Appendix B Table 7. Summary of Literature Values for Minerals in Soybean Grain

Minerals (mg/100g)	**ILSI**
Calcium	116.55-307.1
Copper	NA
Iron	5.54-10.95
Magnesium	219.4-312.8
Manganese	NA
Phosphorus	506.7-935.2
Potassium	1868.01-2316.14
Sodium	NA
Zinc	NA
Iodine	NA
Minerals (ppb)	
Chromium	NA
Selenium	NA
Molybdenum	NA

NA – Literature Values Not Available

Appendix B Table 8. Summary of Literature Values for Anti-nutrients in Soybean Grain

Anti-Nutrients	**OECD**	**ILSI**
Phytic Acid (% DW)	1.0-2.74	0.63-1.960
Raffinose (% DW)	NA	0.212-0.661
Stachyose (% DW)	NA	1.21-3.50
*Lectin (H.U./mg)	NA	0.105-9.038
**Trypsin Inhibitor (TIU/mg)	NA	19.59-118.68

NA – Literature Values Not Applicable
*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit
DW – dry weight

Appendix B Table 9. Summary of Literature Values for Tocopherols in Soybean Grain

	OECD	ILSI
Total Tocopherols (mg/kg)		
Alpha Tocopherol	NA	1.9-61.7
Beta Tocopherol	NA	NA
Gamma Tocopherol	NA	NA
Delta Tocopherol	NA	NA

NA – Literature Values Not Available

APPENDIX C – AGRONOMIC CHARACTERISTICS FROM INDIVIDUAL SITES (IA, IL, IN, NE, ON1 AND ON2)

Appendix C Table 1. Agronomic Characteristics for the DAS-68416-4 AAD-12 Soybean (Sprayed and Unsprayed) and Control at the IA Site (least squares mean)

Analyte	Overall Trt. Effect (Pr>F)[a]	Control	Unsprayed (P-value,[b] Adj. P)[c]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Stand Count (no. of plants)	(0.820)	103	91.0 (0.428,0.702)	89.3 (0.371,0.649)	86.7 (0.292,0.551)	91.7 (0.453,0.702)
Early Population (% emergence)[d]	(0.820)	47.0	41.4 (0.428,0.702)	40.6 (0.373,0.649)	39.4 (0.292,0.551)	41.7 (0.452,0.702)
Seedling Vigor[e]	(0.407)	10.0	9.00 (0.083,0.241)	9.33 (0.224,0.466)	9.33 (0.224,0.466)	9.67 (0.528,0.760)
Vigor/Injury – App. 2[e]	(0.207)	10.0	9.50 (0.142,0.356)	9.67 (0.310,0.568)	9.33 (0.062,0.200)	10.0 (1.000,1.000)
Vigor/Injury – App. 3[e]	(**0.039**)[h]	10.0	10.0 (1.000,1.000)	9.33 (0.056,0.184)	9.00 (**0.010**[h],0.057)	9.67 (0.296,0.553)
Vigor/Injury – App. 5[e]	(0.107)	9.67	9.33 (0.567,0.792)	8.67 (0.111,0.288)	8.00 (**0.017**[h],0.090)	8.67 (0.111,0.288)
Height (cm)	(0.140)	113	103 (0.056,0.184)	106 (0.142,0.356)	101 (**0.025**[h],0.117)	102 (**0.043**[h],0.170)
Lodging (%)	(**<.0001**)[h]	30.0	6.67 (**<.0001**[h], **0.0001**[h])	6.67 (**<.0001**[h], **0.0001**[h])	5.00 (**<.0001**[h], **0.0001**[h])	8.33 (**<.0001**[h], **0.0001**[h])
Final Stand Count (no. of plants)	(0.821)	106	93.3 (0.333,0.600)	97.0 (0.481,0.730)	93.3 (0.333,0.600)	100 (0.647,0.863)
Disease Incidence (%)[f]	(0.564)	20.0	16.7 (0.597,0.807)	18.3 (0.790,0.946)	10.0 (0.137,0.352)	16.7 (0.597,0.807)
Insect Damage[f]	(0.779)	10.0	10.0 (1.000,1.000)	11.7 (0.591,0.807)	8.33 (0.591,0.807)	8.33 (0.591,0.807)
Flowering Days[g]	(**<.0001**)[h]	44.3	47.0 (**<.0001**[h], **0.001**[h])	47.0 (**<.0001**[h], **0.001**[h])	43.7 (0.056,0.184)	46.3 (**0.0002**[h], **0.004**[h])

[a] Overall treatment effect estimated using an F-test.
[b] Comparison of the sprayed and unsprayed treatments to the control using a t-test.
[c] P-values adjusted using a False Discovery Rate (FDR) procedure.
[d] 0-100% scale; (Stand count divided by the no. of seeds planted) * 100.
[e] Visual estimate on 1-10 scale; 10 = growth equivalent to non-transformed plants.
[f] Visual estimate on 0-100% scale; 0% = no damage.
[g] The number of days from the time of planting until flowering.
[h] Statistical difference indicated by P-Value <0.05.

Appendix C Table 2. Agronomic Characteristics for the DAS-68416-4 AAD-12 Soybean (Sprayed and Unsprayed) and Control at the IL Site (least squares mean)

Analyte	Overall Trt. Effect (Pr>F)[a]	Control	Unsprayed (P-value,[b] Adj. P)[c]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Stand Count (no. of plants)	(0.990)	176	177 (0.968,1.000)	182 (0.723,0.933)	175 (0.921,1.000)	175 (0.953,1.000)
Early Population (% emergence)[d]	(0.973)	78.7	79.0 (0.960,1.000)	81.3 (0.689,0.906)	82.0 (0.617,0.829)	79.0 (0.960,1.000)
Seedling Vigor[e]	(0.668)	10.0	9.67 (0.528,0.760)	9.67 (0.528,0.760)	9.33 (0.224,0.466)	10.0 (1.000,1.000)
Vigor/Injury – App. 2[e]	NA[h]	10.0	10.0	10.0	10.0	10.0
Vigor/Injury – App. 3[e]	NA	10.0	10.0	10.0	10.0	10.0
Vigor/Injury – App. 5[e]	NA	10.0	10.0	10.0	10.0	10.0
Height (cm)	(0.775)	87.4	95.2 (0.256,0.512)	91.5 (0.537,0.767)	88.6 (0.848,0.986)	90.3 (0.663,0.878)
Lodging (%)	(0.430)	10.0	18.3 (0.167,0.374)	11.7 (0.769,0.943)	15.0 (0.388,0.669)	8.33 (0.769,0.943)
Final Stand Count (no. of plants)	(0.532)	154	150 (0.782,0.943)	170 (0.304,0.563)	151 (0.799,0.952)	166 (0.415,0.697)
Disease Incidence (%)[f]	(**0.018**)[i]	16.7	13.3 (0.266,0.517)	6.67 (**0.007**[i],**0.045**[i])	15.0 (0.567,0.792)	6.67 (**0.007**[i],**0.045**[i])
Insect Damage[f]	NA	90.0	90.0	90.0	90.0	90.0
Flowering Days[g]	NA	46.0	46.0	46.0	46.0	46.0

[a] Overall treatment effect estimated using an F-test.
[b] Comparison of the sprayed and unsprayed treatments to the control using a t-test.
[c] P-values adjusted using a False Discovery Rate (FDR) procedure.
[d] 0-100% scale; (Stand count divided by the no. of seeds planted) * 100.
[e] Visual estimate on 1-10 scale; 10 = growth equivalent to non-transformed plants.
[f] Visual estimate on 0-100% scale; 0% = no damage.
[g] The number of days from the time of planting until flowering.
[h] NA = statistical analysis not performed since no variability across replicates or treatment.
[i] Statistical difference indicated by P-Value <0.05.

Appendix C Table 3. Agronomic Characteristics for the DAS-68416-4 AAD-12 Soybean (Sprayed and Unsprayed) and Control at the IN Site (least squares mean)

Analyte	Overall Trt. Effect (Pr>F)[a]	Control	Unsprayed (P-value,[b] Adj. P)[c]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Seedling Vigor[e]	(0.461)	10.0	10.0 (1.000,1.000)	10.0 (1.000,1.000)	9.67 (0.153,0.358)	10.0 (1.0,1.0)
Stand Count (no. of plants)	(0.167)	201	189 (0.089,0.250)	202 (0.783,0.943)	202 (0.783,0.943)	205 (0.514,0.760)
Early Population (% emergence)[d]	(0.150)	93.0	87.7 (0.079,0.233)	94.0 (0.715,0.929)	93.7 (0.807,0.956)	94.7 (0.546,0.775)
Vigor/Injury – App. 2[e]	(0.461)	10.0	10.0 (1.000,1.000)	10.0 (1.000,1.000)	9.67 (0.152,0.358)	10.0 (1.000,1.000)
Vigor/Injury – App. 3[e]	NA[h]	10.0	10.0	10.0	10.0	10.0
Vigor/Injury – App. 5[e]	NA	10.0	10.0	10.0	10.0	10.0
Height (cm)	(0.398)	68.0	67.7 (0.777,0.943)	67.7 (0.777,0.943)	67.0 (0.404,0.686)	69.3 (0.274,0.527)
Lodging (%)	NA	12.5	12.5	12.5	12.5	12.5
Final Stand Count (no. of plants)	(0.272)	193	181 (0.104,0.285)	195 (0.843,0.986)	191 (0.694,0.907)	196 (0.730,0.935)
Disease Incidence (%)[f]	NA	25.0	25.0	25.0	25.0	25.0
Insect Damage[f]	NA	12.5	12.5	12.5	12.5	12.5
Flowering Days[g]	(**0.045**)[i]	41.7	41.7 (1.000,1.000)	41.0 (**0.033**[i],0.141)	41.0 (**0.033**[i],0.141)	41.0 (**0.033**[i],0.141)

[a] Overall treatment effect estimated using an F-test.
[b] Comparison of the sprayed and unsprayed treatments to the control using a t-test.
[c] P-values adjusted using a False Discovery Rate (FDR) procedure.
[d] 0-100% scale; (Stand count divided by the no. of seeds planted) * 100.
[e] Visual estimate on 1-10 scale; 10 = growth equivalent to non-transformed plants.
[f] Visual estimate on 0-100% scale; 0% = no damage.
[g] The number of days from the time of planting until flowering.
[h] NA = statistical analysis not performed since no variability across replicates or treatment.
[i] Statistical difference indicated by P-Value <0.05.

Appendix C Table 4. Agronomic Characteristics for the DAS-68416-4 AAD-12 Soybean (Sprayed and Unsprayed) and Control at the NE Site (least squares mean)

Analyte	Overall Trt. Effect (Pr>F)[a]	Control	Unsprayed (P-value,[b] Adj. P)[c]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Stand Count (no. of plants)	(**0.001**)[h]	164	185 (**0.001**[h],**0.016**[h])	188 (**0.001**[h],**0.010**[h])	188 (**0.001**[h], **0.010**[h])	193 (**0.0002**[h], **0.004**[h])
Early Population (% emergence)[d]	(**0.002**)[h]	74.7	83.7 (**0.003**[h],**0.026**[h])	85.7 (**0.001**[h],**0.014**[h])	85.3 (**0.001**[h], **0.016**[h])	87.3 (**0.0004**[h], **0.008**[h])
Seedling Vigor[e]	(0.095)	9.33	10.0 (0.152,0.358)	9.67 (0.452,0.702)	9.67 (0.452,0.702)	8.67 (0.152,0.358)
Vigor/Injury – App. 2[e]	(**0.007**)[h]	10.0	9.67 (0.368,0.649)	9.67 (0.368,0.649)	10.0 (1.000,1.000)	8.33 (**0.001**[h], **0.016**[h])
Vigor/Injury – App. 3[e]	(0.461)	10.0	10.0 (1.000,1.000)	10.0 (1.000,1.000)	10.0 (1.000,1.000)	9.67 (0.152,0.358)
Vigor/Injury – App. 5[e]	NA	10.0	10.0	10.0	10.0	10.0
Height (cm)	(0.121)	114	109 (**0.024**[h],0.116)	110 (**0.047**[h],0.175)	112 (0.207,0.444)	109 (**0.039**[h],0.165)
Lodging (%)	(0.242)	12.5	0.00 (0.067,0.208)	0.00 (0.067,0.208)	8.33 (0.500,0.746)	4.17 (0.195,0.433)
Final Stand Count (no. of plants)	(**0.004**)[h]	162	183 (**0.002**[h],**0.018**[h])	185 (**0.001**[h],**0.016**[h])	183 (**0.002**[h], **0.021**[h])	186 (**0.001**[h], **0.014**[h])
Disease Incidence (%)[f]	(0.519)	16.7	20.8 (0.452,0.702)	20.8 (0.452,0.702)	16.7 (1.000,1.000)	12.5 (0.452,0.702)
Insect Damage[f]	(0.255)	29.2	16.7 (0.111,0.288)	16.7 (0.111,0.288)	20.8 (0.266,0.517)	12.5 (0.044,0.170)
Flowering Days[g]	(0.941)	51.0	51.0 (1.000,1.000)	51.0 (1.000,1.000)	51.0 (1.000,1.000)	50.7 (0.519,0.760)

[a] Overall treatment effect estimated using an F-test.
[b] Comparison of the sprayed and unsprayed treatments to the control using a t-test.
[c] P-values adjusted using a False Discovery Rate (FDR) procedure.
[d] 0-100% scale; (Stand count divided by the no. of seeds planted) * 100.
[e] Visual estimate on 1-10 scale; 10 = growth equivalent to non-transformed plants.
[f] Visual estimate on 0-100% scale; 0% = no damage.
[g] The number of days from the time of planting until flowering.
[h] Statistical difference indicated by P-Value <0.05.
[i] NA = statistical analysis not performed since no variability across replicates or treatment.

Appendix C Table 5. Agronomic Characteristics for the DAS-68416-4 AAD-12 Soybean (Sprayed and Unsprayed) and Control at the ON1 Site (least squares mean)

Analyte	Overall Trt. Effect (Pr>F)[a]	Control	Unsprayed (P-value,[b] Adj. P)[c]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Stand Count (no. of plants)	(**0.021**)[h]	171	188 (0.054,0.184)	195 (**0.015**[h],0.083)	200 (**0.005**[h], **0.037**[h])	203 (**0.003**[h], **0.028**[h])
Early Population (% emergence)[d]	(**0.021**)[h]	76.2	84.1 (0.054,0.184)	86.9 (**0.015**[h],0.083)	89.4 (**0.005**[h], **0.037**[h])	90.5 (**0.003**[h], **0.028**[h])
Seedling Vigor[e]	(0.149)	9.00	8.67 (0.266,0.517)	8.33 (**0.044**,0.170)	9.00 (1.000,1.000)	9.00 (1.000,1.000)
Vigor/Injury – App. 2[e]	NA[i]	10.0	10.0	10.0	10.0	10.0
Vigor/Injury – App. 3[e]	NA	10.0	10.0	10.0	10.0	10.0
Vigor/Injury – App. 5[e]	NA	10.0	10.0	10.0	10.0	10.0
Height (cm)	(0.836)	112	111 (0.898,1.000)	113 (0.831,0.978)	105 (0.405,0.686)	109 (0.734,0.935)
Lodging (%)	(**0.043**)[h]	36.7	58.3 (0.203,0.442)	83.3 (**0.017**[h],0.090)	75.0 (**0.040**[h],0.166)	93.3 (**0.007**[h], **0.045**[h])
Final Stand Count (no. of plants)	(0.426)	126	131 (0.746,0.943)	128 (0.881,1.000)	136 (0.490,0.737)	150 (0.104,0.285)
Disease Incidence (%)[f]	NA	0.0	0.0	0.0	0.0	0.0
Insect Damage[f]	NA	0.0	0.0	0.0	0.0	0.0
Flowering Days[g]	- -[j]	- -	- -	- -	- -	- -

[a] Overall treatment effect estimated using an F-test.
[b] Comparison of the sprayed and unsprayed treatments to the control using a t-test.
[c] P-values adjusted using a False Discovery Rate (FDR) procedure.
[d] 0-100% scale; (Stand count divided by the no. of seeds planted) * 100.
[e] Visual estimate on 1-10 scale; 10 = growth equivalent to non-transformed plants.
[f] Visual estimate on 0-100% scale; 0% = no damage.
[g] The number of days from the time of planting until flowering.
[h] Statistical difference indicated by P-Value <0.05.
[i] NA = statistical analysis not performed since no variability across replicates or treatment.
[j] Flowering days not determined.

Appendix C Table 6. Agronomic Characteristics for the DAS-68416-4 AAD-12 Soybean (Sprayed and Unsprayed) and Control at the ON2 Site (least squares mean)

Analyte	Overall Trt. Effect (Pr>F)[a]	Control	Unsprayed (P-value,[b] Adj. P)[c]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
Stand Count (no. of plants)	(**0.041**)[h]	203	199 (0.482,0.730)	193 (0.079,0.233)	188 (**0.018**[h],0.090)	186 (**0.009**[h],0.053)
Early Population (% emergence)[d]	(**0.039**)[h]	90.5	88.8 (0.480,0.730)	86.0 (0.077,0.233)	83.9 (**0.018**[h],0.090)	82.9 (**0.009**[h],0.053)
Seedling Vigor[e]	(0.095)	10.0	9.00 (**0.045**[h],0.170)	10.0 (1.000,1.000)	9.67 (0.452,0.702)	9.00 (**0.045**[h],0.170)
Vigor/Injury – App. 2[e]	NA[i]	10.0	10.0	10.0	10.0	10.0
Vigor/Injury – App. 3[e]	NA	10.0	10.0	10.0	10.0	10.0
Vigor/Injury – App. 5[e]	NA	10.0	10.0	10.0	10.0	10.0
Height (cm)	(**0.007**)[h]	110	102 (**0.002**[h],**0.018**[h])	107 (0.085,0.242)	104 (**0.005**[h], **0.037**[h])	102 (**0.002**[h], **0.018**[h])
Lodging (%)	(0.158)	1.7	13.3 (0.055,0.184)	13.3 (0.055,0.184)	8.33 (0.235,0.475)	3.33 (0.756,0.943)
Final Stand Count (no. of plants)	(**0.007**)[h]	196	191 (0.197,0.433)	190 (0.149,0.358)	178 (**0.001**[h], **0.016**[h])	182 (**0.005**[h], **0.037**[h])
Disease Incidence (%)[f]	NA	0.0	0.0	0.0	0.0	0.0
Insect Damage[f]	(0.366)	3.00	1.67 (0.071,0.219)	2.00 (0.157,0.358)	2.00 (0.157,0.358)	2.00 (0.157,0.358)
Flowering Days[g]	NA	62.0	62.0	62.0	62.0	62.0

[a] Overall treatment effect estimated using an F-test.
[b] Comparison of the sprayed and unsprayed treatments to the control using a t-test.
[c] P-values adjusted using a False Discovery Rate (FDR) procedure.
[d] 0-100% scale; (Stand count divided by the no. of seeds planted) * 100.
[e] Visual estimate on 1-10 scale; 10 = growth equivalent to non-transformed plants.
[f] Visual estimate on 0-100% scale; 0% = no damage.
[g] The number of days from the time of planting until flowering.
[h] Statistical difference indicated by P-Value <0.05.
[i] NA = statistical analysis not performed since no variability across replicates or treatment.

APPENDIX D – COMPOSITION DATA FROM INDIVIDUAL SITES (IA, IL, IN, NE, ON1 AND ON2)

Appendix D Table 1. Proximate, Fiber and Mineral Analysis of Soybean Forage from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
Protein	11.2-24.7	(0.691)	18.7	18.3 (0.833,0.941)	18.7 (0.976,0.994)	19.8 (0.633,0.853)	16.6 (0.357,0.690)
Fat	1.3-5.1	(0.644)	2.86	3.04 (0.755,0.910)	2.41 (0.453,0.748)	2.98 (0.833,0.941)	2.36 (0.403,0.725)
Ash	6.72-10.8	(0.359)	19.4	16.9 (0.608,0.841)	18.8 (0.900,0.963)	15.4 (0.408,0.727)	25.0 (0.258,0.605)
Moisture	73.5-81.6	(0.124)	84.0	83.6 (0.708,0.891)	82.2 (0.172,0.521)	82.7 (0.288,0.637)	80.6 (0.020,0.237)
Carbohydrates	59.8-74.7	(0.453)	59.0	61.7 (0.453,0.748)	60.1 (0.768,0.914)	61.9 (0.416,0.729)	56.0 (0.396,0.721)
Acid Detergent Fiber (ADF)	32-38	(0.251)	31.4	31.0 (0.918,0.972)	26.6 (0.206,0.561)	24.9 (0.098,0.418)	25.2 (0.112,0.442)
Neutral Detergent Fiber (NDF)	34-40	(0.775)	33.1	33.4 (0.963,0.989)	32.7 (0.931,0.979)	28.1 (0.328,0.671)	33.4 (0.957,0.985)
Calcium	NR[f]	(0.915)	1.30	1.39 (0.399,0.722)	1.37 (0.528,0.787)	1.33 (0.750,0.909)	1.35 (0.612,0.845)
Phosphorus	NR[f]	(0.720)	0.278	0.298 (0.415,0.729)	0.299 (0.379,0.710)	0.288 (0.669,0.877)	0.272 (0.824,0.937)

Appendix D Table 1. (Cont.) Proximate, Fiber and Mineral Analysis of Soybean Forage from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
Protein	11.2-24.7	(0.599)	21.4	21.0 (0.701,0.889)	20.4 (0.309,0.655)	20.7 (0.469,0.754)	20.0 (0.158,0.517)
Fat	1.3-5.1	(0.0009)	10.4	10.7 (0.502,0.777)	8.13 (**0.0008**[e], 0.100)	10.2 (0.707,0.891)	8.53 (**0.003**[e],0.130)
Ash	6.72-10.8	(0.637)	6.78	7.31 (0.443,0.746)	7.77 (0.169,0.519)	7.06 (0.683,0.882)	7.02 (0.722,0.899)
Moisture	73.5-81.6	(0.425)	70.4	70.3 (0.754,0.910)	70.8 (0.495,0.772)	69.8 (0.276,0.623)	70.7 (0.661,0.872)
Carbohydrates	59.8-74.7	(0.083)	61.4	61.0 (0.726,0.899)	63.7 (0.090,0.406)	62.0 (0.648,0.862)	64.4 (0.038,0.283)
Acid Detergent Fiber (ADF)	32-38	(0.989)	28.3	27.8 (0.869,0.959)	27.2 (0.709,0.892)	27.6 (0.817,0.934)	28.5 (0.939,0.981)
Neutral Detergent Fiber (NDF)	34-40	(0.546)	34.2	34.0 (0.938,0.981)	30.1 (0.192,0.548)	30.8 (0.274,0.623)	31.8 (0.429,0.739)
Calcium	NR[f]	(0.266)	1.28	1.17 (0.150,0.509)	1.29 (0.856,0.952)	1.19 (0.258,0.605)	1.31 (0.718,0.897)
Phosphorus	NR[f]	(0.085)	0.276	0.275 (0.937,0.981)	0.276 (0.979,0.994)	0.306 (**0.040**[e],0.283)	0.266 (0.472,0.757)

Appendix D Table 1. (Cont.) Proximate, Fiber and Mineral Analysis of Soybean Forage from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
Protein	11.2-24.7	(0.607)	20.8	19.3 (0.263,0.610)	19.6 (0.339,0.674)	19.3 (0.263,0.610)	18.9 (0.153,0.512)
Fat	1.3-5.1	**(0.004[e])**	3.04	3.39 (**0.049[e]**,0.294)	2.71 (0.054,0.316)	2.70 (**0.047[e]**,0.294)	2.63 (**0.024[e]**,0.246)
Ash	6.72-10.8	(0.428)	9.71	8.20 (0.131,0.476)	9.17 (0.568,0.815)	8.69 (0.290,0.637)	9.71 (0.994,1.000)
Moisture	73.5-81.6	(0.056)	77.2	76.4 (0.165,0.517)	76.5 (0.218,0.574)	75.2 (**0.006[e]**,0.146)	76.2 (0.092,0.407)
Carbohydrates	59.8-74.7	(0.553)	66.3	69.1 (0.176,0.523)	68.7 (0.246,0.597)	69.2 (0.163,0.517)	68.8 (0.223,0.577)
Acid Detergent Fiber (ADF)	32-38	(0.206)	31.2	26.9 (0.085,0.400)	25.6 (**0.034**,0.279)	28.6 (0.261,0.609)	29.0 (0.334,0.673)
Neutral Detergent Fiber (NDF)	34-40	(0.958)	30.9	29.9 (0.767,0.914)	32.2 (0.710,0.892)	30.7 (0.946,0.982)	31.8 (0.803,0.929)
Calcium	NR[f]	(0.059)	1.50	1.46 (0.148,0.504)	1.55 (0.124,0.467)	1.54 (0.286,0.636)	1.54 (0.244,0.597)
Phosphorus	NR[f]	(0.210)	0.230	0.194 (0.071,0.363)	0.220 (0.605,0.841)	0.192 (0.062,0.331)	0.216 (0.453,0.748)

Appendix D Table 1. (Cont.) Proximate, Fiber and Mineral Analysis of Soybean Forage from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
Protein	11.2-24.7	(0.320)	17.6	18.9 (0.278,0.626)	18.7 (0.371,0.700)	19.4 (0.137,0.485)	20.1 (0.056,0.319)
Fat	1.3-5.1	(0.088)	2.32	2.98 (**0.044**[e], 0.290)	2.45 (0.668,0.876)	2.98 (**0.046**[e],0.294)	3.03 (**0.035**[e],0.280)
Ash	6.72-10.8	(0.235)	10.2	10.7 (0.583,0.826)	11.5 (0.165,0.517)	11.3 (0.219,0.575)	12.3 (**0.041**,0.283)
Moisture	73.5-81.6	(0.006)	79.5	80.8 (**0.010**[e],0.175)	81.5 (**0.001**[e],0.106)	81.4 (**0.001**[e],0.106)	81.2 (**0.003**[e],0.139)
Carbohydrates	59.8-74.7	**(0.030**[e]**)**	69.9	67.4 (0.086,0.403)	67.4 (0.086,0.403)	66.2 (**0.019**[e],0.230)	64.6 (**0.003**[e],0.139)
Acid Detergent Fiber (ADF)	32-38	(0.714)	29.8	32.9 (0.355,0.690)	34.3 (0.193,0.550)	32.8 (0.375,0.706)	32.5 (0.417,0.730)
Neutral Detergent Fiber (NDF)	34-40	(0.807)	36.3	38.2 (0.707,0.891)	34.3 (0.692,0.884)	32.4 (0.450,0.746)	35.7 (0.905,0.964)
Calcium	NR[f]	(0.953)	1.22	1.24 (0.763,0.914)	1.28 (0.480,0.761)	1.27 (0.574,0.819)	1.25 (0.706,0.891)
Phosphorus	NR[f]	(0.825)	0.221	0.221 (1.000,1.000)	0.237 (0.430,0.739)	0.237 (0.448,0.746)	0.235 (0.498,0.773)

Appendix D Table 1. (Cont.) Proximate, Fiber and Mineral Analysis of Soybean Forage from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
Protein	11.2-24.7	**(0.041[e])**	18.0	20.0 (0.091,0.406)	20.3 (0.058,0.321)	17.2 (0.457,0.750)	17.3 (0.494,0.770)
Fat	1.3-5.1	(0.458)	3.39	3.97 (0.157,0.515)	3.81 (0.290,0.637)	3.61 (0.572,0.817)	3.36 (0.945,0.982)
Ash	6.72-10.8	(0.708)	9.78	9.01 (0.567,0.814)	10.4 (0.659,0.872)	9.46 (0.813,0.934)	10.7 (0.507,0.780)
Moisture	73.5-81.6	(0.103)	76.9	80.0 (**0.024**[e],0.246)	80.1 (**0.022**,0.243)	78.8 (0.125,0.467)	78.3 (0.240,0.593)
Carbohydrates	59.8-74.7	(0.342)	68.9	67.1 (0.407,0.727)	65.5 (0.134,0.482)	69.6 (0.726,0.899)	68.6 (0.898,0.963)
Acid Detergent Fiber (ADF)	32-38	(0.487)	31.7	30.0 (0.631,0.853)	36.4 (0.221,0.576)	34.0 (0.540,0.793)	33.3 (0.670,0.877)
Neutral Detergent Fiber (NDF)	34-40	(0.923)	35.0	37.3 (0.514,0.781)	35.6 (0.863,0.957)	36.6 (0.648,0.862)	37.6 (0.463,0.754)
Calcium	NR[f]	(0.463)	1.55	1.49 (0.486,0.768)	1.56 (0.882,0.960)	1.58 (0.738,0.904)	1.66 (0.254,0.603)
Phosphorus	NR[f]	(0.682)	0.347	0.374 (0.167,0.517)	0.362 (0.427,0.737)	0.363 (0.407,0.727)	0.363 (0.398,0.722)

Appendix D Table 1. (Cont.) Proximate, Fiber and Mineral Analysis of Soybean Forage from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
Protein	11.2-24.7	(0.216)	18.0	16.5 (0.215,0.571)	18.6 (0.557,0.811)	16.9 (0.342,0.677)	18.8 (0.449,0.746)
Fat	1.3-5.1	(0.943)	2.70	2.71 (0.987,0.997)	2.43 (0.511,0.780)	2.54 (0.701,0.889)	2.55 (0.707,0.891)
Ash	6.72-10.8	(0.172)	7.51	8.29 (0.304,0.650)	8.88 (0.092,0.406)	9.28 (**0.038**[e],0.283)	9.18 (**0.048**,0.294)
Moisture	73.5-81.6	(0.363)	78.9	79.7 (0.232,0.585)	79.1 (0.727,0.899)	78.8 (0.920,0.973)	80.0 (0.136,0.484)
Carbohydrates	59.8-74.7	(0.421)	71.9	72.4 (0.771,0.915)	70.0 (0.306,0.652)	71.4 (0.771,0.915)	69.3 (0.184,0.540)
Acid Detergent Fiber (ADF)	32-38	(0.137)	28.7	33.6 (0.080,0.383)	33.2 (0.103,0.426)	30.5 (0.488,0.768)	35.4 (**0.025**[e],0.247)
Neutral Detergent Fiber (NDF)	34-40	(0.916)	37.0	35.2 (0.728,0.899)	33.7 (0.521,0.783)	33.6 (0.508,0.780)	36.9 (0.984,0.996)
Calcium	NR[f]	(0.391)	1.48	1.41 (0.412,0.728)	1.35 (0.122,0.465)	1.38 (0.223,0.577)	1.47 (0.965,0.989)
Phosphorus	NR[f]	(0.450)	0.226	0.237 (0.541,0.793)	0.220 (0.715,0.895)	0.211 (0.396,0.721)	0.240 (0.426,0.737)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the trangenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
[f] NR = not reported

Appendix D Table 2. Proximate and Fiber Analysis of Soybean Grain from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
Protein	32.0-45.5	(0.368)	38.0	37.1 (0.196,0.552)	36.8 (0.110,0.438)	36.8 (0.102,0.425)	36.8 (0.110,0.438)
Fat	8.10-24.7	(0.839)	17.5	17.3 (0.765,0.914)	17.7 (0.803,0.929)	17.1 (0.491,0.769)	17.7 (0.803,0.929)
Ash	3.89-6.99	(0.644)	5.19	5.22 (0.821,0.936)	5.31 (0.364,0.695)	5.34 (0.275,0.623)	5.35 (0.247,0.598)
Moisture (% fresh weight)	4.70-34.4	(0.224)	13.0	12.5 (0.136,0.485)	12.4 (0.097,0.417)	12.2 (**0.041**[e],0.283)	12.3 (0.069,0.356)
Cholesterol	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Carbohydrate	29.3-50.2	(0.793)	39.2	40.4 (0.388,0.715)	40.2 (0.468,0.754)	40.8 (0.249,0.598)	40.2 (0.468,0.754)
Acid Detergent Fiber (ADF)	7.81-18.6	(0.851)	19.9	19.9 (0.985,0.997)	18.3 (0.388,0.715)	19.7 (0.925,0.976)	20.0 (0.955,0.984)
Neutral Detergent Fiber (NDF)	8.53-21.3	(0.907)	21.3	22.4 (0.692,0.884)	23.6 (0.388,0.715)	21.9 (0.828,0.940)	22.8 (0.576,0.820)
Total Dietary Fiber	NR[g]	(0.239)	31.7	32.6 (0.615,0.846)	29.3 (0.175,0.522)	32.8 (0.550,0.805)	33.0 (0.466,0.754)

Appendix D Table 2. (Cont.) Proximate and Fiber Analysis of Soybean Grain from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
Protein	32.0-45.5	(0.277)	38.4	38.3 (0.900,0.963)	39.4 (0.088,0.406)	38.5 (0.851,0.951)	38.9 (0.304,0.650)
Fat	8.10-24.7	(0.151)	19.7	19.8 (0.953,0.984)	18.5 (0.060,0.331)	18.9 (0.153,0.512)	19.7 (1.000,1.000)
Ash	3.89-6.99	(0.284)	4.92	5.07 (0.209,0.561)	4.97 (0.668,0.876)	4.91 (0.954,0.984)	4.80 (0.329,0.671)
Moisture (% fresh weight)	4.70-34.4	(0.059)	12.3	12.2 (0.856,0.952)	12.0 (0.130,0.475)	11.8 (**0.041**[e],0.283)	11.7 (**0.017**[e],0.217)
Cholesterol	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Carbohydrate	29.3-50.2	(0.609)	37.0	36.8 (0.837,0.943)	37.2 (0.774,0.916)	37.8 (0.338,0.674)	36.5 (0.596,0.836)
Acid Detergent Fiber (ADF)	7.81-18.6	(0.479)	18.4	20.0 (0.407,0.727)	20.1 (0.389,0.716)	22.0 (0.087,0.404)	19.9 (0.436,0.745)
Neutral Detergent Fiber (NDF)	8.53-21.3	(0.107)	20.6	21.2 (0.539,0.793)	22.4 (0.090,0.406)	23.2 (**0.025**[e],0.247)	20.9 (0.756,0.910)
Total Dietary Fiber	NR[g]	(0.315)	34.4	32.3 (0.250,0.598)	32.2 (0.230,0.585)	32.1 (0.218,0.574)	35.1 (0.681,0.882)

Appendix D Table 2. (Cont.) Proximate and Fiber Analysis of Soybean Grain from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
Protein	32.0-45.5	(0.366)	41.0	40.6 (0.699,0.888)	40.6 (0.699,0.888)	39.3 (0.100,0.424)	41.1 (0.916,0.971)
Fat	8.10-24.7	(0.627)	17.0	17.0 (1.000,1.000)	16.9 (0.947,0.982)	17.6 (0.225,0.580)	17.1 (0.841,0.944)
Ash	3.89-6.99	(0.010)	4.81	4.73 (0.425,0.737)	5.13 (**0.008**,0.162)	4.79 (0.832,0.941)	5.03 (**0.040**,0.283)
Moisture (% fresh weight)	4.70-34.4	(0.414)	12.8	12.8 (0.947,0.982)	13.2 (0.438,0.746)	12.2 (0.256,0.603)	12.6 (0.694,0.885)
Cholesterol	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Carbohydrate	29.3-50.2	(0.493)	37.2	37.7 (0.618,0.847)	37.3 (0.908,0.966)	38.3 (0.237,0.590)	36.8 (0.592,0.831)
Acid Detergent Fiber (ADF)	7.81-18.6	(0.712)	17.9	18.1 (0.884,0.960)	16.4 (0.283,0.632)	17.8 (0.923,0.974)	17.8 (0.923,0.974)
Neutral Detergent Fiber (NDF)	8.53-21.3	(0.786)	19.0	21.5 (0.353,0.689)	21.8 (0.308,0.655)	19.7 (0.792,0.924)	20.5 (0.576,0.820)
Total Dietary Fiber	NR[g]	(0.791)	29.6	30.9 (0.427,0.737)	31.5 (0.263,0.610)	30.3 (0.680,0.882)	30.9 (0.438,0.746)

Appendix D Table 2. (Cont.) Proximate and Fiber Analysis of Soybean Grain from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
Protein	32.0-45.5	(0.020)	38.5	37.8 (0.059,0.325)	38.4 (0.781,0.918)	37.4 (**0.010**[e],0.175)	38.7 (0.581,0.824)
Fat	8.10-24.7	(0.591)	16.6	17.2 (0.300,0.645)	16.4 (0.694,0.885)	16.6 (0.955,0.984)	17.0 (0.539,0.793)
Ash	3.89-6.99	(0.701)	4.85	4.88 (0.760,0.913)	4.79 (0.606,0.841)	4.93 (0.488,0.768)	4.92 (0.507,0.780)
Moisture (% fresh weight)	4.70-34.4	(0.332)	12.4	12.4 (1.000,1.000)	12.1 (0.177,0.523)	12.1 (0.134,0.482)	12.1 (0.231,0.585)
Cholesterol	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Carbohydrate	29.3-50.2	(0.408)	40.0	40.1 (0.940,0.981)	40.4 (0.679,0.882)	41.1 (0.233,0.585)	39.4 (0.457,0.750)
Acid Detergent Fiber (ADF)	7.81-18.6	(0.472)	18.9	16.8 (0.289,0.637)	19.4 (0.790,0.923)	20.2 (0.484,0.767)	19.3 (0.831,0.941)
Neutral Detergent Fiber (NDF)	8.53-21.3	(0.178)	21.5	20.1 (0.356,0.690)	21.6 (0.946,0.982)	23.6 (0.168,0.517)	20.1 (0.378,0.710)
Total Dietary Fiber	NR[g]	(0.539)	32.7	31.1 (0.327,0.671)	32.2 (0.784,0.921)	33.8 (0.468,0.754)	32.5 (0.899,0.963)

Appendix D Table 2. (Cont.) Proximate and Fiber Analysis of Soybean Grain from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
Protein	32.0-45.5	**(0.038[e])**	38.0	36.7 (0.063,0.338)	36.9 (0.113,0.446)	35.5 (**0.004[e]**,0.141)	36.3 (**0.023[e]**,0.244)
Fat	8.10-24.7	(0.549)	16.8	15.8 (0.202,0.557)	15.7 (0.164,0.517)	15.7 (0.176,0.522)	16.0 (0.283,0.632)
Ash	3.89-6.99	(0.438)	5.22	5.53 (0.086,0.403)	5.33 (0.498,0.773)	5.35 (0.449,0.746)	5.42 (0.240,0.593)
Moisture (% fresh weight)	4.70-34.4	(0.572)	16.5	13.2 (0.174,0.522)	13.3 (0.190,0.548)	13.5 (0.212,0.566)	13.9 (0.268,0.615)
Cholesterol	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Carbohydrate	29.3-50.2	(0.095)	40.0	42.0 (0.089,0.406)	42.1 (0.077,0.373)	43.4 (**0.011[e]**,0.181)	42.4 (**0.049[e]**,0.296)
Acid Detergent Fiber (ADF)	7.81-18.6	(0.663)	17.1	14.4 (0.309,0.655)	16.4 (0.745,0.909)	13.8 (0.223,0.577)	15.7 (0.539,0.793)
Neutral Detergent Fiber (NDF)	8.53-21.3	(0.407)	19.6	16.5 (0.118,0.456)	19.1 (0.770,0.915)	20.0 (0.802,0.929)	18.8 (0.648,0.862)
Total Dietary Fiber	NR[g]	(0.923)	33.2	32.9 (0.853,0.951)	32.0 (0.440,0.746)	33.1 (0.972,0.992)	32.6 (0.702,0.889)

Appendix D Table 2. (Cont.) Proximate and Fiber Analysis of Soybean Grain from Individual Sites (least squares mean)

Proximate (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
Protein	32.0-45.5	(**0.034**[e])	41.1	39.3 (**0.012**[e],0.192)	40.4 (0.246,0.597)	39.7 (0.034,0.279)	39.1 (**0.007**[e],0.149)
Fat	8.10-24.7	(0.362)	15.0	15.3 (0.723,0.899)	14.4 (0.432,0.741)	14.5 (0.510,0.780)	15.8 (0.302,0.648)
Ash	3.89-6.99	(**0.030**[e])	4.50	4.79 (0.161,0.517)	4.69 (0.341,0.677)	5.28 (**0.003**[e],0.139)	4.87 (0.084,0.398)
Moisture (% fresh weight)	4.70-34.4	(0.140)	22.7	21.4 (0.204,0.558)	22.7 (0.942,0.982)	20.4 (**0.035**[e],0.280)	21.6 (0.266,0.611)
Cholesterol	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Carbohydrate	29.3-50.2	(0.599)	39.4	40.6 (0.176,0.523)	40.4 (0.249,0.598)	40.6 (0.198,0.554)	40.3 (0.328,0.671)
Acid Detergent Fiber (ADF)	7.81-18.6	(0.200)	14.6	15.9 (0.387,0.715)	17.5 (0.076,0.372)	18.1 (**0.041**,0.283)	15.9 (0.399,0.722)
Neutral Detergent Fiber (NDF)	8.53-21.3	(0.487)	18.5	22.3 (0.221,0.576)	22.9 (0.166,0.517)	21.1 (0.400,0.722)	18.9 (0.893,0.963)
Total Dietary Fiber	NR[g]	(0.012)	28.1	30.7 (**0.030**[e],0.273)	33.1 (**0.001**[e],0.106)	31.1 (**0.015**[e],0.206)	30.6 (**0.038**[e],0.283)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the trangenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
[f] NA= statistical analysis was not performed since a majority of the data was < LOQ.
[g] NR = not reported.

Appendix D Table 3. Mineral Analysis of Soybean Grain from Individual Sites (least squares mean)

Minerals (mg/100g dry wt.)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
Calcium	117-307	**(0.011[e])**	266	291 (**0.005[e]**,0.146)	286 (**0.018[e]**,0.222)	297 (**0.001[e]**,0.106)	293 (**0.004[e]**,0.141)
Chromium (ppb)	NR[g]	(0.446)	101	87.7 (0.809,0.931)	156 (0.331,0.671)	151 (0.370,0.700)	165 (0.258,0.605)
Copper	NR[g]	(0.082)	1.33	1.29 (0.199,0.555)	1.35 (0.536,0.792)	1.38 (0.199,0.555)	1.39 (0.123,0.466)
Iodine	NR[g]	(0.275)	0.026	0.052 (0.128,0.469)	0.023 (0.713,0.895)	0.035 (0.445,0.746)	0.019 (0.601,0.838)
Iron	5.54-11.0	(0.193)	8.03	9.25 (0.490,0.769)	12.0 (**0.048[e]**,0.294)	10.7 (0.157,0.516)	11.8 (0.059,0.329)
Magnesium	219-313	(0.801)	228	228 (0.881,0.960)	228 (0.881,0.960)	226 (0.382,0.712)	227 (0.554,0.809)
Manganese	NR[g]	(0.261)	2.47	2.58 (0.363,0.694)	2.71 (0.075,0.372)	2.56 (0.450,0.746)	2.72 (0.066,0.344)
Molybdenum (ppb)	NR[g]	(0.790)	524	549 (0.517,0.783)	515 (0.829,0.941)	534 (0.796,0.925)	504 (0.619,0.847)
Phosphorus	507-935	(0.519)	630	614 (0.217,0.574)	630 (1.000,1.000)	632 (0.825,0.938)	620 (0.448,0.746)
Potassium	1868-2316	(0.269)	1890	1943 (0.110,0.439)	1957 (0.055,0.318)	1923 (0.294,0.641)	1910 (0.520,0.783)
Selenium (ppb)	NR[g]	**(0.017[e])**	1507	1552 (0.767,0.914)	1363 (0.357,0.690)	1513 (0.965,0.989)	947 (**0.005[e]**,0.146)
Sodium	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Zinc	NR[g]	(0.123)	5.32	5.19 (0.228,0.583)	5.37 (0.597,0.836)	5.36 (0.691,0.884)	5.49 (0.106,0.430)

Appendix D Table 3. (Cont.) Mineral Analysis of Soybean Grain from Individual Sites (least squares mean)

Minerals (mg/100g dry wt.)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
Calcium	117-307	**(0.002[e])**	342	323 (**0.014[e]**,0.201)	306 (**0.0004[e]**,0.078)	332 (0.134,0.482)	308 (**0.001[e]**,0.087)
Chromium (ppb)	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Copper	NR[g]	(0.841)	0.978	1.07 (0.584,0.826)	1.10 (0.446,0.746)	1.10 (0.440,0.746)	1.15 (0.300,0.645)
Iodine	NR[g]	(0.053)	0.029	0.023 (0.133,0.482)	0.016 (**0.021[e]**,0.240)	0.031 (0.408,0.727)	0.022 (0.139,0.487)
Iron	5.54-11.0	(0.135)	7.76	8.16 (0.405,0.725)	7.76 (0.994,1.00)	8.95 (**0.030[e]**,0.273)	7.93 (0.711,0.893)
Magnesium	219-313	(0.257)	221	220 (0.947,0.982)	231 (0.076,0.372)	220 (0.947,0.982)	223 (0.647,0.862)
Manganese	NR[g]	(0.488)	2.92	2.97 (0.812,0.933)	2.66 (0.260,0.607)	3.03 (0.626,0.849)	2.80 (0.605,0.841)
Molybdenum (ppb)	NR[g]	(0.539)	1146	761 (0.191,0.548)	968 (0.526,0.785)	770 (0.200,0.556)	751 (0.180,0.531)
Phosphorus	507-935	(0.414)	541	539 (0.899,0.963)	568 (0.118,0.456)	551 (0.530,0.789)	549 (0.628,0.851)
Potassium	1868-2316	(0.728)	1790	1857 (0.232,0.585)	1840 (0.360,0.692)	1847 (0.303,0.649)	1823 (0.536,0.792)
Selenium (ppb)	NR[g]	(0.934)	333	479 (0.567,0.814)	445 (0.659,0.872)	474 (0.578,0.822)	325 (0.975,0.994)
Sodium	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Zinc	NR[g]	(0.694)	4.59	4.71 (0.754,0.910)	4.95 (0.333,0.672)	4.94 (0.350,0.687)	5.03 (0.244,0.597)

Appendix D Table 3. (Cont.) Mineral Analysis of Soybean Grain from Individual Sites (least squares mean)

Minerals (mg/100g dry wt.)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
Calcium	117-307	(0.100)	288	307 (**0.041**[e],0.283)	307 (**0.044**[e],0.290)	310 (**0.023**[e],0.244)	310 (**0.023**[e],0.244)
Chromium (ppb)	NR[g]	(0.226)	158	117 (0.631,0.853)	257 (0.268,0.615)	116 (0.643,0.860)	160 (0.977,0.994)
Copper	NR[g]	(0.247)	1.25	1.28 (0.219,0.575)	1.31 (**0.045**[e],0.287)	1.27 (0.378,0.710)	1.3 (0.099,0.422)
Iodine	NR[g]	(0.375)	0.042	0.017 (0.095,0.413)	0.026 (0.220,0.575)	0.025 (0.272,0.620)	0.025 (0.175,0.522)
Iron	5.54-11.0	(0.277)	7.74	7.88 (0.951,0.983)	12.38 (0.079,0.382)	7.59 (0.951,0.983)	9.52 (0.463,0.754)
Magnesium	219-313	(0.929)	217	219 (0.748,0.909)	217 (0.872,0.959)	218 (0.872,0.959)	220 (0.525,0.785)
Manganese	NR[g]	(0.853)	2.76	2.93 (0.683,0.882)	2.96 (0.644,0.860)	2.55 (0.622,0.847)	2.74 (0.968,0.990)
Molybdenum (ppb)	NR[g]	(0.654)	1567	1820 (0.530,0.789)	1648 (0.838,0.943)	1615 (0.904,0.964)	1227 (0.404,0.725)
Phosphorus	507-935	(0.857)	537	530 (0.516,0.782)	533 (0.731,0.899)	538 (0.900,0.963)	540 (0.755,0.910)
Potassium	1868-2316	(0.142)	1653	1740 (0.064,0.339)	1743 (0.056,0.319)	1767 (**0.023**,0.244)	1710 (0.198,0.553)
Selenium (ppb)	NR[g]	(0.394)	120	122 (0.862,0.956)	124 (0.773,0.915)	140 (0.121,0.464)	118 (0.862,0.956)
Sodium	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Zinc	NR[g]	(0.581)	5.45	5.6 (0.246,0.597)	5.56 (0.378,0.710)	5.5 (0.681,0.882)	5.64 (0.167,0.517)

Appendix D Table 3. (Cont.) Mineral Analysis of Soybean Grain from Individual Sites (least squares mean)

Minerals (mg/100g dry wt.)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
Calcium	117-307	**(0.009[e])**	206	225 (**0.003[e]**,0.130)	221 (**0.008[e]**,0.160)	227 (**0.001[e]**,0.106)	223 (**0.004[e]**,0.141)
Chromium (ppb)	NR[g]	NA[f]	187	< LOQ	< LOQ	< LOQ	< LOQ
Copper	NR[g]	(0.230)	1.62	1.62 (0.775, 0.916)	1.58 (0.091, 0.406)	1.62 (0.886,0.960)	1.64 (0.571, 0.817)
Iodine	NR[g]	(0.148)	0.025	0.015 (0.138,0.486)	0.016 (0.160,0.517)	0.035 (0.166,0.517)	0.017 (0.206,0.561)
Iron	5.54-11.0	(0.046)	10.1	7.65 (**0.020[e]**,0.230)	7.43 (**0.013[e]**,0.198)	7.36 (**0.012[e]**,0.187)	7.38 (**0.012[e]**,0.189)
Magnesium	219-313	(0.256)	201	200 (0.725,0.899)	201 (0.814,0.934)	203 (0.488,0.768)	206 (0.106,0.430)
Manganese	NR[g]	(0.514)	2.48	2.45 (0.351,0.687)	2.47 (0.728,0.899)	2.49 (0.862,0.956)	2.51 (0.442,0.746)
Molybdenum (ppb)	NR[g]	(0.474)	1237	1243 (0.950,0.983)	1200 (0.730,0.899)	1347 (0.315,0.662)	1153 (0.440,0.746)
Phosphorus	507-935	**(0.038[e])**	549	513 (**0.005[e]**,0.146)	534 (0.160,0.517)	524 (**0.031[e]**,0.273)	540 (0.363,0.694)
Potassium	1868-2316	(0.319)	1917	1910 (0.692,0.884)	1890 (0.139,0.487)	1927 (0.555,0.809)	1907 (0.555,0.809)
Selenium (ppb)	NR[g]	(0.667)	463	499 (0.572,0.817)	556 (0.169,0.519)	515 (0.425,0.737)	522 (0.362,0.694)
Sodium	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Zinc	NR[g]	(0.433)	5.22	5.04 (0.165,0.517)	5.1 (0.342,0.677)	5.22 (0.955,0.984)	5.22 (1.00,1.00)

Appendix D Table 3. (Cont.) Mineral Analysis of Soybean Grain from Individual Sites (least squares mean)

Minerals (mg/100g dry wt.)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
Calcium	117-307	(0.071)	229	233 (0.796,0.925)	248 (0.172,0.521)	257 (0.055,0.318)	267 (**0.016**,0.214)
Chromium (ppb)	NR[f]	(0.114)	163	379 (0.064,0.339)	90.1 (0.331,0.671)	73.7 (0.188,0.544)	73.2 (0.186,0.543)
Copper	NR[g]	(0.171)	1.38	1.18 (0.234,0.590)	1.10 (0.240,0.593)	0.966 (**0.033**,0.277)	1.01 (**0.048**[e],0.294)
Iodine	NR[g]	NA[f]	0.023	< LOQ	< LOQ	< LOQ	< LOQ
Iron	5.54-11.0	(0.354)	8.76	8.86 (0.937,0.981)	6.77 (0.155,0.512)	6.93 (0.186,0.543)	7.29 (0.279,0.626)
Magnesium	219-313	(0.084)	203	211 (0.102,0.425)	212 (0.061,0.331)	213 (**0.041**,0.283)	217 (**0.010**[e],0.175)
Manganese	NR[g]	(0.737)	2.25	2.19 (0.478,0.759)	2.19 (0.478,0.759)	2.15 (0.250,0.598)	2.23 (0.873,0.959)
Molybdenum (ppb)	NR[g]	(0.199)	5203	8923 (**0.041**[e],0.283)	7620 (0.153,0.512)	8533 (0.061,0.331)	8490 (0.064,0.339)
Phosphorus	507-935	(0.118)	665	767 (**0.025**[e],0.247)	746 (0.062,0.333)	762 (**0.031**,0.274)	757 (**0.038**[e],0.283)
Potassium	1868-2316	**(0.031[e])**	1883	2003 (**0.013**[e],0.198)	2017 (**0.008**[e],0.161)	2010 (**0.010**[e],0.175)	2017 (**0.008**[e],0.161)
Selenium (ppb)	NR[g]	(0.564)	300	215 (0.505,0.780)	383 (0.515,0.781)	207 (0.466,0.754)	337 (0.773,0.915)
Sodium	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	17.70	11.80
Zinc	NR[g]	(0.628)	5.18	5.41 (0.509,0.780)	5.52 (0.342,0.677)	5.58 (0.268,0.615)	5.69 (0.164,0.517)

Appendix D Table 3. (Cont.) Mineral Analysis of Soybean Grain from Individual Sites (least squares mean)

Minerals (mg/100g dry wt.)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
Calcium	117-307	(0.713)	206	211 (0.592,0.831)	214 (0.380,0.710)	218 (0.195,0.551)	213 (0.457,0.750)
Chromium (ppb)	NR[g]	(0.898)	69.0	149 (0.540,0.793)	109 (0.780,0.918)	161 (0.464,0.754)	133 (0.615,0.846)
Copper	NR[g]	(0.266)	1.317	1.27 (0.388,0.715)	1.283 (0.533,0.790)	1.28 (0.494,0.770)	1.193 (**0.042**,0.283)
Iodine	NR[g]	NA[f]	0.022	< LOQ	< LOQ	< LOQ	< LOQ
Iron	5.54-11.0	(0.066)	6.52	8.95 (**0.037**[e],0.283)	7.41 (0.387,0.715)	9.70 (**0.011**[e],0.184)	7.68 (0.265,0.611)
Magnesium	219-313	(0.093)	191	192 (0.845,0.946)	201 (**0.019**,0.226)	197 (0.106,0.430)	195 (0.225,0.580)
Manganese	NR[g]	(0.161)	2.46	2.46 (0.973,0.993)	2.60 (0.181,0.533)	2.69 (**0.040**,0.283)	2.51 (0.592,0.831)
Molybdenum (ppb)	NR[g]	**(0.029**[e]**)**	3313	2047 (**0.013**[e],0.200)	2823 (0.257,0.605)	2577 (0.104,0.426)	1757 (**0.005**[e],0.143)
Phosphorus	507-935	(0.358)	576	569 (0.547,0.801)	582 (0.604,0.841)	569 (0.565,0.814)	558 (0.151,0.511)
Potassium	1868-2316	**(0.004**[e]**)**	1670	1803 (**0.003**[e],0.139)	1843 (**0.001**[e],0.095)	1823 (**0.002**[e],0.106)	1817 (**0.002**[e],0.128)
Selenium (ppb)	NR[g]	(0.690)	219	271 (0.271,0.618)	248 (0.523,0.784)	217 (0.971,0.992)	256 (0.424,0.737)
Sodium	NR[g]	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Zinc	NR[g]	(0.204)	4.59	4.48 (0.313,0.661)	4.65 (0.584,0.826)	4.68 (0.417,0.730)	4.45 (0.220,0.575)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the trangenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
[f] NA= statistical analysis was not performed since a majority of the data was < LOQ.
[g] NR = not reported.

