

18 January 2016
[01–16]

Call for submissions – Application A1116

Food derived from Herbicide-tolerant & Insect-protected Corn Line MZIR098

FSANZ has assessed an Application made by Syngenta Australia Pty Ltd seeking permission for food derived from corn line MZIR098, which is genetically modified to provide tolerance to the herbicide glufosinate ammonium and protection against key corn coleopteran pests. A draft food regulatory measure has been prepared. Pursuant to section 31 of the *Food Standards Australia New Zealand Act 1991* (FSANZ Act), FSANZ now calls for submissions to assist consideration of the draft food regulatory measure.

For information about making a submission, visit the FSANZ website at [information for submitters](#).

All submissions on applications and proposals will be published on our website. We will not publish material that is provided in-confidence, but will record that such information is held. In-confidence submissions may be subject to release under the provisions of the *Freedom of Information Act 1991*. Submissions will be published as soon as possible after the end of the public comment period. Where large numbers of documents are involved, FSANZ will make these available on CD, rather than on the website.

Under section 114 of the FSANZ Act, some information provided to FSANZ cannot be disclosed. More information about the disclosure of confidential commercial information is available on the FSANZ website at [information for submitters](#).

Submissions should be made in writing; be marked clearly with the word 'Submission' and quote the correct project number and name. While FSANZ accepts submissions in hard copy to our offices, it is more convenient and quicker to receive submissions electronically through the FSANZ website via the link on [documents for public comment](#). You can also email your submission directly to submissions@foodstandards.gov.au.

There is no need to send a hard copy of your submission if you have submitted it by email or via the FSANZ website. FSANZ endeavours to formally acknowledge receipt of submissions within 3 business days.

DEADLINE FOR SUBMISSIONS: 6pm (Canberra time) 29 February 2016

Submissions received after this date will not be considered unless an extension had been given before the closing date. Extensions will only be granted due to extraordinary circumstances during the submission period. Any agreed extension will be notified on the FSANZ website and will apply to all submitters.

Questions about making submissions or the application process can be sent to standards.management@foodstandards.gov.au.

Hard copy submissions may be sent to one of the following addresses:

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Supporting documents

The following document which informed the assessment of this Application is available on the FSANZ website at <http://www.foodstandards.gov.au/code/applications/Pages/A1116-GMcornMZIR098.aspx>

SD1 Safety Assessment Report

Executive summary

All references to the *Australia New Zealand Food Standards Code* (the Code) in this assessment summary and related Supporting Documents (SDs) are to the revised Code which takes effect and replaces the current Code on 1 March 2016. This is because the gazettal of any draft variation is not expected until after this date, if approved by the Food Standards Australia New Zealand (FSANZ) Board and no review of that decision is requested by Ministers, and FSANZ therefore considers it is unnecessary to amend the current Code.

FSANZ received an Application from Syngenta Australia Pty Ltd on 10 July 2015. The Applicant requested a variation to current Standard 1.5.2 – Food produced using Gene Technology. The variation sought is to permit the sale and use of food derived from a genetically modified (GM) corn line that is tolerant to the herbicide glufosinate ammonium and protected against key coleopteran corn pests.

This Application is being assessed under the General Procedure.

The primary objective of FSANZ in developing or varying a food regulatory measure, as stated in section 18 of the *Food Standards Australia New Zealand Act 1991* (FSANZ Act), is the protection of public health and safety. Accordingly, the safety assessment is a central part of considering an application.

The safety assessment of herbicide-tolerant corn line MZIR098 (also referred to as MZIR098) is provided in Supporting Document 1. No potential public health and safety concerns have been identified. Based on the data provided in the present Application, and other available information, food derived from MZIR098 is considered to be as safe for human consumption as food derived from conventional corn cultivars.

FSANZ has prepared a draft variation to Schedule 26 that includes a reference to food derived from herbicide-tolerant and insect-protected corn line MZIR098.

1 Introduction

1.1 The Applicant

Syngenta Australia Pty Ltd is a technology provider to the agricultural sector and food industries.

1.2 The Application

Application A1116 was submitted by Syngenta Australia Pty Ltd on 10 July 2015. It seeks approval for food derived from herbicide-tolerant and insect-protected corn line MZIR098 with OECD Unique Identifier SYN-00098-3 (also referred to as MZIR098).

MZIR098 has been modified to be tolerant to the herbicide glufosinate ammonium (glufosinate) and protected against key corn coleopteran pests.

