GM SOY in Australia

Soybean GM applications
19 Jul, 2013 04:00 AM
BAYER and Syngenta have applied to Food Standards Australia New Zealand to allow food derived from a genetically modified soybean.

Application A1081

Food derived from Herbicide-tolerant Soybean Line SYHT0H2

FSANZ has invited submissions into the application.
Chief executive officer at FSANZ Steve McCutcheon said the application sought permission to allow food derived from a soybean genetically modified to be tolerant to two herbicides.
"This soybean line is tolerant to glufosinate-ammonium and mesotrione," Mr McCutcheon said. "The FSANZ safety assessment found no public health or safety concerns and food from this soybean line is as safe for human consumption as food derived from conventional soybean.
"FSANZ welcomes comments from government agencies, public health professionals, industry and the community."

The closing date for submissions is 23 August 2013 on:
http://www.foodstandards.gov.au/code/applications/Pages/a1081foodderivedfrom5825.aspx
Extension to 6/9/2013

Elizabeth Stewart, BSc. University of Melbourne, retired
[redacted]

I have included references to Roundup Ready (RR) soy from the book below. Although it is not SYHTOH2, health problems in animals have been found with RR soy and I cannot find on the internet evidence of animal tests with SYHTOH2. Where is the evidence that it is ‘as safe for human consumption as food derived from conventional soybean’?

Genetic Roulette The DOCUMENTED HEALTH RISKS OF GENETICALLY ENGINEERED FOODS Jeffrey M. Smith, 2007
Distributed by Dennis Jones and Associates Pty Ltd

Genetic Roulette
Page 4.
The only published human feeding trial found that genetic material in GM soy transferred to DNA of intestinal bacteria. So, if the corn gene that creates Bt-toxin transfers to gut bacteria (as also with soy), it might turn intestinal flora into pesticide factories. No studies have been done.

P.41.

In rats fed Roundup Ready soy, the livers, which detoxify compounds from the intestine or circulation, showed substantial changes – cells with reduced nuclear size, irregular shape (normally round), 50% increase in pores in nuclear membrane, suggesting metabolic activity. There were more splicing factors that process RNA, suggesting that liver DNA is making more RNA copies (than in rats fed non-GM soy).
In rats switched to non-GM soy for one month, most changes disappeared. Long term consequences could be liver damage and consequently, general toxaemia. Since about 89% soybeans in the US are Roundup Ready and they are grown extensively in parts of South America, there is a need to find out why the liver reacts.

P.43
Pregnant mice were fed 14% RR soy and their offspring also at weaning.
Pancreas at month 2: alpha amylase (which degrades carbohydrates) Decreased 77%
at months 5,8: alpha amylase respectively 75%, 60% lower than controls fed on non-GM soy
This happens in starvation and diabetes. Reduced pancreatic enzymes might result in impaired digestion and shortfall of nutrient assimilation. If carbohydrates are not properly degraded in the small intestine, they may be broken down by bacteria in the large intestine, which can produce gas.
If protein digestion is inhibited (by reduced zymogens), it may increase the chance of allergic reactions to protein fragments. The pancreas may be forced to produce and excrete more protein digesting enzymes, putting undue pressure on the pancreas.

P.45
Mice fed RR soy (14% of their diet) had unexplained changes in their testicular cells. Changes were found in spermatocytes (pre sperm cells) and Sertoli cells, which nurture developing sperm cells. Testicular cells are sensitive indicators of toxins, e.g. heavy metals.
In mouse embryos of parents fed RR soy, there was a temporary decrease in the transcription and maturation of messenger RNA (mRNA) at the 4-8 cell stage. More work is needed to see if this carries any health risks.

P. 47
Roundup Ready soy was fed to 30 day old rabbits until 40 days of age, with no signs of any particular disease. However, there were differences in enzyme activity in the heart, liver and especially kidney – with enzymes alanine aminotransferase, lactic dehydrogenase (LDH), gamma glutamyl transferase; also increased LDH in the heart. Increased LDH-1 in all 3 organs indicates increased cell metabolism. Is this a toxic reaction or some other problem?