Appendix D Table 4. Amino Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Amino Acids (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
Alanine	1.51-2.10	(0.693)	1.68	1.67 (0.665,0.875)	1.65 (0.352,0.688)	1.64 (0.244,0.597)	1.64 (0.277,0.623)
Arginine	2.29-3.40	(0.743)	2.89	2.84 (0.518,0.783)	2.80 (0.255,0.603)	2.80 (0.287,0.636)	2.82 (0.359,0.692)
Aspartic Acid	3.81-5.12	(0.617)	4.36	4.32 (0.684,0.882)	4.24 (0.253,0.603)	4.23 (0.197,0.552)	4.26 (0.337,0.674)
Cystine	0.370-0.808	(0.685)	0.601	0.586 (0.399,0.722)	0.611 (0.590,0.831)	0.604 (0.866,0.959)	0.604 (0.881,0.960)
Glutamic Acid	5.84-8.20	(0.532)	6.71	6.60 (0.560,0.813)	6.48 (0.225,0.580)	6.45 (0.165,0.517)	6.47 (0.196,0.552)
Glycine	1.46-2.00	(0.602)	1.68	1.66 (0.508,0.780)	1.65 (0.351,0.687)	1.64 (0.203,0.558)	1.63 (0.176,0.522)
Histidine	0.880-1.22	(0.513)	1.05	1.05 (0.874,0.960)	1.03 (0.354,0.689)	1.02 (0.182,0.534)	1.02 (0.226,0.580)
Isoleucine	1.54-2.08	(0.247)	1.82	1.81 (0.872,0.959)	1.79 (0.526,0.785)	1.74 (0.072,0.363)	1.75 (0.136,0.484)
Leucine	2.20-4.00	(0.487)	2.96	2.95 (0.817,0.934)	2.90 (0.288,0.637)	2.87 (0.145,0.498)	2.89 (0.265,0.611)
Lysine	2.29-2.84	(0.829)	2.47	2.45 (0.662,0.872)	2.44 (0.515,0.781)	2.42 (0.289,0.637)	2.43 (0.429,0.739)
Methionine	0.431-0.681	(0.699)	0.558	0.538 (0.338,0.674)	0.544 (0.492,0.769)	0.530 (0.187,0.544)	0.545 (0.523,0.784)
Phenylalanine	1.60-2.35	(0.407)	1.93	1.91 (0.678,0.882)	1.89 (0.296,0.642)	1.86 (0.123,0.466)	1.87 (0.141,0.490)
Proline	1.69-2.28	(0.742)	1.85	1.84 (0.933,0.980)	1.76 (0.292,0.637)	1.80 (0.561,0.813)	1.85 (1.000,1.000)
Serine	1.11-2.48	(0.423)	1.92	1.88 (0.458,0.750)	1.84 (0.127,0.468)	1.87 (0.350,0.686)	1.92 (0.945,0.982)
Threonine	1.14-1.89	(0.519)	1.57	1.53 (0.235,0.588)	1.52 (0.147,0.504)	1.52 (0.173,0.521)	1.54 (0.475,0.759)
Tryptophan	0.356-0.670	(0.304)	0.443	0.423 (0.209,0.561)	0.425 (0.253,0.603)	0.447 (0.791,0.923)	0.420 (0.154,0.512)
Tyrosine	1.02-1.61	(0.760)	1.31	1.29 (0.725,0.899)	1.27 (0.445,0.746)	1.30 (0.888,0.960)	1.33 (0.623,0.848)
Valine	1.50-2.44	(0.337)	1.91	1.90 (0.889,0.961)	1.88 (0.536,0.792)	1.83 (0.123,0.466)	1.83 (0.137,0.485)

Appendix D Table 4. (Cont.) Amino Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Amino Acids (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
Alanine	1.51-2.10	(0.974)	1.72	1.73 (0.643,0.860)	1.73 (0.876,0.960)	1.72 (0.876,0.960)	1.73 (0.876,0.960)
Arginine	2.29-3.40	(0.567)	2.96	2.92 (0.414,0.729)	3.01 (0.414,0.729)	2.96 (0.949,0.983)	2.95 (0.749,0.909)
Aspartic Acid	3.81-5.12	(0.405)	4.45	4.50 (0.476,0.759)	4.58 (0.077,0.374)	4.48 (0.644,0.860)	4.49 (0.540,0.793)
Cystine	0.370-0.808	(0.689)	0.597	0.612 (0.324,0.671)	0.607 (0.509,0.780)	0.615 (0.242,0.595)	0.615 (0.234,0.585)
Glutamic Acid	5.84-8.20	(0.527)	6.83	6.85 (0.821,0.936)	7.00 (0.167,0.517)	6.81 (0.910,0.967)	6.86 (0.778,0.917)
Glycine	1.46-2.00	(0.935)	1.73	1.72 (0.617,0.847)	1.72 (0.617,0.847)	1.72 (0.617,0.847)	1.72 (0.411,0.727)
Histidine	0.880-1.22	(0.616)	1.07	1.08 (0.808,0.931)	1.09 (0.244,0.597)	1.07 (0.808,0.931)	1.07 (1.000,1.000)
Isoleucine	1.54-2.08	(0.792)	1.83	1.87 (0.368,0.699)	1.88 (0.292,0.637)	1.87 (0.328,0.671)	1.87 (0.411,0.727)
Leucine	2.20-4.00	(0.539)	3.02	3.04 (0.574,0.819)	3.09 (0.117,0.456)	3.04 (0.629,0.851)	3.05 (0.427,0.737)
Lysine	2.29-2.84	(0.296)	2.52	2.55 (0.335,0.674)	2.57 (0.074,0.368)	2.53 (0.804,0.929)	2.52 (0.901,0.963)
Methionine	0.431-0.681	(0.194)	0.539	0.532 (0.522,0.784)	0.547 (0.466,0.754)	0.553 (0.208,0.561)	0.557 (0.118,0.456)
Phenylalanine	1.60-2.35	(0.177)	1.98	2.02 (0.130,0.475)	2.05 (**0.029**[e],0.273)	2.00 (0.490,0.769)	2.00 (0.424,0.737)
Proline	1.69-2.28	(0.136)	1.91	1.80 (**0.049**[e],0.296)	1.89 (0.666,0.875)	1.89 (0.773,0.915)	1.93 (0.567,0.814)
Serine	1.11-2.48	(0.643)	2.01	1.99 (0.819,0.935)	2.08 (0.350,0.686)	1.98 (0.649,0.863)	2.03 (0.749,0.909)
Threonine	1.14-1.89	(0.520)	1.60	1.61 (0.766,0.914)	1.65 (0.188,0.544)	1.59 (0.766,0.914)	1.61 (0.692,0.884)
Tryptophan	0.356-0.670	(0.626)	0.451	0.437 (0.255,0.603)	0.452 (0.882,0.960)	0.447 (0.722,0.899)	0.452 (0.882,0.960)
Tyrosine	1.02-1.61	(0.416)	1.39	1.36 (0.507,0.780)	1.43 (0.233,0.585)	1.41 (0.507,0.780)	1.40 (0.702,0.889)
Valine	1.50-2.44	(0.983)	1.92	1.95 (0.675,0.882)	1.93 (0.904,0.964)	1.92 (0.904,0.964)	1.92 (1.000,1.000)

Appendix D Table 4. (Cont.) Amino Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Amino Acids (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
Alanine	1.51-2.10	(0.289)	1.80	1.78 (0.513,0.781)	1.76 (0.314,0.662)	1.73 (0.086,0.403)	1.81 (0.850,0.951)
Arginine	2.29-3.40	(0.401)	3.25	3.16 (0.332,0.671)	3.16 (0.332,0.671)	3.06 (0.065,0.342)	3.16 (0.348,0.686)
Aspartic Acid	3.81-5.12	(0.325)	4.71	4.65 (0.498,0.773)	4.65 (0.498,0.773)	4.54 (0.088,0.406)	4.72 (0.885,0.960)
Cystine	0.370-0.808	(0.302)	0.617	0.607 (0.454,0.748)	0.622 (0.685,0.882)	0.626 (0.514,0.781)	0.636 (0.166,0.517)
Glutamic Acid	5.84-8.20	(0.116)	7.37	7.21 (0.317,0.664)	7.22 (0.336,0.674)	6.97 (**0.026**[e],0.258)	7.39 (0.897,0.963)
Glycine	1.46-2.00	(0.266)	1.81	1.78 (0.441,0.746)	1.78 (0.498,0.773)	1.74 (0.090,0.406)	1.82 (0.696,0.886)
Histidine	0.880-1.22	(0.261)	1.14	1.12 (0.491,0.769)	1.12 (0.412,0.728)	1.09 (0.078,0.377)	1.14 (0.780,0.918)
Isoleucine	1.54-2.08	(0.369)	1.95	1.97 (0.731,0.899)	1.95 (0.954,0.984)	1.88 (0.248,0.598)	2.00 (0.400,0.722)
Leucine	2.20-4.00	(0.264)	3.20	3.17 (0.676,0.882)	3.16 (0.602,0.839)	3.07 (0.080,0.382)	3.22 (0.753,0.910)
Lysine	2.29-2.84	(0.353)	2.64	2.62 (0.743,0.908)	2.61 (0.558,0.811)	2.55 (0.104,0.426)	2.65 (0.844,0.946)
Methionine	0.431-0.681	(0.963)	0.578	0.574 (0.854,0.951)	0.565 (0.518,0.783)	0.572 (0.776,0.916)	0.568 (0.629,0.851)
Phenylalanine	1.60-2.35	(0.238)	2.13	2.10 (0.597,0.836)	2.07 (0.275,0.623)	2.02 (0.053,0.311)	2.12 (0.894,0.963)
Proline	1.69-2.28	(0.688)	1.97	1.93 (0.473,0.758)	1.95 (0.664,0.874)	1.94 (0.613,0.845)	1.99 (0.564,0.814)
Serine	1.11-2.48	(0.513)	2.09	1.99 (0.141,0.490)	2.02 (0.331,0.671)	1.99 (0.166,0.517)	2.00 (0.195,0.551)
Threonine	1.14-1.89	(0.371)	1.69	1.64 (0.260,0.608)	1.63 (0.207,0.561)	1.60 (0.061,0.331)	1.63 (0.207,0.561)
Tryptophan	0.356-0.670	(0.523)	0.442	0.444 (0.930,0.979)	0.461 (0.337,0.674)	0.464 (0.277,0.623)	0.437 (0.764,0.914)
Tyrosine	1.02-1.61	(0.705)	1.43	1.45 (0.752,0.910)	1.41 (0.659,0.872)	1.39 (0.455,0.749)	1.39 (0.387,0.715)
Valine	1.50-2.44	(0.418)	2.04	2.05 (0.877,0.960)	2.06 (0.837,0.943)	1.98 (0.318,0.666)	2.11 (0.342,0.677)

Appendix D Table 4. (Cont.) Amino Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Amino Acids (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
Alanine	1.51-2.10	(0.170)	1.72	1.67 (**0.023**[e],0.244)	1.69 (0.155,0.512)	1.68 (0.069,0.356)	1.69 (0.155,0.512)
Arginine	2.29-3.40	**(0.023**[e]**)**	3.00	2.86 (**0.015**[e],0.206)	2.88 (**0.030**[e],0.273)	2.83 (**0.005**[e],0.143)	2.82 (**0.004**[e],0.141)
Aspartic Acid	3.81-5.12	**(0.024**[e]**)**	4.47	4.33 (**0.004**[e],0.141)	4.40 (0.079,0.382)	4.33 (**0.006**[e],0.146)	4.36 (**0.017**[e],0.215)
Cystine	0.370-0.808	(0.511)	0.611	0.621 (0.466,0.754)	0.616 (0.686,0.882)	0.620 (0.524,0.784)	0.635 (0.109,0.438)
Glutamic Acid	5.84-8.20	**(0.008**[e]**)**	6.87	6.56 (**0.001**[e],0.106)	6.70 (**0.034**[e],0.279)	6.58 (**0.002**[e],0.128)	6.65 (**0.010**[e],0.175)
Glycine	1.46-2.00	**(0.044**[e]**)**	1.72	1.66 (**0.008**[e],0.160)	1.68 (0.058,0.321)	1.67 (**0.015**[e],0.201)	1.67 (**0.015**[e],0.201)
Histidine	0.880-1.22	**(0.033**[e]**)**	1.08	1.04 (**0.004**[e],0.141)	1.06 (0.061,0.331)	1.05 (**0.011**[e],0.186)	1.06 (0.061,0.331)
Isoleucine	1.54-2.08	(0.339)	1.84	1.78 (0.123,0.466)	1.85 (0.726,0.899)	1.82 (0.662,0.872)	1.84 (1.000,1.000)
Leucine	2.20-4.00	**(0.013**[e]**)**	3.04	2.94 (**0.003**[e],0.130)	3.00 (0.163,0.517)	2.95 (**0.004**[e],0.141)	2.98 (**0.025**[e],0.247)
Lysine	2.29-2.84	**(0.004**[e]**)**	2.54	2.45 (**0.001**[e],0.087)	2.50 (**0.034**[e],0.279)	2.46 (**0.001**[e],0.106)	2.49 (**0.024**[e],0.247)
Methionine	0.431-0.681	(0.893)	0.556	0.560 (0.728,0.899)	0.555 (0.980,0.994)	0.550 (0.691,0.884)	0.562 (0.621,0.847)
Phenylalanine	1.60-2.35	**(0.003**[e]**)**	2.00	1.90 (**0.001**[e],0.087)	1.97 (0.150,0.510)	1.91 (**0.001**[e],0.106)	1.95 (**0.038**[e],0.283)
Proline	1.69-2.28	(0.254)	1.86	1.89 (0.478,0.759)	1.83 (0.478,0.759)	1.83 (0.432,0.741)	1.80 (0.137,0.485)
Serine	1.11-2.48	(0.247)	2.01	1.95 (0.443,0.746)	1.88 (0.117,0.456)	1.84 (**0.049**[e],0.294)	1.89 (0.126,0.467)
Threonine	1.14-1.89	(0.056)	1.63	1.54 (**0.018**[e],0.222)	1.56 (**0.045**[e],0.291)	1.53 (**0.007**[e],0.160)	1.56 (**0.045**[e],0.291)
Tryptophan	0.356-0.670	(0.170)	0.437	0.439 (0.936,0.981)	0.417 (0.235,0.588)	0.406 (0.091,0.406)	0.404 (0.072,0.363)
Tyrosine	1.02-1.61	(0.789)	1.34	1.33 (0.791,0.923)	1.31 (0.514,0.781)	1.29 (0.367,0.697)	1.29 (0.306,0.652)
Valine	1.50-2.44	(0.512)	1.93	1.86 (0.153,0.512)	1.93 (1.000,1.000)	1.93 (0.884,0.960)	1.92 (0.771,0.915)

Appendix D Table 4. (Cont.) Amino Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Amino Acids (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
Alanine	1.51-2.10	**(0.040[e])**	1.71	1.62 (**0.006**[e],0.147)	1.63 (**0.011**[e],0.184)	1.64 (**0.021**[e],0.240)	1.65 (**0.033**[e],0.278)
Arginine	2.29-3.40	(0.110)	3.05	2.86 (**0.033**[e],0.277)	2.88 (**0.047**[e],0.294)	2.84 (**0.019**[e],0.226)	2.92 (0.101,0.424)
Aspartic Acid	3.81-5.12	**(0.012[e])**	4.39	4.17 (**0.002**[e],0.130)	4.18 (**0.003**[e],0.139)	4.18 (**0.003**[e],0.139)	4.23 (**0.013**[e],0.198)
Cystine	0.370-0.808	(0.186)	0.600	0.610 (0.402,0.723)	0.582 (0.126,0.467)	0.601 (0.951,0.983)	0.606 (0.585,0.827)
Glutamic Acid	5.84-8.20	**(0.015[e])**	6.77	6.36 (**0.003**[e],0.130)	6.42 (**0.006**[e],0.147)	6.39 (**0.004**[e],0.141)	6.47 (**0.015**[e],0.201)
Glycine	1.46-2.00	**(0.032[e])**	1.70	1.61 (**0.006**[e],0.147)	1.62 (**0.010**[e],0.175)	1.62 (**0.010**[e],0.175)	1.63 (**0.019**[e],0.226)
Histidine	0.880-1.22	**(0.024[e])**	1.06	1.01 (**0.007**[e],0.156)	1.01 (**0.006**[e],0.147)	1.01 (**0.006**[e],0.146)	1.03 (**0.032**,0.277)
Isoleucine	1.54-2.08	(0.420)	1.79	1.73 (0.215,0.571)	1.70 (0.073,0.366)	1.74 (0.300,0.645)	1.75 (0.333,0.672)
Leucine	2.20-4.00	**(0.022[e])**	2.97	2.84 (**0.005**[e],0.146)	2.84 (**0.006**[e],0.146)	2.84 (**0.006**[e],0.148)	2.88 (**0.027**[e],0.262)
Lysine	2.29-2.84	**(0.024[e])**	2.52	2.41 (**0.007**[e],0.160)	2.40 (**0.005**[e],0.146)	2.41 (**0.006**[e],0.147)	2.45 (**0.048**[e],0.294)
Methionine	0.431-0.681	(0.243)	0.558	0.551 (0.573,0.819)	0.538 (0.126,0.467)	0.530 (**0.047**[e],0.294)	0.545 (0.319,0.666)
Phenylalanine	1.60-2.35	**(0.048[e])**	1.96	1.87 (**0.035**[e],0.281)	1.84 (**0.009**[e],0.175)	1.84 (**0.009**[e],0.175)	1.87 (**0.035**[e]**,**0.281)
Proline	1.69-2.28	(0.131)	1.86	1.73 (**0.031**[e],0.273)	1.87 (0.899,0.963)	1.80 (0.299,0.645)	1.80 (0.299,0.645)
Serine	1.11-2.48	(0.181)	1.95	1.82 (**0.047**[e],0.294)	1.88 (0.241,0.595)	1.81 (**0.035**[e],0.281)	1.86 (0.171,0.520)
Threonine	1.14-1.89	**(0.015[e])**	1.59	1.48 (**0.003**[e],0.139)	1.50 (**0.010**[e],0.175)	1.47 (**0.002**[e],0.130)	1.51 (**0.021**[e],0.239)
Tryptophan	0.356-0.670	(0.694)	0.397	0.394 (0.855,0.952)	0.420 (0.278,0.625)	0.409 (0.566,0.814)	0.406 (0.656,0.870)
Tyrosine	1.02-1.61	(0.059)	1.32	1.24 (**0.014**[e],0.201)	1.28 (0.132,0.479)	1.23 (**0.010**[e],0.175)	1.27 (0.076,0.372)
Valine	1.50-2.44	(0.394)	1.90	1.82 (0.107,0.432)	1.82 (0.120,0.461)	1.87 (0.448,0.746)	1.87 (0.489,0.768)

Appendix D Table 4. (Cont.) Amino Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Amino Acids (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
Alanine	1.51-2.10	(0.091)	1.80	1.70 (**0.014**[e],0.201)	1.74 (0.111,0.439)	1.72 (**0.028**[e],0.262)	1.73 (0.055,0.318)
Arginine	2.29-3.40	**(0.0002**[e]**)**	3.76	3.19 **(0.0001,0.042)**[e]	3.28 (**0.0003**[e],0.078)	3.14 **(0.00005,0.031)**[e]	3.11 **(0.00004,0.031)**[e]
Aspartic Acid	3.81-5.12	(0.080)	4.72	4.49 (**0.018**[e],0.222)	4.61 (0.200,0.556)	4.53 (**0.035**[e],0.281)	4.50 (**0.022**[e],0.243)
Cystine	0.370-0.808	**(0.031**[e]**)**	0.598	0.572 (**0.018**[e],0.225)	0.576 (**0.036**[e],0.282)	0.563 (**0.004**[e],0.141)	0.584 (0.159,0.517)
Glutamic Acid	5.84-8.20	(0.112)	7.35	6.95 (**0.025**[e],0.247)	7.17 (0.254,0.603)	7.02 (0.051,0.303)	6.98 (**0.033**[e],0.278)
Glycine	1.46-2.00	(0.092)	1.81	1.71 (**0.020**[e],0.230)	1.75 (0.098,0.418)	1.72 (**0.027**[e],0.259)	1.72 (**0.027**[e],0.259)
Histidine	0.880-1.22	(0.127)	1.14	1.08 (**0.025**[e],0.247)	1.11 (0.206,0.561)	1.08 (**0.040**[e],0.283)	1.09 (0.051,0.303)
Isoleucine	1.54-2.08	**(0.035**[e]**)**	1.96	1.82 (**0.004**[e],0.141)	1.92 (0.279,0.626)	1.87 (**0.032**[e],0.277)	1.91 (0.167,0.517)
Leucine	2.20-4.00	(0.111)	3.19	3.05 (**0.022**[e],0.243)	3.13 (0.270,0.617)	3.08 (0.050,0.299)	3.07 (**0.041**[e],0.283)
Lysine	2.29-2.84	(0.144)	2.66	2.55 (**0.033**[e],0.277)	2.59 (0.134,0.482)	2.56 (**0.041**[e],0.283)	2.56 (**0.041**[e],0.283)
Methionine	0.431-0.681	(0.906)	0.547	0.548 (0.887,0.960)	0.545 (0.909,0.967)	0.538 (0.468,0.754)	0.545 (0.909,0.967)
Phenylalanine	1.60-2.35	(0.190)	2.12	2.01 (**0.038**[e],0.283)	2.06 (0.192,0.548)	2.02 (**0.048**[e],0.294)	2.04 (0.097,0.417)
Proline	1.69-2.28	(0.245)	1.98	1.93 (0.349,0.686)	2.00 (0.735,0.902)	1.93 (0.406,0.726)	1.87 (0.082,0.388)
Serine	1.11-2.48	**(0.045**[e]**)**	2.00	2.04 (0.410,0.727)	2.00 (1.000,1.000)	1.98 (0.747,0.909)	1.86 (**0.021**[e],0.239)
Threonine	1.14-1.89	(0.182)	1.62	1.60 (0.511,0.780)	1.60 (0.511,0.780)	1.58 (0.174,0.522)	1.55 (**0.030**[e],0.273)
Tryptophan	0.356-0.670	(0.579)	0.426	0.438 (0.562,0.813)	0.423 (0.867,0.959)	0.429 (0.880,0.960)	0.406 (0.315,0.662)
Tyrosine	1.02-1.61	(0.641)	1.35	1.36 (0.808,0.931)	1.38 (0.474,0.758)	1.33 (0.747,0.909)	1.32 (0.474,0.758)
Valine	1.50-2.44	**(0.033**[e]**)**	2.10	1.91 (**0.003**[e],0.139)	2.04 (0.215,0.571)	1.99 (**0.049**[e],0.295)	2.03 (0.155,0.512)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.

Appendix D Table 5. Fatty Acid Analysis of Soybean Grain from Individual Sites(least squares mean)

Fatty Acids (% total fatty acids)[a]	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
8:0 Caprylic	0.148	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
10:0 Capric	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
12:0 Lauric	0.082-0.132	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:0 Myristic	0.071-0.238	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	0.121-0.125	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
16:0 Palmitic	9.55-15.77	(0.558)	10.2	10.0 (0.811,0.933)	9.07 (0.160,0.517)	9.98 (0.755,0.910)	9.50 (0.360,0.692)
16:1 Palmitoleic	0.086-0.194	ID[i]	0.091[i]	0.076[i]	0.079[i]	0.080[i]	0.075[i]
17:0 Heptadecanoic	0.085-0.146	(0.629)	0.109	0.116 (0.625,0.848)	0.103 (0.713,0.895)	0.114 (0.704,0.890)	0.098 (0.582,0.825)
17:1 Heptadecenoic	0.073-0.087	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:0 Stearic	2.70-5.88	(0.438)	4.24	4.12 (0.746,0.909)	3.65 (0.121,0.464)	4.17 (0.844,0.946)	3.86 (0.298,0.645)
18:1 Oleic	14.3-32.2	(0.257)	21.8	20.2 (0.395,0.721)	17.6 (**0.047**[e],0.294)	20.4 (0.456,0.749)	18.7 (0.125,0.467)
18:2 Linoleic	42.3-58.8	(0.642)	50.6	52.7 (0.536,0.792)	48.1 (0.481,0.763)	52.5 (0.580,0.824)	50.0 (0.872,0.959)
18:3 Gamma Linolenic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:3 Linolenic	3.00-12.52	(0.803)	7.66	7.86 (0.404,0.725)	7.68 (0.944,0.982)	7.85 (0.427,0.737)	7.85 (0.427,0.737)
20:0 Arachidic	0.163-0.482	(0.437)	0.298	0.286 (0.607,0.841)	0.258 (0.104,0.426)	0.287 (0.637,0.856)	0.270 (0.233,0.585)
20:1 Eicosenoic	0.140-0.350	(0.598)	0.141	0.145 (0.816,0.934)	0.126 (0.358,0.692)	0.146 (0.766,0.914)	0.129 (0.441,0.746)
20:2 Eicosadienoic	0.077-0.245	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.277-0.595	(0.512)	0.296	0.289 (0.756,0.910)	0.262 (0.144,0.498)	0.287 (0.685,0.882)	0.272 (0.274,0.623)

Appendix D Table 5. (Cont.) Fatty Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Fatty Acids (% total fatty acids)[a]	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
8:0 Caprylic	0.148	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
10:0 Capric	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
12:0 Lauric	0.082-0.132	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:0 Myristic	0.071-0.238	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	0.121-0.125	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
16:0 Palmitic	9.55-15.77	(0.414)	10.7	10.6 (0.794,0.924)	10.3 (0.381,0.712)	10.5 (0.613,0.845)	9.76 (0.092,0.406)
16:1 Palmitoleic	0.086-0.194	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
17:0 Heptadecanoic	0.085-0.146	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
17:1 Heptadecenoic	0.073-0.087	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:0 Stearic	2.70-5.88	(0.668)	4.00	4.06 (0.613,0.845)	3.93 (0.624,0.848)	4.02 (0.875,0.960)	3.89 (0.413,0.728)
18:1 Oleic	14.3-32.2	(0.271)	22.9	21.1 (0.114,0.446)	21.4 (0.174,0.522)	21.5 (0.203,0.558)	20.4 (**0.042**,0.283)
18:2 Linoleic	42.3-58.8	(0.464)	50.4	52.8 (0.236,0.590)	50.7 (0.887,0.960)	52.3 (0.338,0.674)	49.7 (0.714,0.895)
18:3 Gamma Linolenic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:3 Linolenic	3.00-12.52	(0.667)	6.94	7.18 (0.174,0.522)	7.05 (0.531,0.789)	7.00 (0.737,0.904)	7.05 (0.531,0.789)
20:0 Arachidic	0.163-0.482	(0.467)	0.296	0.292 (0.776,0.916)	0.281 (0.232,0.585)	0.289 (0.564,0.814)	0.276 (0.129,0.473)
20:1 Eicosenoic	0.140-0.350	(0.487)	0.170	0.172 (0.901,0.963)	0.161 (0.446,0.746)	0.169 (0.899,0.963)	0.153 (0.170,0.519)
20:2 Eicosadienoic	0.077-0.245	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.277-0.595	(0.503)	0.293	0.290 (0.844,0.946)	0.278 (0.394,0.721)	0.288 (0.719,0.898)	0.269 (0.137,0.485)

Appendix D Table 5. (Cont.) Fatty Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Fatty Acids (% total fatty acids)[a]	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
8:0 Caprylic	0.148	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
10:0 Capric	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
12:0 Lauric	0.082-0.132	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:0 Myristic	0.071-0.238	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	0.121-0.125	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
16:0 Palmitic	9.55-15.77	(0.512)	9.10	9.99 (0.112,0.442)	9.78 (0.208,0.561)	9.62 (0.325,0.671)	9.73 (0.244,0.597)
16:1 Palmitoleic	0.086-0.194	(0.998)	0.093	0.092 (0.939,0.981)	0.090 (0.786,0.922)	0.092 (0.930,0.979)	0.093 (0.938,0.981)
17:0 Heptadecanoic	0.085-0.146	(0.485)	0.101	0.110 (0.265,0.611)	0.109 (0.209,0.561)	0.105 (0.571,0.817)	0.109 (0.172,0.521)
17:1 Heptadecenoic	0.073-0.087	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:0 Stearic	2.70-5.88	(0.902)	4.24	4.37 (0.697,0.887)	4.46 (0.520,0.783)	4.26 (0.938,0.981)	4.51 (0.444,0.746)
18:1 Oleic	14.3-32.2	(0.924)	19.8	20.8 (0.511,0.780)	21.0 (0.453,0.748)	20.6 (0.622,0.848)	20.9 (0.465,0.754)
18:2 Linoleic	42.3-58.8	(0.213)	47.1	53.1 (**0.046**[e],0.294)	52.4 (0.072,0.363)	51.9 (0.093,0.408)	52.5 (0.065,0.342)
18:3 Gamma Linolenic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:3 Linolenic	3.00-12.52	(0.230)	7.00	7.59 (**0.042**[e],0.283)	7.33 (0.215,0.571)	7.18 (0.476,0.759)	7.44 (0.106,0.430)
20:0 Arachidic	0.163-0.482	(0.927)	0.301	0.301 (0.982,0.996)	0.306 (0.817,0.934)	0.292 (0.703,0.890)	0.311 (0.648,0.862)
20:1 Eicosenoic	0.140-0.350	(0.353)	0.131	0.147 (0.147,0.504)	0.149 (0.111,0.441)	0.151 (0.083,0.394)	0.148 (0.132,0.479)
20:2 Eicosadienoic	0.077-0.245	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.277-0.595	(0.982)	0.297	0.304 (0.692,0.884)	0.300 (0.868,0.959)	0.293 (0.865,0.958)	0.299 (0.904,0.964)

Appendix D Table 5. (Cont.) Fatty Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Fatty Acids (% total fatty acids)[a]	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
8:0 Caprylic	0.148	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
10:0 Capric	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
12:0 Lauric	0.082-0.132	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:0 Myristic	0.071-0.238	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	0.121-0.125	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
16:0 Palmitic	9.55-15.77	(0.859)	9.90	9.89 (0.941,0.982)	9.81 (0.620,0.847)	9.94 (0.825,0.937)	9.77 (0.478,0.759)
16:1 Palmitoleic	0.086-0.194	(0.407)	0.095	0.084 (0.090,0.406)	0.090 (0.398,0.722)	0.089 (0.228,0.583)	0.088 (0.219,0.575)
17:0 Heptadecanoic	0.085-0.146	(0.135)	0.106	0.111 (0.023,0.244)	0.110 (0.076,0.372)	0.108 (0.146,0.501)	0.108 (0.276,0.623)
17:1 Heptadecenoic	0.073-0.087	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:0 Stearic	2.70-5.88	(0.157)	4.48	4.14 (**0.031**,0.273)	4.30 (0.191,0.548)	4.24 (0.100,0.424)	4.16 (**0.038**,0.283)
18:1 Oleic	14.3-32.2	**(0.007[e])**	23.3	20.9 (**0.002[e]**,0.106)	21.3 (**0.004[e]**,0.141)	21.0 (**0.002[e]**,0.130)	21.1 (**0.002[e]**,0.130)
18:2 Linoleic	42.3-58.8	**(0.022[e])**	47.7	50.6 (**0.014**,0.200)	51.7 (**0.003**,0.130)	50.8 (**0.010**,0.175)	50.3 (**0.025**,0.247)
18:3 Gamma Linolenic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:3 Linolenic	3.00-12.52	(0.761)	7.79	8.14 (0.449,0.746)	8.00 (0.654,0.869)	7.83 (0.930,0.979)	8.30 (0.284,0.632)
20:0 Arachidic	0.163-0.482	(0.069)	0.316	0.284 (**0.009[e]**,0.175)	0.302 (0.163,0.517)	0.296 (0.061,0.331)	0.292 (**0.031[e]**,0.273)
20:1 Eicosenoic	0.140-0.350	(0.910)	0.141	0.140 (0.716,0.896)	0.142 (0.830,0.941)	0.143 (0.623,0.848)	0.141 (0.872,0.959)
20:2 Eicosadienoic	0.077-0.245	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.277-0.595	(0.344)	0.308	0.289 (0.055,0.318)	0.298 (0.255,0.603)	0.295 (0.170,0.519)	0.299 (0.289,0.637)

Appendix D Table 5. (Cont.) Fatty Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Fatty Acids (% total fatty acids)[a]	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
8:0 Caprylic	0.148	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
10:0 Capric	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
12:0 Lauric	0.082-0.132	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:0 Myristic	0.071-0.238	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	0.121-0.125	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
16:0 Palmitic	9.55-15.77	(0.618)	9.76	9.90 (0.207,0.561)	9.79 (0.805,0.929)	9.79 (0.805,0.929)	9.75 (0.926,0.976)
16:1 Palmitoleic	0.086-0.194	(0.303)	0.096	0.090 (0.188,0.544)	0.087 (0.057,0.321)	0.090 (0.221,0.576)	0.088 (0.092,0.406)
17:0 Heptadecanoic	0.085-0.146	(0.571)	0.114	0.119 (0.163,0.517)	0.119 (0.172,0.521)	0.118 (0.303,0.649)	0.118 (0.292,0.637)
17:1 Heptadecenoic	0.073-0.087	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:0 Stearic	2.70-5.88	(0.190)	4.16	3.90 (0.080,0.383)	3.88 (0.066,0.343)	3.91 (0.096,0.416)	3.82 (**0.033**[e],0.277)
18:1 Oleic	14.3-32.2	(0.114)	20.5	18.5 (**0.047**[e],0.294)	18.2 (**0.029**[e],0.270)	18.5 (0.051,0.304)	18.1 (**0.024**[e],0.246)
18:2 Linoleic	42.3-58.8	(0.187)	50.4	53.0 (0.088,0.406)	53.7 (**0.042**[e],0.283)	53.7 (**0.042**[e],0.283)	53.0 (0.094,0.411)
18:3 Gamma Linolenic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:3 Linolenic	3.00-12.52	(0.492)	8.56	9.34 (0.125,0.467)	9.25 (0.170,0.520)	9.18 (0.209,0.561)	8.97 (0.400,0.722)
20:0 Arachidic	0.163-0.482	(0.352)	0.300	0.283 (0.156,0.512)	0.281 (0.116,0.454)	0.280 (0.105,0.429)	0.279 (0.091,0.406)
20:1 Eicosenoic	0.140-0.350	**(0.035[e])**	0.129	0.118 (**0.009**[e],0.175)	0.119 (**0.015**[e],0.203)	0.118 (**0.009**[e],0.175)	0.118 (**0.010**[e],0.175)
20:2 Eicosadienoic	0.077-0.245	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.277-0.595	(0.083)	0.305	0.284 (**0.040**[e],0.283)	0.280 (**0.021**[e],0.240)	0.279 (**0.018**[e],0.222)	0.282 (**0.030**[e],0.273)

Appendix D Table 5. (Cont.) Fatty Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Fatty Acids (% total fatty acids)[a]	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
8:0 Caprylic	0.148	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
10:0 Capric	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
12:0 Lauric	0.082-0.132	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:0 Myristic	0.071-0.238	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	0.121-0.125	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	NR[h]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
16:0 Palmitic	9.55-15.77	(0.357)	10.9	9.59 (0.089,0.406)	9.98 (0.209,0.561)	9.86 (0.162,0.517)	10.6 (0.641,0.859)
16:1 Palmitoleic	0.086-0.194	(0.271)	0.104	0.063 (0.139,0.487)	< LOQ	0.091 (0.400,0.722)	0.090 (0.298,0.645)
17:0 Heptadecanoic	0.085-0.146	(0.435)	0.126	0.119 (0.156,0.512)	0.124 (0.735,0.902)	0.122 (0.499,0.774)	0.127 (0.757,0.910)
17:1 Heptadecenoic	0.073-0.087	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:0 Stearic	2.70-5.88	(0.159)	4.58	3.60 (**0.041**[e],0.283)	3.63 (**0.046**[e],0.294)	3.67 (0.055,0.318)	4.10 (0.270,0.618)
18:1 Oleic	14.3-32.2	(0.131)	22.5	17.4 (**0.037**[e],0.283)	17.5 (**0.041**[e],0.283)	17.5 (**0.042**[e],0.283)	20.1 (0.284,0.632)
18:2 Linoleic	42.3-58.8	(0.815)	55.5	52.9 (0.430,0.739)	54.7 (0.801,0.929)	54.6 (0.788,0.923)	56.6 (0.725,0.899)
18:3 Gamma Linolenic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
18:3 Linolenic	3.00-12.52	**(0.027[e])**	9.04	9.24 (0.273,0.622)	9.58 (**0.013**[e],0.198)	9.57 (**0.014**[e],0.201)	9.66 (**0.007**[e],0.148)
20:0 Arachidic	0.163-0.482	(0.114)	0.332	0.258 (**0.023**[e],0.244)	0.267 (**0.037**[e],0.283)	0.267 (**0.037**[e],0.283)	0.292 (0.161,0.517)
20:1 Eicosenoic	0.140-0.350	(0.460)	0.143	0.118 (0.160,0.517)	0.121 (0.208,0.561)	0.122 (0.222,0.577)	0.138 (0.781,0.918)
20:2 Eicosadienoic	0.077-0.245	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ

Appendix D Table 5. (Cont.) Fatty Acid Analysis of Soybean Grain from Individual Sites (least squares mean)

Fatty Acids (% total fatty acids)[a]	Literature Values[b]	Overall Trt Effect (Pr>F)[c]	Control	Unsprayed (P-value,[d] Adj. P)[e]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
20:3 Eicosatrienoic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	NR[h]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.277-0.595	(0.193)	0.332	0.273 (**0.037**[e],0.283)	0.287 (0.091,0.406)	0.284 (0.074,0.366)	0.307 (0.312,0.661)

[a] Results converted from units of % dry weight to % fatty acids.
[b] Combined range from Appendix B.
[c] Overall treatment effect estimated using an F-test.
[d] Comparison of the transgenic treatments to the control using t-tests.
[e] P-values adjusted using a False Discovery Rate (FDR) procedure.
[f] Statistical difference indicated by P-Value <0.05.
[g] NA= statistical analysis was not performed since a majority of the data was < LOQ.
[h] NR = not reported.
[i] ID = Insufficient Data to calculate, overall treatment effect estimated using an F-test, comparison of the transgenic treatments to the control using t-tests, and p-values adjusted using a False Discovery Rate (FDR) procedure

Appendix D Table 6. Anti-Nutrient Analysis of Soybean Grain from Individual Sites (least squares mean)

Anti-Nutrient (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
Lectin	0.105-9.04	(0.109)	1.81	2.48 (0.519,0.783)	3.02 (0.259,0.606)	2.48 (0.519,0.783)	4.85 (**0.016**[e],0.211)
Phytic Acid	0.630-2.74	(0.402)	1.29	1.27 (0.824,0.937)	1.23 (0.330,0.671)	1.30 (0.781,0.918)	1.35 (0.330,0.671)
Raffinose	0.212-0.661	(0.916)	0.269	0.281 (0.660,0.872)	0.284 (0.562,0.813)	0.264 (0.835,0.942)	0.272 (0.917,0.972)
Stachyose	1.21-3.50	(0.896)	2.12	2.11 (0.978,0.994)	2.26 (0.575,0.819)	2.05 (0.777,0.917)	2.22 (0.677,0.882)
Trypsin Inhibitor (TIU/mg)	19.59-118.68	(0.796)	22.30	23.8 (0.642,0.860)	25.0 (0.389,0.716)	24.3 (0.533,0.790)	25.9 (0.263,0.610)

Appendix D Table 6. (Cont.) Anti-Nutrient Analysis of Soybean Grain from Individual Sites (least squares mean)

Anti-Nutrient (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
Lectin	0.105-9.04	(0.143)	4.13	4.57 (0.761,0.913)	4.18 (0.969,0.990)	5.42 (0.381,0.712)	7.75 (**0.032**,0.277)
Phytic Acid	0.630-2.74	(0.226)	1.10	1.11 (0.890,0.961)	1.14 (0.561,0.813)	1.00 (0.141,0.490)	1.14 (0.494,0.770)
Raffinose	0.212-0.661	(0.211)	0.395	0.397 (0.968,0.990)	0.323 (0.056,0.319)	0.370 (0.450,0.746)	0.350 (0.201,0.556)
Stachyose	1.21-3.50	**(0.040[e])**	2.71	2.51 (0.182,0.534)	2.21 (**0.006[e]**,0.147)	2.30 (**0.017[e]**,0.214)	2.37 (**0.034[e]**,0.279)
Trypsin Inhibitor (TIU/mg)	19.59-118.68	(0.284)	34.7	36.0 (0.794,0.924)	30.5 (0.398,0.722)	26.1 (0.104,0.426)	28.9 (0.250,0.598)

Appendix D Table 6. (Cont.) Anti-Nutrient Analysis of Soybean Grain from Individual Sites (least squares mean)

Anti-Nutrient (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
Lectin	0.105-9.04	(0.118)	1.82	2.35 (0.487,0.768)	3.03 (0.134,0.482)	3.44 (0.056,0.319)	1.45 (0.621,0.847)
Phytic Acid	0.630-2.74	(0.645)	1.07	0.970 (0.233,0.585)	1.07 (0.965,0.989)	1.07 (0.984,0.996)	1.02 (0.524,0.784)
Raffinose	0.212-0.661	(0.609)	0.314	0.317 (0.832,0.941)	0.317 (0.853,0.951)	0.332 (0.193,0.550)	0.315 (0.979,0.994)
Stachyose	1.21-3.50	(0.504)	2.33	2.29 (0.824,0.937)	2.32 (0.968,0.990)	2.56 (0.188,0.544)	2.34 (0.920,0.973)
Trypsin Inhibitor (TIU/mg)	19.59-118.68	(0.188)	23.2	26.9 (0.262,0.610)	23.0 (0.932,0.979)	30.3 (**0.048**[e],0.294)	26.6 (0.292,0.637)

Appendix D Table 6. (Cont.) Anti-Nutrient Analysis of Soybean Grain from Individual Sites (least squares mean)

Anti-Nutrient (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
Lectin	0.105-9.04	(0.511)	2.81	3.58 (0.447,0.746)	1.85 (0.343,0.679)	2.34 (0.633,0.853)	2.55 (0.787,0.922)
Phytic Acid	0.630-2.74	(0.082)	1.11	0.980 (**0.043**[e],0.285)	1.00 (0.082,0.388)	0.940 (**0.014**[e],0.200)	1.06 (0.382,0.712)
Raffinose	0.212-0.661	(0.246)	0.304	0.324 (0.337,0.674)	0.276 (0.197,0.552)	0.288 (0.445,0.746)	0.293 (0.607,0.841)
Stachyose	1.21-3.50	(0.244)	2.32	2.27 (0.731,0.899)	2.04 (0.095,0.414)	2.01 (0.072,0.363)	2.20 (0.434,0.743)
Trypsin Inhibitor (TIU/mg)	19.59-118.68	(0.714)	24.8	24.8 (0.987,0.997)	26.6 (0.391,0.716)	23.8 (0.634,0.854)	25.5 (0.750,0.909)

Appendix D Table 6. (Cont.) Anti-Nutrient Analysis of Soybean Grain from Individual Sites (least squares mean)

Anti-Nutrient (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
Lectin	0.105-9.04	(0.353)	1.14	1.40 (0.683,0.882)	1.91 (0.245,0.597)	1.94 (0.229,0.583)	0.800 (0.600,0.838)
Phytic Acid	0.630-2.74	(0.455)	1.53	1.71 (0.326,0.671)	1.69 (0.362,0.694)	1.80 (0.153,0.512)	1.84 (0.101,0.424)
Raffinose	0.212-0.661	(0.580)	0.367	0.304 (0.369,0.700)	0.275 (0.161,0.517)	0.286 (0.255,0.603)	0.293 (0.245,0.597)
Stachyose	1.21-3.50	(0.446)	2.52	2.41 (0.722,0.899)	2.05 (0.123,0.466)	2.09 (0.196,0.552)	2.33 (0.499,0.774)
Trypsin Inhibitor (TIU/mg)	19.59-118.68	(0.057)	23.6	29.1 (**0.029**[e],0.271)	22.5 (0.607,0.841)	22.4 (0.565,0.814)	23.5 (0.962,0.989)

Appendix D Table 6. (Cont.) Anti-Nutrient Analysis of Soybean Grain from Individual Sites (least squares mean)

Anti-Nutrient (% dry weight)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
Lectin	0.105-9.04	(0.320)	1.39	2.08 (0.467,0.754)	3.07 (0.102,0.425)	2.23 (0.384,0.715)	1.14 (0.799,0.928)
Phytic Acid	0.630-2.74	(0.844)	1.11	1.16 (0.635,0.854)	1.19 (0.441,0.746)	1.13 (0.838,0.943)	1.09 (0.814,0.934)
Raffinose	0.212-0.661	(0.811)	0.403	0.397 (0.904,0.964)	0.386 (0.735,0.902)	0.353 (0.332,0.671)	0.364 (0.448,0.746)
Stachyose	1.21-3.50	(0.910)	2.50	2.50 (0.986,0.997)	2.48 (0.914,0.970)	2.61 (0.555,0.809)	2.45 (0.773,0.915)
Trypsin Inhibitor (TIU/mg)	19.59-118.68	(0.698)	23.4	23.0 (0.887,0.960)	20.5 (0.238,0.590)	22.4 (0.692,0.884)	21.4 (0.404,0.725)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.