Tolerance to glufosinate is achieved through expression of the enzyme phosphinothricin acetyltransferase (PAT) encoded by the *pat* gene derived from the common soil bacterium *Streptomyces viridochromogenes*.

Protection against coleopteran insect pests is conferred by the expression in the plant of a modified Cry3Aa2 protein designated mCry3Aa2 (based on sequence from the *cry3Aa2* gene from *Bacillus thuringiensis* ssp. *tenebrionis*) and eCry3.1Ab (encoded by a chimeric gene comprising selected sequences of the *mcry3Aa2* gene, and the *cry1Ab* gene from *B. thuringiensis* ssp. *Kurstaki*).

1.3 The current Standard

All references to the Code in this assessment summary and related SD are to the revised Code which takes effect and replaces the current Code on 1 March 2016. This is because the gazettal of any draft variation is not expected until after this date, if approved by the FSANZ Board and no review of that decision is requested by Ministers, and FSANZ therefore considers it is unnecessary to amend the current Code.

Standard 1.5.2 sets out the permission and conditions for the sale and use of food produced using gene technology (a GM food) with approved GM foods listed in Schedule 26.

Pre-market approval is necessary before a GM food may enter the Australian and New Zealand food supply. Approval of such foods under Standard 1.5.2 and inclusion in Schedule 26 is contingent on completion of a comprehensive pre-market safety assessment. Foods that have been assessed and approved are listed in the Schedule to the Standard.

Standard 1.5.2 also contains specific labelling provisions for approved GM foods. As a general rule, GM foods and ingredients (including food additives and processing aids from GM sources) must be identified on labels with the words 'genetically modified', if novel DNA or novel protein (as defined in Standard 1.5.2) is present in the food or if the food is listed in subsections S26-3(2) and (3) of Schedule 26.

1.4 Reasons for accepting Application

The Application was accepted for assessment because:

- it complied with the procedural requirements under subsection 22(2) of the FSANZ Act
- it related to a matter that warranted the variation of a food regulatory measure
- it was not so similar to a previous application for the variation of a food regulatory measure that it ought to be rejected.

1.5 Procedure for assessment

The Application is being assessed under the General Procedure.

2 Summary of the assessment

2.1 Safety assessment

The safety assessment of MZIR098 is provided in the supporting document (SD1) and included the following key elements:

- a characterisation of the transferred genetic material, its origin, function and stability in the corn genome
- characterisation of novel nucleic acids and protein in the whole food
- detailed compositional analyses
- evaluation of intended and unintended changes
- the potential for any newly expressed protein to be either allergenic or toxic in humans.

The assessment of MZIR098 was restricted to human food safety and nutritional issues. This assessment therefore does not address any risks to the environment that may occur as the result of growing GM plants used in food production, or any risks to animals that may consume feed derived from GM plants.

No potential public health and safety concerns have been identified.

Based on the data provided in the present Application, and other available information, food derived from MZIR098 is considered to be as safe for human consumption as food derived from conventional corn cultivars.

2.2 Risk management

2.2.1 Labelling

Standard 1.5.2 generally requires food produced using gene technology to be labelled as 'genetically modified' if it contains novel DNA or novel protein. That is, DNA or protein that is different to that found in the counterpart food produced without gene technology.

Some products derived from line MZHG0JG would be unlikely to require labelling as 'genetically modified'. MZIR098 is a dent corn and therefore is not a popcorn or sweet corn line, but it is possible that it could be used as a parent in the development of sweet corn lines. The grain from dent corns is mostly processed into refined products such as corn syrup and corn starch which, because of processing, are unlikely to contain any novel protein or novel DNA. Similarly, in the production process for refined corn oil, novel protein and novel DNA are not likely to be present. Therefore such products derived from line MZIR098 would be unlikely to require labelling.

MZIR098 products such as meal (used in bread and polenta) and grits (used in cereals) would be likely to contain novel protein or novel DNA, and if so, would require labelling. Sweet corn kernels containing the SYN-00098-3 event are also likely to require labelling.

2.2.2 Detection methodology

An Expert Advisory Group (EAG), involving laboratory personnel and representatives of the Australian and New Zealand jurisdictions was formed by the Food Regulation Standing Committee's Implementation Sub-Committee¹ to identify and evaluate appropriate methods of analysis associated with all applications to FSANZ, including those applications for food derived from gene technology (GM applications).