P.49
Most offspring of rats fed RR soy died within 3 weeks. At the Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences, in 2005, RR soy was fed to female rats, beginning before pregnancy and continuing in the offspring at weaning. Within 3 weeks of birth, 55.6% RR soy fed babies died, but only 9% of non-GM soy fed babies. Pups fed non-GM soy were 13% heavier on average. The liver, lungs, heart, kidneys and spleens in the GM group were tiny compared to the other groups, and there was a high level of anxiety and aggression in GM mothers & pups. In another study on male rats, aggressive behaviour was noted in the GM fed group.

The offspring of RR soy fed rats were sterile, whether or not they continued to feed on non-GM soy. When female offspring mated with male controls, they did conceive, but litter sizes were about 25% less than with controls. The morphology and biochemical structures of rats are very similar to that of humans. All GMO studies were stopped, under pressure from the Presidium of the Russian Academy of Sciences.

P.51

Soy allergies rocketed in the UK soon after RR soy was introduced from the USA. In 1999, the York Laboratory tested 4,500 people for allergic reactions and sensitivities to a wide range of foods. Previously, soy had affected 10%, but now that figure was 15% and soy had moved from 13th to 9th in the Top Ten list of allergens for the first time in 17 years of testing. Reactions included irritable bowel syndrome, digestion problems, skin complaints including acne and eczema, chronic fatigue, headaches and lethargy. Blood tests confirmed an antibody reaction to soy. The soy used in the study was largely GM soy.

Six years later, in 49 people tested, there were 13 positive reactions to non-GM soybeans, and 8 to RR soybeans. One person had a positive skin reaction to RR soybeans only.

RR soy contained proteins which were not in natural soy and vice versa. An antibody related to allergies (IgE) had strong binding with one protein in the RR soy, while non-GM soy reacted to proteins of different weight. This demonstration "of an extra IgE- binding protein allergen in the RR soybean, says biologist Arpad Pusztai, is highly significant."

Why GM soy might provoke a reaction:

-The transgenic protein, which has amino acid sequences identical to known allergens, might cause a reaction.

-The damaged sections of its DNA may help create allergens.

-Altered levels of gene expression might cause a new allergen or increase levels of a known allergen

Monsanto found RR soy contains 27% more trypsin inhibitor, a known allergen, than matched non-GM soy; when heated, that difference jumped to 3-fold and 7-fold in the two RR soy lines tested, suggesting that the RR soy allergen does not break down as readily by heating (as non-GM soy).

There is also cross-reactivity between proteins in natural soybeans and peanuts (i.e. If a person is allergic to one, he's likely to be allergic to the other).

Unpredicted changes in GM soybeans might increase the amount or power of this potentially dangerous allergen as well. If so, it might have contributed to the doubling of peanut allergies among U.S. children from 1997-2002. GM soy was introduced into the US food supply in late 1996.

P.61

A GM food supplement killed about 100 people; 5000-10,000 became sick or disabled.

In the 1980s, thousands in the US became ill, with varied symptoms, including swelling, coughs, rashes, weakness, pneumonia, breathing difficulties, hardening of skin and mouth ulcers, nausea, shortness of breath, muscle spasms, visual problems, hair loss, difficulty with concentration or memory and paralysis; all had intense muscle pain (myalgia) and a high eosinophil count. The epidemic was identified only because the disease was rare, acute, came on quickly and had a unique source. Its discovery required a series of coincidences.

After a few years, it was found that all had eaten L-Tryptophan (LT), an essential amino acid and precursor to the neurotransmitter serotonin, which is taken as a supplement for stress, insomnia and depression. The disease, named eosinophilia myalgia syndrome, was caused by only one of 6 imported brands. The Japanese company Showa Denko was the only one that had genetically engineered their bacteria to produce LT. The product contained 5 separate transgenes and 5-6 unique contaminants, one or more of which was likely to be the cause.

P. 81
RR soybeans produce unintentional RNA variations. Inserted promoters instruct the cell: “Start reading the transgene here”. Another genetic sequence on the far side of the transgene says: “Stop reading here”, setting the length of RNA transcribed from the DNA. The terminator used most often in GM crops is called the NOS terminator.

In 2000, years after GM soybeans were introduced, scientists discovered two extra RR transgene fragments in the soy DNA, one (of 254 base pairs) located immediately after the NOS terminator. A 2005 study confirmed that the NOS terminator signal was ignored and the cell continued to read the DNA in an over long transcript. The RNA combined sequences from both the transgene, the adjacent transgene fragment and sequences further on of plant DNA that had mutated, probably due to gene insertion, and was unlike any natural soy gene. The extra long RNA was processed by the cell into 4 different variations of different lengths.