Appendix D Table 7. Vitamin Analysis of Soybean Grain from Individual Sites (least squares mean)

Vitamins (mg/kg dry weight)	Lit. Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
Beta Tocopherol	NR[f]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Delta Tocopherol	NR[f]	(0.834)	93.8	92.9 (0.685,0.882)	93.1 (0.752,0.910)	91.5 (0.321,0.669)	92.0 (0.425,0.737)
Gamma Tocopherol	NR[f]	(0.252)	159	174 (**0.039**[e],0.283)	167 (0.253,0.603)	170 (0.106,0.430)	169 (0.158,0.517)
Beta Carotene (Vitamin A)	NR[f]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin B1 (Thiamin)	1.01-2.54	(0.638)	2.26	2.00 (0.370,0.700)	2.12 (0.635,0.854)	1.83 (0.160,0.517)	2.08 (0.534,0.792)
Vitamin B2 (Riboflavin)	1.90-3.21	(0.214)	3.74	4.24 (0.325,0.671)	4.08 (0.502,0.777)	4.20 (0.360,0.692)	4.98 (**0.031**[e],0.273)
Vitamin B5 (Pantothenic acid)	NR[f]	(0.914)	14.6	14.3 (0.815,0.934)	14.3 (0.771,0.915)	13.7 (0.439,0.746)	14.6 (0.977,0.994)
Vitamin B6 (Pyridoxine)	NR[f]	(0.817)	5.37	5.29 (0.793,0.924)	5.17 (0.502,0.777)	5.33 (0.878,0.960)	5.06 (0.318,0.666)
Vitamin B12	NR[f]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin C	NR[f]	(0.060)	103.0	93.2 (0.101,0.424)	101 (0.756,0.910)	86.9 (**0.014**[e],0.201)	90.8 (**0.047**[e],0.294)
Vitamin D	NR[f]	NA[g]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin E (alpha Tocopherol)	1.90-61.7	(0.511)	13.7	15.2 (0.153,0.512)	13.8 (0.894,0.963)	14.8 (0.291,0.637)	14.2 (0.598,0.837)
Niacin (Nicotinic acid,Vit. B3)	NR[f]	(0.482)	25.8	24.5 (0.562,0.813)	27.8 (0.395,0.721)	27.6 (0.435,0.744)	25.0 (0.698,0.888)
Folic Acid	2.39-4.71	(0.413)	3.52	3.28 (0.096,0.416)	3.30 (0.126,0.467)	3.33 (0.178,0.524)	3.37 (0.265,0.611)

Appendix D Table 7. (Cont.) Vitamin Analysis of Soybean Grain from Individual Sites (least squares mean)

Vitamins (mg/kg dry weight)	Lit. Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
Beta Tocopherol	NR[f]	Data not found	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Delta Tocopherol	NR[f]	(0.381)	64.4	61.8 (0.387,0.715)	67.3 (0.338,0.674)	64.9 (0.875,0.960)	66.9 (0.410,0.727)
Gamma Tocopherol	NR[f]	(0.180)	201	204 (0.719,0.898)	192 (0.295,0.642)	215 (0.128,0.469)	201 (1.000,1.000)
Beta Carotene (Vitamin A)	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin B1 (Thiamin)	1.01-2.54	(0.517)	2.97	2.34 (0.108,0.436)	2.60 (0.319,0.666)	2.61 (0.331,0.671)	2.75 (0.553,0.808)
Vitamin B2 (Riboflavin)	1.90-3.21	(0.898)	4.23	4.39 (0.833,0.941)	4.15 (0.916,0.971)	4.65 (0.589,0.831)	4.77 (0.489,0.768)
Vitamin B5 (Pantothenic acid)	NR[f]	(0.468)	19.1	18.2 (0.375,0.706)	17.3 (0.102,0.425)	18.2 (0.359,0.692)	17.6 (0.169,0.519)
Vitamin B6 (Pyridoxine)	NR[f]	(0.503)	5.17	5.16 (0.971,0.992)	4.93 (0.230,0.585)	5.09 (0.681,0.882)	4.92 (0.202,0.556)
Vitamin B12	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin C	NR[f]	(0.552)	52.8	48.4 (0.620,0.847)	61.8 (0.321,0.669)	58.3 (0.535,0.792)	59.2 (0.470,0.756)
Vitamin D	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin E (alpha Tocopherol)	1.90-61.7	(0.327)	27.1	27.2 (0.964,0.989)	23.4 (0.233,0.585)	29.4 (0.435,0.744)	24.7 (0.423,0.737)
Niacin (Nicotinic acid,Vit. B3)	NR[f]	(0.031)	32.9	25.5 (0.005,0.146)	26.4 (**0.010**,0.175)	30.2 (0.196,0.552)	28.8 (0.070,0.359)
Folic Acid	2.39-4.71	(0.439)	2.91	2.70 (0.210,0.561)	2.88 (0.834,0.941)	2.67 (0.148,0.504)	2.86 (0.738,0.904)

Appendix D Table 7. (Cont.) Vitamin Analysis of Soybean Grain from Individual Sites (least squares mean)

Vitamins (mg/kg dry weight)	Lit. Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
Beta Tocopherol	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Delta Tocopherol	NR[f]	(0.182)	82.1	88.6 (**0.041**[e],0.283)	83.6 (0.590,0.831)	86.9 (0.110,0.439)	83.6 (0.606,0.841)
Gamma Tocopherol	NR[f]	(0.078)	157	175 (**0.037**[e],0.283)	162 (0.489,0.768)	179 (**0.016**[e],0.211)	165 (0.290,0.637)
Beta Carotene (Vitamin A)	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin B1 (Thiamin)	1.01-2.54	(0.712)	1.58	1.65 (0.885,0.960)	1.770 (0.681,0.882)	2.01 (0.363,0.694)	2.12 (0.263,0.610)
Vitamin B2 (Riboflavin)	1.90-3.21	**(0.025**[e]**)**	4.85	4.50 (0.306,0.652)	3.59 (**0.004**,0.142)	3.80 (**0.012**,0.189)	4.30 (0.125,0.467)
Vitamin B5 (Pantothenic acid)	NR[f]	(0.872)	14.4	14.8 (0.783,0.920)	15.1 (0.600,0.838)	15.8 (0.327,0.671)	15.1 (0.600,0.838)
Vitamin B6 (Pyridoxine)	NR[f]	(0.366)	5.42	4.91 (0.071,0.363)	5.11 (0.247,0.598)	5.26 (0.521,0.783)	5.28 (0.589,0.831)
Vitamin B12	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin C	NR[f]	(0.828)	88.8	80.9 (0.328,0.671)	86.2 (0.745,0.909)	86.7 (0.790,0.923)	88.8 (0.997,1.000)
Vitamin D	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin E (alpha Tocopherol)	1.90-61.7	(0.129)	16.4	17.8 (**0.048**[e],0.294)	17.4 (0.143,0.496)	18.2 (**0.018**,0.222)	17.6 (0.095,0.413)
Niacin (Nicotinic acid,Vit. B3)	NR[f]	(0.949)	26.9	27.2 (0.898,0.963)	26.3 (0.798,0.927)	27.5 (0.809,0.931)	28.1 (0.621,0.847)
Folic Acid	2.39-4.71	(0.229)	4.17	3.67 (0.056,0.318)	3.82 (0.156,0.512)	3.66 (0.053,0.312)	3.74 (0.088,0.406)

Appendix D Table 7. (Cont.) Vitamin Analysis of Soybean Grain from Individual Sites (least squares mean)

Vitamins (mg/kg dry weight)	Lit. Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
Beta Tocopherol	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Delta Tocopherol	NR[f]	(0.700)	104	106 (0.705,0.891)	104 (1.000,1.000)	108 (0.355,0.690)	103 (0.684,0.882)
Gamma Tocopherol	NR[f]	(0.080)	155	164 (0.126,0.467)	153 (0.723,0.899)	164 (0.114,0.448)	149 (0.357,0.690)
Beta Carotene (Vitamin A)	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin B1 (Thiamin)	1.01-2.54	(0.271)	2.10	2.40 (0.512,0.780)	1.51 (0.201,0.556)	1.77 (0.462,0.754)	2.34 (0.595,0.835)
Vitamin B2 (Riboflavin)	1.90-3.21	(0.868)	4.47	4.15 (0.671,0.878)	4.57 (0.901,0.963)	4.25 (0.766,0.914)	3.85 (0.415,0.729)
Vitamin B5 (Pantothenic acid)	NR[f]	(0.080)	15.5	15.9 (0.625,0.848)	14.1 (0.088,0.406)	14.8 (0.339,0.675)	13.7 (**0.040**[e],0.283)
Vitamin B6 (Pyridoxine)	NR[f]	(0.134)	5.10	5.34 (0.325,0.671)	5.27 (0.462,0.754)	4.75 (0.165,0.517)	4.88 (0.378,0.710)
Vitamin B12	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin C	NR[f]	(0.686)	78.8	72.7 (0.255,0.603)	72.0 (0.211,0.563)	73.6 (0.332,0.671)	74.9 (0.463,0.754)
Vitamin D	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin E (alpha Tocopherol)	1.90-61.7	(0.529)	14.4	14.7 (0.670,0.877)	14.4 (0.957,0.985)	15.0 (0.349,0.686)	14.0 (0.461,0.754)
Niacin (Nicotinic acid,Vit. B3)	NR[f]	(0.903)	23.6	24.4 (0.636,0.855)	23.7 (0.942,0.982)	24.4 (0.662,0.872)	22.9 (0.729,0.899)
Folic Acid	2.39-4.71	(0.053)	3.66	3.46 (0.091,0.406)	3.56 (0.366,0.696)	3.27 (**0.006**[e],0.147)	3.52 (0.230,0.585)

Appendix D Table 7. (Cont.) Vitamin Analysis of Soybean Grain from Individual Sites (least squares mean)

Vitamins (mg/kg dry weight)	Lit. Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
Beta Tocopherol	NR[f]	Data not found	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Delta Tocopherol	NR[f]	(0.526)	106	117 (0.175,0.522)	117 (0.151,0.511)	116 (0.187,0.544)	113 (0.344,0.680)
Gamma Tocopherol	NR[f]	(0.786)	136	148 (0.349,0.686)	149 (0.324,0.671)	149 (0.324,0.671)	143 (0.617,0.847)
Beta Carotene (Vitamin A)	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin B1 (Thiamin)	1.01-2.54	(0.164)	1.76	2.08 (0.097,0.417)	1.90 (0.390,0.716)	1.90 (0.390,0.716)	1.62 (0.368,0.699)
Vitamin B2 (Riboflavin)	1.90-3.21	(0.231)	4.86	4.36 (0.298,0.645)	5.42 (0.245,0.597)	4.64 (0.632,0.853)	4.47 (0.411,0.727)
Vitamin B5 (Pantothenic acid)	NR[f]	(0.480)	13.5	13.4 (0.918,0.972)	12.6 (0.368,0.699)	12.2 (0.228,0.583)	12.0 (0.167,0.517)
Vitamin B6 (Pyridoxine)	NR[f]	(0.518)	5.91	5.95 (0.936,0.981)	5.57 (0.464,0.754)	5.81 (0.815,0.934)	6.38 (0.325,0.671)
Vitamin B12	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin C	NR[f]	(0.286)	87.8	87.6 (0.978,0.994)	91.2 (0.562,0.813)	93.8 (0.323,0.671)	99.6 (0.072,0.363)
Vitamin D	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin E (alpha Tocopherol)	1.90-61.7	(0.175)	11.40	8.32 (**0.030**[e],0.273)	9.23 (0.097,0.417)	9.00 (0.073,0.363)	8.51 (**0.038**[e],0.283)
Niacin (Nicotinic acid,Vit. B3)	NR[f]	(0.399)	25.5	26.3 (0.731,0.899)	25.6 (0.943,0.982)	27.4 (0.414,0.729)	29.6 (0.103,0.425)
Folic Acid	2.39-4.71	(0.949)	3.68	3.63 (0.840,0.944)	3.66 (0.924,0.976)	3.60 (0.767,0.914)	3.48 (0.477,0.759)

Appendix D Table 7. (Cont.) Vitamin Analysis of Soybean Grain from Individual Sites (least squares mean)

Vitamins (mg/kg dry weight)	Lit. Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
Beta Tocopherol	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Delta Tocopherol	NR[f]	**(0.046[e])**	104	105 (0.851,0.951)	113 (**0.036[e]**,0.283)	115 (**0.013[e]**,0.198)	108 (0.279,0.626)
Gamma Tocopherol	NR[f]	**(0.013[e])**	110	119 (0.137,0.485)	126 (**0.023[e]**,0.244)	138 (**0.001[e]**,0.106)	117 (0.226,0.580)
Beta Carotene (Vitamin A)	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin B1 (Thiamin)	1.01-2.54	(0.637)	1.91	2.37 (0.356,0.690)	1.73 (0.707,0.891)	1.70 (0.657,0.871)	1.93 (0.978,0.994)
Vitamin B2 (Riboflavin)	1.90-3.21	(0.615)	4.81	5.45 (0.392,0.718)	5.80 (0.201,0.556)	5.58 (0.313,0.661)	4.96 (0.839,0.944)
Vitamin B5 (Pantothenic acid)	NR[f]	(0.717)	13.7	12.9 (0.540,0.793)	11.9 (0.195,0.551)	12.5 (0.365,0.695)	12.7 (0.446,0.746)
Vitamin B6 (Pyridoxine)	NR[f]	(0.517)	6.02	6.42 (0.292,0.637)	6.32 (0.419,0.731)	6.17 (0.681,0.882)	5.84 (0.610,0.843)
Vitamin B12	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin C	NR[f]	(0.611)	94.0	95.1 (0.883,0.960)	100 (0.427,0.737)	95.8 (0.820,0.936)	87.7 (0.439,0.746)
Vitamin D	NR[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Vitamin E (alpha Tocopherol)	1.90-61.7	**(0.016[e])**	6.22	7.06 (0.241,0.594)	8.70 (**0.009[e]**,0.175)	8.99 (**0.005[e]**,0.146)	6.80 (0.454,0.748)
Niacin (Nicotinic acid,Vit. B3)	NR[f]	(0.183)	29.4	23.7 (0.058,0.321)	22.6 (**0.030**,0.273)	24.6 (0.101,0.425)	25.5 (0.172,0.521)
Folic Acid	2.39-4.71	(0.185)	4.23	4.19 (0.851,0.951)	4.13 (0.641,0.859)	3.75 (**0.048[e]**,0.294)	3.89 (0.145,0.498)

[a] Combined range from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the trangenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
[f] NA= statistical analysis was not performed since a majority of the data was < LOQ.
[g] NR = not reported.

Appendix D Table 8. Isoflavone Analysis of Soybean Grain from Individual Sites (least squares mean)

Isoflavones (mcg/g)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IA Site							
Daidzein	60.0-2454	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Daidzin	NR[g]	(0.559)	1050	992 (0.314,0.662)	1083 (0.552,0.807)	1060 (0.857,0.952)	1058 (0.881,0.960)
Genistein	144-2837	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Genistin	NR[g]	(0.684)	1410	1343 (0.388,0.715)	1440 (0.692,0.884)	1430 (0.791,0.923)	1380 (0.692,0.884)
Glycitein	15.3-310	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Glycitin	NR[g]	(0.209)	270	286 (0.463,0.754)	316 (0.062,0.331)	317 (0.057,0.321)	307 (0.119,0.458)

Appendix D Table 8. (Cont.) Isoflavone Analysis of Soybean Grain from Individual Sites (least squares mean)

Isoflavones (mcg/g)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IL Site							
Daidzein	60.0-2454	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Daidzin	NR[g]	(0.199)	433	443 (0.870,0.959)	561 (0.077,0.373)	442 (0.890,0.961)	542 (0.121,0.464)
Genistein	144-2837	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Genistin	NR[g]	(0.275)	712	769 (0.483,0.765)	874 (0.067,0.349)	739 (0.740,0.905)	836 (0.145,0.499)
Glycitein	15.3-310	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Glycitin	NR[g]	(0.774)	257	257 (1.000,1.000)	268 (0.655,0.869)	250 (0.758,0.910)	277 (0.402,0.723)

Appendix D Table 8. Isoflavone Analysis of Soybean Grain from Individual Sites (least squares mean)

Isoflavones (mcg/g)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
IN Site							
Daidzein	60.0-2454	NA[f]	< LOQ	< LOQ	< LOQ	11.80	< LOQ
Daidzin	NR[g]	(0.505)	996	1006 (0.856,0.952)	1070 (0.190,0.548)	1070 (0.194,0.551)	1044 (0.387,0.715)
Genistein	144-2837	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Genistin	NR[g]	(0.364)	1157	1187 (0.591,0.831)	1223 (0.249,0.598)	1270 (0.068,0.350)	1203 (0.410,0.727)
Glycitein	15.3-310	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Glycitin	NR[g]	(0.204)	264	285 (0.141,0.490)	291 (0.066,0.343)	292 (0.060,0.331)	295 (**0.043**[e],0.287)

Appendix D Table 8. (Cont.) Isoflavone Analysis of Soybean Grain from Individual Sites (least squares mean)

Isoflavones (mcg/g)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
NE Site							
Daidzein	60.0-2454	NA[f]	19.90	< LOQ	< LOQ	< LOQ	< LOQ
Daidzin	NR[g]	(0.779)	1333	1427 (0.449,0.746)	1353 (0.869,0.959)	1433 (0.419,0.731)	1460 (0.311,0.660)
Genistein	144-2837	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Genistin	NR[g]	(0.929)	1427	1450 (0.849,0.951)	1383 (0.725,0.899)	1467 (0.745,0.809)	1480 (0.666,0.875)
Glycitein	15.3-310	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Glycitin	NR[g]	(0.378)	256	284 (0.297,0.645)	289 (0.217,0.574)	273 (0.510,0.780)	308 (0.069,0.356)

Appendix D Table 8. (Cont.) Isoflavone Analysis of Soybean Grain from Individual Sites (least squares mean)

Isoflavones (mcg/g)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON1 Site							
Daidzein	60.0-2454	< LOQ	19.90	< LOQ	< LOQ	< LOQ	< LOQ
Daidzin	NR[g]	(0.622)	1480	1412 (0.519,0.783)	1377 (0.287,0.636)	1437 (0.680,0.882)	1510 (0.746,0.909)
Genistein	144-2837	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Genistin	NR[g]	(0.412)	1653	1668 (0.896,0.963)	1613 (0.682,0.882)	1718 (0.566,0.814)	1800 (0.166,0.517)
Glycitein	15.3-310	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Glycitin	NR[g]	(0.497)	265	234 (0.219,0.575)	236 (0.204,0.558)	236 (0.246,0.597)	259 (0.785,0.921)

Appendix D Table 8. (Cont.) Isoflavone Analysis of Soybean Grain from Individual Sites (least squares mean)

Isoflavones (mcg/g)	Literature Values[a]	Overall Trt Effect (Pr>F)[b]	Control	Unsprayed (P-value,[c] Adj. P)[d]	Sprayed Glufosinate (P-value, Adj. P)	Sprayed 2,4-D (P-value, Adj. P)	Sprayed Both (P-value, Adj. P)
ON2 Site							
Daidzein	60.0-2454	NA[f]	18.4	31.15	17.90	14.10	< LOQ
Daidzin	NR[g]	**(0.002[e])**	1217	1337 (**0.016[e]**,0.211)	1230 (0.744,0.909)	1330 (**0.021[e]**,0.239)	1460 (**0.0003[e]**,0.078)
Genistein	144-2837	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Genistin	NR[g]	(0.0002[e])	1333	1530 (**0.0004[e]**,0.078)	1427 (**0.023[e]**,0.244)	1540 (**0.0003[e]**,0.078)	1637 **(0.00002,0.030)[e]**
Glycitein	15.3-310	NA[f]	< LOQ	< LOQ	< LOQ	< LOQ	< LOQ
Glycitin	NR[g]	(0.114)	209	253 (0.055,0.318)	217 (0.674,0.881)	237 (0.191,0.548)	262 (**0.028[e]**,0.262)

[a] ILSI values from Appendix B.
[b] Overall treatment effect estimated using an F-test.
[c] Comparison of the transgenic treatments to the control using t-tests.
[d] P-values adjusted using a False Discovery Rate (FDR) procedure.
[e] Statistical difference indicated by P-Value <0.05.
[f] NA= statistical analysis was not performed since a majority of the data was < LOQ.
[g] NR = not reported.

APPENDIX E – REPORT FROM COVANCE ON COMPOSITION DATA

COVANCE
THE DEVELOPMENT SERVICES COMPANY

Sub-Report

Study Title	Field Expression, Nutrient Composition Analysis, Residue Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar Containing Aryloxyalkanoate Dioxygenase
Study Director	Joelene Smith-Drake Dow AgroSciences LLC
Sponsor	Dow AgroSciences LLC 9330 Zionsville Road Indianapolis, Indiana 46268
Principal Investigator	Jane Z. Sabbatini Covance Laboratories Inc.
Testing Site	Covance Laboratories Inc. 3301 Kinsman Boulevard Madison, WI 53704
Covance Study Identification	6397-200
Sponsor Study Identification	080003
Version	Final
Sub-Report Issued	12 June 2009
Page Number	1 of 147

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COMPLIANCE STATEMENT

The study was conducted in compliance with the Environmental Protection Agency (EPA) FIFRA Good Laboratory Practice (GLP) Standards, Title 40 Code of Federal Regulations Part 160, effective October 16, 1989, and with the OECD GLP Standards with the following exceptions:

1. The reference standards used for compositional analysis were not listed in the protocol or characterized according to GLP standards.
2. Reserve samples from each batch of the reference standards were not retained.

These exceptions had no effect on the integrity or quality of this portion of the study.

Jane Z. Sabbatini
Principal Investigator
Covance Laboratories Inc.

12-Jun-2009
Date

QUALITY ASSURANCE STATEMENT

This report has been reviewed by the Quality Assurance Unit of Covance Laboratories Inc. and accurately reflects the raw data. The following study specific inspections were conducted and findings reported to the principal investigator (PI), study director (SD), and associated management.

Inspection Dates			Date Reported to PI and PI Management	Date Reported to SD and SD Management
From	To	Phase		
04 Dec 2008	05 Dec 2008	Analytical Chemistry	05 Dec 2008	12 Jun 2009
16 Jan 2009	28 Jan 2009	Data/Table Review	28 Jan 2009	12 Jun 2009
30 Jan 2009	03 Feb 2009	Data/Table Review	03 Feb 2009	12 Jun 2009
26 Feb 2009	09 Mar 2009	Data/Table Review	09 Mar 2009	12 Jun 2009
09 Apr 2009	14 Apr 2009	Data/Table Review	15 Apr 2009	12 Jun 2009
30 Apr 2009	04 May 2009	Draft Report and Data Review	04 May 2009	12 Jun 2009
28 May 2009	28 May 2009	Revised Draft Report and Data Review	28 May 2009	12 Jun 2009
10 Jun 2009	11 Jun 2009	Revised Draft Report Review	12 Jun 2009	12 Jun 2009

A. Lea Gough — 12 Jun 09

Representative
Quality Assurance Unit

Date

SIGNATURE

Jane Z. Sabbatini

Jane Z. Sabbatini
Principal Investigator
Covance Laboratories Inc.

12-Jun-2009
Date

COVANCE KEY PERSONNEL

Food and Drug Analysis
Marlo M. Vasquez
Vice President and General Manager

Douglas J. Winters
Director

Lori Ross
Associate Director

Brent A. Rozema
Manager

David Fall
Manager

Antonio Rodriguez
Manager

John Austad
Manager

Jane Z. Sabbatini
Principal Investigator

Wendy R. Sorenson
Study Coordinator

Jeffrey E. Maly
Supervisor

Luke M. Muschinske
Supervisor

Christopher Zais
Supervisor

Robert C. Grahn
Supervisor

Ryan Ellefson
Supervisor

Christopher Belmas
Supervisor

Donald F. Labno
Supervisor

Robin Huggins
Supervisor

James DeVault
Supervisor

Andrea Houge
Supervisor

Dustin LaRue
Supervisor

J. Moses Koch
Supervisor

Chad Volkmann
Supervisor

Quality Assurance Unit
Timothy H. Valley
Manager

STUDY IDENTIFICATION

Study Title
Field Expression, Nutrient Composition Analysis, Residue Analysis and Agronomic Characteristics of a Transformed Soybean Cultivar Containing Aryloxyalkanoate Dioxygenase

Purpose
The purpose of this portion of the study was to conduct compositional analyses of soybean forage and grain products for use in Dow AgroSciences study 080003.

Sponsor
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, Indiana 46268

Study Director
Joelene Smith-Drake
Dow AgroSciences LLC
9330 Zionsville Road, Bldg 306/B2
Indianapolis, Indiana 46268-1054
Phone: 317.337.3459
Fax: 317.337.3235
e-mail: jksmith.drake@dow.com

Testing Site
Covance Laboratories Inc.
3301 Kinsman Boulevard
Madison, WI 53704

Principal Investigator
Jane Z. Sabbatini
Covance Laboratories Inc.
Madison, WI 53704
Phone: 608.395.3604
Fax: 608.310.8200
e-mail: jane.sabbatini@covance.com

Study Timetable

Study Initiation Date:	14 May, 2008
Study Completion Date:	12 June 2009

MAJOR COMPUTER SYSTEMS

The major computer systems used for this portion of the study included, but were not limited to, the following systems:

- Balance (balance weight capture system)
- Waters Empower® Chromatography Manager (data acquisition and result calculation system)
- ICP WinLab32 (ICP spectrometry)
- Laboratory Information Management System (sample and assay tracking)
- The Metasys or REES Centron (monitor and document facility storage conditions)
- eNotes (official study communication system)
- MADCAP (dilution calculation system)
- Elan (ICP-MS)
- WINGZ (calculation of standard curve)
- UV-Visible ChemStation (data acquisition)
- Analyst® (Applied Biosystems)

SAMPLE RECEIPT AND HANDLING

The samples were received in a frozen state on dry ice or via freezer truck. The samples were entered into the Covance Laboratory Information Management System (LIMS) with unique LIMS numbers. Each Dow sample identification was matched with the Covance LIMS information. Documentation of the test samples upon receipt at Covance was maintained in the raw data.

TEST SAMPLES

Test Sample Identification

The test samples were soybean forage and grain and each sample was identified with a unique Dow AgroSciences' sample identifier. The Covance LIMS numbers and the sponsor sample identifier were cross-referenced and are listed in Tables 1 and 2.

Storage Conditions

Upon receipt at Covance, the samples were stored in a freezer set to maintain –20 ±10°C. Reference standards were stored according to vendor specifications.

Summary of Sample Preparation

Each sample of soybean forage and grain was weighed after receipt and was ground to a powder with liquid nitrogen using a Waring Blender prior to analyses.

Stability
Stability of the compositional analytes in the test samples was not determined in this portion of the study.

Disposition
Any remaining prepared dilutions or extractions of the test samples (if applicable) will be discarded at Covance. Any remaining sample volumes will be archived at Covance for one year or until the final disposition is directed by the Study Director. Any remaining reference standards may be used for other testing.

Safety Precautions
Safety precautions were taken as outlined in the Environmental, Health, and Safety section of the Covance Policies and Procedures Manual.

Reserve (Archive) Samples
Reserve samples were not required for this portion of the study.

EXPERIMENTAL DESIGN

Covance used approved analytical methods to determine the composition of the test samples. The samples were analyzed singly unless otherwise determined by Covance methods and/or SOPs. A minimum frequency of 10% quality control samples (duplicates, recoveries, certified reference standards, blanks, or validated control samples) were prepared and analyzed at Covance. Appropriate reference standards were used in each assay for the analytical procedures and equipment calibrations. See Appendix A for reference standard identification (if applicable). Any additional analyses or re-analyses were documented and justified in the raw data. If additional processing was necessary, it was documented in the raw data.

The analytes required for soybean forage samples were as follows:

Analyte	Method Mnemonic[1]
Proximates:	
Protein	PGEN
Fat	FAAH
Ash	ASHM
Moisture	M100
Neutral Detergent Fiber (NDF)	NDFE
Acid Detergent Fiber (ADF)	ADF
Minerals:	ICP2
Calcium, Phosphorus	

[1]Analytical methods are kept on file at Covance Laboratories Inc.
Carbohydrate (CHO) values were determined by calculation.

The analytes required for soybean grain samples were as follows:

Analyte	Method Mnemonic[1]
Proximates:	
Protein	PGEN
Fat	FSOX
Ash	ASHM
Moisture	M100
Cholesterol	CHOK
Neutral Detergent Fiber (NDF)	NDFE
Acid Detergent Fiber (ADF)	ADF
Total Dietary Fiber	TDF
Minerals:	ICPS
Calcium, Copper, Iron, Magnesium, Manganese, Phosphorus, Potassium, Sodium, Zinc	
Iodine	IOL
Selenium, Chromium, Molybdenum	MS1
Fatty Acid Profile (C8-C22)	FAPM
Amino Acid Profile	TAA5
Phytic Acid	PHYT
Trypsin Inhibitor	TRIP
Total Tocopherols	TTLC
Alpha, Beta, Gamma, Delta	
Isoflavones (calculated as aglycon equivalents)	ASOF
Genistin, Genistein, Daidzin, Daidzein, Glycitin, Glycitein	
Lectin	LECT
Sugars	SUGT
Raffinose, Stachyose	
Vitamin A (beta carotene)	BCLC
Vitamin B1 (Thiamin HCl)	BIDE
Vitamin B2 (Riboflavin)	B2FV
Vitamin B5 (Pantothenic Acid)	PANN
Vitamin B6 (Pyridoxine HCl)	B6A
Vitamin B12	B12F
Vitamin C (Ascorbic Acid)	VCF
Vitamin D	VDMS
Niacin (Nicotinic Acid)	NIAP
Folic Acid	FOAN

[1]Analytical methods are kept on file at Covance Laboratories Inc.
Carbohydrate (CHO) values were determined by calculation.

DRY WEIGHT CALCULATION

The calculation used to convert the analytical fresh weight results to dry weight results was as follows:

100%	− %Moisture	= DW%
DW%	÷ 100	= DWD
FWR	÷ DWD	= DWR

DW - Dry Weight
DWD - Dry Weight Decimal
FWR - Fresh Weight Result
DWR - Dry Weight Result

CONTROL OF BIAS/RANDOMIZATION

The samples were treated identically in order to minimize assay bias. Samples were tested in a randomized order to minimize bias. Randomization method and details are documented in the study file.

STATISTICAL EVALUATIONS

There were no statistical evaluations performed on the final tabulated results by Covance.

MAINTENANCE OF RAW DATA AND RECORDS

All raw data, documentation, records, protocol, protocol amendments, and the final original sub-report generated as a result of this portion of the study will be transferred to the Study Director for Dow AgroSciences at the end of this portion of the study. Covance collected data in both paper and electronic formats. When electronic data was collected, Covance printed out a paper copy of the data which was defined as the finalized raw data. Covance has retained a copy of electronic data (CD) in their archives and will ship all finalized paper raw data to Dow AgroSciences at the conclusion of the study.

The following supporting records will be retained at Covance but will not be archived with the study data:

- Training records
- Storage temperature records
- Instrument calibration and maintenance records
- Durable media records
- Applicable Standard Operating Procedures (SOPs)

- Standard logbooks

The test samples, associated with this portion of the study, will be properly disposed of at the direction of the Study Director following receipt of the analytical results.

RESULTS

The results for all analytes for soy grain and forage are presented in Tables 1 and 2, respectively. The moisture results are presented in the table on a fresh-weight basis. The limits of quantitation (LOQs) listed in Appendix A and in the tables are also expressed on a fresh weight basis. All of the other soy grain and forage assay results are presented in the tables on a dry-weight basis.

Table 1
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0020	080003-084-0013	080003-056-0021
Covance LIMS Number	81100050	81100051	81100052
Proximate (%)			
Moisture (fresh weight basis)	20.2	22.9	12.1
Protein	39.7	40.6	39.0
Total Fat	14.0	15.0	19.7
Ash	5.35	4.76	4.82
Carbohydrates (calculated)	40.9	39.6	36.5
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.6	24.4	22.2
Acid Detergent Fiber (%)	18.8	19.6	21.4
Total Dietary Fiber (%)	29.6	33.9	38.1
Amino Acids (%)			
Aspartic Acid	4.54	4.64	4.52
Threonine	1.57	1.61	1.59
Serine	1.95	2.02	2.00
Glutamic Acid	7.06	7.21	6.91
Proline	1.99	2.10	1.95
Glycine	1.74	1.75	1.74
Alanine	1.73	1.75	1.74
Cystine	0.556	0.578	0.618
Valine	2.02	2.05	1.98
Methionine	0.528	0.554	0.549
Isoleucine	1.88	1.92	1.90
Leucine	3.08	3.15	3.06
Tyrosine	1.27	1.40	1.41
Phenylalanine	2.02	2.06	1.99
Lysine	2.56	2.59	2.54
Histidine	1.09	1.11	1.08
Arginine	3.13	3.27	2.98
Tryptophan	0.404	0.410	0.438

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0020	080003-084-0013	080003-056-0021
Covance LIMS Number	81100050	81100051	81100052
*Lectin (H.U./mg)	1.77	1.92	3.75
**Trypsin Inhibitor (TIU/mg)	20.3	21.7	25.6

*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit

Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1290	1300	340
Glycitin	229	231	226
Genistin	1470	1490	578
Phytic Acid (%)	1.13	1.10	1.12
Raffinose (%)	0.338	0.366	0.381
Stachyose (%)	2.56	2.30	2.35
Total Tocopherols (mg/kg)			
Alpha Tocopherol	9.85	8.95	34.2
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	142	125	224
Delta Tocopherol	121	117	62.8
Minerals (mg/100g)			
Calcium	219	205	347
Copper	1.30	1.23	0.882
Iron	12.4	8.04	8.65
Magnesium	199	197	216
Manganese	2.81	2.52	3.38
Phosphorus	571	551	553
Potassium	1840	1840	1730
Sodium	< LOQ	< LOQ	< LOQ
Zinc	4.86	4.55	4.72
Iodine	0.0216	0.0429	0.0371
Minerals (ppb)			
Chromium	283	109	117
Selenium	216	185	181
Molybdenum	3080	1830	1190

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0020	080003-084-0013	080003-056-0021
Covance LIMS Number	81100050	81100051	81100052
Thiamine Hydrochloride (mg/kg)	1.75	1.67	1.77
Riboflavin/Vitamin B2 (mg/kg)	6.32	5.85	6.19
Niacin/Vitamin B3 (mg/kg)	21.9	22.3	28.7
Pyridoxine HCl (mg/kg)	5.43	6.06	5.28
Folic Acid (mg/kg)	3.66	4.28	2.91
Panthotenic acid (mg/kg)	11.2	10.9	16.7
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	103	88.1	76.5
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.39	1.49	2.05
16:1 Palmitoleic	< LOQ	< LOQ	< LOQ
17:0 Heptadecanoic	0.0172	0.0187	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.511	0.553	0.797
18:1 Oleic	2.47	2.67	4.27
18:2 Linoleic	7.77	8.22	10.4
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.38	1.43	1.40
20:0 Arachidic	0.0371	0.0403	0.0584
20:1 Eicosenoic	0.0174	0.0183	0.0334
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0393	0.0433	0.0579

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0015	080003-077-0014	080003-070-0019
Covance LIMS Number	81100053	81100054	81100055
Proximate (%)			
Moisture (fresh weight basis)	22.3	13.7	12.2
Protein	40.9	37.5	37.2
Total Fat	13.6	15.9	17.1
Ash	4.59	5.01	4.93
Carbohydrates (calculated)	40.8	41.6	40.8
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	18.7	19.1	23.1
Acid Detergent Fiber (%)	15.6	17.6	19.8
Total Dietary Fiber (%)	32.6	34.8	35.8
Amino Acids (%)			
Aspartic Acid	4.59	4.23	4.37
Threonine	1.58	1.49	1.56
Serine	1.97	1.83	1.90
Glutamic Acid	7.14	6.50	6.65
Proline	2.03	1.87	1.91
Glycine	1.75	1.65	1.67
Alanine	1.75	1.66	1.70
Cystine	0.575	0.583	0.601
Valine	2.03	1.89	1.94
Methionine	0.530	0.545	0.539
Isoleucine	1.92	1.77	1.83
Leucine	3.11	2.89	2.98
Tyrosine	1.35	1.27	1.34
Phenylalanine	2.03	1.88	1.91
Lysine	2.57	2.42	2.47
Histidine	1.10	1.03	1.06
Arginine	3.27	2.94	2.89
Tryptophan	0.416	0.399	0.410

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0015	080003-077-0014	080003-070-0019
Covance LIMS Number	81100053	81100054	81100055
*Lectin (H.U./mg)	5.60	1.21	3.10
**Trypsin Inhibitor (TIU/mg)	18.3	21.9	19.9

*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit

Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1150	1310	1400
Glycitin	183	241	254
Genistin	1350	1510	1420
Phytic Acid (%)	1.25	1.74	0.991
Raffinose (%)	0.405	0.267	0.312
Stachyose (%)	2.63	1.90	2.21
Total Tocopherols (mg/kg)			
Alpha Tocopherol	8.21	10.2	16.4
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	127	148	172
Delta Tocopherol	111	122	114
Minerals (mg/100g)			
Calcium	198	242	222
Copper	1.34	1.34	1.62
Iron	6.77	7.21	7.68
Magnesium	206	211	206
Manganese	2.48	2.28	2.48
Phosphorus	611	758	495
Potassium	1900	2000	1900
Sodium	< LOQ	< LOQ	< LOQ
Zinc	4.83	5.18	5.24
Iodine	0.0440	0.0615	0.0338
Minerals (ppb)			
Chromium	< LOQ	< LOQ	68.5
Selenium	350	267	599
Molybdenum	2610	7910	1580

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0015	080003-077-0014	080003-070-0019
Covance LIMS Number	81100053	81100054	81100055
Thiamine Hydrochloride (mg/kg)	1.60	1.87	1.56
Riboflavin/Vitamin B2 (mg/kg)	6.38	6.07	6.09
Niacin/Vitamin B3 (mg/kg)	22.5	22.7	22.2
Pyridoxine HCl (mg/kg)	6.55	5.39	4.41
Folic Acid (mg/kg)	3.85	3.77	3.05
Panthotenic acid (mg/kg)	12.9	11.7	14.1
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	103	91.4	79.0
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.38	1.56	1.71
16:1 Palmitoleic	< LOQ	0.0140	0.0142
17:0 Heptadecanoic	0.0171	0.0184	0.0183
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.485	0.630	0.707
18:1 Oleic	2.34	2.90	3.60
18:2 Linoleic	7.46	8.59	8.87
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.30	1.52	1.42
20:0 Arachidic	0.0360	0.0459	0.0495
20:1 Eicosenoic	0.0166	0.0189	0.0245
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0384	0.0457	0.0510

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0007	080003-056-0027	080003-084-0019
Covance LIMS Number	81100056	81100057	81100058
Proximate (%)			
Moisture (fresh weight basis)	12.9	12.0	22.2
Protein	38.1	39.0	40.0
Total Fat	18.5	19.5	13.8
Ash	5.42	4.88	4.78
Carbohydrates (calculated)	38.0	36.6	41.5
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.6	20.6	24.4
Acid Detergent Fiber (%)	19.5	20.5	18.5
Total Dietary Fiber (%)	36.9	35.6	31.2
Amino Acids (%)			
Aspartic Acid	4.39	4.50	4.52
Threonine	1.56	1.61	1.59
Serine	1.92	2.01	1.94
Glutamic Acid	6.74	6.85	6.99
Proline	1.88	1.97	1.85
Glycine	1.69	1.74	1.71
Alanine	1.70	1.75	1.71
Cystine	0.602	0.607	0.559
Valine	1.93	1.95	2.01
Methionine	0.552	0.550	0.539
Isoleucine	1.84	1.89	1.90
Leucine	2.99	3.06	3.08
Tyrosine	1.34	1.40	1.35
Phenylalanine	1.93	2.00	2.03
Lysine	2.48	2.52	2.57
Histidine	1.06	1.08	1.08
Arginine	2.92	2.95	3.11
Tryptophan	0.405	0.427	0.447

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0007	080003-056-0027	080003-084-0019
Covance LIMS Number	81100056	81100057	81100058
*Lectin (H.U./mg)	3.23	5.81	1.14
**Trypsin Inhibitor (TIU/mg)	23.9	19.9	21.0
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	14.1
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	938	524	1360
Glycitin	258	298	248
Genistin	1260	786	1570
Phytic Acid (%)	1.32	1.15	1.05
Raffinose (%)	0.303	0.368	0.386
Stachyose (%)	2.11	2.31	2.70
Total Tocopherols (mg/kg)			
Alpha Tocopherol	16.0	24.7	8.46
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	177	195	127
Delta Tocopherol	96.8	62.4	109
Minerals (mg/100g)			
Calcium	282	319	234
Copper	1.24	1.15	1.32
Iron	9.25	8.33	8.41
Magnesium	227	226	195
Manganese	2.68	3.06	2.74
Phosphorus	618	563	560
Potassium	1930	1800	1770
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.18	5.20	4.65
Iodine	0.0519	0.0245	0.0274
Minerals (ppb)			
Chromium	116	< LOQ	87.5
Selenium	1780	293	144
Molybdenum	558	934	2310

*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0007	080003-056-0027	080003-084-0019
Covance LIMS Number	81100056	81100057	81100058
Thiamine Hydrochloride (mg/kg)	2.10	2.95	1.25
Riboflavin/Vitamin B2 (mg/kg)	3.56	5.05	5.63
Niacin/Vitamin B3 (mg/kg)	23.3	26.8	24.6
Pyridoxine HCl (mg/kg)	5.01	4.70	6.97
Folic Acid (mg/kg)	3.27	2.72	4.22
Panthotenic acid (mg/kg)	13.3	16.0	11.8
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	106	58.2	95.5
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.87	2.06	1.35
16:1 Palmitoleic	< LOQ	< LOQ	< LOQ
17:0 Heptadecanoic	< LOQ	< LOQ	0.0166
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.770	0.791	0.522
18:1 Oleic	3.78	4.25	2.40
18:2 Linoleic	9.82	10.3	7.51
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.46	1.42	1.31
20:0 Arachidic	0.0540	0.0573	0.0375
20:1 Eicosenoic	0.0272	0.0338	0.0165
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0541	0.0574	0.0398

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0001	080003-063-0008	080003-063-0015
Covance LIMS Number	81100059	81100060	81100061
Proximate (%)			
Moisture (fresh weight basis)	13.3	12.9	13.2
Protein	38.1	40.0	42.4
Total Fat	18.7	17.9	16.8
Ash	4.98	4.75	5.02
Carbohydrates (calculated)	38.3	37.4	35.7
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	18.8	21.2	26.3
Acid Detergent Fiber (%)	17.9	18.9	15.3
Total Dietary Fiber (%)	31.5	34.9	31.1
Amino Acids (%)			
Aspartic Acid	4.41	4.55	4.80
Threonine	1.58	1.63	1.71
Serine	1.93	2.00	2.10
Glutamic Acid	6.82	7.07	7.53
Proline	1.80	1.88	1.97
Glycine	1.70	1.73	1.83
Alanine	1.71	1.73	1.81
Cystine	0.591	0.594	0.620
Valine	1.94	2.01	2.11
Methionine	0.544	0.559	0.596
Isoleucine	1.86	1.92	2.02
Leucine	3.00	3.10	3.26
Tyrosine	1.29	1.40	1.50
Phenylalanine	1.96	2.03	2.14
Lysine	2.50	2.56	2.68
Histidine	1.06	1.09	1.15
Arginine	2.90	3.04	3.34
Tryptophan	0.442	0.451	0.459

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0001	080003-063-0008	080003-063-0015
Covance LIMS Number	81100059	81100060	81100061
*Lectin (H.U./mg)	2.51	3.25	3.84
**Trypsin Inhibitor (TIU/mg)	25.3	29.7	25.1
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1080	1120	961
Glycitin	280	310	278
Genistin	1460	1330	1100
Phytic Acid (%)	1.30	0.970	1.23
Raffinose (%)	0.304	0.295	0.361
Stachyose (%)	2.40	2.07	2.66
Total Tocopherols (mg/kg)			
Alpha Tocopherol	14.6	16.2	18.1
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	168	177	145
Delta Tocopherol	96.8	95.4	75.1
Minerals (mg/100g)			
Calcium	269	295	333
Copper	1.26	1.29	1.35
Iron	7.85	6.84	7.83
Magnesium	232	216	229
Manganese	2.41	2.43	2.63
Phosphorus	625	512	591
Potassium	1880	1730	1680
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.18	5.45	5.96
Iodine	0.0239	0.0216	0.0281
Minerals (ppb)			
Chromium	115	59.8	218
Selenium	1680	125	127
Molybdenum	537	2000	964

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0001	080003-063-0008	080003-063-0015
Covance LIMS Number	81100059	81100060	81100061
Thiamine Hydrochloride (mg/kg)	2.71	1.26	1.12
Riboflavin/Vitamin B2 (mg/kg)	3.76	4.76	3.87
Niacin/Vitamin B3 (mg/kg)	23.0	24.8	25.7
Pyridoxine HCl (mg/kg)	5.84	4.83	4.99
Folic Acid (mg/kg)	3.34	3.66	3.92
Panthotenic acid (mg/kg)	13.8	13.1	14.5
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	107	84.2	95.0
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.93	1.77	1.65
16:1 Palmitoleic	< LOQ	< LOQ	0.0154
17:0 Heptadecanoic	< LOQ	< LOQ	0.0183
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.790	0.784	0.789
18:1 Oleic	4.08	3.73	3.63
18:2 Linoleic	9.46	9.46	8.87
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.43	1.33	1.21
20:0 Arachidic	0.0555	0.0541	0.0540
20:1 Eicosenoic	0.0256	0.0255	0.0256
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0556	0.0543	0.0524

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0002	080003-084-0014	080003-056-0015
Covance LIMS Number	81100062	81100063	81100064
Proximate (%)			
Moisture (fresh weight basis)	12.6	23.0	11.8
Protein	38.0	39.7	39.6
Total Fat	17.5	14.7	17.6
Ash	5.22	4.73	5.11
Carbohydrates (calculated)	39.2	40.9	37.8
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	21.4	25.6	24.4
Acid Detergent Fiber (%)	22.7	17.4	21.9
Total Dietary Fiber (%)	30.5	32.7	34.7
Amino Acids (%)			
Aspartic Acid	4.30	4.61	4.52
Threonine	1.56	1.62	1.60
Serine	1.89	2.01	2.00
Glutamic Acid	6.60	7.16	6.92
Proline	1.78	1.88	1.84
Glycine	1.67	1.74	1.71
Alanine	1.66	1.73	1.70
Cystine	0.602	0.575	0.617
Valine	1.89	2.03	1.97
Methionine	0.569	0.552	0.546
Isoleucine	1.81	1.92	1.90
Leucine	2.93	3.14	3.07
Tyrosine	1.29	1.38	1.41
Phenylalanine	1.91	2.08	2.03
Lysine	2.45	2.61	2.55
Histidine	1.04	1.11	1.08
Arginine	2.85	3.30	2.97
Tryptophan	0.439	0.443	0.447

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0002	080003-084-0014	080003-056-0015
Covance LIMS Number	81100062	81100063	81100064
*Lectin (H.U./mg)	1.92	1.70	4.17
**Trypsin Inhibitor (TIU/mg)	23.8	21.4	24.4
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	17.9	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1020	1240	664
Glycitin	262	238	291
Genistin	1380	1440	981
Phytic Acid (%)	1.30	1.22	1.16
Raffinose (%)	0.255	0.386	0.274
Stachyose (%)	2.00	2.51	1.95
Total Tocopherols (mg/kg)			
Alpha Tocopherol	12.1	8.94	19.6
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	150	126	178
Delta Tocopherol	90.7	111	68.5
Minerals (mg/100g)			
Calcium	262	239	305
Copper	1.35	1.28	1.30
Iron	6.98	7.42	7.45
Magnesium	227	199	236
Manganese	2.45	2.79	2.46
Phosphorus	635	583	580
Potassium	1860	1790	1830
Sodium	< LOQ	17.3	< LOQ
Zinc	5.47	4.58	5.35
Iodine	< LOQ	0.0247	0.0186
Minerals (ppb)			
Chromium	< LOQ	< LOQ	< LOQ
Selenium	1460	209	666
Molybdenum	466	4030	734

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0002	080003-084-0014	080003-056-0015
Covance LIMS Number	81100062	81100063	81100064
Thiamine Hydrochloride (mg/kg)	2.08	1.92	2.21
Riboflavin/Vitamin B2 (mg/kg)	3.71	5.18	3.66
Niacin/Vitamin B3 (mg/kg)	23.9	23.0	23.5
Pyridoxine HCl (mg/kg)	5.14	6.36	4.77
Folic Acid (mg/kg)	3.64	4.25	2.95
Panthotenic acid (mg/kg)	14.1	12.0	15.0
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	112	110	80.2
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.81	1.45	1.85
16:1 Palmitoleic	< LOQ	< LOQ	< LOQ
17:0 Heptadecanoic	< LOQ	0.0179	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.740	0.534	0.707
18:1 Oleic	3.84	2.56	3.85
18:2 Linoleic	8.92	7.99	9.08
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.35	1.42	1.22
20:0 Arachidic	0.0524	0.0391	0.0508
20:1 Eicosenoic	0.0249	0.0174	0.0283
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0523	0.0425	0.0514

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0025	080003-070-0013	080003-084-0008
Covance LIMS Number	81100065	81100066	81100067
Proximate (%)			
Moisture (fresh weight basis)	12.4	12.2	21.7
Protein	36.9	38.4	40.5
Total Fat	17.9	16.4	14.2
Ash	5.23	4.81	4.69
Carbohydrates (calculated)	40.0	40.4	40.6
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	25.5	22.0	29.4
Acid Detergent Fiber (%)	22.9	20.3	19.5
Total Dietary Fiber (%)	34.7	32.0	32.2
Amino Acids (%)			
Aspartic Acid	4.20	4.42	4.60
Threonine	1.54	1.61	1.66
Serine	1.88	2.02	2.12
Glutamic Acid	6.32	6.72	7.16
Proline	1.75	1.85	1.92
Glycine	1.59	1.67	1.75
Alanine	1.60	1.67	1.74
Cystine	0.610	0.631	0.562
Valine	1.80	1.87	1.94
Methionine	0.542	0.564	0.543
Isoleucine	1.75	1.80	1.85
Leucine	2.87	3.01	3.13
Tyrosine	1.31	1.38	1.40
Phenylalanine	1.86	1.96	2.06
Lysine	2.41	2.51	2.62
Histidine	1.01	1.06	1.11
Arginine	2.74	2.95	3.38
Tryptophan	0.379	0.428	0.447

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0025	080003-070-0013	080003-084-0008
Covance LIMS Number	81100065	81100066	81100067
*Lectin (H.U./mg)	3.04	3.06	1.93
**Trypsin Inhibitor (TIU/mg)	22.0	29.3	19.4
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	16.6
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1180	1390	1350
Glycitin	341	302	277
Genistin	1530	1410	1510
Phytic Acid (%)	1.31	1.03	1.07
Raffinose (%)	0.24	0.257	0.354
Stachyose (%)	1.80	2.00	2.30
Total Tocopherols (mg/kg)			
Alpha Tocopherol	12.8	13.8	7.02
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	160	148	113
Delta Tocopherol	91.6	102	99.0
Minerals (mg/100g)			
Calcium	287	218	209
Copper	1.38	1.58	1.39
Iron	12.3	7.23	9.85
Magnesium	227	200	194
Manganese	2.73	2.46	2.48
Phosphorus	607	515	558
Potassium	1880	1830	1760
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.51	5.33	4.51
Iodine	0.0193	0.0154	0.0172
Minerals (ppb)			
Chromium	201	< LOQ	84.9
Selenium	1230	549	204
Molybdenum	542	1250	2300

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0025	080003-070-0013	080003-084-0008
Covance LIMS Number	81100065	81100066	81100067
Thiamine Hydrochloride (mg/kg)	2.03	1.65	1.58
Riboflavin/Vitamin B2 (mg/kg)	5.45	4.49	6.30
Niacin/Vitamin B3 (mg/kg)	21.1	20.7	19.2
Pyridoxine HCl (mg/kg)	5.14	4.90	6.21
Folic Acid (mg/kg)	3.50	3.59	4.25
Panthotenic acid (mg/kg)	12.7	12.5	10.9
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	93.4	71.4	86.5
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.85	1.63	1.37
16:1 Palmitoleic	< LOQ	0.0151	< LOQ
17:0 Heptadecanoic	< LOQ	0.0178	0.0169
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.748	0.697	0.522
18:1 Oleic	3.65	3.59	2.52
18:2 Linoleic	9.49	8.43	7.62
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.44	1.38	1.33
20:0 Arachidic	0.0518	0.0491	0.0381
20:1 Eicosenoic	0.0261	0.0236	0.0174
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0532	0.0497	0.0407

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0026	080003-070-0026	080003-063-0003
Covance LIMS Number	81100068	81100069	81100070
Proximate (%)			
Moisture (fresh weight basis)	11.3	12.1	13.2
Protein	39.0	38.8	42.6
Total Fat	19.2	17.0	17.3
Ash	4.62	4.94	4.72
Carbohydrates (calculated)	37.2	39.4	35.4
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	21.8	18.4	16.1
Acid Detergent Fiber (%)	20.9	18.2	16.0
Total Dietary Fiber (%)	35.1	32.8	30.4
Amino Acids (%)			
Aspartic Acid	4.54	4.32	4.71
Threonine	1.66	1.59	1.73
Serine	2.11	2.01	2.17
Glutamic Acid	6.98	6.60	7.40
Proline	1.84	1.80	1.96
Glycine	1.71	1.63	1.80
Alanine	1.72	1.65	1.81
Cystine	0.623	0.618	0.607
Valine	1.89	1.82	1.99
Methionine	0.560	0.559	0.582
Isoleucine	1.86	1.76	1.91
Leucine	3.09	2.95	3.19
Tyrosine	1.39	1.29	1.43
Phenylalanine	2.04	1.92	2.12
Lysine	2.55	2.46	2.64
Histidine	1.08	1.04	1.13
Arginine	2.97	2.81	3.34
Tryptophan	0.460	0.438	0.461

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0026	080003-070-0026	080003-063-0003
Covance LIMS Number	81100068	81100069	81100070
*Lectin (H.U./mg)	8.65	4.51	2.53
**Trypsin Inhibitor (TIU/mg)	34.6	25.9	24.0
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	542	1480	889
Glycitin	247	299	247
Genistin	853	1510	1030
Phytic Acid (%)	1.27	1.09	1.30
Raffinose (%)	0.319	0.306	0.350
Stachyose (%)	2.25	2.28	2.64
Total Tocopherols (mg/kg)			
Alpha Tocopherol	24.0	14.4	17.5
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	193	155	159
Delta Tocopherol	67.2	108	79.7
Minerals (mg/100g)			
Calcium	304	218	303
Copper	1.23	1.58	1.27
Iron	7.72	6.91	10.1
Magnesium	222	204	223
Manganese	2.59	2.49	3.50
Phosphorus	564	535	585
Potassium	1800	1920	1660
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.19	5.27	5.59
Iodine	0.0192	< LOQ	0.0565
Minerals (ppb)			
Chromium	< LOQ	< LOQ	179
Selenium	573	524	114
Molybdenum	723	1120	1130