The EAG indicated that for GM applications, the full DNA sequence of the insert and adjacent genomic DNA are sufficient data to be provided for analytical purposes. Using this information, any DNA analytical laboratory would have the capability to develop a PCR-based detection method. This sequence information was supplied by the Applicant for A1116 and hence satisfies the requirement for detection methodology in the FSANZ *Application Handbook* (FSANZ 2013).

2.3 Risk communication

2.3.1 Consultation

Consultation is a key part of FSANZ's Standards development process.

FSANZ developed and applied a basic communication strategy to this Application. All calls for submissions are notified via the FSANZ Notification Circular, media release and through FSANZ's social media tools and Food Standards News. Subscribers and interested parties are also notified about the availability of reports for public comment.

The draft variation will be considered for approval by the FSANZ Board taking into account public comments received on this call for submissions.

The Applicant and individuals and organisations that make submissions on this Application will be notified at each stage of the assessment.

If the draft variation to the Code is approved by the FSANZ Board, that decision will be notified to the Australia and New Zealand Ministerial Forum on Food Regulation (convening as the Australia and New Zealand Food Regulation Ministerial Council). If the Board's decision is not subject to a request for a review, the Applicant and stakeholders, including the public, will be notified of the gazettal of the variation to the Code in the national press and on the website.

2.3.2 World Trade Organization (WTO)

As members of the World Trade Organization (WTO), Australia and New Zealand are obliged to notify WTO member nations where proposed mandatory regulatory measures are inconsistent with any existing or imminent international standards and the proposed measure may have a significant effect on trade.

There are not any relevant international standards, and amending the Code to permit food derived from MZIR098 is unlikely to have a significant effect on international trade as it would permit food derived from MZIR098 to be imported into Australia and New Zealand and sold, where currently sale is prohibited.

¹ Now known as the Implementation Subcommittee for Food Regulation

Therefore, a notification to the WTO under Australia's and New Zealand's obligations under the WTO Technical Barriers to Trade or Sanitary and Phytosanitary Measures Agreement was not considered necessary.

2.4 FSANZ Act assessment requirements

When assessing this Application and in the subsequent development of a food regulatory measure, FSANZ has had regard to the following matters in section 29 of the FSANZ Act:

2.4.1 Section 29

2.4.1.1 Cost benefit analysis

The Office of Best Practice Regulation (OBPR), in a letter to FSANZ dated 24 November 2010, granted a standing exemption from the need for the OBPR to assess if a Regulatory Impact Statement is required for the approval of additional genetically modified foods (reference 12065).

This standing exemption was provided as such changes are considered as minor, machinery and deregulatory in nature. The exemption relates to the introduction of a food to the food supply that has been determined to be safe.

Notwithstanding the above exemption, FSANZ conducted a cost benefit analysis. That analysis found the direct and indirect benefits that would arise from a food regulatory measure developed or varied as a result of the Application outweigh the costs to the community, Government or industry that would arise from the development or variation of that measure.

A consideration of the cost/benefit of the regulatory options is not intended to be an exhaustive, quantitative financial analysis of the options as most of the impacts that are considered cannot be assigned a dollar value. Rather, the analysis seeks to highlight the qualitative impacts of criteria that are relevant to each option. These criteria are deliberately limited to those involving broad areas such as trade, consumer information and compliance.

The cost/benefit analysis is based on MZIR098 being approved for growing in other countries since the Applicant has stated that approval for cultivation in Australia or New Zealand is not currently being sought. Cultivation in Australia or New Zealand would require separate regulatory approval (see section 2.4.1.4).

Option 1 – Prepare a draft variation to Schedule 26

Consumers: Food from MZIR098 has been assessed as being as safe as food from conventional cultivars of corn.

Broader availability of imported corn products since, if MZIR098 is approved for commercial growing in other countries, there would be no restriction on imported foods containing this line.

For those corn line MZIR098 products containing novel DNA or novel protein, appropriate labelling would allow consumers wishing to avoid these products to do so.

If MZIR098 is approved for commercial growing in overseas countries it could be used in the manufacture of products using co-mingled corn seed. This means that there would be no cost involved in having to exclude MZIR098 from co-mingling and hence that there would be no consequential need to increase the prices of imported foods that are manufactured using co-mingled corn seed.

Government: Approval would avoid any conflict with WTO responsibilities. As mentioned above, food from MZIR098 has been assessed to be as safe as food from conventional cultivars of corn.

This option would be cost neutral in terms of compliance costs, as monitoring is required irrespective of whether or not a GM food is approved.