Monsanto stated that “no new mRNA transcripts or proteins are produced from the newly described DNA”. In 2002 it claimed that RNA “is generally recognized as safe” and thus “the presence of secondary RNA transcripts themselves raises no safety concern.”

P. 83
Researchers are now finding beneficial compounds, e.g. isoflavones in soy may reduce the risk of heart disease, osteoporosis and several types of cancer. Unpredicted changes due to genetic modification may eliminate important chemicals before they are identified. Researchers have already shown that some RR soy varieties contain 12-14% less of the cancer-fighting isoflavones.

P. 85
GM crops have altered levels of nutrients and toxins. Biotech companies measure a few items, e.g total proteins, total carbohydrates; they don’t use modern techniques to identify and quantify many known nutrients, antioxidants, mutagens, carcinogens and toxins.

The stems of Bt corn varieties MON 810 and Bt-11, and RR soy had markedly increased lignin (woody, indigestible). The higher lignin in soybeans was only identified after the stems of plants inexplicably split in the heat at the height of the growing season.

P.86
A Monsanto study on RR soy found differences in the ash, fat, carbohydrate and a 27% increase in trypsin inhibitor, a known allergen. Differences omitted from the paper included lower protein, a fatty acid and an essential amino acid,

phenylalanine. Toasted GM soy contained nearly twice the amount of a lectin, which may interfere with assimilation of nutrients. Cooking had little denaturing effect on the trypsin inhibitor in RR soy than in non-GM soy – when cooked, RR soy had up to seven times more than non-GM soy.
Rats & catfish fed GM soy showed different growth rates, suggesting that nutrition content varied significantly; cows fed GM soy produced milk with a higher fat content.

In 2004, cooked Argentina soybean meal (mostly GM) had 18.5% and U.S. (mixed GM & non-GM soymeal) 8%, less protein than non-GM soybean meal from China and India.

Yields of RR soy on average are 7-10% less than non-GM, 5% due to the gene or its insertion process, another 5% to general biochemical functioning.

P. 91
Pioneer Hi-Bred inserted a Brazil nut gene into soy DNA to increase production of the amino acid methionine. By 3 tests, all people with pre-existing Brazil nut allergy showed allergy to soy – hence genes can carry allergenic properties.
GM crops have inserted DNA with genes derived from bacteria, viruses and other organisms. The proteins they create have never before been present in human food. People will not react to the first exposure and no one knows how many people will develop allergies over time.

P. 93
GM proteins in soy, corn and papaya may be allergens
The World Health Organization(WHO) and UN Food and Agriculture Organization (FAO) criteria include examining GM protein for:
1. Similarity of amino acid sequences to known allergens
2. Digestive stability
3. Heat stability
GM soy, corn and papaya fail the WHO/FAO criteria, but all have been approved without follow up testing. Not all allergenic sequences have been identified. Digestive techniques in test tubes with more acid and more enzymes (than in vivo) do *not* mimic in vivo digestion. Heat stability wasn't adequately reported.

P.115
Transgenes may be unstable and rearrange over time.
In 2003, 2 French labs analyzing inserted genes in 5 GM varieties found sequences different from those described by biotech companies years earlier. In Monsanto RR soybeans, a 254 base pair fragment of herbicide tolerant gene and a 534 base pair section of unknown DNA were added to one end.

Belgium's Scientific Institute of Public Health (IPH) reviewed sequences from 6 GM lines. In the 4 lines in common with the French study, it reported evidence of genetic instability similar to those described by the French study, but showed differences, suggesting that transgenes are unstable after insertion, and that they can mutate in different ways. *Hence GM crops may create new proteins never intended or tested.*

In the 5 most thoroughly studied GM crop varieties, there were deletions in 3 GM corns, recombination in 2 GM corns and GTS 40-3-2 soy, tandem or inverted repeats in 3 corns, as well as rearranged transgenic fragments scattered through

one corn genome. Traavik & Heinemann say that insertion of foreign DNA elicits a “wound” response, which activates nucleases and DNA repair enzymes, which may result in degradation of the incoming DNA or insertion of rearranged copies into the plant DNA.
According to Ho and Cummins, transgenic variability is a key safety issue. A GM variety that has changed its identity since characterized by the company invalidates any safety tests or assessments that have been done. If changed enough, it would not be possible to identify a GM variety after it has been released.
A 2001 European Directive requires that GM crops are stable, but regulatory agencies have so far ignored evidence of instability. Instability may account for problems of sterile pigs, dead cows and sheep, a mysterious disease in the Philippines, high offspring mortality among rats and allergic reactions among Bt cotton workers. In general, follow-up studies are not carried out.