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0026	080003-070-0026	080003-063-0003
Covance LIMS Number	81100068	81100069	81100070
Thiamine Hydrochloride (mg/kg)	2.36	1.84	1.61
Riboflavin/Vitamin B2 (mg/kg)	5.28	3.64	5.78
Niacin/Vitamin B3 (mg/kg)	25.1	21.4	26.7
Pyridoxine HCl (mg/kg)	5.04	4.99	6.05
Folic Acid (mg/kg)	2.86	3.56	4.90
Panthotenic acid (mg/kg)	16.9	13.7	14.4
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	57.6	71.9	94.4
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	2.01	1.70	1.68
16:1 Palmitoleic	< LOQ	0.0149	0.0173
17:0 Heptadecanoic	< LOQ	0.0184	0.0182
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.769	0.709	0.813
18:1 Oleic	4.27	3.62	3.80
18:2 Linoleic	10.0	8.77	8.66
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.35	1.44	1.19
20:0 Arachidic	0.0554	0.0494	0.0575
20:1 Eicosenoic	0.0320	0.0245	0.0258
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0536	0.0518	0.0566

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0014	080003-070-0002	080003-056-0008
Covance LIMS Number	81100071	81100072	81100073
Proximate (%)			
Moisture (fresh weight basis)	12.0	12.6	12.2
Protein	40.0	38.7	38.0
Total Fat	18.8	17.0	19.8
Ash	5.03	4.92	5.11
Carbohydrates (calculated)	36.3	39.4	37.0
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	21.4	22.8	21.8
Acid Detergent Fiber (%)	21.1	21.5	21.4
Total Dietary Fiber (%)	32.2	34.1	31.4
Amino Acids (%)			
Aspartic Acid	4.75	4.49	4.50
Threonine	1.72	1.66	1.65
Serine	2.19	2.09	2.10
Glutamic Acid	7.32	6.91	6.86
Proline	1.92	1.84	1.81
Glycine	1.75	1.72	1.70
Alanine	1.77	1.73	1.72
Cystine	0.624	0.609	0.621
Valine	1.97	1.89	1.88
Methionine	0.567	0.554	0.540
Isoleucine	1.93	1.81	1.82
Leucine	3.20	3.04	3.04
Tyrosine	1.47	1.33	1.30
Phenylalanine	2.13	2.00	2.02
Lysine	2.64	2.55	2.55
Histidine	1.12	1.08	1.07
Arginine	3.10	2.99	2.87
Tryptophan	0.445	0.419	0.433

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0014	080003-070-0002	080003-056-0008
Covance LIMS Number	81100071	81100072	81100073
*Lectin (H.U./mg)	4.20	2.38	5.38
**Trypsin Inhibitor (TIU/mg)	33.5	23.7	43.1
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	553	1640	461
Glycitin	269	309	271
Genistin	843	1760	798
Phytic Acid (%)	1.15	1.14	1.23
Raffinose (%)	0.305	0.289	0.396
Stachyose (%)	2.24	2.22	2.54
Total Tocopherols (mg/kg)			
Alpha Tocopherol	21.7	13.8	27.2
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	186	150	204
Delta Tocopherol	64.7	104	60.1
Minerals (mg/100g)			
Calcium	307	203	318
Copper	1.17	1.62	1.15
Iron	7.80	9.79	7.89
Magnesium	230	204	216
Manganese	2.57	2.48	2.84
Phosphorus	568	548	547
Potassium	1820	1900	1880
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.30	5.30	5.02
Iodine	0.0131	0.0198	0.0151
Minerals (ppb)			
Chromium	< LOQ	99.1	< LOQ
Selenium	481	423	271
Molybdenum	759	1140	731

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0014	080003-070-0002	080003-056-0008
Covance LIMS Number	81100071	81100072	81100073
Thiamine Hydrochloride (mg/kg)	2.31	1.81	2.10
Riboflavin/Vitamin B2 (mg/kg)	4.65	4.90	4.95
Niacin/Vitamin B3 (mg/kg)	25.1	21.4	26.0
Pyridoxine HCl (mg/kg)	4.89	4.94	5.06
Folic Acid (mg/kg)	2.77	3.60	2.87
Panthotenic acid (mg/kg)	17.7	14.6	17.8
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	59.1	81.7	53.6
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.84	1.67	2.11
16:1 Palmitoleic	< LOQ	0.0160	< LOQ
17:0 Heptadecanoic	< LOQ	0.0177	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.694	0.732	0.806
18:1 Oleic	3.85	3.87	4.13
18:2 Linoleic	9.22	8.03	10.6
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.28	1.32	1.41
20:0 Arachidic	0.0492	0.0516	0.0579
20:1 Eicosenoic	0.0286	0.0233	0.0341
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0494	0.0508	0.0573

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0027	080003-063-0025	080003-056-0009
Covance LIMS Number	81100074	81100075	81100076
Proximate (%)			
Moisture (fresh weight basis)	21.9	12.1	12.2
Protein	39.8	40.8	38.8
Total Fat	16.9	16.8	20.0
Ash	4.90	4.88	5.09
Carbohydrates (calculated)	38.4	37.4	36.0
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	15.7	21.0	21.3
Acid Detergent Fiber (%)	14.6	19.9	19.6
Total Dietary Fiber (%)	32.0	31.6	33.8
Amino Acids (%)			
Aspartic Acid	4.70	4.68	4.48
Threonine	1.57	1.60	1.57
Serine	1.86	1.90	1.87
Glutamic Acid	7.34	7.35	6.82
Proline	1.93	1.93	1.79
Glycine	1.81	1.81	1.73
Alanine	1.81	1.80	1.74
Cystine	0.577	0.643	0.614
Valine	2.15	2.13	2.00
Methionine	0.530	0.570	0.518
Isoleucine	2.00	2.01	1.91
Leucine	3.19	3.20	3.03
Tyrosine	1.27	1.30	1.36
Phenylalanine	2.14	2.12	2.02
Lysine	2.66	2.63	2.54
Histidine	1.14	1.14	1.08
Arginine	3.23	3.05	2.88
Tryptophan	0.399	0.425	0.409

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0027	080003-063-0025	080003-056-0009
Covance LIMS Number	81100074	81100075	81100076
*Lectin (H.U./mg)	0.584	0.907	1.71
**Trypsin Inhibitor (TIU/mg)	22.9	30.8	34.6
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1490	1110	427
Glycitin	284	311	267
Genistin	1650	1250	733
Phytic Acid (%)	1.22	1.01	1.18
Raffinose (%)	0.396	0.309	0.387
Stachyose (%)	2.56	2.17	2.53
Total Tocopherols (mg/kg)			
Alpha Tocopherol	< LOQ	18.0	27.0
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	112	171	192
Delta Tocopherol	106	87.8	58.5
Minerals (mg/100g)			
Calcium	204	297	321
Copper	1.24	1.26	1.04
Iron	7.87	9.57	8.59
Magnesium	191	215	228
Manganese	2.51	2.81	3.27
Phosphorus	554	509	548
Potassium	1790	1720	1850
Sodium	< LOQ	16.3	< LOQ
Zinc	4.61	5.60	4.25
Iodine	0.0224	0.0245	0.0272
Minerals (ppb)			
Chromium	115	134	< LOQ
Selenium	293	126	308
Molybdenum	1930	1110	1090

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0027	080003-063-0025	080003-056-0009
Covance LIMS Number	81100074	81100075	81100076
Thiamine Hydrochloride (mg/kg)	1.51	1.41	2.24
Riboflavin/Vitamin B2 (mg/kg)	4.76	4.08	4.24
Niacin/Vitamin B3 (mg/kg)	20.5	22.4	26.2
Pyridoxine HCl (mg/kg)	5.95	5.10	5.33
Folic Acid (mg/kg)	4.02	3.63	2.65
Panthotenic acid (mg/kg)	12.1	14.0	17.5
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	95.4	95.7	42.4
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.66	1.66	2.12
16:1 Palmitoleic	0.0138	0.0159	< LOQ
17:0 Heptadecanoic	0.0209	0.0187	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.624	0.753	0.823
18:1 Oleic	2.98	3.53	4.26
18:2 Linoleic	9.19	8.98	10.4
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.60	1.27	1.47
20:0 Arachidic	0.0452	0.0520	0.0596
20:1 Eicosenoic	0.0206	0.0250	0.0345
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0479	0.0502	0.0589

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0001	080003-070-0027	080003-077-0001
Covance LIMS Number	81100077	81100078	81100079
Proximate (%)			
Moisture (fresh weight basis)	12.9	12.0	23.5
Protein	41.2	38.2	39.2
Total Fat	16.6	16.5	16.1
Ash	4.80	4.95	5.35
Carbohydrates (calculated)	37.3	40.3	39.3
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.8	22.3	17.8
Acid Detergent Fiber (%)	18.5	21.7	14.1
Total Dietary Fiber (%)	30.5	33.2	31.1
Amino Acids (%)			
Aspartic Acid	4.70	4.44	4.48
Threonine	1.68	1.56	1.57
Serine	2.08	1.84	1.82
Glutamic Acid	7.30	6.77	6.98
Proline	2.01	1.82	1.83
Glycine	1.80	1.70	1.75
Alanine	1.78	1.73	1.75
Cystine	0.608	0.639	0.593
Valine	2.03	1.99	2.04
Methionine	0.592	0.586	0.567
Isoleucine	1.93	1.90	1.90
Leucine	3.18	3.02	3.03
Tyrosine	1.42	1.38	1.35
Phenylalanine	2.12	2.00	2.03
Lysine	2.62	2.53	2.58
Histidine	1.13	1.08	1.09
Arginine	3.21	2.91	3.28
Tryptophan	0.444	0.399	0.356

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0001	080003-070-0027	080003-077-0001
Covance LIMS Number	81100077	81100078	81100079
*Lectin (H.U./mg)	1.01	0.631	0.342
**Trypsin Inhibitor (TIU/mg)	27.0	23.4	24.4
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	19.9
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1080	1340	1250
Glycitin	280	281	210
Genistin	1220	1380	1400
Phytic Acid (%)	1.04	1.03	1.73
Raffinose (%)	0.312	0.263	0.523
Stachyose (%)	2.37	1.90	3.02
Total Tocopherols (mg/kg)			
Alpha Tocopherol	16.5	13.6	< LOQ
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	153	140	95.4
Delta Tocopherol	82.5	95.7	90.3
Minerals (mg/100g)			
Calcium	278	225	244
Copper	1.17	1.63	1.23
Iron	6.39	7.65	9.52
Magnesium	212	210	197
Manganese	2.47	2.56	2.18
Phosphorus	502	567	702
Potassium	1600	1940	1790
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.40	5.02	5.41
Iodine	0.0268	0.0209	0.0192
Minerals (ppb)			
Chromium	< LOQ	< LOQ	154
Selenium	130	556	224
Molybdenum	1920	1220	7580

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0001	080003-070-0027	080003-077-0001
Covance LIMS Number	81100077	81100078	81100079
Thiamine Hydrochloride (mg/kg)	1.38	1.91	2.01
Riboflavin/Vitamin B2 (mg/kg)	3.94	4.41	4.76
Niacin/Vitamin B3 (mg/kg)	25.6	22.3	26.8
Pyridoxine HCl (mg/kg)	4.97	4.69	6.50
Folic Acid (mg/kg)	3.85	3.73	4.22
Panthotenic acid (mg/kg)	14.0	14.0	12.1
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	85.3	71.8	85.9
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.66	1.64	1.57
16:1 Palmitoleic	0.0178	0.0145	0.0162
17:0 Heptadecanoic	0.0177	0.0177	0.0187
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.796	0.710	0.686
18:1 Oleic	3.70	3.58	3.27
18:2 Linoleic	8.60	8.48	8.17
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.18	1.42	1.37
20:0 Arachidic	0.0556	0.0498	0.0505
20:1 Eicosenoic	0.0245	0.0236	0.0207
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0533	0.0495	0.0522

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0015	080003-063-0009	080003-049-0013
Covance LIMS Number	81100080	81100081	81100082
Proximate (%)			
Moisture (fresh weight basis)	12.4	12.9	12.7
Protein	39.0	41.1	37.2
Total Fat	17.5	17.3	18.3
Ash	4.90	4.78	5.49
Carbohydrates (calculated)	38.6	36.7	38.9
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	18.4	16.8	18.4
Acid Detergent Fiber (%)	17.6	16.1	16.7
Total Dietary Fiber (%)	31.4	27.7	27.9
Amino Acids (%)			
Aspartic Acid	4.43	4.68	4.36
Threonine	1.53	1.62	1.53
Serine	1.78	1.91	1.81
Glutamic Acid	6.79	7.30	6.68
Proline	1.82	1.94	1.80
Glycine	1.70	1.80	1.70
Alanine	1.72	1.79	1.71
Cystine	0.630	0.622	0.605
Valine	2.00	2.11	1.96
Methionine	0.570	0.599	0.548
Isoleucine	1.91	2.01	1.87
Leucine	3.03	3.19	2.98
Tyrosine	1.27	1.46	1.32
Phenylalanine	1.99	2.12	1.97
Lysine	2.51	2.64	2.50
Histidine	1.07	1.13	1.06
Arginine	2.87	3.20	2.86
Tryptophan	0.395	0.445	0.397

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0015	080003-063-0009	080003-049-0013
Covance LIMS Number	81100080	81100081	81100082
*Lectin (H.U./mg)	0.978	1.27	2.39
**Trypsin Inhibitor (TIU/mg)	24.4	23.3	27.9
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1320	982	1040
Glycitin	281	279	290
Genistin	1370	1140	1360
Phytic Acid (%)	0.917	1.01	1.09
Raffinose (%)	0.306	0.335	0.296
Stachyose (%)	2.24	2.47	2.39
Total Tocopherols (mg/kg)			
Alpha Tocopherol	14.2	18.7	12.7
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	148	169	160
Delta Tocopherol	104	82.5	92.0
Minerals (mg/100g)			
Calcium	217	325	279
Copper	1.60	1.29	1.37
Iron	7.34	9.64	15.5
Magnesium	205	224	227
Manganese	2.49	3.82	2.99
Phosphorus	573	572	617
Potassium	1940	1710	1910
Sodium	< LOQ	< LOQ	< LOQ
Zinc	4.87	5.92	5.51
Iodine	0.0197	0.0125	0.0152
Minerals (ppb)			
Chromium	< LOQ	231	187
Selenium	573	125	1530
Molybdenum	1120	1750	458

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0015	080003-063-0009	080003-049-0013
Covance LIMS Number	81100080	81100081	81100082
Thiamine Hydrochloride (mg/kg)	0.675	1.61	1.96
Riboflavin/Vitamin B2 (mg/kg)	4.62	4.55	4.34
Niacin/Vitamin B3 (mg/kg)	26.1	29.5	26.1
Pyridoxine HCl (mg/kg)	5.56	4.96	4.78
Folic Acid (mg/kg)	3.55	3.59	3.31
Panthotenic acid (mg/kg)	14.4	14.9	13.4
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	79.9	85.4	107
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.66	1.80	1.32
16:1 Palmitoleic	< LOQ	< LOQ	< LOQ
17:0 Heptadecanoic	< LOQ	< LOQ	0.0168
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.766	0.747	0.501
18:1 Oleic	3.60	3.61	2.33
18:2 Linoleic	9.10	9.38	7.19
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.24	1.42	1.29
20:0 Arachidic	0.0542	0.0520	0.0362
20:1 Eicosenoic	0.0241	0.0259	0.0162
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0509	0.0532	0.0386

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0025	080003-070-0021	080003-063-0002
Covance LIMS Number	81100083	81100084	81100085
Proximate (%)			
Moisture (fresh weight basis)	22.3	12.1	12.3
Protein	38.9	37.7	39.1
Total Fat	15.7	16.8	17.0
Ash	4.67	4.79	4.90
Carbohydrates (calculated)	40.8	40.7	39.0
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.3	23.4	20.1
Acid Detergent Fiber (%)	16.7	22.6	19.3
Total Dietary Fiber (%)	29.6	32.3	27.8
Amino Acids (%)			
Aspartic Acid	4.38	4.29	4.72
Threonine	1.51	1.51	1.66
Serine	1.76	1.76	2.01
Glutamic Acid	6.78	6.52	7.42
Proline	1.83	1.72	1.93
Glycine	1.67	1.66	1.82
Alanine	1.69	1.67	1.81
Cystine	0.584	0.627	0.636
Valine	1.99	1.92	2.11
Methionine	0.556	0.548	0.560
Isoleucine	1.88	1.82	2.01
Leucine	3.00	2.92	3.22
Tyrosine	1.34	1.27	1.45
Phenylalanine	2.01	1.92	2.14
Lysine	2.50	2.46	2.66
Histidine	1.06	1.04	1.15
Arginine	2.99	2.76	3.20
Tryptophan	0.389	0.397	0.422

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0025	080003-070-0021	080003-063-0002
Covance LIMS Number	81100083	81100084	81100085
*Lectin (H.U./mg)	1.07	2.24	1.92
**Trypsin Inhibitor (TIU/mg)	20.3	24.0	18.7

*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit

Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1480	1500	1020
Glycitin	254	314	266
Genistin	1650	1500	1220
Phytic Acid (%)	0.851	0.877	0.873
Raffinose (%)	0.356	0.273	0.281
Stachyose (%)	2.42	1.89	1.97
Total Tocopherols (mg/kg)			
Alpha Tocopherol	6.20	14.1	15.2
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	117	159	158
Delta Tocopherol	110	105	84.2
Minerals (mg/100g)			
Calcium	219	230	284
Copper	1.19	1.63	1.31
Iron	7.27	7.13	6.72
Magnesium	197	205	217
Manganese	2.60	2.50	2.31
Phosphorus	551	544	523
Potassium	1810	1960	1700
Sodium	< LOQ	< LOQ	< LOQ
Zinc	4.47	5.36	5.35
Iodine	< LOQ	< LOQ	< LOQ
Minerals (ppb)			
Chromium	< LOQ	< LOQ	< LOQ
Selenium	274	519	117
Molybdenum	1360	1300	1650

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0025	080003-070-0021	080003-063-0002
Covance LIMS Number	81100083	81100084	81100085
Thiamine Hydrochloride (mg/kg)	1.71	1.75	1.76
Riboflavin/Vitamin B2 (mg/kg)	5.83	3.28	4.83
Niacin/Vitamin B3 (mg/kg)	26.5	26.3	28.5
Pyridoxine HCl (mg/kg)	5.46	4.73	5.25
Folic Acid (mg/kg)	3.87	3.40	3.76
Panthotenic acid (mg/kg)	11.5	14.6	14.7
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	86.2	63.8	86.7
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.92	1.66	1.29
16:1 Palmitoleic	0.0169	0.0168	0.0124
17:0 Heptadecanoic	0.0215	0.0179	0.0157
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.794	0.762	0.547
18:1 Oleic	3.99	3.64	2.59
18:2 Linoleic	9.79	8.40	6.68
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.58	1.16	1.19
20:0 Arachidic	0.0550	0.0538	0.0400
20:1 Eicosenoic	0.0275	0.0245	0.0161
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0569	0.0524	0.0410

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0001	080003-070-0025	080003-063-0026
Covance LIMS Number	81100086	81100087	81100088
Proximate (%)			
Moisture (fresh weight basis)	22.3	12.3	13.4
Protein	40.8	39.2	41.5
Total Fat	14.7	17.4	17.3
Ash	4.49	4.88	5.03
Carbohydrates (calculated)	40.0	38.4	36.1
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	18.8	19.7	20.4
Acid Detergent Fiber (%)	15.6	18.0	15.1
Total Dietary Fiber (%)	27.7	31.4	30.5
Amino Acids (%)			
Aspartic Acid	4.77	4.32	4.83
Threonine	1.65	1.53	1.67
Serine	1.99	1.81	2.01
Glutamic Acid	7.46	6.59	7.54
Proline	1.93	1.77	1.94
Glycine	1.81	1.68	1.86
Alanine	1.81	1.70	1.84
Cystine	0.598	0.648	0.635
Valine	2.12	1.95	2.16
Methionine	0.537	0.542	0.547
Isoleucine	1.99	1.86	2.06
Leucine	3.23	2.96	3.28
Tyrosine	1.43	1.19	1.48
Phenylalanine	2.16	1.94	2.18
Lysine	2.69	2.49	2.71
Histidine	1.15	1.06	1.17
Arginine	3.71	2.75	3.27
Tryptophan	0.381	0.375	0.402

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0001	080003-070-0025	080003-063-0026
Covance LIMS Number	81100086	81100087	81100088
*Lectin (H.U./mg)	0.755	2.50	2.33
**Trypsin Inhibitor (TIU/mg)	18.8	27.1	25.5
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1300	1560	1050
Glycitin	229	345	298
Genistin	1390	1550	1200
Phytic Acid (%)	1.12	1.05	0.891
Raffinose (%)	0.346	0.311	0.292
Stachyose (%)	2.32	2.42	2.44
Total Tocopherols (mg/kg)			
Alpha Tocopherol	6.60	13.9	16.7
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	108	153	156
Delta Tocopherol	103	105	83.9
Minerals (mg/100g)			
Calcium	214	226	311
Copper	1.29	1.70	1.30
Iron	6.59	7.58	8.08
Magnesium	190	205	219
Manganese	2.43	2.49	2.58
Phosphorus	565	518	530
Potassium	1660	1860	1670
Sodium	< LOQ	< LOQ	< LOQ
Zinc	4.62	5.36	5.61
Iodine	0.0166	< LOQ	0.0292
Minerals (ppb)			
Chromium	< LOQ	< LOQ	104
Selenium	259	487	114
Molybdenum	2110	1120	1560

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0001	080003-070-0025	080003-063-0026
Covance LIMS Number	81100086	81100087	81100088
Thiamine Hydrochloride (mg/kg)	1.54	3.27	3.14
Riboflavin/Vitamin B2 (mg/kg)	5.05	3.50	4.12
Niacin/Vitamin B3 (mg/kg)	29.2	25.1	28.3
Pyridoxine HCl (mg/kg)	6.11	4.97	5.25
Folic Acid (mg/kg)	4.23	3.28	3.61
Panthotenic acid (mg/kg)	12.1	13.5	13.0
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	84.9	81.1	71.5
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.88	1.63	1.67
16:1 Palmitoleic	0.0190	< LOQ	0.0163
17:0 Heptadecanoic	0.0202	< LOQ	0.0189
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.862	0.697	0.791
18:1 Oleic	4.12	3.51	3.59
18:2 Linoleic	9.50	8.31	9.06
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.31	1.36	1.29
20:0 Arachidic	0.0609	0.0493	0.0544
20:1 Eicosenoic	0.0277	0.0235	0.0253
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0593	0.0506	0.0527

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0007	080003-077-0021	080003-049-0021
Covance LIMS Number	81100089	81100090	81100091
Proximate (%)			
Moisture (fresh weight basis)	13.3	13.2	12.6
Protein	37.8	35.8	37.9
Total Fat	16.5	16.7	17.0
Ash	5.40	5.47	5.39
Carbohydrates (calculated)	40.3	42.1	39.7
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	16.5	19.6	22.0
Acid Detergent Fiber (%)	13.6	IS	20.8
Total Dietary Fiber (%)	32.2	IS	35.1
Amino Acids (%)			
Aspartic Acid	4.28	4.14	4.28
Threonine	1.50	1.49	1.53
Serine	1.78	1.77	1.85
Glutamic Acid	6.59	6.30	6.56
Proline	1.73	1.72	1.77
Glycine	1.67	1.61	1.66
Alanine	1.67	1.64	1.65
Cystine	0.631	0.618	0.574
Valine	1.88	1.85	1.89
Methionine	0.564	0.528	0.489
Isoleucine	1.81	1.74	1.78
Leucine	2.91	2.82	2.89
Tyrosine	1.22	1.24	1.29
Phenylalanine	1.94	1.84	1.88
Lysine	2.48	2.41	2.45
Histidine	1.04	1.01	1.03
Arginine	3.04	2.79	2.85
Tryptophan	0.348	0.416	0.435

IS Insufficient sample.

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0007	080003-077-0021	080003-049-0021
Covance LIMS Number	81100089	81100090	81100091
*Lectin (H.U./mg)	1.20	1.13	2.00
**Trypsin Inhibitor (TIU/mg)	31.7	23.0	22.7
Isoflavones (mcg/g)			
Daidzein	< LOQ	IS	< LOQ
Glycitein	< LOQ	IS	< LOQ
Genistein	< LOQ	IS	< LOQ
Daidzin	1350	IS	1050
Glycitin	203	IS	292
Genistin	1530	IS	1410
Phytic Acid (%)	1.98	1.85	1.26
Raffinose (%)	0.322	IS	0.260
Stachyose (%)	2.50	IS	2.03
Total Tocopherols (mg/kg)			
Alpha Tocopherol	6.77	8.87	13.4
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	133	152	158
Delta Tocopherol	115	113	89.0
Minerals (mg/100g)			
Calcium	230	232	291
Copper	1.39	0.871	1.42
Iron	6.78	6.43	10.7
Magnesium	205	213	230
Manganese	2.22	1.98	2.56
Phosphorus	798	774	658
Potassium	1930	2060	1970
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.56	5.75	5.55
Iodine	0.0220	0.0242	0.0443
Minerals (ppb)			
Chromium	< LOQ	< LOQ	170
Selenium	227	219	1260
Molybdenum	10700	9180	484

*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit

IS Insufficient sample.

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0007	080003-077-0021	080003-049-0021
Covance LIMS Number	81100089	81100090	81100091
Thiamine Hydrochloride (mg/kg)	2.18	2.05	2.08
Riboflavin/Vitamin B2 (mg/kg)	4.88	3.72	3.66
Niacin/Vitamin B3 (mg/kg)	28.1	25.6	25.5
Pyridoxine HCl (mg/kg)	6.19	6.38	5.73
Folic Acid (mg/kg)	3.60	3.17	3.55
Panthotenic acid (mg/kg)	13.4	11.2	13.2
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	IS	< LOQ
Vitamin C (mg/kg)	83.9	89.7	81.0
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.64	1.65	1.70
16:1 Palmitoleic	0.0160	0.0153	0.0140
17:0 Heptadecanoic	0.0193	0.0194	0.0191
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.686	0.646	0.709
18:1 Oleic	3.18	3.11	3.49
18:2 Linoleic	8.52	8.92	8.97
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.56	1.47	1.35
20:0 Arachidic	0.0509	0.0462	0.0490
20:1 Eicosenoic	0.0191	0.0200	0.0249
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0491	0.0461	0.0491

IS Insufficient sample.

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0014	080003-056-0002	080003-049-0015
Covance LIMS Number	81100092	81100093	81100094
Proximate (%)			
Moisture (fresh weight basis)	14.0	12.3	12.3
Protein	39.9	38.4	36.3
Total Fat	16.6	19.0	17.0
Ash	5.07	4.81	5.27
Carbohydrates (calculated)	38.4	37.7	41.5
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.2	21.8	24.6
Acid Detergent Fiber (%)	17.6	22.1	21.6
Total Dietary Fiber (%)	31.7	32.0	30.7
Amino Acids (%)			
Aspartic Acid	4.65	4.50	4.08
Threonine	1.65	1.61	1.47
Serine	2.01	1.96	1.80
Glutamic Acid	7.21	6.93	6.23
Proline	1.93	1.82	1.71
Glycine	1.77	1.74	1.60
Alanine	1.74	1.74	1.58
Cystine	0.645	0.611	0.618
Valine	2.06	2.00	1.80
Methionine	0.583	0.537	0.540
Isoleucine	1.95	1.89	1.72
Leucine	3.16	3.07	2.79
Tyrosine	1.43	1.38	1.24
Phenylalanine	2.08	2.03	1.81
Lysine	2.62	2.54	2.36
Histidine	1.12	1.09	0.99
Arginine	3.15	3.00	2.68
Tryptophan	0.463	0.437	0.428

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0014	080003-056-0002	080003-049-0015
Covance LIMS Number	81100092	81100093	81100094
*Lectin (H.U./mg)	2.47	3.06	1.80
**Trypsin Inhibitor (TIU/mg)	19.3	28.8	25.9
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1130	546	1090
Glycitin	305	302	335
Genistin	1310	820	1470
Phytic Acid (%)	1.02	1.17	1.31
Raffinose (%)	0.271	0.335	0.249
Stachyose (%)	2.07	2.50	1.95
Total Tocopherols (mg/kg)			
Alpha Tocopherol	15.7	23.0	14.0
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	162	187	168
Delta Tocopherol	85.8	69.8	93.8
Minerals (mg/100g)			
Calcium	298	334	298
Copper	1.31	1.29	1.35
Iron	10.7	7.78	11.1
Magnesium	214	221	230
Manganese	2.60	2.44	2.68
Phosphorus	529	546	636
Potassium	1830	1810	1960
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.47	5.12	5.34
Iodine	0.0237	0.0242	0.0251
Minerals (ppb)			
Chromium	228	< LOQ	184
Selenium	117	577	1110
Molybdenum	1810	779	530

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0014	080003-056-0002	080003-049-0015
Covance LIMS Number	81100092	81100093	81100094
Thiamine Hydrochloride (mg/kg)	1.84	3.17	2.36
Riboflavin/Vitamin B2 (mg/kg)	3.58	3.19	4.28
Niacin/Vitamin B3 (mg/kg)	26.2	32.8	30.0
Pyridoxine HCl (mg/kg)	5.12	5.50	5.67
Folic Acid (mg/kg)	3.69	2.88	3.36
Panthotenic acid (mg/kg)	13.5	16.2	13.2
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	80.1	55.8	87.6
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.63	2.03	1.70
16:1 Palmitoleic	0.0147	< LOQ	0.0138
17:0 Heptadecanoic	0.0181	< LOQ	0.0194
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.734	0.741	0.702
18:1 Oleic	3.44	4.41	3.39
18:2 Linoleic	8.76	9.54	8.94
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.27	1.29	1.37
20:0 Arachidic	0.0505	0.0542	0.0488
20:1 Eicosenoic	0.0237	0.0316	0.0245
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0488	0.0534	0.0487

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0020	080003-077-0025	080003-077-0026
Covance LIMS Number	81100095	81100096	81100097
Proximate (%)			
Moisture (fresh weight basis)	13.3	13.8	13.9
Protein	40.1	37.1	36.7
Total Fat	17.3	15.8	15.6
Ash	4.82	5.22	5.37
Carbohydrates (calculated)	37.7	41.9	42.4
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	21.7	17.1	19.7
Acid Detergent Fiber (%)	19.5	15.2	14.8
Total Dietary Fiber (%)	28.4	31.0	32.3
Amino Acids (%)			
Aspartic Acid	4.66	4.27	4.22
Threonine	1.65	1.53	1.51
Serine	2.04	1.87	1.85
Glutamic Acid	7.17	6.59	6.43
Proline	1.96	1.79	1.75
Glycine	1.78	1.65	1.63
Alanine	1.78	1.66	1.64
Cystine	0.641	0.616	0.593
Valine	2.04	1.89	1.87
Methionine	0.588	0.556	0.518
Isoleucine	1.94	1.77	1.75
Leucine	3.16	2.90	2.88
Tyrosine	1.41	1.28	1.28
Phenylalanine	2.08	1.89	1.88
Lysine	2.61	2.47	2.44
Histidine	1.12	1.04	1.02
Arginine	3.16	3.00	2.90
Tryptophan	0.482	0.403	0.411

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0020	080003-077-0025	080003-077-0026
Covance LIMS Number	81100095	81100096	81100097
*Lectin (H.U./mg)	2.99	0.958	0.842
**Trypsin Inhibitor (TIU/mg)	24.8	23.9	24.0
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1150	1460	1500
Glycitin	280	253	256
Genistin	1350	1740	1780
Phytic Acid (%)	1.13	1.82	1.85
Raffinose (%)	0.322	0.303	0.295
Stachyose (%)	2.68	2.47	2.49
Total Tocopherols (mg/kg)			
Alpha Tocopherol	18.5	7.91	8.03
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	170	137	137
Delta Tocopherol	87.1	112	113
Minerals (mg/100g)			
Calcium	321	261	268
Copper	1.25	0.916	0.852
Iron	8.19	8.25	6.69
Magnesium	225	216	220
Manganese	2.66	2.30	2.22
Phosphorus	540	745	756
Potassium	1790	2000	2030
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.57	5.37	5.71
Iodine	0.0249	0.0248	0.0223
Minerals (ppb)			
Chromium	85.0	82.7	< LOQ
Selenium	171	316	449
Molybdenum	2810	8100	8830

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0020	080003-077-0025	080003-077-0026
Covance LIMS Number	81100095	81100096	81100097
Thiamine Hydrochloride (mg/kg)	2.27	1.89	1.59
Riboflavin/Vitamin B2 (mg/kg)	3.51	4.70	3.95
Niacin/Vitamin B3 (mg/kg)	28.7	29.9	28.8
Pyridoxine HCl (mg/kg)	5.06	7.04	6.02
Folic Acid (mg/kg)	3.67	3.64	3.14
Panthotenic acid (mg/kg)	12.9	11.6	10.8
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	64.7	105	102
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.66	1.54	1.52
16:1 Palmitoleic	0.0159	0.0132	0.0148
17:0 Heptadecanoic	0.0182	0.0187	0.0182
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.754	0.588	0.598
18:1 Oleic	3.56	2.82	2.90
18:2 Linoleic	9.12	8.49	8.35
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.27	1.50	1.44
20:0 Arachidic	0.0521	0.0427	0.0431
20:1 Eicosenoic	0.0257	0.0188	0.0188
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0524	0.0440	0.0437

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0007	080003-084-0003	080003-077-0009
Covance LIMS Number	81100098	81100099	81100100
Proximate (%)			
Moisture (fresh weight basis)	23.2	23.0	13.4
Protein	38.9	41.7	35.5
Total Fat	16.4	15.5	14.5
Ash	4.70	4.45	5.53
Carbohydrates (calculated)	40.0	38.4	44.5
Cholesterol (%)	< LOQ	< LOQ	IS
Neutral Detergent Fiber (%)	17.1	19.4	IS
Acid Detergent Fiber (%)	13.5	14.5	IS
Total Dietary Fiber (%)	30.7	27.7	IS
Amino Acids (%)			
Aspartic Acid	4.44	4.75	4.01
Threonine	1.59	1.65	1.47
Serine	1.99	2.04	1.84
Glutamic Acid	6.82	7.39	6.06
Proline	1.90	1.99	1.64
Glycine	1.69	1.82	1.55
Alanine	1.68	1.81	1.56
Cystine	0.592	0.608	0.600
Valine	1.89	2.10	1.71
Methionine	0.542	0.570	0.553
Isoleucine	1.80	1.97	1.64
Leucine	3.01	3.22	2.74
Tyrosine	1.37	1.32	1.20
Phenylalanine	2.01	2.14	1.81
Lysine	2.51	2.69	2.34
Histidine	1.06	1.15	0.977
Arginine	3.11	3.86	2.67
Tryptophan	0.419	0.456	0.402

IS Insufficient sample.

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0007	080003-084-0003	080003-077-0009
Covance LIMS Number	81100098	81100099	81100100
*Lectin (H.U./mg)	2.25	1.73	1.62
**Trypsin Inhibitor (TIU/mg)	24.3	27.5	23.7
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	45.7	18.4	IS
Glycitein	< LOQ	< LOQ	IS
Genistein	22.9	< LOQ	IS
Daidzin	1410	1190	IS
Glycitin	267	213	IS
Genistin	1550	1320	IS
Phytic Acid (%)	1.12	0.990	1.44
Raffinose (%)	0.525	0.449	IS
Stachyose (%)	2.97	2.62	IS
Total Tocopherols (mg/kg)			
Alpha Tocopherol	6.18	5.78	8.80
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	112	107	159
Delta Tocopherol	106	103	119
Minerals (mg/100g)			
Calcium	220	200	234
Copper	1.21	1.35	1.01
Iron	7.30	6.32	7.10
Magnesium	185	195	221
Manganese	2.36	2.48	2.17
Phosphorus	570	594	784
Potassium	1780	1690	2110
Sodium	< LOQ	20.9	< LOQ
Zinc	4.44	4.64	6.06
Iodine	0.0290	0.0270	IS
Minerals (ppb)			
Chromium	< LOQ	69.0	IS
Selenium	237	199	281
Molybdenum	1740	3990	8700

IS Insufficient sample.

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-084-0007	080003-084-0003	080003-077-0009
Covance LIMS Number	81100098	81100099	81100100
Thiamine Hydrochloride (mg/kg)	3.52	2.12	IS
Riboflavin/Vitamin B2 (mg/kg)	4.10	3.79	4.09
Niacin/Vitamin B3 (mg/kg)	27.7	31.2	26.9
Pyridoxine HCl (mg/kg)	6.45	6.32	5.79
Folic Acid (mg/kg)	4.54	4.32	3.86
Panthotenic acid (mg/kg)	14.3	15.7	13.6
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	IS
Vitamin C (mg/kg)	102	108	90.5
Vitamin A (mg/kg)	< LOQ	< LOQ	IS
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.58	1.55	1.47
16:1 Palmitoleic	0.0135	0.0138	0.0120
17:0 Heptadecanoic	0.0195	0.0183	0.0173
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.618	0.599	0.532
18:1 Oleic	2.88	3.03	2.59
18:2 Linoleic	8.68	7.94	7.93
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.51	1.42	1.34
20:0 Arachidic	0.0443	0.0444	0.0387
20:1 Eicosenoic	0.0195	0.0186	0.0176
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0473	0.0453	0.0398

IS Insufficient sample.

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0007	080003-056-0019	080003-049-0014
Covance LIMS Number	81100101	81100102	81100103
Proximate (%)			
Moisture (fresh weight basis)	12.3	11.6	12.2
Protein	38.1	37.7	36.9
Total Fat	19.5	18.3	17.8
Ash	5.01	5.06	5.18
Carbohydrates (calculated)	37.4	38.9	40.2
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.5	23.9	27.9
Acid Detergent Fiber (%)	19.0	24.1	16.7
Total Dietary Fiber (%)	31.6	28.7	29.2
Amino Acids (%)			
Aspartic Acid	4.52	4.46	4.29
Threonine	1.61	1.62	1.55
Serine	2.01	2.04	1.90
Glutamic Acid	6.88	6.75	6.54
Proline	1.81	1.89	1.78
Glycine	1.74	1.70	1.65
Alanine	1.74	1.70	1.65
Cystine	0.601	0.633	0.610
Valine	1.96	1.80	1.88
Methionine	0.537	0.569	0.544
Isoleucine	1.88	1.80	1.79
Leucine	3.06	3.01	2.92
Tyrosine	1.43	1.39	1.25
Phenylalanine	2.03	1.96	1.88
Lysine	2.55	2.51	2.46
Histidine	1.08	1.06	1.04
Arginine	3.01	2.96	2.85
Tryptophan	0.470	0.450	0.451

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0007	080003-056-0019	080003-049-0014
Covance LIMS Number	81100101	81100102	81100103
*Lectin (H.U./mg)	6.61	6.02	4.87
**Trypsin Inhibitor (TIU/mg)	30.2	28.2	21.3
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	442	520	1120
Glycitin	233	268	322
Genistin	775	843	1490
Phytic Acid (%)	0.916	0.921	1.28
Raffinose (%)	0.407	0.343	0.308
Stachyose (%)	2.47	2.17	2.43
Total Tocopherols (mg/kg)			
Alpha Tocopherol	27.4	25.5	14.8
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	217	212	172
Delta Tocopherol	66.7	68.8	93.4
Minerals (mg/100g)			
Calcium	330	329	280
Copper	1.01	1.32	1.34
Iron	7.99	10.1	9.32
Magnesium	217	225	226
Manganese	2.81	2.71	2.46
Phosphorus	522	576	636
Potassium	1840	1890	2000
Sodium	< LOQ	< LOQ	< LOQ
Zinc	4.85	5.29	5.26
Iodine	0.0257	0.0287	0.0285
Minerals (ppb)			
Chromium	< LOQ	156	95.9
Selenium	857	957	1450
Molybdenum	463	577	558

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0007	080003-056-0019	080003-049-0014
Covance LIMS Number	81100101	81100102	81100103
Thiamine Hydrochloride (mg/kg)	2.69	2.92	2.05
Riboflavin/Vitamin B2 (mg/kg)	3.99	3.95	3.61
Niacin/Vitamin B3 (mg/kg)	24.3	33.3	27.2
Pyridoxine HCl (mg/kg)	5.09	4.82	5.05
Folic Acid (mg/kg)	2.59	2.27	3.23
Panthotenic acid (mg/kg)	19.3	20.2	16.2
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	49.1	50.7	108
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	2.05	1.92	1.78
16:1 Palmitoleic	< LOQ	< LOQ	< LOQ
17:0 Heptadecanoic	< LOQ	< LOQ	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.779	0.730	0.727
18:1 Oleic	4.12	3.95	3.56
18:2 Linoleic	10.3	9.50	9.35
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.38	1.26	1.41
20:0 Arachidic	0.0558	0.0519	0.0513
20:1 Eicosenoic	0.0332	0.0307	0.0259
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0559	0.0525	0.0516

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0003	080003-084-0026	080003-049-0003
Covance LIMS Number	81100104	81100105	81100106
Proximate (%)			
Moisture (fresh weight basis)	12.3	20.6	13.0
Protein	38.9	38.5	38.0
Total Fat	16.5	14.9	16.4
Ash	4.73	5.05	5.37
Carbohydrates (calculated)	39.9	41.6	40.1
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	21.2	20.7	23.8
Acid Detergent Fiber (%)	17.4	16.4	19.1
Total Dietary Fiber (%)	33.6	30.1	33.2
Amino Acids (%)			
Aspartic Acid	4.48	4.43	4.37
Threonine	1.61	1.56	1.56
Serine	1.98	1.95	1.93
Glutamic Acid	6.88	6.81	6.70
Proline	1.87	1.85	1.97
Glycine	1.71	1.68	1.68
Alanine	1.71	1.69	1.68
Cystine	0.632	0.592	0.611
Valine	1.96	1.94	1.90
Methionine	0.570	0.550	0.560
Isoleucine	1.85	1.84	1.79
Leucine	3.04	3.02	2.95
Tyrosine	1.29	1.34	1.34
Phenylalanine	1.98	1.96	1.92
Lysine	2.53	2.51	2.46
Histidine	1.08	1.06	1.05
Arginine	2.98	3.12	2.93
Tryptophan	0.448	0.429	0.449

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0003	080003-084-0026	080003-049-0003
Covance LIMS Number	81100104	81100105	81100106
*Lectin (H.U./mg)	2.55	1.78	0.987
**Trypsin Inhibitor (TIU/mg)	26.3	20.9	17.9
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1230	1410	1050
Glycitin	231	248	267
Genistin	1350	1610	1390
Phytic Acid (%)	1.12	1.20	1.26
Raffinose (%)	0.312	0.340	0.249
Stachyose (%)	2.37	2.36	1.95
Total Tocopherols (mg/kg)			
Alpha Tocopherol	14.8	7.39	14.4
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	161	123	159
Delta Tocopherol	107	109	93.8
Minerals (mg/100g)			
Calcium	203	215	267
Copper	1.64	1.15	1.39
Iron	8.00	7.91	9.26
Magnesium	200	198	225
Manganese	2.43	2.42	2.55
Phosphorus	566	569	629
Potassium	1950	1850	1930
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.10	4.28	5.30
Iodine	0.0295	0.0335	0.0287
Minerals (ppb)			
Chromium	< LOQ	151	86.8
Selenium	521	200	1380
Molybdenum	1210	1980	568

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0003	080003-084-0026	080003-049-0003
Covance LIMS Number	81100104	81100105	81100106
Thiamine Hydrochloride (mg/kg)	2.02	2.56	1.99
Riboflavin/Vitamin B2 (mg/kg)	4.09	4.28	3.76
Niacin/Vitamin B3 (mg/kg)	24.4	29.5	30.6
Pyridoxine HCl (mg/kg)	4.88	6.10	5.14
Folic Acid (mg/kg)	3.64	3.79	3.59
Panthotenic acid (mg/kg)	16.6	14.5	15.9
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	80.0	81.6	88.4
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.64	1.45	1.64
16:1 Palmitoleic	0.0154	< LOQ	0.0152
17:0 Heptadecanoic	0.0177	0.0180	0.0178
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.738	0.531	0.697
18:1 Oleic	3.84	2.58	3.54
18:2 Linoleic	7.92	7.90	8.23
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.31	1.41	1.25
20:0 Arachidic	0.0522	0.0383	0.0489
20:1 Eicosenoic	0.0235	0.0176	0.0236
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0513	0.0409	0.0476

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0020	080003-056-0001	080003-063-0027
Covance LIMS Number	81100107	81100108	81100109
Proximate (%)			
Moisture (fresh weight basis)	12.2	12.3	12.3
Protein	37.1	39.2	40.9
Total Fat	18.1	20.4	17.1
Ash	5.41	4.88	5.18
Carbohydrates (calculated)	39.4	35.5	36.8
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	19.1	20.8	20.1
Acid Detergent Fiber (%)	18.6	17.7	18.4
Total Dietary Fiber (%)	30.6	35.1	30.6
Amino Acids (%)			
Aspartic Acid	4.34	4.50	4.66
Threonine	1.58	1.63	1.63
Serine	1.99	2.08	2.09
Glutamic Acid	6.63	6.86	7.29
Proline	1.95	1.98	2.11
Glycine	1.66	1.76	1.79
Alanine	1.67	1.74	1.78
Cystine	0.632	0.605	0.631
Valine	1.81	1.89	2.03
Methionine	0.575	0.545	0.588
Isoleucine	1.72	1.81	1.93
Leucine	2.94	3.03	3.17
Tyrosine	1.36	1.44	1.38
Phenylalanine	1.89	1.98	2.06
Lysine	2.46	2.55	2.61
Histidine	1.04	1.08	1.12
Arginine	2.89	3.01	3.16
Tryptophan	0.473	0.464	0.483

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0020	080003-056-0001	080003-063-0027
Covance LIMS Number	81100107	81100108	81100109
*Lectin (H.U./mg)	1.65	3.12	1.10
**Trypsin Inhibitor (TIU/mg)	22.0	42.4	23.6
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1080	343	971
Glycitin	321	250	275
Genistin	1470	601	1160
Phytic Acid (%)	1.34	1.02	1.15
Raffinose (%)	0.297	0.415	0.343
Stachyose (%)	2.38	2.78	2.42
Total Tocopherols (mg/kg)			
Alpha Tocopherol	15.9	31.2	18.0
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	179	218	168
Delta Tocopherol	94.4	61.7	79.0
Minerals (mg/100g)			
Calcium	296	349	323
Copper	1.34	0.783	1.33
Iron	13.3	8.20	10.9
Magnesium	224	209	226
Manganese	2.67	3.07	2.84
Phosphorus	620	536	581
Potassium	1880	1700	1740
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.24	4.17	5.70
Iodine	0.0247	0.0285	0.0219
Minerals (ppb)			
Chromium	219	< LOQ	242
Selenium	1530	161	115
Molybdenum	542	1550	1010

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0020	080003-056-0001	080003-063-0027
Covance LIMS Number	81100107	81100108	81100109
Thiamine Hydrochloride (mg/kg)	1.46	3.00	1.81
Riboflavin/Vitamin B2 (mg/kg)	4.26	3.80	4.69
Niacin/Vitamin B3 (mg/kg)	30.5	34.3	33.6
Pyridoxine HCl (mg/kg)	5.18	5.09	5.50
Folic Acid (mg/kg)	3.36	3.01	3.97
Panthotenic acid (mg/kg)	12.9	21.6	18.4
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	96.6	47.8	99.1
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.80	2.16	1.65
16:1 Palmitoleic	< LOQ	< LOQ	0.0152
17:0 Heptadecanoic	< LOQ	< LOQ	0.0182
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.753	0.815	0.764
18:1 Oleic	3.69	4.68	3.60
18:2 Linoleic	9.44	10.2	8.85
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.41	1.44	1.25
20:0 Arachidic	0.0518	0.0609	0.0529
20:1 Eicosenoic	0.0262	0.0351	0.0254
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0519	0.0608	0.0501

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0003	080003-077-0027	080003-056-0025
Covance LIMS Number	81100110	81100111	81100112
Proximate (%)			
Moisture (fresh weight basis)	13.4	13.9	11.9
Protein	36.1	35.0	38.8
Total Fat	17.2	16.5	20.5
Ash	5.40	5.67	4.90
Carbohydrates (calculated)	41.2	42.9	35.8
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	18.1	19.7	20.3
Acid Detergent Fiber (%)	15.7	17.1	18.3
Total Dietary Fiber (%)	34.4	34.6	34.7
Amino Acids (%)			
Aspartic Acid	4.20	4.19	4.44
Threonine	1.54	1.50	1.57
Serine	1.93	1.87	1.98
Glutamic Acid	6.41	6.40	6.75
Proline	1.91	1.87	1.99
Glycine	1.62	1.61	1.70
Alanine	1.64	1.64	1.71
Cystine	0.599	0.610	0.616
Valine	1.78	1.85	1.93
Methionine	0.553	0.562	0.561
Isoleucine	1.66	1.72	1.85
Leucine	2.84	2.85	3.01
Tyrosine	1.29	1.24	1.41
Phenylalanine	1.84	1.84	1.96
Lysine	2.42	2.43	2.50
Histidine	1.02	1.02	1.06
Arginine	2.89	2.85	2.92
Tryptophan	0.417	0.405	0.470

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0003	080003-077-0027	080003-056-0025
Covance LIMS Number	81100110	81100111	81100112
*Lectin (H.U./mg)	0.687	0.603	8.79
**Trypsin Inhibitor (TIU/mg)	22.7	22.6	32.1
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1550	1570	560
Glycitin	275	268	287
Genistin	1800	1880	869
Phytic Acid (%)	1.72	1.86	1.01
Raffinose (%)	0.289	0.280	0.364
Stachyose (%)	2.32	2.03	2.54
Total Tocopherols (mg/kg)			
Alpha Tocopherol	9.39	9.58	25.3
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	164	154	216
Delta Tocopherol	125	115	71.1
Minerals (mg/100g)			
Calcium	241	272	302
Copper	1.30	1.25	1.07
Iron	6.96	6.93	7.75
Magnesium	209	214	221
Manganese	2.08	2.18	2.76
Phosphorus	744	771	519
Potassium	1960	2020	1870
Sodium	< LOQ	11.8	< LOQ
Zinc	4.84	6.00	4.71
Iodine	0.0297	0.0276	< LOQ
Minerals (ppb)			
Chromium	236	63.6	< LOQ
Selenium	254	245	110
Molybdenum	6890	8540	595

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0003	080003-077-0027	080003-056-0025
Covance LIMS Number	81100110	81100111	81100112
Thiamine Hydrochloride (mg/kg)	1.47	1.39	2.95
Riboflavin/Vitamin B2 (mg/kg)	4.92	4.76	3.97
Niacin/Vitamin B3 (mg/kg)	28.2	30.1	34.6
Pyridoxine HCl (mg/kg)	6.30	6.07	5.01
Folic Acid (mg/kg)	3.23	3.66	3.00
Panthotenic acid (mg/kg)	13.7	13.7	20.0
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	95.7	91.9	61.9
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.67	1.61	1.69
16:1 Palmitoleic	0.0158	0.0142	< LOQ
17:0 Heptadecanoic	0.0209	0.0196	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.671	0.645	0.739
18:1 Oleic	3.15	2.96	3.53
18:2 Linoleic	9.17	8.52	9.06
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.62	1.35	1.40
20:0 Arachidic	0.0488	0.0480	0.0504
20:1 Eicosenoic	0.0210	0.0190	0.0244
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0502	0.0475	0.0476