In the case of approved GM foods, monitoring is required to ensure compliance with the labelling requirements, and in the case of GM foods that have not been approved, monitoring is required to ensure they are not illegally entering the food supply.

Industry: Foods derived from MZIR098 would be permitted under the Code, allowing broader market access and increased choice in raw materials.

The segregation of seed of MZIR098, as for any GM crop, will be driven by industry, based on market preferences. Implicit in this will be a due regard to the costs of maintaining various levels of purity.

Retailers may be able to offer a broader range of corn products or imported foods manufactured using corn derivatives.

There may be additional costs to the food industry as food ingredients derived from MZIR098 would require the 'genetically modified' labelling statement if they contain novel DNA or novel protein.

Option 2 – Reject application

Consumers: Possible restriction in the availability of imported corn products which may be produced after co-mingling of seed from MZIR098.

No effect on consumers wishing to avoid GM foods, as food from MZIR098 is not currently permitted in the food supply.

Potential increase in price of imported corn foods due to requirement for segregation of MZIR098.

Government: Potential effect if considered inconsistent with WTO obligations but this would be in terms of trade policy rather than in government revenue.

Industry: Possible restriction on imports of corn food products, if MZIR098 is commercialised overseas.

As food from MZIR098 has been found to be as safe as food from conventional cultivars of corn, not preparing a draft variation would offer little benefit to consumers, as approval of MZIR098 by other countries could limit the availability of imported corn products in the Australian and New Zealand markets.

FSANZ has decided to prepare a draft variation to Schedule 26 because the potential benefits of approving the variation outweigh the potential costs, and because no public health or safety concerns resulting from consumption of food derived from MZIR098 were identified in the safety assessment.

2.4.1.2 Other measures

There are no other measures (whether available to FSANZ or not) that would be more cost-effective than a food regulatory measure developed or varied as a result of Application A1116.

2.4.1.3 Any relevant New Zealand standards

Schedule 26 applies in New Zealand.

2.4.1.4 Any other relevant matters

The Applicant is seeking regulatory approval of MZIR098 in a number of other countries. To date none of these applications has been finalised. The Applicant has indicated there is currently no intention to apply for approval to cultivate lines containing this event in either Australia or New Zealand. Cultivation in Australia or New Zealand would require independent assessment and approval by the Office of the Gene Technology Regulator in Australia and by the Environmental Protection Authority in New Zealand, respectively.

2.4.2. Subsection 18(1)

FSANZ has also considered the three objectives in subsection 18(1) of the FSANZ Act during the assessment.

2.4.2.1 Protection of public health and safety

Food derived from MZIR098 has been assessed according to the safety assessment guidelines prepared by FSANZ (2007).

No public health and safety concerns were identified in this assessment. Based on the available evidence, including detailed studies provided by the Applicant, food derived from MZIR098 is considered as safe and wholesome as food derived from other commercial corn cultivars.

2.4.2.2 The provision of adequate information relating to food to enable consumers to make informed choices

In accordance with existing labelling provisions to enable informed consumer choice, food derived from MZIR098 would have to be labelled as 'genetically modified' if it contains novel DNA or novel protein (see Section 2.2.1).

2.4.2.3 The prevention of misleading or deceptive conduct

The requirement for detection methodology (see Section 2.2.2) is designed to address this objective.

2.4.3 Subsection 18(2) considerations

FSANZ has also had regard to:

- **the need for standards to be based on risk analysis using the best available scientific evidence**

FSANZ's approach to the safety assessment of all GM foods applies concepts and principles outlined in the Codex Principles for the Risk Analysis of Foods derived from Biotechnology (Codex 2004). Based on these principles, the risk analysis undertaken for MZIR098 used the best scientific evidence available. The Applicant submitted to FSANZ a comprehensive dossier of quality-assured raw experimental data. In addition to the information supplied by the Applicants, other available resource material including published scientific literature and general technical information was used in the safety assessment.

- **the promotion of consistency between domestic and international food standards**

This is not a consideration as there are no relevant international standards.

- **the desirability of an efficient and internationally competitive food industry**

The inclusion of GM foods in the food supply, providing there are no safety concerns, allows for innovation by developers and a widening of the technological base for the production of foods. MZIR098 is a new food crop designed to expedite future breeding efforts as well as providing growers with alternative weed and pest management strategies.

- **the promotion of fair trading in food**

Not applicable

- **any written policy guidelines formulated by the Ministerial Council²**

No specific policy guidelines have been developed since Standard 1.5.2 commenced.