P.127
Gene sequences *normally* found in plants are not similar to those in bacteria, but GM crops contain bacterial sequences., e.g. Bt and herbicide tolerant transgenes come from bacteria. Also, prior to insertion, transgenes are usually incorporated into circular DNA (plasmids) in order to generate multiple copies. The plasmids are made from bacteria, including E. coli – common gut bacteria – and are often inserted into the crop along with the transgene. Bacterial sequences from either the transgene or the flanking plasmids may therefore be similar to the DNA in gut bacteria and facilitate gene transfer.
A number of GM plants have sufficient similarities in their genetic structure to facilitate transfer into gut (or soil) bacteria, e.g. Chardon LL corn by Bayer contains most parts of a bacteria-derived ampicillin resistance gene, a modified bacterial sequence that is 70% homologous to the original, and most of a plasmid from E. coli.

GM crops may vastly increase the rate of gene transfer. By stripping GM plants of natural barriers to horizontal gene transfer, transgenes could, in principle, transfer into any organism that ingests these materials or comes into contact with DNA released from that plant, including microorganisms (bacteria, fungi, protozoa and viruses) of soil, sewage and the digestive tract, including those of humans, cows, bees, slugs or earthworms.

P. 131
A transgene transfer to human gut bacteria is confirmed
In the only human study on GM foods, in 3 out of 7 people, genes had transferred from GM soy to the DNA of gut bacteria – sequences from the herbicide tolerant bacterial gene, the CaMV promoter and a petunia plant, all parts of the RR soybean gene cassette. The CaMV promoter had switched on the transgene in the gut bacteria, actively producing herbicide-tolerant protein in the human gut.

P. 147
Herbicide-tolerant crops increase herbicide use and residues in food.
When herbicide-tolerant (HT) GM crops came to market in 1996, the biotech industry claimed that they would need less herbicide, which was true for 3 years. The repeated use of Roundup caused weeds to develop resistance to the active ingredient glyphosate. Farmers used more Roundup or added more toxic herbicide varieties, such as Parquat and 2,4-D. According to US Department of Agriculture (USDA) data, the net effect of HT soybeans,

cotton and corn in the US was a 5% increase in herbicides 1996-2001, and it's accelerating. In 2004, Roundup Ready soybeans received an estimated 86% more herbicide than conventional beans.

Increased herbicide is bad for human health:
1.Herbicides can alter crop nutrient. Flavonoids, important nutrients are reduced in RR soybeans
2.Farmers, their families and herbicide applicators have increased exposure to herbicide
3.Herbicides may increase in the water table. In Denmark, glyphosate contaminated the drinking water supply at 5 times allowable levels, overturning the belief that the toxin was fully broken down by soil bacteria. Roundup use increased the rate of fusarium head blight in spring wheat. The fusarium fungus can produce toxins that kill humans and animals. A USDA researcher found 50%- to 5 times greater colonization of fusarium in the roots of untreated soybeans.
4. Herbicide residues on GM food are higher. In 1992, Monsanto successfully petitioned the EPA to increase allowable residue levels of glyphosate on soybeans more than 3-fold and asked regulators in Australia and NZ for a 200-fold increase. When Monsanto tests its Roundup Ready beans, it typically uses beans never sprayed with Roundup.
5.Roundup Ready soybeans convert much of the applied glyphosate into a metabolite called AMPA (aminomethylphophonic acid) with unknown health properties. In one study, the beans contained 3mg/kg glyphosate and up to 25mg/kg AMPA, which was not anticipated.