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0026	080003-077-0020	080003-077-0013
Covance LIMS Number	81100113	81100114	81100115
Proximate (%)			
Moisture (fresh weight basis)	12.7	13.5	13.2
Protein	37.3	35.4	37.0
Total Fat	17.9	15.0	14.6
Ash	5.33	5.35	5.47
Carbohydrates (calculated)	39.5	44.3	43.0
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.0	19.2	21.3
Acid Detergent Fiber (%)	18.1	15.0	18.8
Total Dietary Fiber (%)	29.9	33.1	31.5
Amino Acids (%)			
Aspartic Acid	4.41	4.20	4.24
Threonine	1.57	1.49	1.51
Serine	1.96	1.85	1.91
Glutamic Acid	6.76	6.43	6.52
Proline	1.97	1.86	1.90
Glycine	1.70	1.63	1.64
Alanine	1.70	1.64	1.64
Cystine	0.625	0.585	0.586
Valine	1.92	1.86	1.85
Methionine	0.561	0.543	0.541
Isoleucine	1.82	1.73	1.73
Leucine	2.98	2.84	2.88
Tyrosine	1.36	1.28	1.29
Phenylalanine	1.92	1.84	1.87
Lysine	2.51	2.40	2.44
Histidine	1.06	1.01	1.02
Arginine	2.94	2.90	2.93
Tryptophan	0.455	0.413	0.431

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0026	080003-077-0020	080003-077-0013
Covance LIMS Number	81100113	81100114	81100115
*Lectin (H.U./mg)	5.97	2.73	3.00
**Trypsin Inhibitor (TIU/mg)	24.3	19.9	20.9
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	975	1390	1360
Glycitin	294	231	219
Genistin	1230	1620	1570
Phytic Acid (%)	1.44	1.75	1.52
Raffinose (%)	0.276	0.276	0.243
Stachyose (%)	2.35	2.09	1.75
Total Tocopherols (mg/kg)			
Alpha Tocopherol	15.5	9.39	8.69
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	173	148	147
Delta Tocopherol	89.9	114	114
Minerals (mg/100g)			
Calcium	304	274	260
Copper	1.40	0.917	1.28
Iron	9.84	7.46	6.72
Magnesium	227	215	213
Manganese	2.63	2.20	2.20
Phosphorus	643	742	720
Potassium	1910	1950	1960
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.48	5.56	5.38
Iodine	< LOQ	< LOQ	0.0156
Minerals (ppb)			
Chromium	83.3	83.6	90.1
Selenium	1100	178	171
Molybdenum	527	8010	5760

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0026	080003-077-0020	080003-077-0013
Covance LIMS Number	81100113	81100114	81100115
Thiamine Hydrochloride (mg/kg)	1.68	1.62	1.94
Riboflavin/Vitamin B2 (mg/kg)	5.19	5.39	5.37
Niacin/Vitamin B3 (mg/kg)	28.8	31.0	28.9
Pyridoxine HCl (mg/kg)	4.99	5.90	5.65
Folic Acid (mg/kg)	3.30	3.95	3.54
Panthotenic acid (mg/kg)	16.0	13.9	12.7
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	92.9	93.4	80.3
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.45	1.47	1.42
16:1 Palmitoleic	0.0134	0.0135	0.0124
17:0 Heptadecanoic	0.0176	0.0178	0.0175
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.593	0.599	0.554
18:1 Oleic	2.81	2.83	2.63
18:2 Linoleic	7.97	8.05	7.86
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.35	1.36	1.37
20:0 Arachidic	0.0420	0.0424	0.0400
20:1 Eicosenoic	0.0176	0.0178	0.0171
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0419	0.0423	0.0394

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0008	080003-084-0021	080003-056-0003
Covance LIMS Number	81100116	81100117	81100118
Proximate (%)			
Moisture (fresh weight basis)	12.4	18.8	12.2
Protein	38.0	39.3	37.5
Total Fat	17.0	15.8	19.8
Ash	5.11	5.71	5.06
Carbohydrates (calculated)	39.8	39.3	37.7
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	20.9	18.2	19.2
Acid Detergent Fiber (%)	17.5	17.0	15.4
Total Dietary Fiber (%)	34.8	32.6	36.1
Amino Acids (%)			
Aspartic Acid	4.35	4.52	4.36
Threonine	1.56	1.58	1.56
Serine	2.00	2.06	1.99
Glutamic Acid	6.63	7.00	6.69
Proline	1.93	1.96	1.92
Glycine	1.67	1.71	1.70
Alanine	1.68	1.71	1.69
Cystine	0.614	0.574	0.576
Valine	1.86	1.95	1.88
Methionine	0.546	0.547	0.534
Isoleucine	1.78	1.82	1.80
Leucine	2.96	3.07	2.96
Tyrosine	1.32	1.38	1.34
Phenylalanine	1.91	2.00	1.92
Lysine	2.45	2.54	2.47
Histidine	1.05	1.08	1.05
Arginine	2.87	3.18	2.88
Tryptophan	0.447	0.437	0.451

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0008	080003-084-0021	080003-056-0003
Covance LIMS Number	81100116	81100117	81100118
*Lectin (H.U./mg)	5.05	3.77	6.20
**Trypsin Inhibitor (TIU/mg)	22.6	26.0	32.9
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1310	1340	409
Glycitin	272	234	219
Genistin	1380	1580	716
Phytic Acid (%)	1.01	1.22	1.11
Raffinose (%)	0.332	0.334	0.436
Stachyose (%)	2.37	2.57	2.85
Total Tocopherols (mg/kg)			
Alpha Tocopherol	15.1	8.65	27.0
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	167	144	199
Delta Tocopherol	104	116	61.7
Minerals (mg/100g)			
Calcium	232	202	344
Copper	1.61	1.22	0.862
Iron	7.63	8.28	7.30
Magnesium	204	197	232
Manganese	2.53	2.52	3.25
Phosphorus	525	576	541
Potassium	1910	1860	1860
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.13	4.54	4.49
Iodine	0.0122	< LOQ	< LOQ
Minerals (ppb)			
Chromium	< LOQ	112	< LOQ
Selenium	371	291	262
Molybdenum	1180	2340	1110

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0008	080003-084-0021	080003-056-0003
Covance LIMS Number	81100116	81100117	81100118
Thiamine Hydrochloride (mg/kg)	2.47	2.09	2.73
Riboflavin/Vitamin B2 (mg/kg)	5.29	4.78	5.71
Niacin/Vitamin B3 (mg/kg)	26.8	27.3	31.7
Pyridoxine HCl (mg/kg)	5.24	6.12	4.91
Folic Acid (mg/kg)	3.41	3.36	2.85
Panthotenic acid (mg/kg)	16.7	14.5	19.6
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	71.6	88.8	54.7
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.69	1.56	2.16
16:1 Palmitoleic	0.0142	0.0127	< LOQ
17:0 Heptadecanoic	0.0187	0.0196	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.724	0.567	0.810
18:1 Oleic	3.62	2.76	4.49
18:2 Linoleic	8.69	8.52	10.1
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.38	1.48	1.38
20:0 Arachidic	0.0494	0.0415	0.0600
20:1 Eicosenoic	0.0240	0.0191	0.0341
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0501	0.0445	0.0595

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0027	080003-077-0015	080003-084-0009
Covance LIMS Number	81100119	81100120	81100121
Proximate (%)			
Moisture (fresh weight basis)	11.9	13.1	19.4
Protein	36.2	36.2	38.5
Total Fat	17.3	16.6	15.3
Ash	5.49	5.52	4.99
Carbohydrates (calculated)	41.1	41.7	41.3
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	22.9	16.9	20.5
Acid Detergent Fiber (%)	19.0	12.7	14.8
Total Dietary Fiber (%)	34.4	29.8	29.2
Amino Acids (%)			
Aspartic Acid	4.18	4.07	4.44
Threonine	1.52	1.50	1.56
Serine	1.92	1.89	2.02
Glutamic Acid	6.32	6.24	6.87
Proline	1.83	1.83	1.96
Glycine	1.61	1.57	1.70
Alanine	1.62	1.59	1.69
Cystine	0.577	0.578	0.563
Valine	1.78	1.73	1.91
Methionine	0.532	0.527	0.560
Isoleucine	1.69	1.61	1.80
Leucine	2.83	2.75	3.01
Tyrosine	1.32	1.27	1.30
Phenylalanine	1.82	1.77	1.96
Lysine	2.38	2.35	2.52
Histidine	1.00	0.983	1.06
Arginine	2.77	2.77	3.08
Tryptophan	0.427	0.430	0.448

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0027	080003-077-0015	080003-084-0009
Covance LIMS Number	81100119	81100120	81100121
*Lectin (H.U./mg)	5.54	1.51	2.07
**Trypsin Inhibitor (TIU/mg)	31.4	24.7	25.4
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1020	1460	1250
Glycitin	285	249	216
Genistin	1380	1760	1530
Phytic Acid (%)	1.29	1.82	1.29
Raffinose (%)	0.300	0.314	0.311
Stachyose (%)	2.51	2.49	2.22
Total Tocopherols (mg/kg)			
Alpha Tocopherol	14.4	8.80	7.99
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	173	152	133
Delta Tocopherol	94.4	116	110
Minerals (mg/100g)			
Calcium	288	242	203
Copper	1.38	0.914	1.21
Iron	13.1	6.38	9.69
Magnesium	226	212	196
Manganese	2.80	2.08	2.54
Phosphorus	611	759	578
Potassium	1940	2090	1870
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.49	6.00	4.49
Iodine	< LOQ	< LOQ	< LOQ
Minerals (ppb)			
Chromium	212	< LOQ	212
Selenium	510	712	371
Molybdenum	444	9190	2100

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0027	080003-077-0015	080003-084-0009
Covance LIMS Number	81100119	81100120	81100121
Thiamine Hydrochloride (mg/kg)	2.53	1.88	2.02
Riboflavin/Vitamin B2 (mg/kg)	4.31	4.83	5.96
Niacin/Vitamin B3 (mg/kg)	25.0	25.3	24.1
Pyridoxine HCl (mg/kg)	5.05	5.68	6.60
Folic Acid (mg/kg)	3.30	3.66	3.77
Panthotenic acid (mg/kg)	15.2	13.3	13.5
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	86.0	102	96.9
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.74	1.63	1.45
16:1 Palmitoleic	< LOQ	0.0146	< LOQ
17:0 Heptadecanoic	< LOQ	0.0203	0.0180
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.707	0.644	0.514
18:1 Oleic	3.46	3.06	2.56
18:2 Linoleic	9.09	8.81	7.98
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.38	1.46	1.40
20:0 Arachidic	0.0493	0.0465	0.0362
20:1 Eicosenoic	0.0245	0.0201	0.0172
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0490	0.0471	0.0373

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0014	080003-049-0008	080003-070-0001
Covance LIMS Number	81100122	81100123	81100124
Proximate (%)			
Moisture (fresh weight basis)	11.7	12.0	12.2
Protein	37.9	37.2	38.0
Total Fat	15.2	16.8	16.3
Ash	4.67	5.09	4.90
Carbohydrates (calculated)	42.2	40.9	40.8
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	24.3	22.5	20.4
Acid Detergent Fiber (%)	20.3	19.9	17.8
Total Dietary Fiber (%)	33.3	29.0	30.3
Amino Acids (%)			
Aspartic Acid	4.34	4.32	4.44
Threonine	1.54	1.55	1.61
Serine	1.85	1.89	1.95
Glutamic Acid	6.60	6.61	6.81
Proline	1.83	1.82	1.88
Glycine	1.68	1.64	1.72
Alanine	1.69	1.64	1.73
Cystine	0.588	0.557	0.591
Valine	1.93	1.89	1.95
Methionine	0.532	0.514	0.543
Isoleucine	1.85	1.81	1.86
Leucine	2.97	2.95	3.03
Tyrosine	1.27	1.35	1.40
Phenylalanine	1.96	1.95	2.02
Lysine	2.47	2.45	2.53
Histidine	1.05	1.05	1.08
Arginine	2.83	2.88	3.04
Tryptophan	0.427	0.424	0.445

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0014	080003-049-0008	080003-070-0001
Covance LIMS Number	81100122	81100123	81100124
*Lectin (H.U./mg)	1.52	2.10	3.51
**Trypsin Inhibitor (TIU/mg)	26.2	25.7	24.4
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	11.6	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1350	949	1130
Glycitin	285	273	227
Genistin	1370	1320	1170
Phytic Acid (%)	1.05	1.31	1.06
Raffinose (%)	0.265	0.248	0.311
Stachyose (%)	1.88	1.88	2.38
Total Tocopherols (mg/kg)			
Alpha Tocopherol	15.2	14.5	14.7
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	162	173	153
Delta Tocopherol	107	90.7	102
Minerals (mg/100g)			
Calcium	229	295	211
Copper	1.56	1.28	1.61
Iron	7.72	8.85	12.5
Magnesium	197	231	200
Manganese	2.46	2.49	2.54
Phosphorus	515	617	534
Potassium	1900	1980	1900
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.10	5.13	5.25
Iodine	< LOQ	< LOQ	< LOQ
Minerals (ppb)			
Chromium	< LOQ	71.0	274
Selenium	545	1930	446
Molybdenum	1230	534	1360

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-070-0014	080003-049-0008	080003-070-0001
Covance LIMS Number	81100122	81100123	81100124
Thiamine Hydrochloride (mg/kg)	2.20	2.23	2.48
Riboflavin/Vitamin B2 (mg/kg)	4.59	5.32	4.43
Niacin/Vitamin B3 (mg/kg)	24.3	25.3	24.9
Pyridoxine HCl (mg/kg)	5.36	5.73	5.47
Folic Acid (mg/kg)	3.54	3.45	3.75
Panthotenic acid (mg/kg)	15.4	14.8	15.3
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	64.7	93.5	74.6
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.52	1.69	1.62
16:1 Palmitoleic	0.0134	0.0127	0.0158
17:0 Heptadecanoic	0.0168	0.0192	0.0172
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.648	0.691	0.761
18:1 Oleic	3.25	3.36	3.90
18:2 Linoleic	7.84	8.91	7.82
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.29	1.34	1.25
20:0 Arachidic	0.0450	0.0478	0.0534
20:1 Eicosenoic	0.0219	0.0236	0.0235
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0455	0.0483	0.0513

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0013	080003-063-0007	080003-063-0019
Covance LIMS Number	81100125	81100126	81100127
Proximate (%)			
Moisture (fresh weight basis)	12.1	12.7	11.8
Protein	38.5	40.7	37.5
Total Fat	19.2	15.7	17.9
Ash	4.76	4.66	4.69
Carbohydrates (calculated)	37.5	38.9	39.9
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	21.4	26.6	19.2
Acid Detergent Fiber (%)	17.2	19.4	17.6
Total Dietary Fiber (%)	29.6	30.2	32.3
Amino Acids (%)			
Aspartic Acid	4.47	4.71	4.37
Threonine	1.62	1.67	1.59
Serine	2.05	2.05	2.00
Glutamic Acid	6.76	7.27	6.66
Proline	1.90	1.98	1.89
Glycine	1.71	1.81	1.68
Alanine	1.71	1.81	1.66
Cystine	0.580	0.605	0.603
Valine	1.85	2.04	1.83
Methionine	0.527	0.565	0.543
Isoleucine	1.80	1.98	1.76
Leucine	3.00	3.22	2.95
Tyrosine	1.41	1.49	1.37
Phenylalanine	1.99	2.15	1.95
Lysine	2.53	2.67	2.46
Histidine	1.07	1.14	1.05
Arginine	2.95	3.23	2.91
Tryptophan	0.465	0.436	0.433

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0013	080003-063-0007	080003-063-0019
Covance LIMS Number	81100125	81100126	81100127
*Lectin (H.U./mg)	4.18	2.53	4.73
**Trypsin Inhibitor (TIU/mg)	33.6	27.6	38.8
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	465	916	1100
Glycitin	243	266	308
Genistin	799	1090	1300
Phytic Acid (%)	1.10	0.919	0.988
Raffinose (%)	0.391	0.321	0.337
Stachyose (%)	2.45	2.33	2.39
Total Tocopherols (mg/kg)			
Alpha Tocopherol	28.9	18.6	17.6
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	213	179	185
Delta Tocopherol	68.8	88.0	89.7
Minerals (mg/100g)			
Calcium	307	302	299
Copper	0.837	1.27	1.26
Iron	8.04	7.17	7.31
Magnesium	226	216	213
Manganese	2.94	2.55	2.29
Phosphorus	555	505	509
Potassium	1870	1780	1780
Sodium	< LOQ	< LOQ	< LOQ
Zinc	4.21	5.44	5.42
Iodine	< LOQ	< LOQ	< LOQ
Minerals (ppb)			
Chromium	< LOQ	59.1	< LOQ
Selenium	188	117	129
Molybdenum	1410	1710	1190

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-056-0013	080003-063-0007	080003-063-0019
Covance LIMS Number	81100125	81100126	81100127
Thiamine Hydrochloride (mg/kg)	3.28	2.08	2.05
Riboflavin/Vitamin B2 (mg/kg)	4.15	4.18	3.97
Niacin/Vitamin B3 (mg/kg)	30.5	27.4	26.3
Pyridoxine HCl (mg/kg)	5.14	4.93	5.60
Folic Acid (mg/kg)	2.92	3.76	3.59
Panthotenic acid (mg/kg)	19.2	16.3	17.5
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	46.1	73.0	94.4
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	2.01	1.52	1.75
16:1 Palmitoleic	< LOQ	0.0145	< LOQ
17:0 Heptadecanoic	< LOQ	0.0172	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.785	0.694	0.746
18:1 Oleic	4.19	3.26	3.67
18:2 Linoleic	9.87	8.20	9.34
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.42	1.12	1.29
20:0 Arachidic	0.0560	0.0473	0.0514
20:1 Eicosenoic	0.0327	0.0234	0.0279
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0564	0.0473	0.0523

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0019	080003-056-0020	080003-084-0002
Covance LIMS Number	81100128	81100129	81100130
Proximate (%)			
Moisture (fresh weight basis)	11.9	11.8	22.7
Protein	35.3	38.7	40.8
Total Fat	16.1	18.6	14.9
Ash	5.22	4.85	4.57
Carbohydrates (calculated)	43.4	37.9	39.8
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	24.6	23.4	17.3
Acid Detergent Fiber (%)	19.8	20.4	13.8
Total Dietary Fiber (%)	32.6	29.5	29.0
Amino Acids (%)			
Aspartic Acid	4.06	4.47	4.64
Threonine	1.45	1.56	1.57
Serine	1.77	1.89	1.97
Glutamic Acid	6.15	6.78	7.19
Proline	1.69	1.84	2.03
Glycine	1.59	1.73	1.79
Alanine	1.59	1.72	1.77
Cystine	0.607	0.594	0.587
Valine	1.79	1.97	2.07
Methionine	0.527	0.541	0.533
Isoleucine	1.71	1.92	1.93
Leucine	2.78	3.05	3.13
Tyrosine	1.25	1.43	1.29
Phenylalanine	1.82	2.04	2.06
Lysine	2.35	2.53	2.61
Histidine	0.991	1.07	1.11
Arginine	2.67	2.94	3.71
Tryptophan	0.434	0.452	0.442

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0019	080003-056-0020	080003-084-0002
Covance LIMS Number	81100128	81100129	81100130
*Lectin (H.U./mg)	3.79	6.50	1.67
**Trypsin Inhibitor (TIU/mg)	28.1	24.4	23.8
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1050	465	1160
Glycitin	337	255	184
Genistin	1410	795	1290
Phytic Acid (%)	1.31	0.963	1.23
Raffinose (%)	0.235	0.385	0.413
Stachyose (%)	1.73	2.39	2.56
Total Tocopherols (mg/kg)			
Alpha Tocopherol	15.1	28.5	< LOQ
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	174	209	114
Delta Tocopherol	91.1	63.0	107
Minerals (mg/100g)			
Calcium	305	320	203
Copper	1.37	1.11	1.31
Iron	8.01	8.10	6.66
Magnesium	224	220	188
Manganese	2.46	3.00	2.46
Phosphorus	619	524	568
Potassium	1920	1920	1660
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.28	4.81	4.52
Iodine	< LOQ	< LOQ	< LOQ
Minerals (ppb)			
Chromium	64.2	< LOQ	< LOQ
Selenium	1750	285	198
Molybdenum	575	544	3840

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-049-0019	080003-056-0020	080003-084-0002
Covance LIMS Number	81100128	81100129	81100130
Thiamine Hydrochloride (mg/kg)	1.95	3.14	2.08
Riboflavin/Vitamin B2 (mg/kg)	4.69	3.80	5.58
Niacin/Vitamin B3 (mg/kg)	26.8	28.5	27.7
Pyridoxine HCl (mg/kg)	5.07	5.17	5.64
Folic Acid (mg/kg)	3.08	2.82	4.13
Panthotenic acid (mg/kg)	15.0	17.6	13.3
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	83.2	47.7	89.0
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.61	1.95	1.49
16:1 Palmitoleic	0.0126	< LOQ	0.0140
17:0 Heptadecanoic	0.0187	< LOQ	0.0181
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.671	0.746	0.599
18:1 Oleic	3.25	3.95	2.96
18:2 Linoleic	8.46	9.71	7.53
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.26	1.30	1.35
20:0 Arachidic	0.0463	0.0532	0.0441
20:1 Eicosenoic	0.0235	0.0314	0.0180
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0459	0.0525	0.0449

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0019	080003-049-0009	080003-077-0008
Covance LIMS Number	81100131	81100132	81100133
Proximate (%)			
Moisture (fresh weight basis)	13.8	12.5	12.9
Protein	35.4	35.9	36.7
Total Fat	15.5	16.7	16.4
Ash	5.22	5.15	5.65
Carbohydrates (calculated)	43.9	42.3	41.2
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	21.1	24.0	16.5
Acid Detergent Fiber (%)	12.8	20.2	15.4
Total Dietary Fiber (%)	33.1	31.9	33.5
Amino Acids (%)			
Aspartic Acid	4.19	4.25	4.21
Threonine	1.44	1.47	1.47
Serine	1.80	1.83	1.83
Glutamic Acid	6.43	6.46	6.43
Proline	1.83	1.83	1.81
Glycine	1.62	1.65	1.62
Alanine	1.64	1.66	1.63
Cystine	0.600	0.599	0.598
Valine	1.89	1.89	1.87
Methionine	0.519	0.549	0.536
Isoleucine	1.76	1.79	1.75
Leucine	2.87	2.90	2.86
Tyrosine	1.17	1.18	1.29
Phenylalanine	1.84	1.86	1.86
Lysine	2.41	2.42	2.41
Histidine	1.01	1.03	1.02
Arginine	2.82	2.72	2.88
Tryptophan	0.398	0.441	0.431

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0019	080003-049-0009	080003-077-0008
Covance LIMS Number	81100131	81100132	81100133
*Lectin (H.U./mg)	1.95	2.11	1.37
**Trypsin Inhibitor (TIU/mg)	24.2	21.7	31.8
*H.U. - Hemagglutinating Unit			
**TIU - Trypsin Inhibitor Unit			
Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1460	1090	1450
Glycitin	234	327	258
Genistin	1730	1450	1720
Phytic Acid (%)	1.79	1.19	1.70
Raffinose (%)	0.296	0.291	0.287
Stachyose (%)	2.09	2.34	2.32
Total Tocopherols (mg/kg)			
Alpha Tocopherol	8.75	15.2	9.39
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	147	173	153
Delta Tocopherol	122	91.1	116
Minerals (mg/100g)			
Calcium	266	296	234
Copper	1.11	1.35	1.13
Iron	6.89	9.66	12.7
Magnesium	211	227	206
Manganese	2.26	2.58	2.17
Phosphorus	770	607	720
Potassium	2020	1920	1970
Sodium	17.7	< LOQ	< LOQ
Zinc	5.43	5.26	4.62
Iodine	< LOQ	< LOQ	< LOQ
Minerals (ppb)			
Chromium	63.8	76.2	379
Selenium	224	945	138
Molybdenum	8410	555	7370

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-077-0019	080003-049-0009	080003-077-0008
Covance LIMS Number	81100131	81100132	81100133
Thiamine Hydrochloride (mg/kg)	2.02	1.66	2.04
Riboflavin/Vitamin B2 (mg/kg)	4.80	3.84	4.11
Niacin/Vitamin B3 (mg/kg)	25.6	25.0	23.8
Pyridoxine HCl (mg/kg)	5.14	5.14	5.87
Folic Acid (mg/kg)	3.68	3.11	3.42
Panthotenic acid (mg/kg)	11.6	14.9	13.1
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	98.3	80.2	88.4
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.50	1.66	1.58
16:1 Palmitoleic	0.0139	0.0130	0.0148
17:0 Heptadecanoic	0.0184	0.0197	0.0200
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.600	0.683	0.633
18:1 Oleic	2.81	3.35	3.01
18:2 Linoleic	8.35	8.69	8.65
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.50	1.29	1.53
20:0 Arachidic	0.0436	0.0472	0.0449
20:1 Eicosenoic	0.0179	0.0245	0.0191
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0434	0.0479	0.0458

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0013	080003-070-0009	080003-070-0007
Covance LIMS Number	81100134	81100135	81100136
Proximate (%)			
Moisture (fresh weight basis)	12.4	12.5	12.2
Protein	39.5	37.7	37.6
Total Fat	17.4	16.8	17.9
Ash	5.29	4.71	4.83
Carbohydrates (calculated)	37.9	40.8	39.7
Cholesterol (%)	< LOQ	< LOQ	< LOQ
Neutral Detergent Fiber (%)	18.9	19.8	19.5
Acid Detergent Fiber (%)	16.3	19.3	13.7
Total Dietary Fiber (%)	31.8	29.5	28.9
Amino Acids (%)			
Aspartic Acid	4.49	4.31	4.32
Threonine	1.54	1.57	1.50
Serine	1.96	1.97	1.88
Glutamic Acid	6.92	6.53	6.51
Proline	1.94	1.86	1.89
Glycine	1.75	1.66	1.66
Alanine	1.74	1.66	1.67
Cystine	0.602	0.629	0.620
Valine	2.00	1.82	1.91
Methionine	0.516	0.563	0.572
Isoleucine	1.89	1.74	1.81
Leucine	3.07	2.93	2.94
Tyrosine	1.30	1.33	1.33
Phenylalanine	1.99	1.89	1.89
Lysine	2.53	2.45	2.45
Histidine	1.08	1.04	1.04
Arginine	2.98	2.86	2.86
Tryptophan	0.461	0.449	0.420

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0013	080003-070-0009	080003-070-0007
Covance LIMS Number	81100134	81100135	81100136
*Lectin (H.U./mg)	2.79	3.06	2.62
**Trypsin Inhibitor (TIU/mg)	24.5	24.8	26.9

*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit

Isoflavones (mcg/g)			
Daidzein	< LOQ	< LOQ	< LOQ
Glycitein	< LOQ	< LOQ	< LOQ
Genistein	< LOQ	< LOQ	< LOQ
Daidzin	1120	1430	1540
Glycitin	291	286	293
Genistin	1260	1460	1510
Phytic Acid (%)	0.952	1.06	0.860
Raffinose (%)	0.318	0.290	0.351
Stachyose (%)	2.23	2.03	2.41
Total Tocopherols (mg/kg)			
Alpha Tocopherol	18.4	14.1	14.9
Beta Tocopherol	< LOQ	< LOQ	< LOQ
Gamma Tocopherol	179	160	165
Delta Tocopherol	90.0	106	107
Minerals (mg/100g)			
Calcium	290	223	219
Copper	1.27	1.61	1.63
Iron	18.6	7.69	7.64
Magnesium	207	199	198
Manganese	3.64	2.41	2.40
Phosphorus	479	529	484
Potassium	1720	1920	1900
Sodium	< LOQ	< LOQ	< LOQ
Zinc	5.26	4.94	5.05
Iodine	< LOQ	< LOQ	0.0131
Minerals (ppb)			
Chromium	326	< LOQ	< LOQ
Selenium	127	465	662
Molybdenum	2170	1040	1510

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0013	080003-070-0009	080003-070-0007
Covance LIMS Number	81100134	81100135	81100136
Thiamine Hydrochloride (mg/kg)	2.36	2.40	2.32
Riboflavin/Vitamin B2 (mg/kg)	3.31	3.76	3.41
Niacin/Vitamin B3 (mg/kg)	27.1	23.3	23.2
Pyridoxine HCl (mg/kg)	5.23	5.52	5.25
Folic Acid (mg/kg)	3.85	3.58	3.38
Panthotenic acid (mg/kg)	17.4	15.2	15.7
Vitamin B12 (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ	< LOQ
Vitamin C (mg/kg)	83.6	76.6	69.8
Vitamin A (mg/kg)	< LOQ	< LOQ	< LOQ
Fatty Acids (%)			
8:0 Caprylic	< LOQ	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ	< LOQ
16:0 Palmitic	1.69	1.68	1.74
16:1 Palmitoleic	< LOQ	0.0143	< LOQ
17:0 Heptadecanoic	< LOQ	0.0189	< LOQ
17:1 Heptadecenoic	< LOQ	< LOQ	< LOQ
18:0 Stearic	0.743	0.701	0.715
18:1 Oleic	3.58	3.51	3.66
18:2 Linoleic	8.96	8.54	8.93
18:3 gamma-Linolenic	< LOQ	< LOQ	< LOQ
18:3 Linolenic	1.24	1.39	1.44
20:0 Arachidic	0.0509	0.0480	0.0495
20:1 Eicosenoic	0.0264	0.0238	0.0246
20:2 Eicosadienoic	< LOQ	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ	< LOQ
22:0 Behenic	0.0510	0.0490	0.0503

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0021	080003-070-0020
Covance LIMS Number	81100137	81100138
Proximate (%)		
Moisture (fresh weight basis)	11.5	11.9
Protein	40.2	37.2
Total Fat	17.6	15.8
Ash	4.85	5.06
Carbohydrates (calculated)	37.3	41.9
Cholesterol (%)	< LOQ	< LOQ
Neutral Detergent Fiber (%)	18.2	24.4
Acid Detergent Fiber (%)	16.3	18.3
Total Dietary Fiber (%)	30.1	33.4
Amino Acids (%)		
Aspartic Acid	4.58	4.34
Threonine	1.56	1.51
Serine	1.94	1.87
Glutamic Acid	7.07	6.56
Proline	1.98	1.86
Glycine	1.77	1.68
Alanine	1.76	1.68
Cystine	0.633	0.631
Valine	2.06	1.92
Methionine	0.586	0.564
Isoleucine	1.94	1.82
Leucine	3.11	2.95
Tyrosine	1.40	1.27
Phenylalanine	2.02	1.90
Lysine	2.58	2.45
Histidine	1.10	1.05
Arginine	3.10	2.83
Tryptophan	0.476	0.412

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0021	080003-070-0020
Covance LIMS Number	81100137	81100138
*Lectin (H.U./mg)	2.61	1.68
**Trypsin Inhibitor (TIU/mg)	27.2	27.5

*H.U. - Hemagglutinating Unit
**TIU - Trypsin Inhibitor Unit

Isoflavones (mcg/g)		
Daidzein	11.8	< LOQ
Glycitein	< LOQ	< LOQ
Genistein	< LOQ	< LOQ
Daidzin	959	1400
Glycitin	288	251
Genistin	1160	1480
Phytic Acid (%)	1.09	0.941
Raffinose (%)	0.336	0.279
Stachyose (%)	2.60	1.94
Total Tocopherols (mg/kg)		
Alpha Tocopherol	18.6	14.6
Beta Tocopherol	< LOQ	< LOQ
Gamma Tocopherol	182	162
Delta Tocopherol	84.0	104
Minerals (mg/100g)		
Calcium	311	228
Copper	1.31	1.61
Iron	7.27	7.28
Magnesium	216	199
Manganese	2.70	2.49
Phosphorus	565	533
Potassium	1730	1920
Sodium	< LOQ	< LOQ
Zinc	5.51	5.07
Iodine	< LOQ	< LOQ
Minerals (ppb)		
Chromium	149	< LOQ
Selenium	119	426
Molybdenum	844	1160

LOQ-Limit of Quantitation

Table 1 (Continued)
Compositional Analyses of Soy Grain
Dry Weight

Type of Sample	Soy Grain	Soy Grain
DAS SGN (or SN range)	080003-063-0021	080003-070-0020
Covance LIMS Number	81100137	81100138
Thiamine Hydrochloride (mg/kg)	1.72	2.01
Riboflavin/Vitamin B2 (mg/kg)	3.93	3.38
Niacin/Vitamin B3 (mg/kg)	27.5	24.6
Pyridoxine HCl (mg/kg)	5.11	5.10
Folic Acid (mg/kg)	3.73	3.35
Panthotenic acid (mg/kg)	17.1	15.6
Vitamin B12 (mg/kg)	< LOQ	< LOQ
Vitamin D (mg/kg)	< LOQ	< LOQ
Vitamin C (mg/kg)	101	78.1
Vitamin A (mg/kg)	< LOQ	< LOQ
Fatty Acids (%)		
8:0 Caprylic	< LOQ	< LOQ
10:0 Capric	< LOQ	< LOQ
12:0 Lauric	< LOQ	< LOQ
14:0 Myristic	< LOQ	< LOQ
14:1 Myristoleic	< LOQ	< LOQ
15:0 Pentadecanoic	< LOQ	< LOQ
15:1 Pentadecenoic	< LOQ	< LOQ
16:0 Palmitic	1.67	1.57
16:1 Palmitoleic	< LOQ	0.0131
17:0 Heptadecanoic	< LOQ	0.0176
17:1 Heptadecenoic	< LOQ	< LOQ
18:0 Stearic	0.751	0.640
18:1 Oleic	3.63	3.22
18:2 Linoleic	8.96	8.00
18:3 gamma-Linolenic	< LOQ	< LOQ
18:3 Linolenic	1.23	1.31
20:0 Arachidic	0.0508	0.0439
20:1 Eicosenoic	0.0261	0.0220
20:2 Eicosadienoic	< LOQ	< LOQ
20:4 Arachidonic	< LOQ	< LOQ
20:3 Eicosatrienoic	< LOQ	< LOQ
22:0 Behenic	0.0501	0.0436

LOQ-Limit of Quantitation

Table 2
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-076-0020	080003-083-0008	080003-055-0007
Covance LIMS Number	81100139	81100140	81100141
Proximate (%)			
Moisture (on a fresh weight basis)	78.2	79.8	69.4
Protein	18.1	17.1	20.5
Total Fat	4.02	3.12	10.5
Ash	9.45	8.42	7.03
Carbohydrates (calculated)	68.3	71.3	62.1
Neutral Detergent Fiber (%)	40.7	37.5	32.6
Acid Detergent Fiber (%)	40.6	31.8	25.6
Minerals (%)			
Calcium	1.56	1.46	1.18
Phosphorus	0.339	0.239	0.249

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-055-0014	080003-076-0008	080003-062-0014
Covance LIMS Number	81100142	81100143	81100144
Proximate (%)			
Moisture (on a fresh weight basis)	71.4	80.3	77.7
Protein	20.3	18.5	20.0
Total Fat	8.15	4.63	2.72
Ash	6.82	7.82	9.19
Carbohydrates (calculated)	64.7	69.0	68.2
Neutral Detergent Fiber (%)	35.3	37.3	33.1
Acid Detergent Fiber (%)	29.0	33.7	25.3
Minerals (%)			
Calcium	1.36	1.49	1.53
Phosphorus	0.282	0.363	0.213

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-062-0003	080003-069-0008	080003-055-0026
Covance LIMS Number	81100145	81100146	81100147
Proximate (%)			
Moisture (on a fresh weight basis)	76.1	81.1	70.9
Protein	18.5	18.8	18.4
Total Fat	3.10	3.38	8.38
Ash	8.37	11.2	7.42
Carbohydrates (calculated)	69.9	66.7	65.6
Neutral Detergent Fiber (%)	40.2	52.9	34.7
Acid Detergent Fiber (%)	34.1	38.3	31.7
Minerals (%)			
Calcium	1.54	1.35	1.38
Phosphorus	0.238	0.255	0.291

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-069-0013	080003-048-0020	080003-048-0001
Covance LIMS Number	81100148	81100149	81100150
Proximate (%)			
Moisture (on a fresh weight basis)	81.4	83.2	81.9
Protein	16.0	20.4	18.0
Total Fat	2.48	3.43	2.13
Ash	12.3	13.9	25.9
Carbohydrates (calculated)	69.4	62.5	54.0
Neutral Detergent Fiber (%)	37.0	31.3	36.4
Acid Detergent Fiber (%)	40.3	25.8	23.9
Minerals (%)			
Calcium	1.30	1.32	1.35
Phosphorus	0.212	0.302	0.280

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-083-0002	080003-083-0027	080003-069-0020
Covance LIMS Number	81100151	81100152	81100153
Proximate (%)			
Moisture (on a fresh weight basis)	78.7	79.0	81.8
Protein	18.3	17.1	19.8
Total Fat	3.27	2.32	3.42
Ash	7.18	8.52	10.8
Carbohydrates (calculated)	71.4	71.9	65.9
Neutral Detergent Fiber (%)	42.4	43.8	36.5
Acid Detergent Fiber (%)	29.3	37.4	32.7
Minerals (%)			
Calcium	1.46	1.46	1.34
Phosphorus	0.232	0.239	0.267

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-048-0014	080003-062-0019	080003-076-0026
Covance LIMS Number	81100154	81100155	81100156
Proximate (%)			
Moisture (on a fresh weight basis)	84.1	74.8	79.6
Protein	21.1	18.8	16.8
Total Fat	2.59	2.54	3.12
Ash	15.6	7.94	7.84
Carbohydrates (calculated)	60.8	70.6	72.1
Neutral Detergent Fiber (%)	28.2	31.6	38.8
Acid Detergent Fiber (%)	24.1	30.6	34.9
Minerals (%)			
Calcium	1.44	1.58	1.80
Phosphorus	0.348	0.193	0.391

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-055-0003	080003-076-0021	080003-048-0026
Covance LIMS Number	81100157	81100158	81100159
Proximate (%)			
Moisture (on a fresh weight basis)	70.4	78.8	79.1
Protein	20.2	15.3	13.7
Total Fat	10.1	3.98	2.09
Ash	6.76	8.54	31.1
Carbohydrates (calculated)	62.8	72.2	53.1
Neutral Detergent Fiber (%)	37.5	26.8	25.9
Acid Detergent Fiber (%)	25.4	27.6	21.8
Minerals (%)			
Calcium	1.18	1.52	1.24
Phosphorus	0.290	0.383	0.266

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-069-0003	080003-083-0009	080003-076-0013
Covance LIMS Number	81100160	81100161	81100162
Proximate (%)			
Moisture (on a fresh weight basis)	79.5	80.8	81.7
Protein	16.9	18.3	23.2
Total Fat	2.40	3.05	3.49
Ash	10.5	8.33	11.7
Carbohydrates (calculated)	70.2	70.3	61.7
Neutral Detergent Fiber (%)	39.1	28.4	33.3
Acid Detergent Fiber (%)	28.2	31.6	33.4
Minerals (%)			
Calcium	1.10	1.30	1.68
Phosphorus	0.226	0.270	0.368

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-048-0021	080003-069-0001	080003-083-0003
Covance LIMS Number	81100163	81100164	81100165
Proximate (%)			
Moisture (on a fresh weight basis)	81.9	79.2	78.9
Protein	20.3	16.3	17.8
Total Fat	2.12	2.51	2.07
Ash	16.2	10.0	7.35
Carbohydrates (calculated)	61.3	71.2	73.0
Neutral Detergent Fiber (%)	26.2	33.3	38.6
Acid Detergent Fiber (%)	21.4	30.2	27.8
Minerals (%)			
Calcium	1.42	1.24	1.43
Phosphorus	0.278	0.180	0.236

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-083-0026	080003-069-0015	080003-062-0025
Covance LIMS Number	81100166	81100167	81100168
Proximate (%)			
Moisture (on a fresh weight basis)	80.9	82.1	76.4
Protein	18.8	19.6	19.4
Total Fat	2.98	2.33	2.76
Ash	8.43	10.6	8.14
Carbohydrates (calculated)	69.6	67.6	69.5
Neutral Detergent Fiber (%)	37.1	31.9	31.1
Acid Detergent Fiber (%)	36.2	28.4	27.8
Minerals (%)			
Calcium	1.39	1.30	1.57
Phosphorus	0.253	0.274	0.212

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-048-0025	080003-055-0021	080003-069-0002
Covance LIMS Number	81100169	81100170	81100171
Proximate (%)			
Moisture (on a fresh weight basis)	81.6	69.9	79.9
Protein	15.3	20.4	19.7
Total Fat	1.59	9.90	2.06
Ash	26.7	6.41	10.1
Carbohydrates (calculated)	56.5	63.1	68.2
Neutral Detergent Fiber (%)	33.3	34.9	36.5
Acid Detergent Fiber (%)	26.2	30.7	31.0
Minerals (%)			
Calcium	1.48	1.11	1.31
Phosphorus	0.288	0.321	0.258

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-076-0001	080003-048-0027	080003-069-0026
Covance LIMS Number	81100172	81100173	81100174
Proximate (%)			
Moisture (on a fresh weight basis)	75.5	81.0	81.6
Protein	18.6	20.9	18.9
Total Fat	3.32	3.39	3.50
Ash	8.24	17.3	11.1
Carbohydrates (calculated)	69.8	58.4	66.3
Neutral Detergent Fiber (%)	34.7	41.0	37.3
Acid Detergent Fiber (%)	28.3	27.7	29.3
Minerals (%)			
Calcium	1.44	1.34	1.11
Phosphorus	0.344	0.263	0.240

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-076-0009	080003-048-0013	080003-069-0025
Covance LIMS Number	81100175	81100176	81100177
Proximate (%)			
Moisture (on a fresh weight basis)	81.6	82.5	80.9
Protein	18.5	19.0	19.9
Total Fat	3.82	2.10	2.64
Ash	9.29	13.7	13.6
Carbohydrates (calculated)	68.5	65.1	63.9
Neutral Detergent Fiber (%)	39.2	39.1	37.5
Acid Detergent Fiber (%)	23.3	25.6	39.7
Minerals (%)			
Calcium	1.49	1.54	1.44
Phosphorus	0.407	0.287	0.241

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-048-0007	080003-062-0015	080003-055-0001
Covance LIMS Number	81100178	81100179	81100180
Proximate (%)			
Moisture (on a fresh weight basis)	83.8	75.5	70.0
Protein	16.7	18.0	21.5
Total Fat	2.53	2.69	10.6
Ash	12.7	8.41	6.27
Carbohydrates (calculated)	67.9	71.0	61.7
Neutral Detergent Fiber (%)	38.2	32.9	35.3
Acid Detergent Fiber (%)	34.0	21.8	33.2
Minerals (%)			
Calcium	1.45	1.58	1.41
Phosphorus	0.301	0.245	0.260

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-083-0014	080003-083-0019	080003-048-0008
Covance LIMS Number	81100181	81100182	81100183
Proximate (%)			
Moisture (on a fresh weight basis)	77.7	78.5	84.5
Protein	18.1	16.3	19.3
Total Fat	2.06	2.81	3.19
Ash	8.83	11.1	18.8
Carbohydrates (calculated)	70.9	69.8	58.7
Neutral Detergent Fiber (%)	29.1	37.9	36.8
Acid Detergent Fiber (%)	30.9	26.6	31.5
Minerals (%)			
Calcium	1.41	1.60	1.46
Phosphorus	0.208	0.227	0.335

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-055-0009	080003-062-0027	080003-048-0002
Covance LIMS Number	81100184	81100185	81100186
Proximate (%)			
Moisture (on a fresh weight basis)	71.2	75.9	84.9
Protein	19.8	18.3	15.9
Total Fat	10.1	2.80	3.89
Ash	7.85	11.0	19.5
Carbohydrates (calculated)	62.2	68.0	60.7
Neutral Detergent Fiber (%)	33.2	33.2	27.2
Acid Detergent Fiber (%)	27.1	29.8	32.6
Minerals (%)			
Calcium	1.20	1.58	1.28
Phosphorus	0.282	0.272	0.254

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-055-0025	080003-062-0008	080003-062-0007
Covance LIMS Number	81100187	81100188	81100189
Proximate (%)			
Moisture (on a fresh weight basis)	70.9	77.8	75.7
Protein	21.2	18.3	19.8
Total Fat	9.42	3.68	3.23
Ash	6.74	9.19	7.74
Carbohydrates (calculated)	62.5	68.9	69.1
Neutral Detergent Fiber (%)	28.6	25.2	31.0
Acid Detergent Fiber (%)	23.9	26.7	25.7
Minerals (%)			
Calcium	1.24	1.39	1.46
Phosphorus	0.251	0.181	0.181

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-076-0015	080003-062-0001	080003-048-0019
Covance LIMS Number	81100190	81100191	81100192
Proximate (%)			
Moisture (on a fresh weight basis)	78.6	77.4	82.9
Protein	17.9	20.7	18.7
Total Fat	4.15	2.93	3.39
Ash	9.77	9.65	16.0
Carbohydrates (calculated)	68.2	66.8	62.0
Neutral Detergent Fiber (%)	35.7	27.3	26.8
Acid Detergent Fiber (%)	40.0	32.1	27.6
Minerals (%)			
Calcium	1.55	1.46	1.26
Phosphorus	0.372	0.215	0.284

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-076-0003	080003-069-0007	080003-062-0026
Covance LIMS Number	81100193	81100194	81100195
Proximate (%)			
Moisture (on a fresh weight basis)	78.5	79.8	76.2
Protein	16.6	18.3	18.9
Total Fat	3.94	3.01	2.34
Ash	9.40	8.86	10.0
Carbohydrates (calculated)	70.2	69.8	68.9
Neutral Detergent Fiber (%)	36.0	30.6	31.0
Acid Detergent Fiber (%)	34.3	29.8	29.3
Minerals (%)			
Calcium	1.52	1.19	1.47
Phosphorus	0.377	0.186	0.164

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-083-0025	080003-062-0002	080003-069-0021
Covance LIMS Number	81100196	81100197	81100198
Proximate (%)			
Moisture (on a fresh weight basis)	80.0	78.0	81.8
Protein	20.6	23.3	19.3
Total Fat	2.34	3.10	3.04
Ash	10.6	11.1	11.2
Carbohydrates (calculated)	66.5	62.3	66.5
Neutral Detergent Fiber (%)	29.7	25.2	27.0
Acid Detergent Fiber (%)	32.7	27.5	28.7
Minerals (%)			
Calcium	1.57	1.51	1.21
Phosphorus	0.228	0.236	0.241

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-055-0015	080003-048-0009	080003-062-0021
Covance LIMS Number	81100199	81100200	81100201
Proximate (%)			
Moisture (on a fresh weight basis)	71.1	82.4	75.4
Protein	21.1	18.8	21.2
Total Fat	7.54	3.40	2.85
Ash	6.99	19.3	9.63
Carbohydrates (calculated)	64.4	58.5	66.3
Neutral Detergent Fiber (%)	29.1	25.1	28.1
Acid Detergent Fiber (%)	29.5	27.5	25.7
Minerals (%)			
Calcium	1.19	1.26	1.55
Phosphorus	0.269	0.257	0.226

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-083-0020	080003-055-0002	080003-062-0009
Covance LIMS Number	81100202	81100203	81100204
Proximate (%)			
Moisture (on a fresh weight basis)	78.8	70.9	75.6
Protein	17.5	22.5	19.9
Total Fat	2.81	10.4	3.25
Ash	9.48	7.32	7.66
Carbohydrates (calculated)	70.3	59.8	69.3
Neutral Detergent Fiber (%)	35.5	29.9	33.4
Acid Detergent Fiber (%)	31.2	26.3	28.3
Minerals (%)			
Calcium	1.35	1.25	1.52
Phosphorus	0.189	0.277	0.219

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-076-0014	080003-076-0027	080003-055-0013
Covance LIMS Number	81100205	81100206	81100207
Proximate (%)			
Moisture (on a fresh weight basis)	79.9	77.4	69.9
Protein	19.7	17.1	19.8
Total Fat	3.80	4.19	8.70
Ash	9.65	11.8	9.50
Carbohydrates (calculated)	66.7	66.8	62.1
Neutral Detergent Fiber (%)	37.7	38.5	25.8
Acid Detergent Fiber (%)	35.9	32.5	23.0
Minerals (%)			
Calcium	1.46	1.50	1.33
Phosphorus	0.346	0.369	0.277

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-069-0027	080003-076-0007	080003-069-0009
Covance LIMS Number	81100208	81100209	81100210
Proximate (%)			
Moisture (on a fresh weight basis)	81.0	78.1	81.6
Protein	21.4	22.9	19.6
Total Fat	2.94	3.47	2.56
Ash	12.1	9.91	12.0
Carbohydrates (calculated)	63.7	63.9	65.8
Neutral Detergent Fiber (%)	32.3	35.3	31.1
Acid Detergent Fiber (%)	28.6	32.9	30.7
Minerals (%)			
Calcium	1.20	1.48	1.19
Phosphorus	0.224	0.352	0.223

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-055-0027	080003-083-0001	080003-076-0002
Covance LIMS Number	81100211	81100212	81100213
Proximate (%)			
Moisture (on a fresh weight basis)	70.2	79.1	76.6
Protein	20.3	17.8	18.8
Total Fat	7.79	2.77	2.91
Ash	6.91	7.99	11.7
Carbohydrates (calculated)	65.1	71.3	66.7
Neutral Detergent Fiber (%)	32.1	29.9	34.2
Acid Detergent Fiber (%)	30.0	29.1	32.6
Minerals (%)			
Calcium	1.30	1.54	1.69
Phosphorus	0.257	0.210	0.321

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-048-0003	080003-055-0020	080003-055-0019
Covance LIMS Number	81100214	81100215	81100216
Proximate (%)			
Moisture (on a fresh weight basis)	85.3	69.4	70.2
Protein	22.3	20.7	21.0
Total Fat	2.55	11.0	9.70
Ash	12.8	7.42	7.35
Carbohydrates (calculated)	62.4	60.8	62.1
Neutral Detergent Fiber (%)	35.8	28.2	29.3
Acid Detergent Fiber (%)	37.6	27.6	24.5
Minerals (%)			
Calcium	1.27	1.32	1.15
Phosphorus	0.299	0.294	0.303

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-083-0015	080003-062-0020	080003-076-0025
Covance LIMS Number	81100217	81100218	81100219
Proximate (%)			
Moisture (on a fresh weight basis)	80.0	75.4	77.9
Protein	18.2	18.0	17.9
Total Fat	2.56	2.70	2.78
Ash	8.70	8.50	12.4
Carbohydrates (calculated)	70.5	70.7	67.0
Neutral Detergent Fiber (%)	37.1	32.3	35.4
Acid Detergent Fiber (%)	37.5	29.4	32.5
Minerals (%)			
Calcium	1.31	1.48	1.67
Phosphorus	0.218	0.157	0.329

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-083-0007	080003-076-0019	080003-083-0013
Covance LIMS Number	81100220	81100221	81100222
Proximate (%)			
Moisture (on a fresh weight basis)	78.6	79.4	79.7
Protein	14.1	18.2	19.6
Total Fat	1.96	2.83	2.66
Ash	8.13	10.4	9.11
Carbohydrates (calculated)	75.7	68.4	68.5
Neutral Detergent Fiber (%)	39.8	42.2	35.0
Acid Detergent Fiber (%)	37.4	33.8	31.2
Minerals (%)			
Calcium	1.48	1.66	1.33
Phosphorus	0.201	0.366	0.233

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-062-0013	080003-069-0014	080003-083-0021
Covance LIMS Number	81100223	81100224	81100225
Proximate (%)			
Moisture (on a fresh weight basis)	76.2	81.0	79.2
Protein	20.7	20.4	16.8
Total Fat	2.72	2.53	2.01
Ash	9.92	11.6	7.26
Carbohydrates (calculated)	66.8	65.3	74.0
Neutral Detergent Fiber (%)	30.6	34.0	27.5
Acid Detergent Fiber (%)	29.7	34.3	33.7
Minerals (%)			
Calcium	1.55	1.24	1.19
Phosphorus	0.203	0.226	0.217

LOQ-Limit of Quantitation

Table 2 (Continued)
Compositional Analyses of Soy Forage
Dry Weight

Type of Sample	Soy Forage	Soy Forage	Soy Forage
DAS SGN (or SN range)	080003-055-0008	080003-069-0019	080003-048-0015
Covance LIMS Number	81100226	81100227	81100228
Proximate (%)			
Moisture (on a fresh weight basis)	70.2	80.7	80.1
Protein	22.8	19.2	15.9
Total Fat	11.4	2.47	2.54
Ash	7.05	12.0	27.1
Carbohydrates (calculated)	58.7	66.3	54.3
Neutral Detergent Fiber (%)	36.2	33.8	30.8
Acid Detergent Fiber (%)	30.7	37.0	30.2
Minerals (%)			
Calcium	1.12	1.25	1.12
Phosphorus	0.293	0.202	0.263

LOQ-Limit of Quantitation

APPENDIX A
ANALYTICAL METHOD SUMMARIES AND REFERENCE STANDARDS

Acid Detergent Fiber (ADF) with Ankom
The ANKOM2000 Fiber analyzer automated the process of the removal of protein, carbohydrate, and ash. If necessary, fats and pigments were removed with an acetone wash prior to analysis. A fraction lignin, cellulose and/or insoluble protein complexes was left in the filter bag, and determined gravimetrically. The limit of quantitation for this study was 0.100%.