3 Draft variation

The proposed draft variation to the revised Code is at Attachment A and is intended to take effect on gazettal.

A draft explanatory statement is at Attachment B. An explanatory statement is required to accompany an instrument if it is lodged on the Federal Register of Legislative Instruments.

4 References

Codex (2004) Principles for the risk analysis of foods derived from modern biotechnology. CAC/GL 44-2003. Codex Alimentarius Commission, Rome.

http://www.codexalimentarius.net/web/standard_list.do?lang=en

FSANZ (2007) Safety assessment of genetically modified foods - guidance document. Document prepared by Food Standards Australia New Zealand.

<http://www.foodstandards.gov.au/publications/Pages/Safety-Assessment-of-Genetically-Modified-Foods-Guidance-Document-.aspx>

FSANZ (2013) Application handbook. Prepared by Food Standards Australia New Zealand.

<http://www.foodstandards.gov.au/code/changes/pages/applicationshandbook.aspx>

² Now known as the Australia and New Zealand Ministerial Forum on Food Regulation (convening as the Australia and New Zealand Food Regulation Ministerial Council)

Attachments

- A. Draft variation to the *Australia New Zealand Food Standards Code*
- B. Draft Explanatory Statement

Attachment A – Draft variation to the *Australia New Zealand Food Standards Code*



Food Standards (Application A1116 – Food derived from Herbicide-tolerant & Insect-protected Corn Line MZIR098) Variation

The Board of Food Standards Australia New Zealand gives notice of the making of this variation under section 92 of the *Food Standards Australia New Zealand Act 1991*. The variation commences on the date specified in clause 3 of the variation.

Dated [To be completed by Standards Management Officer]

Standards Management Officer
Delegate of the Board of Food Standards Australia New Zealand

Note:

This variation will be published in the Commonwealth of Australia Gazette No. FSC **XX on XX Month 20XX**. This means that this date is the gazettal date for the purposes of the above notice.

1 Name

This instrument is the *Food Standards (Application A1116 – Food derived from Herbicide-tolerant & Insect-protected Corn Line MZIR098) Variation*.

2 Variation to a Standard in the *Australia New Zealand Food Standards Code*

The Schedule varies a Standard in the Australia New Zealand Food Standards Code.

3 Commencement

The variation commences on the date of gazettal.

Schedule

[1] Schedule 26 is varied by inserting in the table to subsection S26—3(4) in alphabetical order under item 2

(z) herbicide-tolerant and insect-protected corn line MZIR098

Attachment B – Draft Explanatory Statement

1. Authority

Section 13 of the *Food Standards Australia New Zealand Act 1991* (the FSANZ Act) provides that the functions of Food Standards Australia New Zealand (the Authority) include the development of standards and variations of standards for inclusion in the *Australia New Zealand Food Standards Code* (the Code).

Division 1 of Part 3 of the FSANZ Act specifies that the Authority may accept applications for the development or variation of food regulatory measures, including standards. This Division also stipulates the procedure for considering an application for the development or variation of food regulatory measures.

FSANZ accepted Application A1116 which seeks permission for the sale and use of food derived from herbicide-tolerant and insect-protected corn line MZIR098 (MZIR098). The Authority considered the Application in accordance with Division 1 of Part 3 and has prepared a draft variation.

2. Purpose

The variation inserts a reference to herbicide-tolerant and insect-protected corn line MZIR098 into Schedule 26 of the Code in order to permit the sale, or use in food, of food derived from that corn line.

3. Documents incorporated by reference

The variations to food regulatory measures do not incorporate any documents by reference.

4. Consultation

In accordance with the procedure in Division 1 of Part 3 of the FSANZ Act, the Authority's consideration of Application A1116 will include one round of public consultation following an assessment and the preparation of a draft variation.

A Regulation Impact Statement was not required because the use of food derived from MZIR098, if approved, would be voluntary and would be likely to have a minor impact on business and individuals.

5. Statement of compatibility with human rights

This instrument is exempt from the requirements for a statement of compatibility with human rights as it is a non-disallowable instrument under section 94 of the FSANZ Act.

6. Variation

Item [1] inserts item 2(z) into the table to subsection S26—3(4) of Schedule 26. The new item refers to herbicide-tolerant and insect-protected corn line MZIR098. The effect of the variation is to permit the sale and use of food derived from that corn line in accordance with Standard 1.5.2.