P.151
GM crops may accumulate environmental toxins or concentrate toxins in milk and meat of GM-fed animals
The US Division of Food Chemistry and Technology of the Food and Drug Administration (FDA) named 4 potential dangers of GM crops:
- increased levels of known naturally occurring toxins
- the appearance of new, not previously identified toxin
- undesirable alterations in levels of nutrients
- GM crops might gather toxic substances from the environment, such as pesticides or heavy metals
The Division's recommendation of testing every GM food before it enters the marketplace was ignored by the US government. Herbicide residues and their metallic by-products (NAG and AMPA) do increase in GM crops. A 2006 study showed that transgenic soybean oil in Beijing was presumably polluted with zinc, chromium, lead, arsenic and titanium. The levels were not above Chinese allowable limits and the study did not present data from non-GM soy oil controls.
Bioaccumulation of toxins in animals is well-documented – when an animal eats a plant, some fat-soluble toxins may collect in animal tissues and pass to humans when we eat the animal – and can be secreted in human and animal milk (for example, solanine from potatoes).
According to the European Commission, Bt-toxin could accumulate in Bt resistant herbivores (e.g. caterpillars which are able to ingest the Bt-toxin and thus accumulate it and/or its metabolites without dying) and pass it to organisms higher up the food web.
A 2006 study of 60 samples of 12 brands of milk in Italy showed the presence of GM corn sequences in 15 (25%) and of GM soybean sequences in 7 (11.7%). These were not degraded by pasteurization. The DNA may have

come from GM feed given to the cows or contamination of the milk after production.

Genetic Roulette. The documented Health Risks of Engineered Foods, Jeffrey M. Smith, 2007. Distributed by Dennis Jones and Associates Pty Ltd

Recent studies of GM foods

Pigs fed a diet of GM corn and GM soy exhibited heavier uteri and a higher rate of severe stomach inflammation than pigs fed a comparable non-GMO diet. Given the widespread use of GMO feed for livestock as well as humans this is a cause for concern. The results indicate that it would be prudent for GM crops that are destined for human food and animal feed, including stacked GM crops, to undergo long-term animal feeding studies preferably before commercial planting, particularly for toxicological and reproductive effects. Humans have a similar gastrointestinal tract to pigs, and these GM crops are widely consumed by people, particularly in the USA, so it would be also prudent to determine if the findings of this study are applicable to humans.(1)
Judy A. Carman, Howard R. Vlieger, Larry J. Ver Steeg, Verlyn E. Sneller, Garth W. Robinson, Catherine A. Clinch-Jones, Julie I. Haynes, John W. Edwards. *Journal of Organic Systems 8 (1)* 2013

The journal EFFEKTIVT LANDBRUG published a front page piece on 13 April 2012 which appears to have caused quite a stir in Danish farming circles. The main headline article was written by Anne Wolfenberg and Jacob Lund-Larsen, and it briefly described the "significant improvements" which farmer lb Borup Pedersen has seen in his herd after changing from GM-soy feed to GM-free soy. He was quoted as saying: "Most obvious was the fact that our massive problems with piglet diarrhoea disappeared from day one following the change." The journalists reported that after switching to GM-free soy, the farmer noted a number of improvements – including easier farrowing, sows with higher milk yield, fewer dead piglets, more uniform pigs at weaning, lower medication use, a higher farrowing rate and an increase in weaned pigs per pen, with many litters of 14 piglets.

http://www.effektivtlandbrug.dk/indhold/sider/artikler/vis_artikel.aspx?id=2426i

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Glyphosate is an active ingredient of the most widely used herbicide and it is believed to be less toxic than other pesticides. However, several recent studies showed its potential adverse health effects to humans as it may be an endocrine disruptor. Results indicated that low and environmentally relevant concentrations of glyphosate possessed estrogenic activity. Glyphosate-based herbicides are widely used for soybean cultivation, and our results also found that there was an additive estrogenic effect between glyphosate and genistein, a phytoestrogen in

soybeans. However, these additive effects of glyphosate contamination in soybeans need further animal study.

Thongprakaisang S, Thiantanawat A, Rangkadilok N, Suriyo T, Satayavivad J. *Food and Chemical Toxicology 2013 June 8*. pii: S0278-6915(13)00363-3. doi: 10.1016/j.fct.2013.05.057. [Epub ahead of print]
http://www.ncbi.nlm.nih.gov/pubmed/23756170

Glufosinate-resistant corn injury was frequently higher with mixtures of mesotrione plus glufosinate than with mesotrione applied alone.

Gregory R. Armel, Robert J. Richardson, Henry P. Wilson, and Thomas E. Hines (*2008*) Mesotrione and Glufosinate in Glufosinate-Resistant Corn. *Weed Technology*: October 2008, Vol. 22, No. 4, pp. 591-596.