Reference:
Forage and Fiber Analyses, Agriculture Handbook No.379, United States Department of Agriculture, Washington, D.C. (1970).

Komarek, A.R., Robertson J.B and Van Soest P.J. "A Comparison of Methods for Determining ADF Using the Filter Bag Technique versus Conventional Filtration," *Journal of Dairy Science* Vol. 77 Supplement 1. (1993).

Amino Acid Composition (TAAP/TAA5)
Total aspartic acid (including asparagine)
Total threonine
Total serine
Total glutamic acid (including glutamine)
Total proline
Total glycine
Total alanine
Total valine
Total isoleucine
Total leucine
Total tyrosine
Total phenylalanine
Total histidine
Total lysine
Total arginine
Total tryptophan
Sulfur-containing amino acids: Total methionine
Total cystine (including cysteine)

The sample was assayed by three methods to obtain the full profile. Tryptophan required a base hydrolysis with sodium hydroxide. The sulfur-containing amino acids required an oxidation with performic acid prior to hydrolysis with hydrochloric acid. Analysis of the samples for the remaining amino acids was accomplished through direct acid hydrolysis with hydrochloric acid. Once hydrolyzed, the individual amino acids were then quantitated using an automated amino acid analyzer. The limit of quantitation for this study was 0.0100%.

Reference Standards:
Thermo Scientific Amino Acid Standard H, (K18), 2.5 µmol/mL per constituent except cystine (1.25 µmol/mL),
Lot Number JG124726
Sigma-Aldrich, L-Tryptophan, 100%, Lot Number 076K0075
Sigma-Aldrich/BioChemika, L-Cysteic Acid Monohydrate, 99.5% (used as 100%), Lot Number 1305674
Sigma-Aldrich, L-Methionine Sulfone, Lot Numbers 012H3349, >99% (used as 100%) and 047K1321, 100%

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 982.30, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Ash (ASHM)
The sample was placed in an electric furnace at 550°C and ignited to drive off all volatile organic matter. The nonvolatile matter remaining was quantitated gravimetrically and calculated to determine percent ash. The limit of quantitation for this study was 0.100%.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 923.03, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Beta Carotene (Reported as Vitamin A) (BCLC)
The sample was saponified and extracted with hexane. The sample was then injected on a reverse phase high-performance liquid chromatography system with ultraviolet light detection. Quantitation was achieved with a linear regression analysis. The limit of quantitation was calculated and reported on a fresh weight basis. The limit of quantitation for this study was 0.200 mg/kg.

Reference Standard:
Sigma, Beta Carotene, Type 1, 98.2%, stock standard concentration determined spectrophotometrically, Lot Number 127K3751

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 941.15, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Quackenbush, F. W., *Journal of Liquid Chromatography*, 10: 643-653, (1987).

Carbohydrate (CHO)
The total carbohydrate level was calculated by difference using the fresh weight-derived data and the following equation:

% carbohydrates = 100 % - (% protein + % fat + % moisture + % ash)

The limit of quantitation for this study was 0.100%.

Reference:
United States Department of Agriculture, "Energy Value of Foods", *Agriculture Handbook No. 74,* pp. 2-11, (1973).

Cholesterol (CHOK)
The sample is saponified using ethanolic potassium hydroxide. The unsaponifiable fraction that contains cholesterol and other sterols is extracted with toluene. The toluene is evaporated to dryness and the residue is dissolved in dimethylformamide. The samples are derivatized to form trimethylsilyl ethers. The derivatized cholesterol is quantitatively determined by gas chromatography using 5 α-cholestane as an internal standard. The limit of quantitation for this study was 0.0010%.

Reference Standards:
Sigma, Cholesterol, 99.5%,Lot Number 064K5324
Chromadex, Campesterol, 97.2%,Lot Number 03072-641*
Sigma, Stigmasterol, 97.0%,Lot Number 027K5302*
Sigma, Beta-sitosterol, 98.0%,Lot Number 107K3814*

* Present in the standard but not used for CHOK calculation.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 17th Ed., Official Method 994.10. (Modified), AOAC INTERNATIONAL, Gaithersburg, Maryland, (2000).

Fat by Acid Hydrolysis (FAAH)
The sample was hydrolyzed with hydrochloric acid at an elevated temperature. The fat was extracted with ether and hexane. The extract was evaporated on a steambath, re-dissolved in hexane and filtered through a sodium sulfate column. The hexane extract was then evaporated again on a steambath under nitrogen, dried, and weighed. The limit of quantitation for this study was 0.100%.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 922.06 and 954.02, AOAC INTERNATIONAL, Gaithersburg, Maryland, (2005).

Fat by Soxhlet Extraction (FSOX)
The sample was weighed into a cellulose thimble containing sodium sulfate and dried to remove excess moisture. Pentane was dripped through the sample to remove the fat. The extract was then evaporated, dried, and weighed. The limit of quantitation for this study was 0.100%.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 960.39 and 948.22, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005)

Fatty Acids (FAPM)
The lipid was extracted and saponified with 0.5N sodium hydroxide in methanol. The saponification mixture was methylated with 14% boron trifluoride in methanol. The resulting methyl esters were extracted with heptane containing an internal standard. The methyl esters of the fatty acids were analyzed by gas chromatography using external standards for quantitation. The limit of quantitation was 0.0100-0.0200% depending on percent lipid.

Reference Standards:
Nu Chek Prep GLC Reference Standard Hazelton No. 1, Greater than 99%, Lot Number AU18-S*
Nu Chek Prep GLC Reference Standard Hazelton No. 2, Greater than 99%, Lot Number M13-O*
Nu Chek Prep GLC Reference Standard Hazelton No. 3, Greater than 99%, Lot Number MA18-S*
Nu Chek Prep GLC Reference Standard Hazelton No. 4, Greater than 99%, Lot Number AU18-S*
Nu Chek Prep Methyl Gamma Linolenate, used as 100%, Lot Number U-63M-JY12-R
Nu Chek Prep Methyl Tridecanoate, used as 100%, Lot Number N-13M-A2-S
* Overall purity of the sum of the mixture of components

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 996.06, AOAC INTERNATIONAL, Gaithersburg, Maryland, (2005).

Official Methods and Recommended Practices of the AOCS, 5th Ed., Method Ce 1-62, American Oil Chemists' Society: Champaign, Illinois, (1997).

Folic acid (FOAN)
The sample was hydrolyzed in a potassium phosphate buffer with the addition of ascorbic acid to protect the folic acid during autoclaving. Following hydrolysis by autoclaving, the sample was treated with a chicken-pancreas enzyme and incubated approximately 18 hours to liberate the bound folic acid. The amount of folic acid was determined by

comparing the growth response of the sample, using the bacteria *Lactobacillus casei*, with the growth response of a folic acid standard. This response was measured turbidimetrically. The limit of quantitation for this study was 0.0600 mg/kg.

Reference Standard:
USP, Folic acid, 98.9%, Lot Number Q0G151

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 960.46 and 992.05, AOAC INTERNATIONAL, Gaithersburg, Maryland, (2005).

Methods of Analysis for Infant Formulas, Infant Formula Council, Atlanta, Georgia, Section C-2, (1985).

ICP Emission Spectrometry (ICPS/ICP2)
The sample was dried, precharred, and ashed overnight in a muffle set to maintain 500°C. The ashed sample was re-ashed with nitric acid, treated with hydrochloric acid, taken to dryness, and put into a solution of 5% hydrochloric acid. The amount of each element was determined at appropriate wavelengths by comparing the emission of the unknown sample, measured on the inductively coupled plasma spectrometer, with the emission of the standard solutions.

Inorganic Ventures Reference Standards and Limits of Quantitation:

Mineral	Lot Numbers	Concentration (µg/ml)	Grain Limit of Quantitation (mg/100g)	Forage Limit of Quantitation (%)
Calcium	B2-MEB280039, B2-MEB266040	200, 1000	2.00	0.00200
Copper	B2-MEB280039, B2-MEB280036	2, 10	0.050	-
Iron	B2-MEB280039, B2-MEB280035	10, 50	0.200	-
Magnesium	B2-MEB280039, B2-MEB280036	50, 250	2.00	-
Manganese	B2-MEB280039, B2-MEB280036	2, 10	0.030	-
Phosphorus	B2-MEB280039, B2-MEB266040	200, 1000	2.00	0.00200
Potassium	B2-MEB280039, B2-MEB266040	200, 1000	10.0	-
Sodium	B2-MEB280039, B2-MEB266040	200, 1000	10.0	-
Zinc	B2-MEB280039, B2-MEB280036	10, 50	0.040	-

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 984.27 and 985.01, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

ICP-Mass Spectrometry (MS1)
The sample was wet-ashed with nitric acid using microwave digestion. Using inductively coupled plasma mass spectrometry, the amount of each element was determined by comparing the counts generated by the unknowns to those generated by standard solutions of known concentrations.

Spex CertiPrep Reference Standards and Limits of Quantitation:

Mineral	Lot Numbers	Concentration (mg/L)	Limit of Quantitation (ppb)
Selenium	6-74GS	100	50.0
Chromium	6-74GS	100	50.0
Molybdenum	6-74GS	100	50.0

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 993.14, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

EPA Method 200.8, *Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry*, (1994).

Cabrera, C., Gallego, C., Lopez, M. C., Lorenzo, M. L., and Lillo, E., "Determination of Levels of Lead Contamination in Food and Feed Crops", *Journal of AOAC International*, Volume 77(5):1249-1252, (1994).

Iodine (IOL)
The sample was digested with a combination of alcoholic potassium hydroxide, sodium carbonate, and alcoholic magnesium nitrate, whereby the iodide was converted to potassium iodide. In the case of organic iodides, the conversion was the result of a dehydrohalogenation reaction. After preliminary charring on a hot plate with heat lamps, the sample was placed in a muffle set for 90 minutes to complete the combustion of organic material. The iodide was then extracted from the ash with hot water and filtered. The analysis was completed by colorimetrically measuring the extent of the reaction between arsenic and cerium as catalyzed by the presence of iodide. The greater the amount of iodide present, the greater the rate of reaction as determined by the difference in absorbance for a 15-minute interval. The limit of quantitation for this study was 0.0100 mg/100g.

Reference Standard:
Fisher, Potassium Iodide, 99.9%, Lot Number 061234

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 932.21, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Binnerts, W. T., "Determination of Iodine in Milk", *Analytica Chimica Acta*, 10:78-80, (1954).

Heerspink, W., Op Deweegh, G. J., *Clinica Chimica Acta*, 39:327-338, (1972).

Isoflavones (ASOF)
The samples were extracted at approximately 65°C with a 80/20 methanol:water solution and the extracts were saponified with dilute NaOH solution. The extracts were then acidified, filtered, and then diluted. The samples were analyzed on a high-performance liquid chromatography system with ultraviolet spectrophotometric detection and were compared against an external standard curve. The glucosides (daidzin, glycitin and genistin) are calculated as their aglycon equivalents. The limit of quantitation for each individual component for this study was 10 µg/g.

Reference Standards:
Chromadex, Daidzein, 96.5% Lot Number: 04007-120.
Chromadex, Glycitein, 96.3% Lot Number: 07344-571.
Indofine, Genistein, 99+% (used as 100%) Lot Number: 0309074.
Chromadex, Daidzin, 88.5% Lot Number: 04014-111.
Indofine, Glycitin, 98 +% (used as 98%) Lot Number: 0310179.
Indofine, Genistin, >99% (used as 100%) Lot Number: 0701006.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Official Methods 2001.10, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Lectin (LECT)
The sample was suspended in phosphate buffered saline (PBS), shaken, and filtered. An aliquot of the resulting extract was serially diluted in 10 cuvettes containing PBS. A 10% hematocrit of lyophilized rabbit blood in PBS was added to each dilution. After 2.5 hours, the absorbance of each dilution of the sample and lectin control was measured on a spectrophotometer at 620 nm, using PBS to zero the instrument. One hemagglutinating unit (H.U.) was defined as the level that caused 50% of the standard cell suspension to sediment in 2.5 hours. The limit of quantitation for this study was 0.10 H.U./mg.

References:
Klurfeld, D. M. and Kritchevsky, D., "Isolation and Quantitation of Lectins from Vegetable Oils," *Lipids,* 22:667-668, (1987).

Klurfeld, D. M., Personal communication.

Liener, I. E., "The Photometric Determination of the Hemagglutinating Activity of Soyin and Crude Soybean Extracts," *Archives of Biochemistry and Biophysics,* 54:223-231, (1955).

Moisture (M100)
The sample was dried in a vacuum oven at approximately 100°C to a constant weight. The moisture weight loss was determined and converted to percent moisture. The limit of quantitation for this study was 0.100%.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 926.08 and 925.09, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Neutral Detergent Fiber, Enzyme Method (NDFE) using Ankom
The ANKOM2000 Fiber Analyzer automated the process of the removal of protein, carbohydrate, and ash. An enzyme treatment of heat stabilized alpha-amylase was used to break down starches. If necessary, fats and pigments were removed with an acetone wash prior to analysis. Hemicellulose, cellulose, lignin and insoluble protein fraction was left in the filter bag and determined gravimetrically. The limit of quantitation for this study was 0.100%.

References:
Approved Methods of the American Association of Cereal Chemists, 9th Ed., Method 32.20, (1998).

Forage and Fiber Analyses, Agriculture Handbook No. 379, United States Department of Agriculture, (1970).

Komarek, A.R., Robertson J.B and Van Soest P.J. "Comparison of the Filter Bag Technique to Conventional Filtration in the Vn Soest NDF Analysis of 21 Feeds," Presented at National Conference on Forage Quality, Evaluation and Utilization Proceedings (University of Nebraska) (1994).

Niacin (NIAP)
The sample was hydrolyzed with sulfuric acid and the pH was adjusted to remove interferences. The amount of niacin was determined by comparing the growth response of the sample, using the bacteria *Lactobacillus plantarum,* with the growth response of a niacin standard. This response was measured turbidimetrically. The limit of quantitation for this study was 0.300 mg/kg.

Reference Standard:
USP, Niacin, 99.8%, Lot Number I0E295

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 944.13 and 960.46, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Pantothenic Acid (PANN)
The sample was diluted with water or treated with an enzyme mixture to liberate the pantothenic acid from coenzyme A and the pH was adjusted to remove interferences. The amount of pantothenic acid was determined by comparing the growth response of the sample, using the bacteria *Lactobacillus plantarum*, with the growth response of a calcium pantothenate standard. This growth response was measured turbidimetrically. The limit of quantitation for this study was 0.400 mg/kg.

Reference Standard:
USP, Calcium pantothenate, 99.0%, Lot Number O0C331

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 945.74 and 960.46, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Phytic Acid (PHYT)
The sample was extracted using 0.5M HCl with ultrasonication. Purification and concentration were accomplished on a silica-based anion-exchange column. The sample was analyzed on a polymer high-performance liquid chromatography column PRP-1, 5μm (150 x 4.1mm) with a refractive index detector. The limit of quantitation for this study was approximately 0.100%.

Reference Standard:
Sigma-Aldrich, Phytic Acid, Dodecasodium Salt Hydrate, 95%, Lot Number 077K0693

References:
Lehrfeld, Jacob, "HPLC Separation and Quantitation of Phytic Acid and Some Inositol Phosphates in Foods: Problem and Solutions," *Journal of Agricultural and Food Chemistry*, 42:2726-2731, (1994).

Lehrfeld, Jacob, "High-Performance Liquid Chromatography Analysis of Phytic Acid on a pH-Stable, Macroporous Polymer Column," *Cereal Chemistry*, 66(6):510-515, (1989).

Protein (PGEN)

Nitrogenous compounds in the sample were reduced in the presence of boiling sulfuric acid and a mercury catalyst mixture to form ammonia. The acid digest was made alkaline. The ammonia was distilled and then titrated with a previously standardized acid. The percent nitrogen was calculated and converted to equivalent protein using the factor 6.25. The limit of quantitation for this study was 0.100%.

References:

Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 955.04 and 979.09, AOAC INTERNATIONAL, Gaithersburg, Maryland, (2005).

Bradstreet, R. B., *The Kjeldahl Method for Organic Nitrogen*, Academic Press: New York, New York, (1965).

Kalthoff, I. M., and Sandell, E. B., *Quantitative Inorganic Analysis*, MacMillan: New York, (1948).

Raffinose and Stachyose (SUGT)

The sample was extracted with deionized water and the extract treated with a hydroxylamine hydrochloride solution in pyridine, containing phenyl-β-D-glucoside as an internal standard. The resulting oximes were converted to silyl derivatives by treatment with hexamethyldisilazane and trifluoracetic acid and analyzed by gas chromatography using a flame ionization detector. The limit of quantitation for this study was 0.100%.

Reference Standards:

Sigma-Aldrich, Raffinose Pentahydrate, 99% (84.0% after correction for degree of hydration), Lot Number 037K1059

Sigma-Aldrich, Stachyose, 98% (96.8% after correction for moisture), Lot Number 038K3775.

References:

Brobst, K. M., "Gas-Liquid Chromatography of Trimethylsilyl Derivatives," *Methods in Carbohydrate Chemistry*, Volume 6, Academic Press: New York, New York, (1972).

Mason, B. S., and Slover, H. T., "A Gas Chromatographic Method for the Determination of Sugars in Foods," *Journal of Agricultural and Food Chemistry*, 19(3):551-554, (1971).

Thiamin Hydrochloride (BIDE)

The sample was autoclaved under weak acid conditions to extract the thiamin. The resulting solution was incubated with a buffered enzyme solution to release any bound thiamin. The solution was purified on a cation-exchange column. An aliquot was reacted with potassium ferricyanide to convert thiamin to thiochrome. The thiochrome was

extracted into isobutyl alcohol, measured on a fluorometer, and quantitated by comparison to a known standard. The limit of quantitation for this study was 0.10 mg/kg. Results were reported as thiamin hydrochloride.

Reference Standard:
USP, Thiamin hydrochloride, 99.8%, used as 95.9% after correction for moisture, Lot Number 01F236

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 942.23, 953.17, and 957.17, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Tocopherols, Total (TTLC)
The product was saponified to break down any fat and release vitamin E. The saponified mixture was extracted with an organic solvent, dried down and brought to a suitable volume in hexane. The sample was then quantitated by high-performance liquid chromatography using a silica column. The limit of quantitation for this study was approximately 5.00 mg/kg.

Reference Standard:
USP, Alpha Tocopherol, 100%, Lot Number M
Matreya, Beta Tocopherol, stock standard concentration determined spectrophotometrically, Lot Number 22647
Sigma, Gamma Tocopherol, 99%, Lot Number 038K1232
Sigma, Delta Tocopherol, 95%, Lot Number 126K1307

References:
Speek, A. J., Schijver, J., and Schreurs, W. H. P., "Vitamin E Composition of Some Seed Oils as Determined by High-Performance Liquid Chromatography with Fluorometric Quantitation," *Journal of Food Science,* 50(1):121-124, (1985).

Cort, W. M., Vincente, T. S., Waysek, E. H., and Williams, B. D., "Vitamin E Content of Feedstuffs Determined by High-Performance Liquid Chromatographic Fluorescence," *Journal of Agricultural and Food Chemistry,* 31:1330-1333, (1983).

McMurray, C. H., Blanchflower, W. J., and Rice, D. A., "Influence of Extraction Techniques on Determination of α-Tocopherol in Animal Feedstuffs," *Journal of the Association of Official Analytical Chemists,* 63(6):1258-1261, (1980).

Total Dietary Fiber (TDF)
Duplicate samples were gelatinized with α-amylase and digested with enzymes to break down starch and protein. Ethanol was added to each sample to precipitate the soluble fiber. The samples were filtered, and the residue was rinsed with ethanol and acetone to

remove starch and protein degradation products and moisture. Protein content was determined for one of the duplicates; ash content was determined for the other. The total dietary fiber in the sample was calculated using the protein and ash values. The limit of quantitation for this study was 1.00%.

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 985.29, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Trypsin Inhibitor (TRIP)
The sample was ground and defatted with petroleum ether. A sample of matrix was extracted with 0.01N sodium hydroxide. Varying aliquots of the sample suspension were exposed to a known amount of trypsin and benzoy1-DL-arginine~p~nitroanilide hydrochloride. The sample was allowed to react for 10 minutes at 37°C. After 10 minutes, the reaction was halted by the addition of acetic acid. The solution was centrifuged, then the absorbance was determined at 410 nm. Trypsin inhibitor activity was determined by photometrically measuring the inhibition of trypsin's reaction with benzoyl-DL-arginine~p~nitroanilide hydrochloride. The limit of quantitation for this study was 1.00 Trypsin Inhibitor Units (TIU)/mg.

Reference:
Official Methods and Recommended Practices of the American Oil Chemists' Society, 5th Ed., Method Ba 12-75, American Oil Chemists' Society: Champaign, Illinois, (1997).

Vitamin B_2 (Riboflavin) (B2FV)
The sample was hydrolyzed with dilute hydrochloric acid and the pH was adjusted to remove interferences. The amount of riboflavin was determined by comparing the growth response of the sample, using the bacteria *Lactobacillus rhamnosus*, with the growth response of multipoint riboflavin standards. The growth response was measured turbidimetrically. The limit of quantitation for this study was 0.200 mg/kg.

Reference Standard:
USP, Riboflavin, 100%, Lot Number: N0C021

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 940.33 and 960.46, AOAC INTERNATIONAL, Gaithersburg, Maryland, (2005).

The United States Pharmacopeia, Twenty-Ninth Revision, p. 1913, United States Pharmacopeial Convention, Inc.: Rockville, Maryland, (2005).

Pyridoxine Hydrochloride (B6A)

The sample was hydrolyzed with dilute sulfuric acid in the autoclave and the pH was adjusted to remove interferences. The amount of pyridoxine was determined by comparing the growth response of the sample, using the yeast *Saccharomyces cerevisiae,* with the growth response of a pyridoxine standard. The response was measured turbidimetrically. Results were reported as pyridoxine hydrochloride. The limit of quantitation for this study was 0.0700 mg/kg.

Reference Standard:
USP, Pyridoxine hydrochloride, 100%, Lot Number: P

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 961.15, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Atkins, L., Schultz, A. S., Williams, W. L., and Frey, C. N., "Yeast Microbiological Methods for Determination of Vitamins," *Industrial and Engineering Chemistry, Analytical Edition,* 15:141-144, (1943).

Vitamin B_{12} (B12F)
Vitamin B_{12} was extracted from the sample into a buffer by heating in an autoclave. Utilizing the bacteria *Lactobacillus delbrueckii*, the amount of vitamin B_{12} was determined turbidimetrically by comparing the growth response of a sample against the growth response of a vitamin B_{12} standard. The limit of quantitation for this study was 0.00300 mg/kg.

Reference Standard:
USP, Cyanocobalamin, 10.7 µg/mg, Lot Number: N

References:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Methods 952.20 and 960.46, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

The United States Pharmacopeia, Twenty-Ninth Revision, pp. 603-4, United States Pharmacopeial Convention, Inc.: Rockville, Maryland, (2005).

Methods of Analysis for Infant Formulas, Infant Formula Council, Atlanta, Georgia, Section C-2, (1985).

Vitamin C (VCF)
The vitamin C in the sample was extracted, oxidized, and mixed with o-phenylenediamine to produce a fluorophor having an activation maximum at approximately 350 nm and a fluorescence maximum at 430 nm. Fluorescence was proportional to concentration. Development of the fluorescence compound with the

vitamin was prevented by forming a boric acid-dehydroascorbic acid complex prior to addition of the o-phenylenediamine solution. Any remaining fluorescence was due to extraneous material and served as the blank. The limit of quantitation for this study was 10.0 mg/kg.

Reference Standard:
USP, Ascorbic Acid, 99.9%, but used as 100%, Lot Number Q1G135

Reference:
Official Methods of Analysis of AOAC INTERNATIONAL, 18th Ed., Method 967.22, AOAC INTERNATIONAL: Gaithersburg, Maryland, (2005).

Vitamin D (VDMS)
Vitamin D was extracted with reagent alcohol. After removing any solid particles by centrifuging the extraction solution was saponified by adding KOH solution. The analyte was extracted with hexane, dried down, reconstituted, and injected for LC/MS/MS measurement. The limit of quantitation for this study was 0.005 mg/kg.

Reference Standards:
USP, Cholecalciferol, 100%, Lot Number N0G038
USP, Ergocalciferol, 100%, Lot Number P0B275

Reference:
Huang, M., LaLuzerne P., and Winters, D. "Measurement of Vitamin D in Foods and Nutritional Supplements by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)" 2009 (accepted), Journal of AOAC INTERNATIONAL

APPENDIX F- 080003.01 EXPRESSION REPORT

SUMMARY

(In accordance with 40 CFR part 152, this summary is available for public release after registration)

STUDY TITLE

Field Expression of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase-12 (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

DATA REQUIREMENTS

Not Applicable

AUTHOR(S)

J. K. Smith-Drake, A. D. Thomas, M. J. Sosa

STUDY COMPLETED ON

22-Oct-2009

PERFORMING LABORATORY

Regulatory Sciences and Government Affairs—Indianapolis Lab
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, Indiana 46268-1054

LABORATORY STUDY ID

080003

Sub-Report ID

080003.01

Field Expression of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase-12 (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

SUMMARY

Soybean (*Glycine max*) has been modified by the insertion of the *aad-12* gene from soil bacterium *Delftia acidovorans* and *pat* gene from *Streptomyces viridochromogenes*. The *aad*-12 gene encodes an aryloxyalkanoate dioxygenase-12 protein (AAD-12) which provides tolerance to 2,4-dichlorophenoxyacetic acid and pyridyloxyacetate herbicides. The *pat* gene encodes a phosphinothricin acetyltransferase (PAT) protein which provides tolerance to glufosinate-based herbicides.

A study to determine the field expression, nutrient composition, and agronomic performance of a non-transgenic control and transgenic soybean (DAS-68416-4) containing *aad*-12 and *pat* genes was conducted in 2008 at six sites located in Iowa, Illinois, Indiana, Nebraska and Ontario, Canada (2 sites). This report summarizes the expression levels of AAD-12 and PAT proteins in leaf at V5 and V10 growth stages, root, forage, and grain samples from the control and DAS-68416-4 soybean.

The soluble, extractable AAD-12 and PAT proteins were measured using a quantitative enzyme-linked immunosorbent assay (ELISA) method for soybean leaf, root, forage, and grain. Average expression values for AAD-12 ranged from 16.31 ng/mg dry weight in R3 stage root to 55.58 ng/mg in V10 leaf tissue. Average expression values for PAT ranged from 1.83 ng/mg dry weight in R3 stage root to 11.45 ng/mg in V10 leaf tissue. Expression values were similar for all the sprayed treatments as well as for the plots sprayed and unsprayed with 2,4-D and glufosinate herbicides

STUDY TITLE

Field Expression of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase-12 (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

DATA REQUIREMENTS

Not Applicable

AUTHOR(S)

J. K. Smith-Drake 317-337-3459
[jksmith.drake@dow.com]
A. D. Thomas, M. J. Sosa

STUDY COMPLETED ON

22-Oct-2009

PERFORMING LABORATORY

Regulatory Sciences and Government Affairs—Indianapolis Lab
Dow AgroSciences LLC
9330 Zionsville Road
Indianapolis, Indiana 46268-1054

LABORATORY STUDY ID

080003

Sub-Report ID

080003.01

STATEMENT OF NO DATA CONFIDENTIALITY CLAIMS

Compound: AAD-12 and PAT

Title: Field Expression of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase-12 (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

- STATEMENT OF NO DATA CONFIDENTIALITY CLAIMS: No claim of confidentiality, on any basis whatsoever, is made for any information contained in this document. I acknowledge that information not designated as within the scope of FIFRA sec. 10(d)(1)(A), (B), or (C) and which pertains to a registered or previously registered pesticide is not entitled to confidential treatment and may be released to the public, subject to the provisions regarding disclosure to multinational entities under FIFRA sec. 10(g).

Company: Dow AgroSciences LLC

Company Agent: M. S. Krieger

Title: Regulatory Manager

Signature: [illegible]

Date: 20 October 2009

THIS DATA MAY BE CONSIDERED CONFIDENTIAL IN COUNTRIES OUTSIDE THE UNITED STATES.

STATEMENT OF COMPLIANCE WITH GOOD LABORATORY PRACTICE STANDARDS

Title: Field Expression of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase-12 (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

Study Initiation Date: 14 May 2008

This report represents data generated after the effective date of the EPA FIFRA Good Laboratory Practice Standards.

United States Environmental Protection Agency
Title 40 Code of Federal Regulations Part 160
FEDERAL REGISTER, August 17, 1989

Organisation for Economic Co-Operation and Development
ENV/MC/CHEM(98)17, Paris January 26, 1998

All aspects of this study were conducted in accordance with the requirements for Good Laboratory Practice Standards, 40 CFR 160, with the following exceptions:

The test substance was not characterized according to GLP.

M. S. Krieger
Sponsor
Dow AgroSciences LLC

26 October 2009
Date

M. S. Krieger
Submitter
Dow AgroSciences LLC

26 October 2009
Date

J. K. Smith-Drake
Study Director/Author
Dow AgroSciences LLC

22 OCT 2009
Sub-Report Completion Date

Dow AgroSciences Quality Assurance Unit
Good Laboratory Practice Statement Page

Study ID: 080003.01

Title: Field Expression of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

Study Initiation Date: 14-May-2008 **Study Completion Date:** 22-Oct-2009

GLP Quality Assurance Inspections

Date of GLP Inspection(s)	Date Reported to the Study Director and to Management	Phases of the Study which received a GLP Inspection by the Quality Assurance Unit
09-May-2008	14-May-2008	Protocol Review
29-July-2009	29-July-2009	Expression Analysis of Root Tissue
28, 31-Aug-2009 1-4-Sept-2009	09-Sept-2009	Raw Data and Sub-Report for Field Expression Analysis; Sample Verification

QUALITY ASSURANCE STATEMENT:

The Quality Assurance Unit has reviewed the final study report and has determined that the report reflects the raw data generated during the conduct of this study.

Gaya Wickremsinhe 22 Oct 2009

Gaya Wickremsinhe, RQAP-GLP
Dow AgroSciences, Quality Assurance

Date

SIGNATURE PAGE

J. K. Smith-Drake Author Dow AgroSciences LLC	20 Oct 09 Date
A. D. Thomas Co-Author Dow AgroSciences LLC	20 Oct 09 Date
M. J. Sosa Co-Author Dow AgroSciences LLC	21 Oct 09 Date
G. Shan Peer Reviewer/Technical Leader Dow AgroSciences LLC	20 Oct 09 Date
K. A. Clayton Global Leader, Biotechnology Regulatory Sciences Dow AgroSciences LLC	21 Oct 2009 Date

STUDY PERSONNEL

Title: Field Expression of a Transformed Soybean Cultivar (DAS-68416-4) Containing Aryloxyalkanoate Dioxygenase-12 (AAD-12) and Phosphinotricin Acetyltransferase (PAT)

Study Director: J. K. Smith-Drake

Analysts: A. D. Thomas

M. J. Sosa

Site	Field Investigator
080003IA	David Bennett Bennett Agricultural Research Consulting Richland, Iowa
080003IL	Tim Boeker Alvey Agricultural Research Carlyle, Illinois
080003IN	John Bailey Alvey Agricultural Research Rockville, IN
080003NE	Matt Krause Ag Research Associates York, Nebraska
080003ON1	Sarah Neals-Bolinger Ecologistics Research Services Thorndale, Ontario
080003ON2	Jamie Parnell Vaughn Agricultural Research Services, Ltd. Branchton, Ontario

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ABSTRACT

Soybean (*Glycine max*) has been modified by the insertion of the *aad-12* gene from soil bacterium *Delftia acidovorans* and a *pat* gene from *Streptomyces viridochromogenes*. The *aad*-12 encodes an aryloxyalkanoate dioxygenase-12 (AAD-12) which provides tolerance to 2,4-dichlorophenoxyacetic acid and pyridyloxyacetate herbicides. The *pat* gene encodes a phosphinothricin acetyltransferase (PAT) protein which provides tolerance to glufosinate-based herbicides and was used as a selectable marker during the transformation.

Field expression, nutrient composition, and agronomic trials of a non-transgenic control and a transgenic soybean line event DAS-68416-4 containing *aad*-12 and *pat* genes was conducted in 2008 at six sites located in Iowa, Illinois, Indiana, Nebraska and Ontario, Canada (2 sites). This report summarizes the expression levels of AAD-12 and PAT proteins in leaf at V5 and V10 growth stages, root, forage, and grain samples from the control and DAS-68416-4 AAD-12 soybean.

The soluble, extractable AAD-12 and PAT proteins were measured using a quantitative enzyme-linked immunosorbent assay (ELISA) method for soybean leaf, root, forage, and grain. Average expression values for AAD-12 across different spray treatments ranged from 16.31 ng/mg dry weight in R3 stage root to 55.58 ng/mg in V10 leaf tissue. Average expression values for PAT across different spray treatments ranged from 1.83 ng/mg dry weight in R3 stage root to 11.45 ng/mg in V10 leaf tissue. Expression values were similar for all the sprayed treatments as well as for the plots sprayed and unsprayed with 2,4-D and glufosinate herbicides.

INTRODUCTION

Soybean (*Glycine max*) has been modified by the insertion of the *aad-12* gene from soil bacterium *Delftia acidovorans* and a *pat* gene from *Streptomyces viridochromogenes*. The *aad*-12 encodes an aryloxyalkanoate dioxygenase-12 (AAD-12) protein which provides tolerance to 2,4-dichlorophenoxyacetic acid and pyridyloxyacetate herbicides. The *pat* gene encodes a phosphinothricin acetyltransferase (PAT) protein which provides tolerance to glufosinate-based herbicides and was used as a selectable marker during the transformation. Transformation of a variety "Maverick" soybean with plasmid pDAB4468, followed by conventional breeding produced a transgenic soybean event DAS-68416-4, which is the focus of this study. The purpose of this study was to determine the levels of AAD-12 and PAT proteins found in soybean tissues.

Field expression, composition, and agronomic trials were conducted at six test sites located within the major soybean-producing regions of the U.S and Canada. These sites represent regions of diverse agronomic practices and environmental conditions. The trials were located in Iowa, Illinois, Indiana, Nebraska and Ontario, Canada (2 sites).

EXPERIMENTAL

Test Substances/Test Systems

The test substance seed was pDAB4468-416 (OECD DAS-68416-4). Transformation of a soybean variety "Maverick" with plasmid pDAB4468, followed by conventional breeding produced a transgenic soybean event DAS-68416-4, which is the focus of this study. The test substance and treatments are listed in the table on the following page:

Test Entry	Event ID	Source ID Number	Test Entry Description
1	Maverick	YX07KX002114	Maverick control
3	pDAB4468-416	YX07KX002559 and YX07KX002526	AAD Event 2 unsprayed
5	pDAB4468-416		AAD Event 2 sprayed w/ glufosinate
7	pDAB4468-416		AAD Event 2 sprayed w/ 2,4-D
9	pDAB4468-416		AAD Event 2 sprayed w/ 2,4-D and glufosinate

The test systems were lyophilized soybean plant tissue samples from 2008 CEA field trial (Study 080003.01) including leaf (V5 and V10 growth stages), forage, root and grain collected from 6 sites with three different treatments. Detailed information of these samples is listed in Table 1-Table 5.

Sample Collection, Processing and Storage

Samples for expression analysis were collected as per the following table

Expression Tissue	Growth Stage[a]	Sample Size	Samples per Entry: Control Entry 1	Samples per Entry: Test Entries 3, 5, 7, & 9
Leaf	V5	8 trifoliate leaves	1	1
Leaf	V10-12	8 trifoliate leaves	1	1
Forage	R3	3 plants[b]	1	1
Root	R3	3 plants[b]	1	1
Grain	R8-Maturity	500-g	1	1

[a] Approximate Growth Stage
[b] Plants chopped, combined (pooled).

All expression samples were shipped frozen to Dow AgroSciences by overnight shipping, except for samples from Canada, which were shipped via freezer truck. Upon receipt at Dow AgroSciences, samples were inspected for physical condition and were found to be either cold or frozen and in good condition. Samples were logged into the computerized Regulatory Laboratories Information Management System (RLIMS). All expression samples were stored in temperature-monitored freezers at approximately -80 °C, being removed only for required sample preparation and analysis.

Samples of soybean tissues were prepared for expression analysis by coarse grinding, lyophilizing and fine-grinding (if necessary) with a Geno/Grinder (Certiprep, Metuchen, New Jersey).

Reference Substances

The reference substances employed in this study were purified PAT and AAD-12 protein used as calibration standards in the ELISA analysis.

Characterization of the reference standards and documentation of the source is located on file at Dow AgroSciences, LLC archives.

Protein	TSN	Purity or Concentration	Reference
PAT	105742	0.3 mg/mL	BIOT 063302 (1)
AAD-12	030732-0002	35.3%	BIOT 09-203009 (2)

All test and reference substances were stored in temperature monitored freezers, and removed only for sample preparation and analysis.

Determination of AAD-12 Protein in Soybean Samples

Samples of soybean were analyzed for the amount of AAD-12 protein using the Dow AgroSciences draft method GRM 08.04 (3). In this method, the soluble extractable AAD-12 protein is quantified using an enzyme-linked immunosorbent assay (ELISA) kit purchased from Beacon Analytical System, Inc.

In the analytical method, the AAD-12 protein was extracted from soybean tissues except grain with a phosphate buffered saline solution with Tween-20 (PBST) and 0.75% ovalbumin (OVA). For grain, the protein was extracted with a PBST buffer containing 0.1% Triton-100. The plant tissue and grain extracts were centrifuged; the aqueous supernatant was collected, diluted with appropriate buffer if necessary, and analyzed using an AAD-12 ELISA kit in a sandwich format. Briefly, an aliquot of the diluted sample and a horseradish peroxidase (HRP)/anti-AAD-12 monoclonal antibody conjugate are incubated in the wells of a microtiter plate coated with an immobilized anti-AAD-12 polyclonal antibody. These antibodies bind with AAD-12 protein in the wells and form a "sandwich" with AAD-12 protein bound between soluble and the immobilized antibodies. The unbound samples and conjugate are then removed from the plate by washing with PBST. Subsequent addition of an enzyme substrate generated a colored product. The reaction was stopped by adding a dilute acid solution. Since the AAD-12 was bound in the antibody sandwich, the level of color development was related to the concentration of AAD-12 in the sample (i.e., lower protein concentrations result in lower color development). The absorbance at 450 nm minus 650 nm was measured using a Molecular Devices Spectra Max 190 or Spectra Max M2 plate reader. A calibration curve was generated and the AAD-12 concentration in unknown samples was calculated from the polynomial regression equation using Soft-MAX Pro™ software which was compatible with the plate reader. Samples were analyzed in duplicate wells with the average concentration of the duplicate wells being reported.

Determination of PAT Protein in Soybean Tissue Samples

All soybean samples were analyzed to determine the expression levels of the PAT protein. Samples were analyzed using the Dow AgroSciences validated method GRM 08.05 (4). In this method, the soluble extractable PAT protein is quantified using an enzyme-linked immunosorbent assay (ELISA) kit purchased from Envirologix Inc.

In the analytical method, the PAT protein was extracted from soybean tissues with a phosphate buffered saline solution containing the detergent Tween (PBST) and polyvinylpyrrolidone (PVP). The extract was centrifuged; the aqueous supernatant was collected, diluted with PBST/1% PVP, and analyzed using a PAT ELISA kit. Briefly, an aliquot of the diluted sample was incubated with enzyme-conjugated anti-PAT antibody and anti-PAT antibodies coated in the wells of a 96-well plate in a sandwich ELISA format. At the end of the incubation period, the unbound reagents were removed from the plate by washing. Subsequent addition of an enzyme substrate generated a colored product. The reaction was stopped by adding a dilute acid solution. Since the PAT was bound in the antibody sandwich, the level of color development was related to the concentration of PAT in the sample (i.e., lower residue concentrations result in lower color development). The absorbance at 450 minus 650 nm was measured using a Molecular Devices Spectra Max 190 or Spectra max M2 plate reader. A calibration curve was generated and the PAT concentration in unknown samples was calculated from the polynomial regression equation using Soft-MAX Pro™ software which was compatible with the plate reader. Samples were analyzed in duplicate wells with the average concentration of the duplicate wells being reported.

Limit of Detection/Quantitation for Soybean Samples

The limit of detection (LOD) and limit of quantitation (LOQ) for soybean tissues were determined during the method validation for the methods described above. Samples were reported as not detectable (ND) if the absorbance was less than the lowest standard absorbance at the minimum matrix dilution. Reported sample concentrations that are less than the method

LOQ values (shown in table below) have lower precision than results reported above the LOQ values (5).

	PAT (ng/mg sample dry weight)		AAD-12 (ng/mg sample dry weight)	
Matrix	LOD	LOQ	LOD	LOQ
Leaf V5	0.06	0.12	0.5	1.0
Leaf V10	0.06	0.12	0.5	1.0
Root	0.06	0.12	0.5	1.0
Forage	0.06	0.12	0.5	1.0
Grain	0.06	0.12	0.5	1.0

Statistical Treatment

Mean calculations, standard deviations, and regression analysis were performed for the expression analyses. Acceptance criteria of the calibration curves for each ELISA plate was detailed in the analytical methods report for the methods described above.

RESULTS AND DISCUSSION

Expression Analysis Results

The soybean matrices of leaf (V5, V10), root, forage, and grain were analyzed for expression levels of AAD-12 and PAT proteins. Protein concentrations in the matrices (ng/mg) are expressed on a dry tissue weight basis. The AAD-12 and PAT protein concentration was reported as not detected (ND) if the sample absorbance was less than the lowest calibration standard absorbance. The AAD-12 and PAT protein concentration was reported as the value in parenthesis (0.XX) if the concentration was less than the validated method LOQ but greater than the validated method LOD. Values reported in parentheses are less precise than values above the LOQ.

A summary of the AAD-12 and PAT protein concentrations (averaged across sites) in the various soybean matrices is shown in Table 6 and Table 7. Control samples were negative for AAD-12 and PAT for all tissues.

Expression of AAD-12 for V5 leaf ranged from 50.63 -66.08 ng/mg across treatments. Average expression of AAD-12 was 54.95 ng/mg for V5 leaf. V10 leaf expression of AAD-12 ranged from 53.95-57.07 ng/mg across the treatments. V10 leaf had the highest overall expression of AAD-12 at 55.58 ng/mg. The average expression of AAD-12 in root ranged from 15.48-17.10 ng/mg across the treatments. Average expression of AAD-12 was 16.31 ng/mg for root. Expression of AAD-12 levels in forage ranged from 39.35-41.11 ng/mg. Average expression of AAD-12 was 40.17 ng/mg for forage. Expression levels of AAD-12 in grain ranged from 16.21-16.94 ng/mg. Average expression of AAD-12 was 16.52 ng/mg for grain.

Average expression values for AAD-12 ranged from 16.31 ng/mg dry weight in R3 stage root to 55.58 ng/mg in V10 leaf tissue.

Expression of PAT for V5 leaf ranged from 9.01 -10.05 ng/mg across treatments. Average expression of PAT was 9.51 ng/mg for V5 leaf. V10 leaf expression of PAT ranged from 10.94-11.76 ng/mg across the treatments. V10 leaf had the highest overall expression of PAT at 11.45 ng/mg. The average expression of PAT in root ranged from 1.73-1.93 ng/mg across the treatments. Average expression of PAT was 1.83 ng/mg for root. Expression of PAT levels in forage ranged from 3.63-5.28 ng/mg. Average expression of PAT was 4.61 ng/mg for forage Expression levels of PAT in grain ranged from 2.73-2.82 ng/mg. Average expression of PAT was 2.77 ng/mg for grain.

Average expression values for PAT ranged from 1.83 ng/mg dry weight in R3 stage root to 11.45 ng/mg in V10 leaf tissue. Expression results for the unsprayed and sprayed plots were similar. Results for individual samples can be found in Appendix A, Tables 1-5, and Appendix B, Table 1-5

CONCLUSION

Expression of AAD-12 and PAT was not observed in the control samples. AAD-12 and PAT expression was highest in V10 leaf samples and lowest in the root samples. Average expression values for AAD-12 ranged from 16.31 ng/mg dry weight in R3 stage root to 55.58 ng/mg in V10 leaf tissue. Average expression values for PAT ranged from 1.83 ng/mg dry weight in R3 stage root to 11.45 ng/mg in V10 leaf tissue. Expression results for the unsprayed and sprayed plots were similar.

ARCHIVING

The final report and all raw data (including verified and signed copies) associated with this study will be filed in the Dow AgroSciences facility archives, Indianapolis, Indiana upon issuing the final report.

REFERENCES

1. Schafer, B. W., "Certificate of Analysis for Test/Reference/Control Substance TSN105742", BIOT 063302, 2006, unpublished report of Dow AgroSciences LLC.

2. Embrey, S. K., Schaffer, B. W., "Certificate of Analysis of the Test/Reference/Controls Substances: Aryloxyalkanoate Dioxygenase-12 (AAD-12) – TSN030732", BIOT09-203009, 2009, unpublished report of Dow AgroSciences LLC.

3. Smith-Drake, J. K., Sosa, M. J., Shan, G., "Method Validation for the Determination of Aryloxyalkanoate Dioxygenase (AAD-12) in Soybean Tissues Using an Enzyme-Linked Immunosorbent Assay (ELISA)", 081008, 2009, unpublished report of Dow AgroSciences LLC.

4. Smith-Drake, J. K., Sosa, M. J., Shan, G., "Method Validation for the Determination of Phosphinothricin Acetyltransferase (PAT) Protein in Soybean Tissues Using and Enzyme-Linked Immunosorbent Assay (ELISA)", 081022, 2009, unpublished report of Dow AgroSciences LLC.

5. Keith, L. H.; Crummett, W.; Deegan, J. Jr.; Libby, R. A.; Taylor, J. K.; Wentler, G. 1983 Principles of environmental analysis**,** *Anal. Chem.*, *55*, 2210-2218

Table 1. Test System- V5 Soybean Leaf

SGN	Site/Sample Type	Description
080003-043-0001, -0002, -0003	Iowa/V5 leaf	Control
080003-043-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-043-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-043-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-043-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-050-0001, -0002, -0003	Illinois/V5 Leaf	Control
080003-050-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-050-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-050-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-050-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-057-0001, -0002, -0003	Indiana./V5 Leaf	Control
080003-057-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-057-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-057-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-057-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-064-0001, -0002, -0003	Nebraska/V5 Leaf	Control
080003-064-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-064-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-064-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-064-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-071-0001, -0002, -0003	Thorndale, ON/V5 Leaf	Control
080003-071-0007, -0008[a], -0009[a]		DAS-68416-4 unsprayed
080003-071-0013, -0014[a], -0015[a]		DAS-68416-4 glufosinate sprayed
080003-071-0019, -0020[a], -0021[a]		DAS-68416-4 2,4-D sprayed
080003-071-0025, -0026[a], -0027[a]		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-078-0001, -0002, -0003	Branchton, ON/V5 Leaf	Control
080003-078-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-078-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-078-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-078-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed

[a] Samples were not collected

Table 2. Test System- V10 Soybean Leaf

SGN	Site/Sample Type	Description
080003-044-0001, -0002, -0003	Iowa/V10 leaf	Control
080003-044-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-044-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-044-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-044-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-051-0001, -0002, -0003	Illinois/V10 Leaf	Control
080003-051-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-051-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-051-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-051-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-058-0001, -0002, -0003	Indiana/V10 Leaf	Control
080003-058-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-058-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-058-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-058-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-065-0001, -0002, -0003	Nebraska/V10 Leaf	Control
080003-065-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-065-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-065-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-065-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-072-0001, -0002, -0003	Thorndale, ON/V10 Leaf	Control
080003-072-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-072-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-072-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-072-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-079-0001, -0002, -0003	Branchton, ON/V10 Leaf	Control
080003-079-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-079-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-079-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-079-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed

Table 3. Test System- Forage Soybean Leaf

SGN	Site/Sample Type	Description
080003-045-0001, -0002, -0003	Iowa/Forage	Control
080003-045-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-045-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-045-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-045-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-052-0001, -0002, -0003	Illinois/Forage	Control
080003-052-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-052-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-052-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-052-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-059-0001, -0002, -0003	Indiana/Forage	Control
080003-059-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-059-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-059-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-059-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-066-0001, -0002, -0003	Nebraska/Forage	Control
080003-066-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-066-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-066-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-066-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-073-0001, -0002, -0003	Thorndale, ON/Forage	Control
080003-073-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-073-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-073-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-073-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-080-0001, -0002, -0003	Branchton, ON/Forage	Control
080003-080-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-080-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-080-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-080-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed

Table 4. Test System- Soybean Root.

SGN	Site/Sample Type	Description
080003-046-0001, -0002, -0003	Iowa/Root	Control
080003-046-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-046-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-046-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-046-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-053-0001, -0002, -0003	Illinois/Root	Control
080003-053-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-053-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-053-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-053-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-060-0001, -0002, -0003	Indiana/Root	Control
080003-060-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-060-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-060-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-060-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-067-0001, -0002, -0003	Nebraska/Root	Control
080003-067-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-067-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-067-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-067-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-074-0001, -0002, -0003	Thorndale, ON/Root	Control
080003-074-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-074-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-074-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-074-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-081-0001, -0002, -0003	Branchton, ON/Root	Control
080003-081-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-081-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-081-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-081-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed

Table 5. Test System- Soybean Grain.

SGN	Site/Sample Type	Description
080003-047-0001, -0002, -0003	Iowa/Grain	Control
080003-047-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-047-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-047-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-047-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-054-0001, -0002, -0003	Illinois/Grain	Control
080003-054-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-054-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-054-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-054-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-061-0001, -0002, -0003	Indiana/Grain	Control
080003-061-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-061-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-061-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-061-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-068-0001, -0002, -0003	Nebraska/Grain	Control
080003-068-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-068-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-068-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-068-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed
080003-075-0001, -0002, -0003	Thorndale, ON/Grain	Control
080003-075-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-075-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-075-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-075-0025, -0026, -0027		D DAS-68416-4 glufosinate and 2,4-D sprayed
080003-082-0001, -0002, -0003	Branchton, ON/Grain	Control
080003-082-0007, -0008, -0009		DAS-68416-4 unsprayed
080003-082-0013, -0014, -0015		DAS-68416-4 glufosinate sprayed
080003-082-0019, -0020, -0021		DAS-68416-4 2,4-D sprayed
080003-082-0025, -0026, -0027		DAS-68416-4 glufosinate and 2,4-D sprayed

Table 6. Summary of Average Concentration Levels of AAD-12 Protein in Soybean Tissue Measured in the DAS-68416-4 Unsprayed, DAS-68416-4 sprayed with Glufosinate, DAS-68416-4 sprayed with 2,4-D, and DAS-68416-4 sprayed with Glufosinate and 2,4-D Across Six Different Sites.

Soybean Tissue	Treatment	AAD-12 ng/mg Tissue Dry Weight		
		Average	Std. Dev.	Range
V5 Leaf	DAS-68416-4 Unsprayed	51.42	25.22	26.37-97.66
	DAS-68416-4 + Glufosinate	50.63	23.69	28.03-94.00
	DAS-68416-4 + 2,4-D	51.68	25.41	27.16-100.79
	DAS-68416-4 + Glufosinate and 2,4-D	66.08	37.82	25.14-164.58
	Average	54.95		
V10 Leaf	DAS-68416-4 Unsprayed	53.95	20.85	29.83-90.89
	DAS-68416-4 + Glufosinate	56.06	21.95	25.06-91.95
	DAS-68416-4 + 2,4-D	55.24	20.62	30.84-91.80
	DAS-68416-4 + Glufosinate and 2,4-D	57.07	22.97	32.02-95.16
	Average	55.58		
Root	DAS-68416-4 Unsprayed	17.10	5.68	8.80-27.62
	DAS-68416-4 + Glufosinate	15.48	4.58	6.30-23.08
	DAS-68416-4 + 2,4-D	16.01	6.64	3.16-27.91
	DAS-68416-4 + Glufosinate and 2,4-D	16.66	6.81	1.84-26.50
	Average	16.31		
Forage	DAS-68416-4 Unsprayed	41.11	25.72	5.70-91.17
	DAS-68416-4 + Glufosinate	39.35	24.47	5.49-87.96
	DAS-68416-4 + 2,4-D	40.56	25.58	5.02-88.02
	DAS-68416-4 + Glufosinate and 2,4-D	39.65	22.41	4.96-69.62
	Average	40.17		
Grain	DAS-68416-4 Unsprayed	16.47	3.55	9.40-21.86
	DAS-68416-4 + Glufosinate	16.94	3.15	11.87-22.74
	DAS-68416-4 + 2,4-D	16.47	3.78	9.71-21.95
	DAS-68416-4 + Glufosinate and 2,4-D	16.21	3.62	9.91-23.40
	Average	16.52		

Table 7. Summary of Average Concentration Levels of PAT Protein Measured in the PAT Unsprayed, PAT + Glufosinate, PAT + 2,4-D and PAT + Glufosinate and 2,4-D in Soybean Tissue

Soybean Tissue	Treatment	PAT ng/mg Tissue Dry Weight		
		Average	Std. Dev.	Range
V5 Leaf	DAS-68416-4 Unsprayed	9.17	2.99	4.33-13.75
	DAS-68416-4 + Glufosinate	9.83	2.66	3.67-13.78
	DAS-68416-4 + 2,4-D	9.01	3.03	4.87-13.92
	DAS-68416-4 + Glufosinate and 2,4-D	10.05	3.76	3.00-15.03
	Average	9.51		
V10 Leaf	DAS-68416-4 Unsprayed	10.94	1.31	8.43-13.35
	DAS-68416-4 + Glufosinate	11.51	1.69	9.08-14.44
	DAS-68416-4 + 2,4-D	11.76	2.02	7.49-14.81
	DAS-68416-4 + Glufosinate and 2,4-D	11.58	1.45	9.26-14.15
	Average	11.45		
Root	DAS-68416-4 Unsprayed	1.73	0.51	0.47-2.84
	DAS-68416-4 + Glufosinate	1.92	0.45	1.01-2.67
	DAS-68416-4 + 2,4-D	1.73	0.68	0.42-2.83
	DAS-68416-4 + Glufosinate and 2,4-D	1.93	0.55	0.36-2.68
	Average	1.83		
Forage	DAS-68416-4 Unsprayed	3.63	2.88	0.06-12.54
	DAS-68416-4 + Glufosinate	4.81	3.75	0.40-12.10
	DAS-68416-4 + 2,4-D	5.28	4.20	0.12-12.13
	DAS-68416-4 + Glufosinate and 2,4-D	4.73	3.63	0.45-12.35
	Average	4.61		
Grain	DAS-68416-4 Unsprayed	2.73	0.34	1.96-3.37
	DAS-68416-4 + Glufosinate	2.74	0.28	2.29-3.39
	DAS-68416-4 + 2,4-D	2.79	0.26	2.21-3.13
	DAS-68416-4 + Glufosinate and 2,4-D	2.82	0.23	2.43-3.25
	Average	2.77		

APPENDIX A – RAW DATA FOR AAD-12

Appendix A Table 1. Expression Levels of AAD-12 in Leaf V5 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-043-0001	IA control 1	30-Jul-09	15	1.5	2	ND	ND
080003-043-0002	IA control 2	30-Jul-09	15	1.5	2	ND	ND
080003-043-0003	IA control 3	30-Jul-09	15	1.5	2	ND	ND
080003-050-0001	IL control 1	30-Jul-09	15	1.5	2	ND	ND
080003-050-0002	IL control 2	30-Jul-09	15	1.5	2	ND	ND
080003-050-0003	IL control 3	30-Jul-09	15	1.5	2	ND	ND
080003-057-0001	IN control 1	31-Jul-09	15	1.5	2	ND	ND
080003-057-0002	IN control 2	31-Jul-09	15	1.5	2	ND	ND
080003-057-0003	IN control 3	31-Jul-09	15	1.5	2	ND	ND
080003-064-0001	NE control 1	31-Jul-09	15	1.5	2	ND	ND
080003-064-0002	NE control 2	31-Jul-09	15	1.5	2	ND	ND
080003-064-0003	NE control 3	31-Jul-09	15	1.5	2	ND	ND
080003-071-0001	ON1 control 1	31-Jul-09	15	1.5	2	ND	ND
080003-071-0002	ON1 control 2	31-Jul-09	No sample	--	--	--	--
080003-071-0003	ON1 control 3	31-Jul-09	No sample	--	--	--	--
080003-078-0001	ON2 control 1	31-Jul-09	15	1.5	2	ND	ND
080003-078-0002	ON2 control 2	31-Jul-09	15	1.5	2	ND	ND
080003-078-0003	ON2 control 3	31-Jul-09	15	1.5	2	ND	ND
080003-043-0007	IA Unsprayed 1	30 July 09	15	1.5	200	546.59	54.66
080003-043-0008	IA Unsprayed 2	30 July 09	15	1.5	200	644.24	64.42
080003-043-0009	IA Unsprayed 3	30 July 09	15	1.5	200	673.73	67.37
080003-050-0007	IL Unsprayed 1	30 July 09	15	1.5	200	322.80	32.28
080003-050-0008	IL Unsprayed 2	30 July 09	15	1.5	200	263.67	26.37
080003-050-0009	IL Unsprayed 3	30 July 09	15	1.5	200	341.83	34.18
080003-057-0007	IN Unsprayed 1	31 July 09	15	1.5	200	328.28	32.83
080003-057-0008	IN Unsprayed 2	31 July 09	15	1.5	200	337.63	33.76
080003-057-0009	IN Unsprayed 3	31 July 09	15	1.5	200	328.27	32.83
080003-064-0007	NE Unsprayed 1	31 July 09	15	1.5	200	399.37	39.94
080003-064-0008	NE Unsprayed 2	31 July 09	15	1.5	200	420.05	42.01
080003-064-0009	NE Unsprayed 3	31 July 09	15	1.5	200	294.51	29.45
080003-071-0007	ON1Unsprayed 1	31 July 09	15	1.5	200	437.05	43.70
080003-071-0008	ON1Unsprayed 2	31 July 09	No sample	--	--	--	--
080003-071-0009	ON1Unsprayed 3	31 July 09	No sample	--	--	--	--
080003-078-0007	ON2Unsprayed 1	31 July 09	15	1.5	200	972.77	97.28
080003-078-0008	ON2Unsprayed 2	31 July 09	15	1.5	200	976.64	97.66
080003-078-0009	ON2Unsprayed 3	31 July 09	15	1.5	200	939.86	93.99
						Ave. =	51.42
						Std dev. =	25.22

ND – Not Detected

Appendix A Table 1 (Cont.). Expression Levels of AAD-12 in Leaf V5 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-043-0013	IA Glufosinate 1	30 July 09	15	1.5	200	625.59	62.56
080003-043-0014	IA Glufosinate 2	30 July 09	15	1.5	200	651.29	65.13
080003-043-0015	IA Glufosinate 3	30 July 09	15	1.5	200	565.11	56.51
080003-050-0013	IL Glufosinate 1	30 July 09	15	1.5	200	281.83	28.18
080003-050-0014	IL Glufosinate 2	30 July 09	15	1.5	200	351.57	35.16
080003-050-0015	IL Glufosinate 3	30 July 09	15	1.5	200	389.37	38.94
080003-057-0013	IN Glufosinate 1	31 July 09	15	1.5	200	347.88	34.79
080003-057-0014	IN Glufosinate 2	31 July 09	15	1.5	200	410.47	41.05
080003-057-0015	IN Glufosinate 3	31 July 09	15	1.5	200	364.82	36.48
080003-064-0013	NE Glufosinate 1	31 July 09	15	1.5	200	411.66	41.17
080003-064-0014	NE Glufosinate 2	31 July 09	15	1.5	200	351.42	35.14
080003-064-0015	NE Glufosinate 3	31 July 09	15	1.5	200	290.36	29.04
080003-071-0013	ON1 Glufosinate 1	31 July 09	15	1.5	200	280.32	28.03
080003-071-0014	ON1 Glufosinate 2	31 July 09	No sample	--	--	--	--
080003-071-0015	ON1 Glufosinate 3	31 July 09	No sample	--	--	--	--
080003-078-0013	ON2 Glufosinate 1	31 July 09	15	1.5	200	911.37	91.14
080003-078-0014	ON2 Glufosinate 2	31 July 09	15	1.5	200	928.05	92.81
080003-078-0015	ON2 Glufosinate 3	31 July 09	15	1.5	200	940.00	94.00
						Ave. =	50.63
						Std dev. =	23.69
080003-043-0019	IA 2,4-D 1	30 July 09	15	1.5	200	559.96	56.00
080003-043-0020	IA 2,4-D 2	30 July 09	15	1.5	200	502.07	50.21
080003-043-0021	IA 2,4-D 3	30 July 09	15	1.5	200	385.98	38.60
080003-050-0019	IL 2,4-D 1	30 July 09	15	1.5	200	402.99	40.30
080003-050-0020	IL 2,4-D 2	5 Aug 09	15	1.5	200	271.58	27.16[a]
080003-050-0021	IL 2,4-D 3	30 July 09	15	1.5	200	496.69	49.67
080003-057-0019	IN 2,4-D 1	31 July 09	15	1.5	200	367.20	36.72
080003-057-0020	IN 2,4-D 2	31 July 09	15	1.5	200	342.17	34.22
080003-057-0021	IN 2,4-D 3	31 July 09	15	1.5	200	384.28	38.43
080003-064-0019	NE 2,4-D 1	31 July 09	15	1.5	200	319.26	31.93
080003-064-0020	NE 2,4-D 2	31 July 09	15	1.5	200	293.03	29.30
080003-064-0021	NE 2,4-D 3	31 July 09	15	1.5	200	330.24	33.02
080003-071-0019	ON1 2,4-D 1	31 July 09	15	1.5	200	653.20	65.32
080003-071-0020	ON1 2,4-D 2	31 July 09	No sample	--	--	--	--
080003-071-0021	ON1 2,4-D 3	31 July 09	No sample	--	--	--	--
080003-078-0019	ON2 2,4-D 1	31 July 09	15	1.5	200	971.42	97.14
080003-078-0020	ON22,4-D 2	31 July 09	15	1.5	200	980.85	98.08
080003-078-0021	ON2 2,4-D 3	31 July 09	15	1.5	200	1007.88	100.79
						Ave. =	51.68
						Std dev. =	25.41

[a] Reanalysis of samples

Appendix A Table 1 (Cont.). Expression Levels of AAD-12 in Leaf V5 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-043-0025	IA Glufosinate + 2,4-D 1	30 July 09	15	1.5	200	533.90	53.39
080003-043-0026	IA Glufosinate + 2,4-D 2	30 July 09	15	1.5	200	473.87	47.39
080003-043-0027	IA Glufosinate + 2,4-D 3	30 July 09	15	1.5	200	565.83	56.58
080003-050-0025	IL Glufosinate + 2,4-D 1	5 Aug 09	15	1.5	200	251.38	25.14[a]
080003-050-0026	IL Glufosinate + 2,4-D 2	30 July 09	15	1.5	200	1645.79	164.58
080003-050-0027	IL Glufosinate + 2,4-D 3	30 July 09	15	1.5	200	1056.50	105.65
080003-057-0025	IN Glufosinate + 2,4-D 1	31 July 09	15	1.5	200	353.72	35.37
080003-057-0026	IN Glufosinate + 2,4-D 2	31 July 09	15	1.5	200	384.11	38.41
080003-057-0027	IN Glufosinate + 2,4-D 3	31 July 09	15	1.5	200	372.60	37.26
080003-064-0025	NE Glufosinate + 2,4-D 1	31 July 09	15	1.5	200	434.58	43.46
080003-064-0026	NE Glufosinate + 2,4-D 2	31 July 09	15	1.5	200	513.74	51.37
080003-064-0027	NE Glufosinate + 2,4-D 3	31 July 09	15	1.5	200	375.85	37.59
080003-071-0025	ON1Glufosinate + 2,4-D 1	31 July 09	15	1.5	200	573.94	57.39
080003-071-0026	ON1Glufosinate + 2,4-D 2	31 July 09	No sample	--	--	--	--
080003-071-0027	ON1Glufosinate + 2,4-D 3	31 July 09	No sample	--	--	--	--
080003-078-0025	ON2Glufosinate + 2,4-D 1	31 July 09	15	1.5	200	1064.40	106.44
080003-078-0026	ON2Glufosinate + 2,4-D 2	31 July 09	15	1.5	200	1011.01	101.10
080003-078-0027	ON2Glufosinate + 2,4-D 3	31 July 09	15	1.5	200	961.18	96.12
						Ave. =	66.08
						Std dev. =	37.82

[a] Reanalysis of samples

Appendix A Table 2. Expression Levels of AAD-12 in Leaf V10 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-044-0001	IA control 1	3-Aug-09	15	1.5	2	ND	ND
080003-044-0002	IA control 2	3-Aug-09	15	1.5	2	ND	ND
080003-044-0003	IA control 3	3-Aug-09	15	1.5	2	ND	ND
080003-051-0001	IL control 1	3-Aug-09	15	1.5	2	ND	ND
080003-051-0002	IL control 2	3-Aug-09	15	1.5	2	ND	ND
080003-051-0003	IL control 3	3-Aug-09	15	1.5	2	ND	ND
080003-058-0001	IN control 1	3-Aug-09	15	1.5	2	ND	ND
080003-058-0002	IN control 2	3-Aug-09	15	1.5	2	ND	ND
080003-058-0003	IN control 3	3-Aug-09	15	1.5	2	ND	ND
080003-065-0001	NE control 1	3-Aug-09	15	1.5	2	ND	ND
080003-065-0002	NE control 2	3-Aug-09	15	1.5	2	ND	ND
080003-065-0003	NE control 3	3-Aug-09	15	1.5	2	ND	ND
080003-072-0001	ON1 control 1	4-Aug-09	15	1.5	2	ND	ND
080003-072-0002	ON1 control 2	4-Aug-09	15	1.5	2	ND	ND
080003-072-0003	ON1 control 3	4-Aug-09	15	1.5	2	ND	ND
080003-079-0001	ON2 control 1	4-Aug-09	15	1.5	2	ND	ND
080003-079-0002	ON2 control 2	4-Aug-09	15	1.5	2	ND	ND
080003-079-0003	ON2 control 3	4-Aug-09	15	1.5	2	ND	ND
080003-044-0007	IA Unsprayed 1	3-Aug-09	15	1.5	100	412.68	41.27
080003-044-0008	IA Unsprayed 2	3-Aug-09	15	1.5	100	421.85	42.19
080003-044-0009	IA Unsprayed 3	3-Aug-09	15	1.5	100	424.24	42.42
080003-051-0007	IL Unsprayed 1	3-Aug-09	15	1.5	100	321.74	32.17
080003-051-0008	IL Unsprayed 2	3-Aug-09	15	1.5	100	316.91	31.69
080003-051-0009	IL Unsprayed 3	3-Aug-09	15	1.5	100	298.29	29.83
080003-058-0007	IN Unsprayed 1	3-Aug-09	15	1.5	100	356.39	35.64
080003-058-0008	IN Unsprayed 2	3-Aug-09	15	1.5	100	411.54	41.15
080003-058-0009	IN Unsprayed 3	3-Aug-09	15	1.5	100	383.31	38.33
080003-065-0007	NE Unsprayed 1	3-Aug-09	15	1.5	100	475.99	47.60
080003-065-0008	NE Unsprayed 2	3-Aug-09	15	1.5	100	441.57	44.16
080003-065-0009	NE Unsprayed 3	3-Aug-09	15	1.5	100	597.62	59.76
080003-072-0007	ON1Unsprayed 1	4-Aug-09	15	1.5	100	767.58	76.76
080003-072-0008	ON1Unsprayed 2	4-Aug-09	15	1.5	100	762.71	76.27
080003-072-0009	ON1Unsprayed 3	4-Aug-09	15	1.5	100	833.22	83.32
080003-079-0007	ON2Unsprayed 1	4-Aug-09	15	1.5	100	908.89	90.89
080003-079-0008	ON2Unsprayed 2	4-Aug-09	15	1.5	100	769.10	76.91
080003-079-0009	ON2Unsprayed 3	4-Aug-09	15	1.5	100	807.36	80.74
						Ave. =	53.95
						Std dev. =	20.85

ND – Not Detected

Appendix A Table 2 (Cont.). Expression Levels of AAD-12 in Leaf V10 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-044-0013	IA Glufosinate 1	3-Aug-09	15	1.5	100	585.55	58.56
080003-044-0014	IA Glufosinate 2	3-Aug-09	15	1.5	100	526.31	52.63
080003-044-0015	IA Glufosinate 3	3-Aug-09	15	1.5	100	509.07	50.91
080003-051-0013	IL Glufosinate 1	3-Aug-09	15	1.5	100	281.45	28.15
080003-051-0014	IL Glufosinate 2	3-Aug-09	15	1.5	100	332.02	33.20
080003-051-0015	IL Glufosinate 3	3-Aug-09	15	1.5	100	343.94	34.39
080003-058-0013	IN Glufosinate 1	3-Aug-09	15	1.5	100	250.59	25.06
080003-058-0014	IN Glufosinate 2	3-Aug-09	15	1.5	100	304.63	30.46
080003-058-0015	IN Glufosinate 3	3-Aug-09	15	1.5	100	344.45	34.44
080003-065-0013	NE Glufosinate 1	3-Aug-09	15	1.5	100	489.85	48.98
080003-065-0014	NE Glufosinate 2	3-Aug-09	15	1.5	100	675.12	67.51
080003-065-0015	NE Glufosinate 3	3-Aug-09	15	1.5	100	568.51	56.85
080003-072-0013	ON1 Glufosinate 1	4-Aug-09	15	1.5	100	777.53	77.75
080003-072-0014	ON1 Glufosinate 2	4-Aug-09	15	1.5	100	919.49	91.95
080003-072-0015	ON1 Glufosinate 3	4-Aug-09	15	1.5	100	776.24	77.62
080003-079-0013	ON2 Glufosinate 1	4-Aug-09	15	1.5	100	790.14	79.01
080003-079-0014	ON2 Glufosinate 2	4-Aug-09	15	1.5	100	889.21	88.92
080003-079-0015	ON2 Glufosinate 3	4-Aug-09	15	1.5	100	727.45	72.74
						Ave/ =	56.06
						Std dev. =	21.95
080003-044-0019	IA 2,4-D 1	3-Aug-09	15	1.5	100	427.45	42.74
080003-044-0020	IA 2,4-D 2	3-Aug-09	15	1.5	100	516.56	51.66
080003-044-0021	IA 2,4-D 3	3-Aug-09	15	1.5	100	469.29	46.93
080003-051-0019	IL 2,4-D 1	3-Aug-09	15	1.5	100	322.52	32.25
080003-051-0020	IL 2,4-D 2	3-Aug-09	15	1.5	100	319.55	31.95
080003-051-0021	IL 2,4-D 3	3-Aug-09	15	1.5	100	308.36	30.84
080003-058-0019	IN 2,4-D 1	3-Aug-09	15	1.5	100	441.57	44.16
080003-058-0020	IN 2,4-D 2	3-Aug-09	15	1.5	100	432.51	43.25
080003-058-0021	IN 2,4-D 3	3-Aug-09	15	1.5	100	562.85	56.29
080003-065-0019	NE 2,4-D 1	3-Aug-09	15	1.5	100	380.16	38.02
080003-065-0020	NE 2,4-D 2	3-Aug-09	15	1.5	100	475.13	47.51
080003-065-0021	NE 2,4-D 3	3-Aug-09	15	1.5	100	415.73	41.57
080003-072-0019	ON1 2,4-D 1	4-Aug-09	15	1.5	100	917.98	91.80
080003-072-0020	ON1 2,4-D 2	5 Aug 09	15	1.5	100	899.33	89.93[a]
080003-072-0021	ON1 2,4-D 3	4-Aug-09	15	1.5	100	789.95	79.00
080003-079-0019	ON2 2,4-D 1	4-Aug-09	15	1.5	100	647.18	64.72
080003-079-0020	ON22,4-D 2	4-Aug-09	15	1.5	100	830.31	83.03
080003-079-0021	ON2 2,4-D 3	4-Aug-09	15	1.5	100	785.76	78.58
						Ave/=	55.24
						Std dev. =	20.26

[a] Reanalysis of samples

Appendix A Table 2 (Cont.). Expression Levels of AAD-12 in Leaf V10 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-044-0025	IA Glufosinate + 2,4-D 1	3-Aug-09	15	1.5	100	496.86	49.69
080003-044-0026	IA Glufosinate + 2,4-D 2	3-Aug-09	15	1.5	100	498.21	49.82
080003-044-0027	IA Glufosinate + 2,4-D 3	3-Aug-09	15	1.5	100	470.13	47.01
080003-051-0025	IL Glufosinate + 2,4-D 1	3-Aug-09	15	1.5	100	322.82	32.28
080003-051-0026	IL Glufosinate + 2,4-D 2	3-Aug-09	15	1.5	100	341.90	34.19
080003-051-0027	IL Glufosinate + 2,4-D 3	3-Aug-09	15	1.5	100	320.20	32.02
080003-058-0025	IN Glufosinate + 2,4-D 1	3-Aug-09	15	1.5	100	332.77	33.28
080003-058-0026	IN Glufosinate + 2,4-D 2	3-Aug-09	15	1.5	100	446.20	44.62
080003-058-0027	IN Glufosinate + 2,4-D 3	3-Aug-09	15	1.5	100	429.45	42.94
080003-065-0025	NE Glufosinate + 2,4-D 1	3-Aug-09	15	1.5	100	515.17	51.52
080003-065-0026	NE Glufosinate + 2,4-D 2	3-Aug-09	15	1.5	100	366.14	36.61
080003-065-0027	NE Glufosinate + 2,4-D 3	3-Aug-09	15	1.5	100	529.96	53.00
080003-072-0025	ON1Glufosinate + 2,4-D 1	4-Aug-09	15	1.5	100	766.61	76.66
080003-072-0026	ON1Glufosinate + 2,4-D 2	4-Aug-09	15	1.5	100	797.65	79.76
080003-072-0027	ON1Glufosinate + 2,4-D 3	4-Aug-09	15	1.5	100	942.90	94.29
080003-079-0025	ON2Glufosinate + 2,4-D 1	4-Aug-09	15	1.5	100	951.60	95.16
080003-079-0026	ON2Glufosinate + 2,4-D 2	4-Aug-09	15	1.5	100	815.71	81.57
080003-079-0027	ON2Glufosinate + 2,4-D 3	4-Aug-09	15	1.5	100	927.93	92.79
						Ave/ =	57.07
						Std dev. =	22.97

Appendix A Table 3. Expression Levels of AAD-12 in Forage Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-045-0001	IA control 1	27 Jul 09	15	1.5	2	ND	ND
080003-045-0002	IA control 2	27 Jul 09	15	1.5	2	ND	ND
080003-045-0003	IA control 3	27 Jul 09	15	1.5	2	ND	ND
080003-052-0001	IL control 1	27 Jul 09	15	1.5	2	ND	ND
080003-052-0002	IL control 2	27 Jul 09	15	1.5	2	ND	ND
080003-052-0003	IL control 3	27 Jul 09	15	1.5	2	ND	ND
080003-059-0001	IN control 1	28 Jul 09	15	1.5	2	ND	ND
080003-059-0002	IN control 2	28 Jul 09	15	1.5	2	ND	ND
080003-059-0003	IN control 3	28 Jul 09	15	1.5	2	ND	ND
080003-066-0001	NE control 1	28 Jul 09	15	1.5	2	ND	ND
080003-066-0002	NE control 2	28 Jul 09	15	1.5	2	ND	ND
080003-066-0003	NE control 3	28 Jul 09	15	1.5	2	ND	ND
080003-073-0001	ON1 control 1	28 Jul 09	15	1.5	2	ND	ND
080003-073-0002	ON1 control 2	28 Jul 09	15	1.5	2	ND	ND
080003-073-0003	ON1 control 3	28 Jul 09	15	1.5	2	ND	ND
080003-080-0001	ON2 control 1	28 Jul 09	15	1.5	2	ND	ND
080003-080-0002	ON2 control 2	28 Jul 09	15	1.5	2	ND	ND
080003-080-0003	ON2 control 3	28 Jul 09	15	1.5	2	ND	ND
080003-045-0007	IA Unsprayed 1	27 Jul 09	15	1.5	100	58.43	5.84
080003-045-0008	IA Unsprayed 2	27 Jul 09	15	1.5	100	71.01	7.10
080003-045-0009	IA Unsprayed 3	27 Jul 09	15	1.5	100	57.01	5.70
080003-052-0007	IL Unsprayed 1	27 Jul 09	15	1.5	100	222.79	22.28
080003-052-0008	IL Unsprayed 2	27 Jul 09	15	1.5	100	215.67	21.57
080003-052-0009	IL Unsprayed 3	27 Jul 09	15	1.5	100	209.54	20.95
080003-059-0007	IN Unsprayed 1	28 Jul 09	15	1.5	100	506.52	50.65
080003-059-0008	IN Unsprayed 2	28 Jul 09	15	1.5	100	488.45	48.85
080003-059-0009	IN Unsprayed 3	28 Jul 09	15	1.5	100	467.58	46.76
080003-066-0007	NE Unsprayed 1	28 Jul 09	15	1.5	100	416.09	41.61
080003-066-0008	NE Unsprayed 2	28 Jul 09	15	1.5	100	911.70	91.17
080003-066-0009	NE Unsprayed 3	28 Jul 09	15	1.5	100	443.27	44.33
080003-073-0007	ON1Unsprayed 1	28 Jul 09	15	1.5	100	686.18	68.62
080003-073-0008	ON1Unsprayed 2	28 Jul 09	15	1.5	100	460.71	46.07
080003-073-0009	ON1Unsprayed 3	28 Jul 09	15	1.5	100	666.65	66.66
080003-080-0007	ON2Unsprayed 1	28 Jul 09	15	1.5	100	544.74	54.47
080003-080-0008	ON2Unsprayed 2	28 Jul 09	15	1.5	100	168.47	16.85
080003-080-0009	ON2Unsprayed 3	28 Jul 09	15	1.5	100	804.86	80.49
						Ave. =	41.11
						Std dev. =	25.72

ND – Not Detected

Appendix A Table 3 (Cont.). Expression Levels of AAD-12 in Forage Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-045-0013	IA Glufosinate 1	27 Jul 09	15	1.5	100	54.91	5.49
080003-045-0014	IA Glufosinate 2	27 Jul 09	15	1.5	100	96.06	9.61
080003-045-0015	IA Glufosinate 3	27 Jul 09	15	1.5	100	78.59	7.86
080003-052-0013	IL Glufosinate 1	27 Jul 09	15	1.5	100	225.49	22.55
080003-052-0014	IL Glufosinate 2	27 Jul 09	15	1.5	100	133.35	13.34
080003-052-0015	IL Glufosinate 3	27 Jul 09	15	1.5	100	231.05	23.10
080003-059-0013	IN Glufosinate 1	28 Jul 09	15	1.5	100	506.49	50.65
080003-059-0014	IN Glufosinate 2	28 Jul 09	15	1.5	100	448.62	44.86
080003-059-0015	IN Glufosinate 3	28 Jul 09	15	1.5	100	480.21	48.02
080003-066-0013	NE Glufosinate 1	28 Jul 09	15	1.5	100	405.61	40.56
080003-066-0014	NE Glufosinate 2	28 Jul 09	15	1.5	100	627.67	62.77
080003-066-0015	NE Glufosinate 3	28 Jul 09	15	1.5	100	452.74	45.27
080003-073-0013	ON1 Glufosinate 1	28 Jul 09	15	1.5	100	586.37	58.64
080003-073-0014	ON1 Glufosinate 2	28 Jul 09	15	1.5	100	879.56	87.96
080003-073-0015	ON1 Glufosinate 3	28 Jul 09	15	1.5	100	656.56	65.66
080003-080-0013	ON2 Glufosinate 1	28 Jul 09	15	1.5	100	678.29	67.83
080003-080-0014	ON2 Glufosinate 2	28 Jul 09	15	1.5	100	439.94	43.99
080003-080-0015	ON2 Glufosinate 3	28 Jul 09	15	1.5	100	101.35	10.13
						Ave. =	39.35
						Std dev. =	24.47
080003-045-0019	IA 2,4-D 1	27 Jul 09	15	1.5	100	59.14	5.91
080003-045-0020	IA 2,4-D 2	27 Jul 09	15	1.5	100	50.61	5.06
080003-045-0021	IA 2,4-D 3	27 Jul 09	15	1.5	100	73.17	7.32
080003-052-0019	IL 2,4-D 1	27 Jul 09	15	1.5	100	268.62	26.86
080003-052-0020	IL 2,4-D 2	27 Jul 09	15	1.5	100	246.43	24.64
080003-052-0021	IL 2,4-D 3	27 Jul 09	15	1.5	100	185.07	18.51
080003-059-0019	IN 2,4-D 1	28 Jul 09	15	1.5	100	545.62	54.56
080003-059-0020	IN 2,4-D 2	28 Jul 09	15	1.5	100	475.91	47.59
080003-059-0021	IN 2,4-D 3	28 Jul 09	15	1.5	100	477.33	47.73
080003-066-0019	NE 2,4-D 1	28 Jul 09	15	1.5	100	350.47	35.05
080003-066-0020	NE 2,4-D 2	28 Jul 09	15	1.5	100	486.81	48.68
080003-066-0021	NE 2,4-D 3	28 Jul 09	15	1.5	100	518.17	51.82
080003-073-0019	ON1 2,4-D 1	28 Jul 09	15	1.5	100	617.00	61.70
080003-073-0020	ON1 2,4-D 2	28 Jul 09	15	1.5	100	661.98	66.20
080003-073-0021	ON1 2,4-D 3	28 Jul 09	15	1.5	100	644.15	64.42
080003-080-0019	ON2 2,4-D 1	28 Jul 09	15	1.5	100	709.56	70.96
080003-080-0020	ON2 2,4-D 2	28 Jul 09	15	1.5	100	50.18	5.02
080003-080-0021	ON2 2,4-D 3	28 Jul 09	15	1.5	100	880.20	88.02
						Ave. =	40.56
						Std dev. =	25.58

Appendix A Table 3 (Cont.). Expression Levels of AAD-12 in Forage Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-045-0025	IA Glufosinate + 2,4-D 1	27 Jul 09	15	1.5	100	49.59	4.96
080003-045-0026	IA Glufosinate + 2,4-D 2	27 Jul 09	15	1.5	100	69.32	6.93
080003-045-0027	IA Glufosinate + 2,4-D 3	27 Jul 09	15	1.5	100	50.18	5.02
080003-052-0025	IL Glufosinate + 2,4-D 1	27 Jul 09	15	1.5	100	288.99	28.90
080003-052-0026	IL Glufosinate + 2,4-D 2	27 Jul 09	15	1.5	100	288.74	28.87
080003-052-0027	IL Glufosinate + 2,4-D 3	27 Jul 09	15	1.5	100	187.10	18.71
080003-059-0025	IN Glufosinate + 2,4-D 1	28 Jul 09	15	1.5	100	449.55	44.95
080003-059-0026	IN Glufosinate + 2,4-D 2	28 Jul 09	15	1.5	100	520.08	52.01
080003-059-0027	IN Glufosinate + 2,4-D 3	28 Jul 09	15	1.5	100	561.74	56.17
080003-066-0025	NE Glufosinate + 2,4-D 1	28 Jul 09	15	1.5	100	637.43	63.74
080003-066-0026	NE Glufosinate + 2,4-D 2	28 Jul 09	15	1.5	100	498.87	49.89
080003-066-0027	NE Glufosinate + 2,4-D 3	28 Jul 09	15	1.5	100	532.80	53.28
080003-073-0025	ON1Glufosinate + 2,4-D 1	28 Jul 09	15	1.5	100	630.55	63.06
080003-073-0026	ON1Glufosinate + 2,4-D 2	28 Jul 09	15	1.5	100	653.31	65.33
080003-073-0027	ON1Glufosinate + 2,4-D 3	28 Jul 09	15	1.5	100	492.10	49.21
080003-080-0025	ON2Glufosinate + 2,4-D 1	28 Jul 09	15	1.5	100	696.17	69.62
080003-080-0026	ON2Glufosinate + 2,4-D 2	28 Jul 09	15	1.5	100	427.49	42.75
080003-080-0027	ON2Glufosinate + 2,4-D 3	28 Jul 09	15	1.5	100	103.34	10.33
						Ave. =	39.65
						Std dev. =	22.41

Appendix A Table 4. Expression Levels of AAD-12 in Root Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-046-0001	IA control 1	29 Jul 09	15	1.5	2	ND	ND
080003-046-0002	IA control 2	29 Jul 09	15	1.5	2	ND	ND
080003-046-0003	IA control 3	29 Jul 09	15	1.5	2	ND	ND
080003-053-0001	IL control 1	29 Jul 09	15	1.5	2	ND	ND
080003-053-0002	IL control 2	29 Jul 09	15	1.5	2	ND	ND
080003-053-0003	IL control 3	29 Jul 09	15	1.5	2	ND	ND
080003-060-0001	IN control 1	29 Jul 09	15	1.5	2	ND	ND
080003-060-0002	IN control 2	29 Jul 09	15	1.5	2	ND	ND
080003-060-0003	IN control 3	29 Jul 09	15	1.5	2	ND	ND
080003-067-0001	NE control 1	29 Jul 09	15	1.5	2	ND	ND
080003-067-0002	NE control 2	29 Jul 09	15	1.5	2	ND	ND
080003-067-0003	NE control 3	29 Jul 09	15	1.5	2	ND	ND
080003-074-0001	ON1 control 1	30 Jul 09	15	1.5	2	ND	ND
080003-074-0002	ON1 control 2	30 Jul 09	15	1.5	2	ND	ND
080003-074-0003	ON1 control 3	30 Jul 09	15	1.5	2	ND	ND
080003-081-0001	ON2 control 1	30 Jul 09	15	1.5	2	ND	ND
080003-081-0002	ON2 control 2	30 Jul 09	15	1.5	2	ND	ND
080003-081-0003	ON2 control 3	30 Jul 09	15	1.5	2	ND	ND
080003-046-0007	IA Unsprayed 1	29 Jul 09	15	1.5	40	159.71	15.97
080003-046-0008	IA Unsprayed 2	29 Jul 09	15	1.5	40	197.29	19.73
080003-046-0009	IA Unsprayed 3	29 Jul 09	15	1.5	40	234.07	23.41
080003-053-0007	IL Unsprayed 1	29 Jul 09	15	1.5	40	95.85	9.58
080003-053-0008	IL Unsprayed 2	29 Jul 09	15	1.5	40	128.74	12.87
080003-053-0009	IL Unsprayed 3	29 Jul 09	15	1.5	40	106.37	10.64
080003-060-0007	IN Unsprayed 1	29 Jul 09	15	1.5	40	173.95	17.39
080003-060-0008	IN Unsprayed 2	29 Jul 09	15	1.5	40	236.76	23.68
080003-060-0009	IN Unsprayed 3	29 Jul 09	15	1.5	40	193.90	19.39
080003-067-0007	NE Unsprayed 1	29 Jul 09	15	1.5	40	136.59	13.66
080003-067-0008	NE Unsprayed 2	29 Jul 09	15	1.5	40	276.19	27.62
080003-067-0009	NE Unsprayed 3	29 Jul 09	15	1.5	40	168.78	16.88
080003-074-0007	ON1Unsprayed 1	30 Jul 09	15	1.5	40	111.06	11.11
080003-074-0008	ON1Unsprayed 2	30 Jul 09	15	1.5	40	206.09	20.61
080003-074-0009	ON1Unsprayed 3	30 Jul 09	15	1.5	40	88.03	8.80
080003-081-0007	ON2Unsprayed 1	30 Jul 09	15	1.5	40	248.66	24.87
080003-081-0008	ON2Unsprayed 2	30 Jul 09	15	1.5	40	197.15	19.71
080003-081-0009	ON2Unsprayed 3	30 Jul 09	15	1.5	40	118.18	11.82
						Ave. =	17.10
						Std dev. =	5.68

ND – Not Detected

Appendix A Table 4 (Cont.). Expression Levels of AAD-12 in Root Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-046-0013	IA Glufosinate 1	29 Jul 09	15	1.5	40	113.49	11.35
080003-046-0014	IA Glufosinate 2	29 Jul 09	15	1.5	40	192.04	19.20
080003-046-0015	IA Glufosinate 3	29 Jul 09	15	1.5	40	181.42	18.14
080003-053-0013	IL Glufosinate 1	29 Jul 09	15	1.5	40	95.41	9.54
080003-053-0014	IL Glufosinate 2	29 Jul 09	15	1.5	40	136.42	13.64
080003-053-0015	IL Glufosinate 3	29 Jul 09	15	1.5	40	112.96	11.30
080003-060-0013	IN Glufosinate 1	29 Jul 09	15	1.5	40	196.05	19.60
080003-060-0014	IN Glufosinate 2	29 Jul 09	15	1.5	40	207.71	20.77
080003-060-0015	IN Glufosinate 3	29 Jul 09	15	1.5	40	230.81	23.08
080003-067-0013	NE Glufosinate 1	29 Jul 09	15	1.5	40	189.37	18.94
080003-067-0014	NE Glufosinate 2	29 Jul 09	15	1.5	40	165.69	16.57
080003-067-0015	NE Glufosinate 3	29 Jul 09	15	1.5	40	143.15	14.32
080003-074-0013	ON1 Glufosinate 1	30 Jul 09	15	1.5	40	100.71	10.07
080003-074-0014	ON1 Glufosinate 2	30 Jul 09	15	1.5	40	121.75	12.17
080003-074-0015	ON1 Glufosinate 3	30 Jul 09	15	1.5	40	62.96	6.30
080003-081-0013	ON2 Glufosinate 1	30 Jul 09	15	1.5	40	191.43	19.14
080003-081-0014	ON2 Glufosinate 2	30 Jul 09	15	1.5	40	167.72	16.77
080003-081-0015	ON2 Glufosinate 3	30 Jul 09	15	1.5	40	177.80	17.78
						Ave. =	15.48
						Std dev. =	4.58
080003-046-0019	IA 2,4-D 1	29 Jul 09	15	1.5	40	146.66	14.67
080003-046-0020	IA 2,4-D 2	29 Jul 09	15	1.5	40	191.86	19.19
080003-046-0021	IA 2,4-D 3	29 Jul 09	15	1.5	40	178.71	17.87
080003-053-0019	IL 2,4-D 1	29 Jul 09	15	1.5	40	77.65	7.76
080003-053-0020	IL 2,4-D 2	29 Jul 09	15	1.5	40	72.10	7.21
080003-053-0021	IL 2,4-D 3	29 Jul 09	15	1.5	40	65.90	6.59
080003-060-0019	IN 2,4-D 1	29 Jul 09	15	1.5	40	161.99	16.20
080003-060-0020	IN 2,4-D 2	29 Jul 09	15	1.5	40	178.00	17.80
080003-060-0021	IN 2,4-D 3	29 Jul 09	15	1.5	40	242.94	24.29
080003-067-0019	NE 2,4-D 1	29 Jul 09	15	1.5	40	97.99	9.80
080003-067-0020	NE 2,4-D 2	29 Jul 09	15	1.5	40	182.35	18.23
080003-067-0021	NE 2,4-D 3	29 Jul 09	15	1.5	40	186.85	18.68
080003-074-0019	ON1 2,4-D 1	30 Jul 09	15	1.5	40	31.64	3.16
080003-074-0020	ON1 2,4-D 2	30 Jul 09	15	1.5	40	175.66	17.57
080003-074-0021	ON1 2,4-D 3	30 Jul 09	15	1.5	40	279.13	27.91
080003-081-0019	ON2 2,4-D 1	30 Jul 09	15	1.5	40	185.72	18.57
080003-081-0020	ON2 2,4-D 2	30 Jul 09	15	1.5	40	227.65	22.77
080003-081-0021	ON2 2,4-D 3	30 Jul 09	15	1.5	40	198.95	19.89
						Ave. =	16.01
						Std dev. =	6.64

Appendix A Table 4 (Cont.). Expression Levels of AAD-12 in Root Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-046-0025	IA Glufosinate + 2,4-D 1	29 Jul 09	15	1.5	40	124.80	12.48
080003-046-0026	IA Glufosinate + 2,4-D 2	29 Jul 09	15	1.5	40	208.21	20.82
080003-046-0027	IA Glufosinate + 2,4-D 3	29 Jul 09	15	1.5	40	205.40	20.54
080003-053-0025	IL Glufosinate + 2,4-D 1	29 Jul 09	15	1.5	40	107.25	10.73
080003-053-0026	IL Glufosinate + 2,4-D 2	29 Jul 09	15	1.5	40	93.69	9.37
080003-053-0027	IL Glufosinate + 2,4-D 3	29 Jul 09	15	1.5	40	42.26	4.23
080003-060-0025	IN Glufosinate + 2,4-D 1	29 Jul 09	15	1.5	40	179.61	17.96
080003-060-0026	IN Glufosinate + 2,4-D 2	29 Jul 09	15	1.5	40	197.30	19.73
080003-060-0027	IN Glufosinate + 2,4-D 3	29 Jul 09	15	1.5	40	261.49	26.15
080003-067-0025	NE Glufosinate + 2,4-D 1	29 Jul 09	15	1.5	40	149.77	14.98
080003-067-0026	NE Glufosinate + 2,4-D 2	29 Jul 09	15	1.5	40	159.00	15.90
080003-067-0027	NE Glufosinate + 2,4-D 3	29 Jul 09	15	1.5	40	195.37	19.54
080003-074-0025	ON1Glufosinate + 2,4-D 1	30 Jul 09	15	1.5	40	214.27	21.43
080003-074-0026	ON1Glufosinate + 2,4-D 2	30 Jul 09	15	1.5	40	164.98	16.50
080003-074-0027	ON1Glufosinate + 2,4-D 3	30 Jul 09	15	1.5	40	18.41	1.84
080003-081-0025	ON2Glufosinate + 2,4-D 1	30 Jul 09	15	1.5	40	265.01	26.50
080003-081-0026	ON2Glufosinate + 2,4-D 2	30 Jul 09	15	1.5	40	230.60	23.06
080003-081-0027	ON2Glufosinate + 2,4-D 3	30 Jul 09	15	1.5	40	180.49	18.05
						Ave. =	16.66
						Std dev. =	6.81

Appendix A Table 5. Expression Levels of AAD-12 in Grain Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-047-0001	IA control 1	6 Aug 09	15	1.5	2	ND	ND
080003-047-0002	IA control 2	6 Aug 09	15	1.5	2	ND	ND
080003-047-0003	IA control 3	6 Aug 09	15	1.5	2	ND	ND
080003-054-0001	IL control 1	6 Aug 09	15	1.5	2	ND	ND
080003-054-0002	IL control 2	6 Aug 09	15	1.5	2	ND	ND
080003-054-0003	IL control 3	6 Aug 09	15	1.5	2	ND	ND
080003-061-0001	IN control 1	6 Aug 09	15	1.5	2	ND	ND
080003-061-0002	IN control 2	6 Aug 09	15	1.5	2	ND	ND
080003-061-0003	IN control 3	6 Aug 09	15	1.5	2	ND	ND
080003-068-0001	NE control 1	6 Aug 09	15	1.5	2	ND	ND
080003-068-0002	NE control 2	6 Aug 09	15	1.5	2	ND	ND
080003-068-0003	NE control 3	6 Aug 09	15	1.5	2	ND	ND
080003-075-0001	ON1 control 1	7 Aug 09	15	1.5	2	ND	ND
080003-075-0002	ON1 control 2	7 Aug 09	15	1.5	2	ND	ND
080003-075-0003	ON1 control 3	7 Aug 09	15	1.5	2	ND	ND
080003-082-0001	ON2 control 1	7 Aug 09	15	1.5	2	ND	ND
080003-082-0002	ON2 control 2	7 Aug 09	15	1.5	2	ND	ND
080003-082-0003	ON2 control 3	7 Aug 09	15	1.5	2	ND	ND
080003-047-0007	IA Unsprayed 1	6 Aug 09	15	1.5	80	168.17	16.82
080003-047-0008	IA Unsprayed 2	6 Aug 09	15	1.5	80	170.90	17.09
080003-047-0009	IA Unsprayed 3	6 Aug 09	15	1.5	80	163.41	16.34
080003-054-0007	IL Unsprayed 1	6 Aug 09	15	1.5	80	93.96	9.40
080003-054-0008	IL Unsprayed 2	6 Aug 09	15	1.5	80	121.44	12.14
080003-054-0009	IL Unsprayed 3	6 Aug 09	15	1.5	80	98.65	9.86
080003-061-0007	IN Unsprayed 1	6 Aug 09	15	1.5	80	161.17	16.12
080003-061-0008	IN Unsprayed 2	6 Aug 09	15	1.5	80	145.00	14.50
080003-061-0009	IN Unsprayed 3	6 Aug 09	15	1.5	80	138.58	13.86
080003-068-0007	NE Unsprayed 1	6 Aug 09	15	1.5	80	167.70	16.77
080003-068-0008	NE Unsprayed 2	6 Aug 09	15	1.5	80	163.11	16.31
080003-068-0009	NE Unsprayed 3	6 Aug 09	15	1.5	80	163.21	16.32
080003-075-0007	ON1Unsprayed 1	7 Aug 09	15	1.5	80	218.64	21.86
080003-075-0008	ON1Unsprayed 2	7 Aug 09	15	1.5	80	199.92	19.99
080003-075-0009	ON1Unsprayed 3	7 Aug 09	15	1.5	80	206.22	20.62
080003-082-0007	ON2Unsprayed 1	7 Aug 09	15	1.5	80	183.40	18.34
080003-082-0008	ON2Unsprayed 2	7 Aug 09	15	1.5	80	210.18	21.02
080003-082-0009	ON2Unsprayed 3	7 Aug 09	15	1.5	80	191.13	19.11
						Ave. =	16.47
						Std dev. =	3.55

Appendix A Table 5 (Cont.). Expression Levels of AAD-12 in Grain Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-047-0013	IA Glufosinate 1	6 Aug 09	15	1.5	80	155.47	15.55
080003-047-0014	IA Glufosinate 2	6 Aug 09	15	1.5	80	161.32	16.13
080003-047-0015	IA Glufosinate 3	6 Aug 09	15	1.5	80	160.82	16.08
080003-054-0013	IL Glufosinate 1	6 Aug 09	15	1.5	80	129.56	12.96
080003-054-0014	IL Glufosinate 2	6 Aug 09	15	1.5	80	118.66	11.87
080003-054-0015	IL Glufosinate 3	6 Aug 09	15	1.5	80	131.84	13.18
080003-061-0013	IN Glufosinate 1	6 Aug 09	15	1.5	80	141.23	14.12
080003-061-0014	IN Glufosinate 2	6 Aug 09	15	1.5	80	154.12	15.41
080003-061-0015	IN Glufosinate 3	6 Aug 09	15	1.5	80	149.23	14.92
080003-068-0013	NE Glufosinate 1	6 Aug 09	15	1.5	80	175.32	17.53
080003-068-0014	NE Glufosinate 2	6 Aug 09	15	1.5	80	174.92	17.49
080003-068-0015	NE Glufosinate 3	6 Aug 09	15	1.5	80	156.92	15.69
080003-075-0013	ON1 Glufosinate 1	7 Aug 09	15	1.5	80	219.70	21.97
080003-075-0014	ON1 Glufosinate 2	7 Aug 09	15	1.5	80	227.39	22.74
080003-075-0015	ON1 Glufosinate 3	7 Aug 09	15	1.5	80	190.76	19.08
080003-082-0013	ON2 Glufosinate 1	7 Aug 09	15	1.5	80	202.01	20.20
080003-082-0014	ON2 Glufosinate 2	7 Aug 09	15	1.5	80	205.25	20.53
080003-082-0015	ON2 Glufosinate 3	7 Aug 09	15	1.5	80	194.45	19.44
						Ave. =	16.94
						Std dev. =	3.15
080003-047-0019	IA 2,4-D 1	6 Aug 09	15	1.5	80	153.03	15.30
080003-047-0020	IA 2,4-D 2	6 Aug 09	15	1.5	80	154.13	15.41
080003-047-0021	IA 2,4-D 3	6 Aug 09	15	1.5	80	180.32	18.03
080003-054-0019	IL 2,4-D 1	6 Aug 09	15	1.5	80	97.13	9.71
080003-054-0020	IL 2,4-D 2	6 Aug 09	15	1.5	80	107.96	10.80
080003-054-0021	IL 2,4-D 3	6 Aug 09	15	1.5	80	100.60	10.06
080003-061-0019	IN 2,4-D 1	6 Aug 09	15	1.5	80	146.23	14.62
080003-061-0020	IN 2,4-D 2	6 Aug 09	15	1.5	80	137.73	13.77
080003-061-0021	IN 2,4-D 3	6 Aug 09	15	1.5	80	154.59	15.46
080003-068-0019	NE 2,4-D 1	6 Aug 09	15	1.5	80	168.00	16.80
080003-068-0020	NE 2,4-D 2	6 Aug 09	15	1.5	80	161.01	16.10
080003-068-0021	NE 2,4-D 3	6 Aug 09	15	1.5	80	170.81	17.08
080003-075-0019	ON1 2,4-D 1	7 Aug 09	15	1.5	80	205.56	20.56
080003-075-0020	ON1 2,4-D 2	7 Aug 09	15	1.5	80	214.85	21.48
080003-075-0021	ON1 2,4-D 3	7 Aug 09	15	1.5	80	192.25	19.22
080003-082-0019	ON2 2,4-D 1	7 Aug 09	15	1.5	80	192.17	19.22
080003-082-0020	ON2 2,4-D 2	7 Aug 09	15	1.5	80	208.49	20.85
080003-082-0021	ON2 2,4-D 3	7 Aug 09	15	1.5	80	219.48	21.95
						Ave. =	16.47
						Std dev. =	3.78