In December, Western Australia's Department of Agriculture conducted tests which confirmed that 70% of Steve's wheat and oats crops have been contaminated by Monsanto's Roundup Ready canola, grown on a neighbouring farm. Due to Monsanto's inability to control the spread of their 'product', Steve's farm has lost its organic certification, and is accordingly facing significant financial losses as a result.

The offending farmer has apparently "complied with his obligation to keep a 5m buffer between his GM crop and the adjoining farm." (weeklytimesnow.com). We should know by now that the only way to stop the spread of GMO plants is complete elimination (see also). A bee can carry pollen kilometres in a day. A five metre buffer between GM and non-GM crops is meaningless fine print which only serves to hasten the rapid spread of Big Biotech's 'proprietary technology', and create potentially new captive customers of the same.

Apparently, in addition to the Monsanto mega-corp being willing to bankroll the legal defense of the GM farmers around Steve's farm, the DFAWA (Department of Agriculture and Food, Western Australia), who appear to be quite cozy with Monsanto, is responding rather nonchalantly. Instead of this being a wake-up call about the already well documented uncontrollability of GM crops, and its impact on farmers who have a right to grow their own pure strains of plants without fear of such contamination, both Monsanto and the DFAWA are using this tragedy as an opportunity to instead call for a relaxation of organic standards. Instead of respecting farmers' boundaries and their right to exercise free choice, Monsanto and their buddies are determined to push for GM crops to get let in the door and allowed to wear the organic mantle, next to natural versions!

I would call on farmers and consumers everywhere to get vocal about this. Aside from all the other issues (ethics, environmental and personal health, etc.), farmers will have to deal with the rise of super weeds as herbicide tolerance spreads across the country. (See Who Benefits from GM Crops? The Rise in Pesticide Use PDF.) This tolerance occurs both by plants naturally adapting to chemical overuse, and by horizontal gene transfer of the herbicide resistant trait to both domestic and wild species of related and unrelated plants. Farmers in the USA are now battling super weeds that in some people's words are being described as the greatest threat to agriculture ever seen.

Australia's First Legal Attack on Monsanto for GM Contamination of Organically Certified Crops
GMOs — by Craig Mackintosh, Permaculture Research Institute Editor February 1, 2011
http://permaculturenews.org/2011/02/01/australias-first-legal-attack-on-monsanto-for-gm-contamination-of-organically-certified-crops/

Drug and chemical giant Bayer AG has admitted that there is no way to stop the uncontrolled spread of its genetically modified crops.

"Even the best practices can't guarantee perfection," said Mark Ferguson, the company's defense lawyer in a recent trial.

Two Missouri farmers sued Bayer for contaminating their crop with modified genes from an experimental strain of rice engineered to be resistant to the company's Liberty-brand herbicide. The contamination occurred in 2006, during an open field test of the new rice, which was not approved for human consumption. According to the plaintiffs' lawyer, Don Downing, genetic material from the unapproved rice contaminated more than 30 percent of all rice cropland in the United States.

"Bayer was supposed to be careful," Downing said. "Bayer was not careful and that rice did escape into our commercial rice supplies."

The plaintiffs alleged that in addition to contaminating their fields, Bayer further harmed them financially by undermining their export market. When the U.S. Department of Agriculture announced the widespread rice contamination, important export markets were closed to U.S. producers. A report from Greenpeace International estimates the financial damage of the contamination at between $741 million and $1.3 billion.

Bayer claimed that there was no possible way it could have prevented the contamination, insisting that it followed not only the law but also the best industry practices. The jury disagreed, finding Bayer guilty of carelessness in handling the genetically modified crops. The company was ordered to pay farmers Kenneth Bell and Johnny Hunter $2 million.

"This is a huge victory, not only for Kenny and me, but for every farmer in America who was harmed by Bayer's LibertyLink rice contamination," Hunter said.

According to Hunter, the company got "the wake-up call they deserved."

Bayer is still being sued by more than 1,000 other farmers from Missouri, Arkansas, Louisiana, Mississippi and Texas.

Bayer admits GMO contamination out of control
David Gutierrez
Natural News Thursday, April 15th, 2010
http://www.bloomberg.com/news/2010-10-18/bayer-settles-suits-with-texas-farmers-over-genetically-engineered-rice.html