Appendix Table 5 (Cont.). Expression Levels of AAD-12 in Grain Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	AAD-12 Reported Results (ng/mL)	AAD-12 Results (ng/mg)
080003-047-0025	IA Glufosinate + 2,4-D 1	6 Aug 09	15	1.5	80	131.83	13.18
080003-047-0026	IA Glufosinate + 2,4-D 2	6 Aug 09	15	1.5	80	151.31	15.13
080003-047-0027	IA Glufosinate + 2,4-D 3	6 Aug 09	15	1.5	80	154.45	15.44
080003-054-0025	IL Glufosinate + 2,4-D 1	6 Aug 09	15	1.5	80	133.48	13.35
080003-054-0026	IL Glufosinate + 2,4-D 2	6 Aug 09	15	1.5	80	99.08	9.91
080003-054-0027	IL Glufosinate + 2,4-D 3	6 Aug 09	15	1.5	80	120.49	12.05
080003-061-0025	IN Glufosinate + 2,4-D 1	6 Aug 09	15	1.5	80	138.31	13.83
080003-061-0026	IN Glufosinate + 2,4-D 2	6 Aug 09	15	1.5	80	143.31	14.33
080003-061-0027	IN Glufosinate + 2,4-D 3	6 Aug 09	15	1.5	80	150.51	15.05
080003-068-0025	NE Glufosinate + 2,4-D 1	6 Aug 09	15	1.5	80	139.76	13.98
080003-068-0026	NE Glufosinate + 2,4-D 2	6 Aug 09	15	1.5	80	166.71	16.67
080003-068-0027	NE Glufosinate + 2,4-D 3	6 Aug 09	15	1.5	80	154.16	15.42
080003-075-0025	ON1Glufosinate + 2,4-D 1	7 Aug 09	15	1.5	80	233.96	23.40
080003-075-0026	ON1Glufosinate + 2,4-D 2	7 Aug 09	15	1.5	80	192.84	19.28
080003-075-0027	ON1Glufosinate + 2,4-D 3	7 Aug 09	15	1.5	80	191.96	19.20
080003-082-0025	ON2Glufosinate + 2,4-D 1	7 Aug 09	15	1.5	80	207.01	20.70
080003-082-0026	ON2Glufosinate + 2,4-D 2	7 Aug 09	15	1.5	80	219.90	21.99
080003-082-0027	ON2Glufosinate + 2,4-D 3	7 Aug 09	15	1.5	80	188.96	18.90
						Ave. =	16.21
						Std dev. =	3.62

APPENDIX B – RAW DATA FOR PAT

Appendix B Table 1. Expression Levels of PAT in Leaf V5 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-043-0001	IA control 1	30-Mar-09	15	1.5	2	ND	ND
080003-043-0002	IA control 2	30-Mar-09	15	1.5	2	ND	ND
080003-043-0003	IA control 3	30-Mar-09	15	1.5	2	ND	ND
080003-050-0001	IL control 1	30-Mar-09	15	1.5	2	ND	ND
080003-050-0002	IL control 2	30-Mar-09	15	1.5	2	ND	ND
080003-050-0003	IL control 3	30-Mar-09	15	1.5	2	ND	ND
080003-057-0001	IN control 1	30-Mar-09	15	1.5	2	ND	ND
080003-057-0002	IN control 2	30-Mar-09	15	1.5	2	ND	ND
080003-057-0003	IN control 3	30-Mar-09	15	1.5	2	ND	ND
080003-064-0001	NE control 1	30-Mar-09	15	1.5	2	ND	ND
080003-064-0002	NE control 2	30-Mar-09	15	1.5	2	ND	ND
080003-064-0003	NE control 3	30-Mar-09	15	1.5	2	ND	ND
080003-071-0001	ON1 control 1	31-Mar-09	15	1.5	2	ND	ND
080003-071-0002	ON1 control 2	31-Mar-09	No sample	--	--	--	--
080003-071-0003	ON1 control 3	31-Mar-09	No sample	--	--	--	--
080003-078-0001	ON2 control 1	31-Mar-09	15	1.5	2	ND	ND
080003-078-0002	ON2 control 2	31-Mar-09	15	1.5	2	ND	ND
080003-078-0003	ON2 control 3	31-Mar-09	15	1.5	2	ND	ND
080003-043-0007	IA Unsprayed 1	30-Mar-09	15	1.5	50	105.412	10.54
080003-043-0008	IA Unsprayed 2	30-Mar-09	15	1.5	50	109.230	10.92
080003-043-0009	IA Unsprayed 3	30-Mar-09	15	1.5	50	86.994	8.70
080003-050-0007	IL Unsprayed 1	30-Mar-09	15	1.5	50	85.291	8.53
080003-050-0008	IL Unsprayed 2	30-Mar-09	15	1.5	50	83.063	8.31
080003-050-0009	IL Unsprayed 3	30-Mar-09	15	1.5	50	100.622	10.06
080003-057-0007	IN Unsprayed 1	30-Mar-09	15	1.5	50	91.552	9.16
080003-057-0008	IN Unsprayed 2	30-Mar-09	15	1.5	50	67.103	6.71
080003-057-0009	IN Unsprayed 3	30-Mar-09	15	1.5	50	82.678	8.27
080003-064-0007	NE Unsprayed 1	30-Mar-09	15	1.5	50	136.639	13.66
080003-064-0008	NE Unsprayed 2	30-Mar-09	15	1.5	50	137.545	13.75
080003-064-0009	NE Unsprayed 3	30-Mar-09	15	1.5	50	137.127	13.71
080003-071-0007	ON1Unsprayed 1	31-Mar-09	15	1.5	50	99.475	9.95
080003-071-0008	ON1Unsprayed 2	31-Mar-09	No sample	--	--	--	--
080003-071-0009	ON1Unsprayed 3	31-Mar-09	No sample	--	--	--	--
080003-078-0007	ON2Unsprayed 1	31-Mar-09	15	1.5	50	47.554	4.76
080003-078-0008	ON2Unsprayed 2	31-Mar-09	15	1.5	50	53.024	5.30
080003-078-0009	ON2Unsprayed 3	31-Mar-09	15	1.5	50	43.344	4.33
						Ave. =	9.17
						Std dev. =	2.99

ND – Not Detected

Appendix B Table 1 (Cont.). Expression Levels of PAT in Leaf V5 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-043-0013	IA Glufosinate 1	30-Mar-09	15	1.5	50	109.744	10.97
080003-043-0014	IA Glufosinate 2	30-Mar-09	15	1.5	50	115.242	11.52
080003-043-0015	IA Glufosinate 3	30-Mar-09	15	1.5	50	102.778	10.28
080003-050-0013	IL Glufosinate 1	30-Mar-09	15	1.5	50	97.652	9.77
080003-050-0014	IL Glufosinate 2	30-Mar-09	15	1.5	50	108.226	10.82
080003-050-0015	IL Glufosinate 3	30-Mar-09	15	1.5	50	96.687	9.67
080003-057-0013	IN Glufosinate 1	30-Mar-09	15	1.5	50	109.697	10.97
080003-057-0014	IN Glufosinate 2	30-Mar-09	15	1.5	50	114.793	11.48
080003-057-0015	IN Glufosinate 3	30-Mar-09	15	1.5	50	81.748	8.17
080003-064-0013	NE Glufosinate 1	30-Mar-09	15	1.5	50	123.628	12.36
080003-064-0014	NE Glufosinate 2	30-Mar-09	15	1.5	50	137.816	13.78
080003-064-0015	NE Glufosinate 3	30-Mar-09	15	1.5	50	117.900	11.79
080003-071-0013	ON1 Glufosinate 1	31-Mar-09	15	1.5	50	36.658	3.67
080003-071-0014	ON1 Glufosinate 2	31-Mar-09	No sample	--	--	--	--
080003-071-0015	ON1 Glufosinate 3	31-Mar-09	No sample	--	--	--	--
080003-078-0013	ON2 Glufosinate 1	31-Mar-09	15	1.5	50	51.986	5.20
080003-078-0014	ON2 Glufosinate 2	31-Mar-09	15	1.5	50	69.279	6.93
080003-078-0015	ON2 Glufosinate 3	19 Aug 09	15	1.5	50	98.709	9.87[a]
						Ave. =	9.83
						Std dev. =	2.66
080003-043-0019	IA 2,4-D 1	30-Mar-09	15	1.5	50	96.624	9.66
080003-043-0020	IA 2,4-D 2	30-Mar-09	15	1.5	50	93.292	9.33
080003-043-0021	IA 2,4-D 3	30-Mar-09	15	1.5	50	48.749	4.87
080003-050-0019	IL 2,4-D 1	30-Mar-09	15	1.5	50	109.992	11.00
080003-050-0020	IL 2,4-D 2	30-Mar-09	15	1.5	50	92.870	9.29
080003-050-0021	IL 2,4-D 3	30-Mar-09	15	1.5	50	112.944	11.29
080003-057-0019	IN 2,4-D 1	30-Mar-09	15	1.5	50	64.731	6.47
080003-057-0020	IN 2,4-D 2	30-Mar-09	15	1.5	50	66.033	6.60
080003-057-0021	IN 2,4-D 3	30-Mar-09	15	1.5	50	79.251	7.93
080003-064-0019	NE 2,4-D 1	30-Mar-09	15	1.5	50	136.346	13.63
080003-064-0020	NE 2,4-D 2	30-Mar-09	15	1.5	50	135.061	13.51
080003-064-0021	NE 2,4-D 3	30-Mar-09	15	1.5	50	139.155	13.92
080003-071-0019	ON1 2,4-D 1	31-Mar-09	15	1.5	50	93.545	9.35
080003-071-0020	ON1 2,4-D 2	31-Mar-09	No sample	--	--	--	--
080003-071-0021	ON1 2,4-D 3	31-Mar-09	No sample	--	--	--	--
080003-078-0019	ON2 2,4-D 1	31-Mar-09	15	1.5	50	54.368	5.44
080003-078-0020	ON22,4-D 2	31-Mar-09	15	1.5	50	60.212	6.02
080003-078-0021	ON2 2,4-D 3	31-Mar-09	15	1.5	50	58.459	5.85
						Ave. =	9.01
						Std dev. =	3.03

[a] Reanalysis of samples

Appendix B Table 1 (Cont.). Expression Levels of PAT in Leaf V5 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-043-0025	IA Glufosinate + 2,4-D 1	30-Mar-09	15	1.5	50	126.192	12.62
080003-043-0026	IA Glufosinate + 2,4-D 2	30-Mar-09	15	1.5	50	131.588	13.16
080003-043-0027	IA Glufosinate + 2,4-D 3	30-Mar-09	15	1.5	50	133.977	13.40
080003-050-0025	IL Glufosinate + 2,4-D 1	30-Mar-09	15	1.5	50	92.475	9.25
080003-050-0026	IL Glufosinate + 2,4-D 2	30-Mar-09	15	1.5	50	100.536	10.05
080003-050-0027	IL Glufosinate + 2,4-D 3	30-Mar-09	15	1.5	50	30.025	3.00
080003-057-0025	IN Glufosinate + 2,4-D 1	30-Mar-09	15	1.5	50	122.970	12.30
080003-057-0026	IN Glufosinate + 2,4-D 2	30-Mar-09	15	1.5	50	96.805	9.68
080003-057-0027	IN Glufosinate + 2,4-D 3	30-Mar-09	15	1.5	50	94.645	9.46
080003-064-0025	NE Glufosinate + 2,4-D 1	30-Mar-09	15	1.5	50	135.845	13.58
080003-064-0026	NE Glufosinate + 2,4-D 2	30-Mar-09	15	1.5	50	143.896	14.39
080003-064-0027	NE Glufosinate + 2,4-D 3	30-Mar-09	15	1.5	50	150.342	15.03
080003-071-0025	ON1Glufosinate + 2,4-D 1	31-Mar-09	15	1.5	50	94.156	9.42
080003-071-0026	ON1Glufosinate + 2,4-D 2	31-Mar-09	No sample	--	--	--	--
080003-071-0027	ON1Glufosinate + 2,4-D 3	31-Mar-09	No sample	--	--	--	--
080003-078-0025	ON2Glufosinate + 2,4-D 1	31-Mar-09	15	1.5	50	45.963	4.60
080003-078-0026	ON2Glufosinate + 2,4-D 2	31-Mar-09	15	1.5	50	55.516	5.55
080003-078-0027	ON2Glufosinate + 2,4-D 3	31-Mar-09	15	1.5	50	53.168	5.32
						Ave. =	10.05
						Std dev. =	3.76

Appendix B Table 2. Expression Levels of PAT in Leaf V10 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-044-0001	IA control 1	1-Apr-09	15	1.5	2	ND	ND
080003-044-0002	IA control 2	1-Apr-09	15	1.5	2	ND	ND
080003-044-0003	IA control 3	1-Apr-09	15	1.5	2	ND	ND
080003-051-0001	IL control 1	1-Apr-09	15	1.5	2	ND	ND
080003-051-0002	IL control 2	1-Apr-09	15	1.5	2	ND	ND
080003-051-0003	IL control 3	1-Apr-09	15	1.5	2	ND	ND
080003-058-0001	IN control 1	1-Apr-09	15	1.5	2	ND	ND
080003-058-0002	IN control 2	1-Apr-09	15	1.5	2	ND	ND
080003-058-0003	IN control 3	1-Apr-09	15	1.5	2	ND	ND
080003-065-0001	NE control 1	1-Apr-09	15	1.5	2	ND	ND
080003-065-0002	NE control 2	1-Apr-09	15	1.5	2	ND	ND
080003-065-0003	NE control 3	1-Apr-09	15	1.5	2	ND	ND
080003-072-0001	ON1 control 1	1-Apr-09	15	1.5	2	ND	ND
080003-072-0002	ON1 control 2	1-Apr-09	15	1.5	2	ND	ND
080003-072-0003	ON1 control 3	1-Apr-09	15	1.5	2	ND	ND
080003-079-0001	ON2 control 1	1-Apr-09	15	1.5	2	ND	ND
080003-079-0002	ON2 control 2	1-Apr-09	15	1.5	2	ND	ND
080003-079-0003	ON2 control 3	1-Apr-09	15	1.5	2	ND	ND
080003-044-0007	IA Unsprayed 1	1-Apr-09	15	1.5	50	113.208	11.32
080003-044-0008	IA Unsprayed 2	1-Apr-09	15	1.5	50	113.273	11.33
080003-044-0009	IA Unsprayed 3	1-Apr-09	15	1.5	50	122.268	12.23
080003-051-0007	IL Unsprayed 1	1-Apr-09	15	1.5	50	118.850	11.89
080003-051-0008	IL Unsprayed 2	1-Apr-09	15	1.5	50	92.387	9.24
080003-051-0009	IL Unsprayed 3	1-Apr-09	15	1.5	50	115.823	11.58
080003-058-0007	IN Unsprayed 1	1-Apr-09	15	1.5	50	133.474	13.35
080003-058-0008	IN Unsprayed 2	1-Apr-09	15	1.5	50	122.941	12.29
080003-058-0009	IN Unsprayed 3	1-Apr-09	15	1.5	50	127.762	12.78
080003-065-0007	NE Unsprayed 1	1-Apr-09	15	1.5	50	104.239	10.42
080003-065-0008	NE Unsprayed 2	1-Apr-09	15	1.5	50	112.855	11.29
080003-065-0009	NE Unsprayed 3	1-Apr-09	15	1.5	50	102.239	10.22
080003-072-0007	ON1Unsprayed 1	1-Apr-09	15	1.5	50	109.315	10.93
080003-072-0008	ON1Unsprayed 2	1-Apr-09	15	1.5	50	104.245	10.42
080003-072-0009	ON1Unsprayed 3	1-Apr-09	15	1.5	50	101.423	10.14
080003-079-0007	ON2Unsprayed 1	1-Apr-09	15	1.5	50	84.274	8.43
080003-079-0008	ON2Unsprayed 2	1-Apr-09	15	1.5	50	97.998	9.80
080003-079-0009	ON2Unsprayed 3	1-Apr-09	15	1.5	50	92.920	9.29
						Ave. =	10.94
						Std dev. =	1.31

ND – Not Detected

Appendix B Table 2 (Cont.). Expression Levels of PAT in Leaf V10 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-044-0013	IA Glufosinate 1	1-Apr-09	15	1.5	50	134.568	13.46
080003-044-0014	IA Glufosinate 2	1-Apr-09	15	1.5	50	144.428	14.44
080003-044-0015	IA Glufosinate 3	1-Apr-09	15	1.5	50	127.616	12.76
080003-051-0013	IL Glufosinate 1	1-Apr-09	15	1.5	50	117.339	11.73
080003-051-0014	IL Glufosinate 2	1-Apr-09	15	1.5	50	104.883	10.49
080003-051-0015	IL Glufosinate 3	1-Apr-09	15	1.5	50	100.431	10.04
080003-058-0013	IN Glufosinate 1	1-Apr-09	15	1.5	50	129.770	12.98
080003-058-0014	IN Glufosinate 2	1-Apr-09	15	1.5	50	116.199	11.62
080003-058-0015	IN Glufosinate 3	1-Apr-09	15	1.5	50	135.190	13.52
080003-065-0013	NE Glufosinate 1	1-Apr-09	15	1.5	50	112.641	11.26
080003-065-0014	NE Glufosinate 2	1-Apr-09	15	1.5	50	124.454	12.45
080003-065-0015	NE Glufosinate 3	1-Apr-09	15	1.5	50	136.588	13.66
080003-072-0013	ON1 Glufosinate 1	1-Apr-09	15	1.5	50	96.954	9.70
080003-072-0014	ON1 Glufosinate 2	1-Apr-09	15	1.5	50	99.721	9.97
080003-072-0015	ON1 Glufosinate 3	1-Apr-09	15	1.5	50	109.179	10.92
080003-079-0013	ON2 Glufosinate 1	1-Apr-09	15	1.5	50	90.777	9.08
080003-079-0014	ON2 Glufosinate 2	1-Apr-09	15	1.5	50	95.273	9.53
080003-079-0015	ON2 Glufosinate 3	1-Apr-09	15	1.5	50	95.737	9.57
						Ave. =	11.51
						Std dev. =	1.69
080003-044-0019	IA 2,4-D 1	1-Apr-09	15	1.5	50	115.102	11.51
080003-044-0020	IA 2,4-D 2	1-Apr-09	15	1.5	50	146.895	14.69
080003-044-0021	IA 2,4-D 3	1-Apr-09	15	1.5	50	120.965	12.10
080003-051-0019	IL 2,4-D 1	1-Apr-09	15	1.5	50	105.907	10.59
080003-051-0020	IL 2,4-D 2	1-Apr-09	15	1.5	50	113.410	11.34
080003-051-0021	IL 2,4-D 3	1-Apr-09	15	1.5	50	133.000	13.30
080003-058-0019	IN 2,4-D 1	1-Apr-09	15	1.5	50	128.453	12.85
080003-058-0020	IN 2,4-D 2	1-Apr-09	15	1.5	50	141.455	14.15
080003-058-0021	IN 2,4-D 3	1-Apr-09	15	1.5	50	148.078	14.81
080003-065-0019	NE 2,4-D 1	1-Apr-09	15	1.5	50	120.136	12.01
080003-065-0020	NE 2,4-D 2	1-Apr-09	15	1.5	50	95.363	9.54
080003-065-0021	NE 2,4-D 3	1-Apr-09	15	1.5	50	107.728	10.77
080003-072-0019	ON1 2,4-D 1	1-Apr-09	15	1.5	50	120.893	12.09
080003-072-0020	ON1 2,4-D 2	1-Apr-09	15	1.5	50	131.738	13.17
080003-072-0021	ON1 2,4-D 3	1-Apr-09	15	1.5	50	127.600	12.76
080003-079-0019	ON2 2,4-D 1	1-Apr-09	15	1.5	50	74.871	7.49
080003-079-0020	ON22,4-D 2	1-Apr-09	15	1.5	50	93.428	9.34
080003-079-0021	ON2 2,4-D 3	1-Apr-09	15	1.5	50	90.775	9.08
						Ave. =	11.76
						Std dev. =	2.02

Appendix B Table 2 (Cont.). Expression Levels of PAT in Leaf V10 Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-044-0025	IA Glufosinate + 2,4-D 1	1-Apr-09	15	1.5	50	129.889	12.99
080003-044-0026	IA Glufosinate + 2,4-D 2	1-Apr-09	15	1.5	50	132.824	13.28
080003-044-0027	IA Glufosinate + 2,4-D 3	1-Apr-09	15	1.5	50	115.558	11.56
080003-051-0025	IL Glufosinate + 2,4-D 1	1-Apr-09	15	1.5	50	127.016	12.70
080003-051-0026	IL Glufosinate + 2,4-D 2	1-Apr-09	15	1.5	50	121.476	12.15
080003-051-0027	IL Glufosinate + 2,4-D 3	1-Apr-09	15	1.5	50	125.052	12.51
080003-058-0025	IN Glufosinate + 2,4-D 1	1-Apr-09	15	1.5	50	122.899	12.29
080003-058-0026	IN Glufosinate + 2,4-D 2	1-Apr-09	15	1.5	50	141.513	14.15
080003-058-0027	IN Glufosinate + 2,4-D 3	1-Apr-09	15	1.5	50	114.350	11.44
080003-065-0025	NE Glufosinate + 2,4-D 1	1-Apr-09	15	1.5	50	125.464	12.55
080003-065-0026	NE Glufosinate + 2,4-D 2	1-Apr-09	15	1.5	50	97.573	9.76
080003-065-0027	NE Glufosinate + 2,4-D 3	1-Apr-09	15	1.5	50	98.272	9.83
080003-072-0025	ON1Glufosinate + 2,4-D 1	1-Apr-09	15	1.5	50	102.294	10.23
080003-072-0026	ON1Glufosinate + 2,4-D 2	1-Apr-09	15	1.5	50	114.669	11.47
080003-072-0027	ON1Glufosinate + 2,4-D 3	1-Apr-09	15	1.5	50	124.116	12.41
080003-079-0025	ON2Glufosinate + 2,4-D 1	1-Apr-09	15	1.5	50	92.557	9.26
080003-079-0026	ON2Glufosinate + 2,4-D 2	1-Apr-09	15	1.5	50	96.123	9.61
080003-079-0027	ON2Glufosinate + 2,4-D 3	1-Apr-09	15	1.5	50	101.639	10.16
						Ave. =	11.58
						Std dev. =	1.45

Appendix B Table 3. Expression Levels of PAT in Forage Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-045-0001	IA control 1	31-Mar-09	15	1.5	2	ND	ND
080003-045-0002	IA control 2	31-Mar-09	15	1.5	2	ND	ND
080003-045-0003	IA control 3	31-Mar-09	15	1.5	2	ND	ND
080003-052-0001	IL control 1	31-Mar-09	15	1.5	2	ND	ND
080003-052-0002	IL control 2	31-Mar-09	15	1.5	2	ND	ND
080003-052-0003	IL control 3	31-Mar-09	15	1.5	2	ND	ND
080003-059-0001	IN control 1	2-Apr-09	15	1.5	2	ND	ND
080003-059-0002	IN control 2	2-Apr-09	15	1.5	2	ND	ND
080003-059-0003	IN control 3	2-Apr-09	15	1.5	2	ND	ND
080003-066-0001	NE control 1	2-Apr-09	15	1.5	2	ND	ND
080003-066-0002	NE control 2	2-Apr-09	15	1.5	2	ND	ND
080003-066-0003	NE control 3	2-Apr-09	15	1.5	2	ND	ND
080003-073-0001	ON1 control 1	2-Apr-09	15	1.5	2	ND	ND
080003-073-0002	ON1 control 2	2-Apr-09	15	1.5	2	ND	ND
080003-073-0003	ON1 control 3	2-Apr-09	15	1.5	2	ND	ND
080003-080-0001	ON2 control 1	2-Apr-09	15	1.5	2	ND	ND
080003-080-0002	ON2 control 2	2-Apr-09	15	1.5	2	ND	ND
080003-080-0003	ON2 control 3	2-Apr-09	15	1.5	2	ND	ND
080003-045-0007	IA Unsprayed 1	28 Apr 09	15	1.5	5	1.27	0.13[a]
080003-045-0008	IA Unsprayed 2	30 Apr 09	15	1.5	2	0.69	(0.07)[a]
080003-045-0009	IA Unsprayed 3	30 Apr 09	15	1.5	2	0.58	(0.06)[a]
080003-052-0007	IL Unsprayed 1	31-Mar-09	15	1.5	10	22.819	2.28
080003-052-0008	IL Unsprayed 2	31-Mar-09	15	1.5	10	15.297	1.53
080003-052-0009	IL Unsprayed 3	31-Mar-09	15	1.5	10	24.699	2.47
080003-059-0007	IN Unsprayed 1	2-Apr-09	15	1.5	10	53.800	5.38
080003-059-0008	IN Unsprayed 2	2-Apr-09	15	1.5	10	49.350	4.94
080003-059-0009	IN Unsprayed 3	2-Apr-09	15	1.5	10	52.404	5.24
080003-066-0007	NE Unsprayed 1	8-Apr-09	15	1.5	25	125.439	12.54[a]
080003-066-0008	NE Unsprayed 2	2-Apr-09	15	1.5	10	51.694	5.17
080003-066-0009	NE Unsprayed 3	2-Apr-09	15	1.5	10	50.117	5.01
080003-073-0007	ON1Unsprayed 1	2-Apr-09	15	1.5	10	43.800	4.38
080003-073-0008	ON1Unsprayed 2	2-Apr-09	15	1.5	10	34.345	3.43
080003-073-0009	ON1Unsprayed 3	2-Apr-09	15	1.5	10	35.667	3.57
080003-080-0007	ON2Unsprayed 1	2-Apr-09	15	1.5	10	32.978	3.30
080003-080-0008	ON2Unsprayed 2	2-Apr-09	15	1.5	10	16.649	1.66
080003-080-0009	ON2Unsprayed 3	2-Apr-09	15	1.5	10	42.447	4.24
						Ave. =	3.63
						Std dev. =	2.88

[a] Reanalysis of samples
ND – Not Detected

Appendix B Table 3 (Cont.). Expression Levels of PAT in Forage Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-045-0013	IA Glufosinate 1	31-Mar-09	15	1.5	10	4.013	0.40
080003-045-0014	IA Glufosinate 2	31-Mar-09	15	1.5	10	8.742	0.87
080003-045-0015	IA Glufosinate 3	31-Mar-09	15	1.5	10	14.709	1.47
080003-052-0013	IL Glufosinate 1	31-Mar-09	15	1.5	10	32.765	3.28
080003-052-0014	IL Glufosinate 2	31-Mar-09	15	1.5	10	16.822	1.68
080003-052-0015	IL Glufosinate 3	31-Mar-09	15	1.5	10	19.596	1.96
080003-059-0013	IN Glufosinate 1	8-Apr-09	15	1.5	25	120.982	12.10[a]
080003-059-0014	IN Glufosinate 2	8-Apr-09	15	1.5	25	112.516	11.25[a]
080003-059-0015	IN Glufosinate 3	8-Apr-09	15	1.5	25	115.761	11.58[a]
080003-066-0013	NE Glufosinate 1	2-Apr-09	15	1.5	10	38.072	3.81
080003-066-0014	NE Glufosinate 2	8-Apr-09	15	1.5	25	92.270	9.23[a]
080003-066-0015	NE Glufosinate 3	8-Apr-09	15	1.5	25	61.793	6.18[a]
080003-073-0013	ON1 Glufosinate 1	2-Apr-09	15	1.5	10	33.913	3.39
080003-073-0014	ON1 Glufosinate 2	2-Apr-09	15	1.5	10	39.635	3.96
080003-073-0015	ON1 Glufosinate 3	2-Apr-09	15	1.5	10	46.783	4.68
080003-080-0013	ON2 Glufosinate 1	2-Apr-09	15	1.5	10	43.667	4.37
080003-080-0014	ON2 Glufosinate 2	2-Apr-09	15	1.5	10	21.888	2.19
080003-080-0015	ON2 Glufosinate 3	2-Apr-09	15	1.5	10	41.024	4.10
						Ave. =	4.81
						Std dev. =	3.75
080003-045-0019	IA 2,4-D 1	30 Apr 09	15	1.5	2	ND	ND[a]
080003-045-0020	IA 2,4-D 2	30 Apr 09	15	1.5	2	1.17	0.12[a]
080003-045-0021	IA 2,4-D 3	28 Apr 09	15	1.5	5	1.38	0.14[a]
080003-052-0019	IL 2,4-D 1	31-Mar-09	15	1.5	10	22.884	2.29
080003-052-0020	IL 2,4-D 2	31-Mar-09	15	1.5	10	25.559	2.56
080003-052-0021	IL 2,4-D 3	31-Mar-09	15	1.5	10	17.904	1.79
080003-059-0019	IN 2,4-D 1	8-Apr-09	15	1.5	25	116.144	11.61[a]
080003-059-0020	IN 2,4-D 2	8-Apr-09	15	1.5	25	121.312	12.13[a]
080003-059-0021	IN 2,4-D 3	8-Apr-09	15	1.5	25	117.498	11.75[a]
080003-066-0019	NE 2,4-D 1	8-Apr-09	15	1.5	25	65.783	6.58[a]
080003-066-0020	NE 2,4-D 2	8-Apr-09	15	1.5	25	106.665	10.67[a]
080003-066-0021	NE 2,4-D 3	8-Apr-09	15	1.5	25	88.441	8.84[a]
080003-073-0019	ON1 2,4-D 1	2-Apr-09	15	1.5	10	39.595	3.96
080003-073-0020	ON1 2,4-D 2	2-Apr-09	15	1.5	10	42.941	4.29
080003-073-0021	ON1 2,4-D 3	2-Apr-09	15	1.5	10	32.063	3.21
080003-080-0019	ON2 2,4-D 1	2-Apr-09	15	1.5	10	47.030	4.70
080003-080-0020	ON2 2,4-D 2	2-Apr-09	15	1.5	10	8.023	0.80
080003-080-0021	ON2 2,4-D 3	2-Apr-09	15	1.5	10	43.430	4.34
						Ave. =	5.28
						Std dev. =	4.20

[a] Reanalysis of samples

ND – Not Detected

Appendix B Table 3 (Cont.). Expression Levels of PAT in Forage Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-045-0025	IA Glufosinate + 2,4-D 1	31-Mar-09	15	1.5	10	9.695	0.97
080003-045-0026	IA Glufosinate + 2,4-D 2	31-Mar-09	15	1.5	10	7.247	0.72
080003-045-0027	IA Glufosinate + 2,4-D 3	31-Mar-09	15	1.5	10	4.525	0.45
080003-052-0025	IL Glufosinate + 2,4-D 1	31-Mar-09	15	1.5	10	29.512	2.95
080003-052-0026	IL Glufosinate + 2,4-D 2	31-Mar-09	15	1.5	10	23.104	2.31
080003-052-0027	IL Glufosinate + 2,4-D 3	31-Mar-09	15	1.5	10	23.739	2.37
080003-059-0025	IN Glufosinate + 2,4-D 1	8-Apr-09	15	1.5	25	106.830	10.68[a]
080003-059-0026	IN Glufosinate + 2,4-D 2	8-Apr-09	15	1.5	25	100.009	10.00[a]
080003-059-0027	IN Glufosinate + 2,4-D 3	8-Apr-09	15	1.5	25	123.512	12.35[a]
080003-066-0025	NE Glufosinate + 2,4-D 1	8-Apr-09	15	1.5	25	97.799	9.78[a]
080003-066-0026	NE Glufosinate + 2,4-D 2	2-Apr-09	15	1.5	10	56.834	5.68
080003-066-0027	NE Glufosinate + 2,4-D 3	2-Apr-09	15	1.5	10	48.630	4.86
080003-073-0025	ON1Glufosinate + 2,4-D 1	2-Apr-09	15	1.5	10	35.248	3.52
080003-073-0026	ON1Glufosinate + 2,4-D 2	2-Apr-09	15	1.5	10	46.351	4.64
080003-073-0027	ON1Glufosinate + 2,4-D 3	2-Apr-09	15	1.5	10	39.070	3.91
080003-080-0025	ON2Glufosinate + 2,4-D 1	2-Apr-09	15	1.5	10	51.658	5.17
080003-080-0026	ON2Glufosinate + 2,4-D 2	2-Apr-09	15	1.5	10	25.705	2.57
080003-080-0027	ON2Glufosinate + 2,4-D 3	2-Apr-09	15	1.5	10	22.034	2.20
						Ave. =	4.73
						Std dev. =	3.63

[a] Reanalysis of samples

Appendix B Table 4. Expression Levels of PAT in Root Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-046-0001	IA control 1	22-Apr-09	15	1.5	2	ND	ND
080003-046-0002	IA control 2	7-Apr-09	15	1.5	2	ND	ND
080003-046-0003	IA control 3	7-Apr-09	15	1.5	2	ND	ND
080003-053-0001	IL control 1	7-Apr-09	15	1.5	2	ND	ND
080003-053-0002	IL control 2	7-Apr-09	15	1.5	2	ND	ND
080003-053-0003	IL control 3	7-Apr-09	15	1.5	2	ND	ND
080003-060-0001	IN control 1	7-Apr-09	15	1.5	2	ND	ND
080003-060-0002	IN control 2	7-Apr-09	15	1.5	2	ND	ND
080003-060-0003	IN control 3	7-Apr-09	15	1.5	2	ND	ND
080003-067-0001	NE control 1	7-Apr-09	15	1.5	2	ND	ND
080003-067-0002	NE control 2	7-Apr-09	15	1.5	2	ND	ND
080003-067-0003	NE control 3	7-Apr-09	15	1.5	2	ND	ND
080003-074-0001	ON1 control 1	8-Apr-09	15	1.5	2	ND	ND
080003-074-0002	ON1 control 2	8-Apr-09	15	1.5	2	ND	ND
080003-074-0003	ON1 control 3	8-Apr-09	15	1.5	2	ND	ND
080003-081-0001	ON2 control 1	8-Apr-09	15	1.5	2	ND	ND
080003-081-0002	ON2 control 2	8-Apr-09	15	1.5	2	ND	ND
080003-081-0003	ON2 control 3	8-Apr-09	15	1.5	2	ND	ND
080003-046-0007	IA Unsprayed 1	7-Apr-09	15	1.5	5	12.485	1.25
080003-046-0008	IA Unsprayed 2	7-Apr-09	15	1.5	5	18.520	1.85
080003-046-0009	IA Unsprayed 3	7-Apr-09	15	1.5	5	16.682	1.67
080003-053-0007	IL Unsprayed 1	7-Apr-09	15	1.5	5	14.000	1.40
080003-053-0008	IL Unsprayed 2	7-Apr-09	15	1.5	5	16.678	1.67
080003-053-0009	IL Unsprayed 3	7-Apr-09	15	1.5	5	19.183	1.92
080003-060-0007	IN Unsprayed 1	7-Apr-09	15	1.5	5	18.896	1.89
080003-060-0008	IN Unsprayed 2	7-Apr-09	15	1.5	5	23.197	2.32
080003-060-0009	IN Unsprayed 3	22-Apr-09	15	1.5	10	28.416	2.84[a]
080003-067-0007	NE Unsprayed 1	7-Apr-09	15	1.5	5	19.507	1.95
080003-067-0008	NE Unsprayed 2	7-Apr-09	15	1.5	5	4.681	0.47
080003-067-0009	NE Unsprayed 3	7-Apr-09	15	1.5	5	17.398	1.74
080003-074-0007	ON1Unsprayed 1	8-Apr-09	15	1.5	5	12.145	1.21
080003-074-0008	ON1Unsprayed 2	8-Apr-09	15	1.5	5	13.538	1.35
080003-074-0009	ON1Unsprayed 3	8-Apr-09	15	1.5	5	18.505	1.85
080003-081-0007	ON2Unsprayed 1	8-Apr-09	15	1.5	5	23.333	2.33
080003-081-0008	ON2Unsprayed 2	8-Apr-09	15	1.5	5	18.865	1.89
080003-081-0009	ON2Unsprayed 3	8-Apr-09	15	1.5	5	15.247	1.52
						Ave. =	1.73
						Std dev. =	0.51

[a] Reanalysis of Samples
ND – Not Detected

Appendix B Table 4 (Cont.). Expression Levels of PAT in Root Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-046-0013	IA Glufosinate 1	7-Apr-09	15	1.5	5	17.325	1.73
080003-046-0014	IA Glufosinate 2	7-Apr-09	15	1.5	5	16.768	1.68
080003-046-0015	IA Glufosinate 3	7-Apr-09	15	1.5	5	15.155	1.52
080003-053-0013	IL Glufosinate 1	7-Apr-09	15	1.5	5	17.768	1.78
080003-053-0014	IL Glufosinate 2	7-Apr-09	15	1.5	5	21.230	2.12
080003-053-0015	IL Glufosinate 3	7-Apr-09	15	1.5	5	21.656	2.17
080003-060-0013	IN Glufosinate 1	7-Apr-09	15	1.5	5	24.356	2.44
080003-060-0014	IN Glufosinate 2	7-Apr-09	15	1.5	5	26.671	2.67
080003-060-0015	IN Glufosinate 3	22-Apr-09	15	1.5	10	26.442	2.64[a]
080003-067-0013	NE Glufosinate 1	7-Apr-09	15	1.5	5	18.114	1.81
080003-067-0014	NE Glufosinate 2	7-Apr-09	15	1.5	5	18.682	1.87
080003-067-0015	NE Glufosinate 3	7-Apr-09	15	1.5	5	16.714	1.67
080003-074-0013	ON1 Glufosinate 1	8-Apr-09	15	1.5	5	10.095	1.01
080003-074-0014	ON1 Glufosinate 2	8-Apr-09	15	1.5	5	14.908	1.49
080003-074-0015	ON1 Glufosinate 3	8-Apr-09	15	1.5	5	14.590	1.46
080003-081-0013	ON2 Glufosinate 1	8-Apr-09	15	1.5	5	25.216	2.52
080003-081-0014	ON2 Glufosinate 2	8-Apr-09	15	1.5	5	18.142	1.81
080003-081-0015	ON2 Glufosinate 3	8-Apr-09	15	1.5	5	21.399	2.14
						Ave. =	1.92
						Std dev. =	0.45
080003-046-0019	IA 2,4-D 1	7-Apr-09	15	1.5	5	20.606	2.06
080003-046-0020	IA 2,4-D 2	7-Apr-09	15	1.5	5	14.564	1.46
080003-046-0021	IA 2,4-D 3	7-Apr-09	15	1.5	5	15.855	1.59
080003-053-0019	IL 2,4-D 1	7-Apr-09	15	1.5	5	16.336	1.63
080003-053-0020	IL 2,4-D 2	7-Apr-09	15	1.5	5	7.220	0.72
080003-053-0021	IL 2,4-D 3	7-Apr-09	15	1.5	5	10.133	1.01
080003-060-0019	IN 2,4-D 1	22-Apr-09	15	1.5	10	25.338	2.53[a]
080003-060-0020	IN 2,4-D 2	7-Apr-09	15	1.5	5	23.528	2.35
080003-060-0021	IN 2,4-D 3	7-Apr-09	15	1.5	5	28.345	2.83
080003-067-0019	NE 2,4-D 1	7-Apr-09	15	1.5	5	14.175	1.42
080003-067-0020	NE 2,4-D 2	7-Apr-09	15	1.5	5	14.441	1.44
080003-067-0021	NE 2,4-D 3	7-Apr-09	15	1.5	5	14.778	1.48
080003-074-0019	ON1 2,4-D 1	8-Apr-09	15	1.5	5	4.237	0.42
080003-074-0020	ON1 2,4-D 2	8-Apr-09	15	1.5	5	22.463	2.25
080003-074-0021	ON1 2,4-D 3	8-Apr-09	15	1.5	5	12.259	1.23
080003-081-0019	ON2 2,4-D 1	8-Apr-09	15	1.5	5	16.485	1.65
080003-081-0020	ON2 2,4-D 2	8-Apr-09	15	1.5	5	22.439	2.24
080003-081-0021	ON2 2,4-D 3	8-Apr-09	15	1.5	5	28.211	2.82
						Ave. =	1.73
						Std dev. =	0.68

[a] Reanalysis of Samples

Appendix B Table 4 (Cont.). Expression Levels of PAT in Root Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-046-0025	IA Glufosinate + 2,4-D 1	7-Apr-09	15	1.5	5	20.177	2.02
080003-046-0026	IA Glufosinate + 2,4-D 2	7-Apr-09	15	1.5	5	17.592	1.76
080003-046-0027	IA Glufosinate + 2,4-D 3	7-Apr-09	15	1.5	5	19.760	1.98
080003-053-0025	IL Glufosinate + 2,4-D 1	7-Apr-09	15	1.5	5	18.558	1.86
080003-053-0026	IL Glufosinate + 2,4-D 2	7-Apr-09	15	1.5	5	15.564	1.56
080003-053-0027	IL Glufosinate + 2,4-D 3	19 Aug 09	15	1.5	5	14.981	1.50[a]
080003-060-0025	IN Glufosinate + 2,4-D 1	7-Apr-09	15	1.5	5	25.825	2.58
080003-060-0026	IN Glufosinate + 2,4-D 2	7-Apr-09	15	1.5	5	24.403	2.44
080003-060-0027	IN Glufosinate + 2,4-D 3	7-Apr-09	15	1.5	5	25.605	2.56
080003-067-0025	NE Glufosinate + 2,4-D 1	7-Apr-09	15	1.5	5	19.603	1.96
080003-067-0026	NE Glufosinate + 2,4-D 2	7-Apr-09	15	1.5	5	17.308	1.73
080003-067-0027	NE Glufosinate + 2,4-D 3	7-Apr-09	15	1.5	5	15.953	1.60
080003-074-0025	ON1Glufosinate + 2,4-D 1	8-Apr-09	15	1.5	5	22.054	2.21
080003-074-0026	ON1Glufosinate + 2,4-D 2	8-Apr-09	15	1.5	5	26.816	2.68
080003-074-0027	ON1Glufosinate + 2,4-D 3	8-Apr-09	15	1.5	5	3.591	0.36
080003-081-0025	ON2Glufosinate + 2,4-D 1	8-Apr-09	15	1.5	5	14.368	1.44
080003-081-0026	ON2Glufosinate + 2,4-D 2	8-Apr-09	15	1.5	5	22.782	2.28
080003-081-0027	ON2Glufosinate + 2,4-D 3	8-Apr-09	15	1.5	5	22.144	2.21
						Ave. =	1.93
						Std dev. =	0.55

[a] Reanalysis of Samples

Appendix B Table 5. Expression Levels of PAT in Grain Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-047-0001	IA control 1	10 Aug 09	15	1.5	2	ND	ND
080003-047-0002	IA control 2	10 Aug 09	15	1.5	2	ND	ND
080003-047-0003	IA control 3	10 Aug 09	15	1.5	2	ND	ND
080003-054-0001	IL control 1	10 Aug 09	15	1.5	2	ND	ND
080003-054-0002	IL control 2	10 Aug 09	15	1.5	2	ND	ND
080003-054-0003	IL control 3	11 Aug 09	15	1.5	2	ND	ND
080003-061-0001	IN control 1	11 Aug 09	15	1.5	2	ND	ND
080003-061-0002	IN control 2	11 Aug 09	15	1.5	2	ND	ND
080003-061-0003	IN control 3	11 Aug 09	15	1.5	2	ND	ND
080003-068-0001	NE control 1	11 Aug 09	15	1.5	2	ND	ND
080003-068-0002	NE control 2	11 Aug 09	15	1.5	2	ND	ND
080003-068-0003	NE control 3	11 Aug 09	15	1.5	2	ND	ND
080003-075-0001	ON1 control 1	11 Aug 09	15	1.5	2	ND	ND
080003-075-0002	ON1 control 2	11 Aug 09	15	1.5	2	ND	ND
080003-075-0003	ON1 control 3	11 Aug 09	15	1.5	2	ND	ND
080003-082-0001	ON2 control 1	11 Aug 09	15	1.5	2	ND	ND
080003-082-0002	ON2 control 2	11 Aug 09	15	1.5	2	ND	ND
080003-082-0003	ON2 control 3	11 Aug 09	15	1.5	2	ND	ND
080003-047-0007	IA Unsprayed 1	12 Aug 09	15	1.5	16	26.025	2.60[a]
080003-047-0008	IA Unsprayed 2	10 Aug 09	15	1.5	8	25.808	2.58
080003-047-0009	IA Unsprayed 3	10 Aug 09	15	1.5	8	26.235	2.62
080003-054-0007	IL Unsprayed 1	10 Aug 09	15	1.5	8	27.690	2.77
080003-054-0008	IL Unsprayed 2	10 Aug 09	15	1.5	8	31.732	3.17
080003-054-0009	IL Unsprayed 3	11 Aug 09	15	1.5	8	33.705	3.37
080003-061-0007	IN Unsprayed 1	11 Aug 09	15	1.5	8	28.622	2.86
080003-061-0008	IN Unsprayed 2	11 Aug 09	15	1.5	8	27.128	2.71
080003-061-0009	IN Unsprayed 3	11 Aug 09	15	1.5	8	25.236	2.52
080003-068-0007	NE Unsprayed 1	11 Aug 09	15	1.5	8	27.727	2.77
080003-068-0008	NE Unsprayed 2	11 Aug 09	15	1.5	8	25.519	2.55
080003-068-0009	NE Unsprayed 3	11 Aug 09	15	1.5	8	31.269	3.13
080003-075-0007	ON1Unsprayed 1	11 Aug 09	15	1.5	8	22.694	2.27
080003-075-0008	ON1Unsprayed 2	11 Aug 09	15	1.5	8	25.499	2.55
080003-075-0009	ON1Unsprayed 3	11 Aug 09	15	1.5	8	19.643	1.96
080003-082-0007	ON2Unsprayed 1	11 Aug 09	15	1.5	8	31.884	3.19
080003-082-0008	ON2Unsprayed 2	11 Aug 09	15	1.5	8	28.276	2.83
080003-082-0009	ON2Unsprayed 3	11 Aug 09	15	1.5	8	25.984	2.60
						Ave. =	2.73
						Std dev. =	0.34

[a] Reanalysis of Samples
ND – Not Detected

Appendix B Table 5 (Cont.). Expression Levels of PAT in Grain Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)
080003-047-0013	IA Glufosinate 1	10 Aug 09	15	1.5	8	27.037	2.70
080003-047-0014	IA Glufosinate 2	10 Aug 09	15	1.5	8	24.243	2.42
080003-047-0015	IA Glufosinate 3	10 Aug 09	15	1.5	8	29.995	3.00
080003-054-0013	IL Glufosinate 1	10 Aug 09	15	1.5	8	33.910	3.39
080003-054-0014	IL Glufosinate 2	10 Aug 09	15	1.5	8	26.799	2.68
080003-054-0015	IL Glufosinate 3	11 Aug 09	15	1.5	8	27.856	2.79
080003-061-0013	IN Glufosinate 1	11 Aug 09	15	1.5	8	24.638	2.46
080003-061-0014	IN Glufosinate 2	11 Aug 09	15	1.5	8	25.077	2.51
080003-061-0015	IN Glufosinate 3	11 Aug 09	15	1.5	8	23.493	2.35
080003-068-0013	NE Glufosinate 1	11 Aug 09	15	1.5	8	30.500	3.05
080003-068-0014	NE Glufosinate 2	11 Aug 09	15	1.5	8	22.919	2.29
080003-068-0015	NE Glufosinate 3	11 Aug 09	15	1.5	8	29.241	2.92
080003-075-0013	ON1 Glufosinate 1	11 Aug 09	15	1.5	8	25.875	2.59
080003-075-0014	ON1 Glufosinate 2	11 Aug 09	15	1.5	8	27.468	2.75
080003-075-0015	ON1 Glufosinate 3	11 Aug 09	15	1.5	8	28.067	2.81
080003-082-0013	ON2 Glufosinate 1	11 Aug 09	15	1.5	8	28.043	2.80
080003-082-0014	ON2 Glufosinate 2	11 Aug 09	15	1.5	8	29.422	2.94
080003-082-0015	ON2 Glufosinate 3	11 Aug 09	15	1.5	8	29.361	2.94
						Average =	2.74
						Std dev. =	0.28
080003-047-0019	IA 2,4-D 1	10 Aug 09	15	1.5	8	29.517	2.95
080003-047-0020	IA 2,4-D 2	10 Aug 09	15	1.5	8	30.823	3.08
080003-047-0021	IA 2,4-D 3	10 Aug 09	15	1.5	8	29.945	2.99
080003-054-0019	IL 2,4-D 1	10 Aug 09	15	1.5	8	28.353	2.84
080003-054-0020	IL 2,4-D 2	10 Aug 09	15	1.5	8	29.198	2.92
080003-054-0021	IL 2,4-D 3	11 Aug 09	15	1.5	8	29.433	2.94
080003-061-0019	IN 2,4-D 1	11 Aug 09	15	1.5	8	31.251	3.13
080003-061-0020	IN 2,4-D 2	11 Aug 09	15	1.5	8	24.445	2.44
080003-061-0021	IN 2,4-D 3	11 Aug 09	15	1.5	8	30.389	3.04
080003-068-0019	NE 2,4-D 1	11 Aug 09	15	1.5	8	27.214	2.72
080003-068-0020	NE 2,4-D 2	11 Aug 09	15	1.5	8	26.613	2.66
080003-068-0021	NE 2,4-D 3	11 Aug 09	15	1.5	8	26.970	2.70
080003-075-0019	ON1 2,4-D 1	11 Aug 09	15	1.5	8	27.011	2.70
080003-075-0020	ON1 2,4-D 2	11 Aug 09	15	1.5	8	31.049	3.10
080003-075-0021	ON1 2,4-D 3	11 Aug 09	15	1.5	8	22.079	2.21
080003-082-0019	ON2 2,4-D 1	11 Aug 09	15	1.5	8	23.812	2.38
080003-082-0020	ON2 2,4-D 2	11 Aug 09	15	1.5	8	26.640	2.66
080003-082-0021	ON2 2,4-D 3	11 Aug 09	15	1.5	8	27.297	2.73
						Average =	2.79
						Std dev. =	0.26

Appendix B Table 5 (Cont.). Expression Levels of PAT in Grain Samples

DAS Sample Number	Sample Description	Date of Analysis	Sample Weight (mg)	Sample Volume (mL)	Dilution Factor	PAT Reported Results (ng/mL)	PAT Results (ng/mg)[a]
080003-047-0025	IA Glufosinate + 2,4-D 1	10 Aug 09	15	1.5	8	25.002	2.50
080003-047-0026	IA Glufosinate + 2,4-D 2	10 Aug 09	15	1.5	8	29.145	2.91
080003-047-0027	IA Glufosinate + 2,4-D 3	10 Aug 09	15	1.5	8	27.131	2.71
080003-054-0025	IL Glufosinate + 2,4-D 1	10 Aug 09	15	1.5	8	28.367	2.84
080003-054-0026	IL Glufosinate + 2,4-D 2	10 Aug 09	15	1.5	8	28.072	2.81
080003-054-0027	IL Glufosinate + 2,4-D 3	11 Aug 09	15	1.5	8	30.378	3.04
080003-061-0025	IN Glufosinate + 2,4-D 1	11 Aug 09	15	1.5	8	28.785	2.88
080003-061-0026	IN Glufosinate + 2,4-D 2	11 Aug 09	15	1.5	8	31.032	3.10
080003-061-0027	IN Glufosinate + 2,4-D 3	11 Aug 09	15	1.5	8	26.261	2.63
080003-068-0025	NE Glufosinate + 2,4-D 1	11 Aug 09	15	1.5	8	28.294	2.83
080003-068-0026	NE Glufosinate + 2,4-D 2	11 Aug 09	15	1.5	8	24.255	2.43
080003-068-0027	NE Glufosinate + 2,4-D 3	11 Aug 09	15	1.5	8	26.159	2.62
080003-075-0025	ON1Glufosinate + 2,4-D 1	11 Aug 09	15	1.5	8	28.223	2.82
080003-075-0026	ON1Glufosinate + 2,4-D 2	11 Aug 09	15	1.5	8	28.763	2.88
080003-075-0027	ON1Glufosinate + 2,4-D 3	11 Aug 09	15	1.5	8	28.056	2.81
080003-082-0025	ON2Glufosinate + 2,4-D 1	11 Aug 09	15	1.5	8	25.506	2.55
080003-082-0026	ON2Glufosinate + 2,4-D 2	11 Aug 09	15	1.5	8	32.462	3.25
080003-082-0027	ON2Glufosinate + 2,4-D 3	11 Aug 09	15	1.5	8	31.683	3.17
						Average =	2.82
						Std dev. =	0.23