

The Hon Kevin Rudd MP
Prime Minister
Parliament House
CANBERRA ACT 2600

Electorate Office:
PO Box 476A
Morningside Qld 4170

Dear Hon Prime Minister,

In Labor's Plan for Primary Industries¹, developed for the 2007 Federal election, your Party gave the following undertaking to the Australian people in relation to genetic engineering (GE) and genetically modified (GM) crops:-

“Labor recognises ongoing community concern about genetically modified crops being grown in Australia. We believe that genetically modified (GM) crops should not be approved for commercial release unless they are safe to health and the environment, and beneficial to the economy. Labor supports the existing national framework for management and regulation of gene technology.

A Rudd Labor Government will ensure that the assessment process for GM licence applications is based on rigorous science, and that any evidence presented to support claims is subject to peer review and thorough public consultation.

Labor will also ensure that the process for assessment of GM crops includes careful consideration of health and environmental risks.

Safe and beneficial standards must be established beyond reasonable doubt and standards must be met to the satisfaction of the government, the scientific community, the consumer community and the farming community.”

The Federal Labor Party has recently publicly confirmed that it would honour all election promises “at all costs”². More specifically,

“There’s nothing in our pre-election commitments that we have any basis for walking away from. I have no such intention to do so.”

“We were serious about our commitments to the people before the election. We intend to implement those commitments. It’s part of our relationship of trust with the Australian Community.”²

We wish to advise that the safety of GM crops and GM foods has not been established beyond reasonable doubt, that there is in fact significant scientific evidence for health risks from GM foods and that therefore this matter requires your urgent attention to ensure that your undertaking to the Australian people is met.

The evidence we refer to is easily available. However, we are aware that you may not have been given this evidence due to the fact that a pro-GM regulatory regime and Federal government culture was established by John Howard's government. In this letter, we wish to show you how this happened, the awful nature of the regulatory regime you have inherited, how this regime is in complete opposition to your stated standards and how we can assist you to obtain a regime consistent with your stated standards by drawing upon the expertise of a group of internationally-recognised scientific experts on GM foods and health.

The previous Howard government had a policy of providing a pathway to market for GM crops. It established the Office of Gene Technology Regulator (OGTR) and gave it the role of determining the health and environmental risks of GM crops and removed from the States the ability to refuse to plant a GM crop on health or environmental grounds. The Howard government then appointed a Head of the OGTR with expertise in commercialising biotechnology and little expertise in health or environmental science. A system was set-up whereby the only advisory committee she needs to consult also has extremely little training or experience in environmental science or health but is dominated by persons who undertake genetic engineering for commercial ends and/or who have strong links to international GM crop companies. An official review recommended that this situation change³. It could therefore be argued that, through the OGTR, the GM crop industry is regulating itself in Australia.

The regulatory body that assesses the health effects of eating GM crops is Food Standards Australia New Zealand (FSANZ). Its regulatory framework for assessing GM crops was also established under the policy direction of the Howard government. FSANZ does no safety experimentation of its own but rather is paid by GM crop companies to conduct a paper-based assessment of the summary information given to it by those companies. It has a policy of not even reviewing any raw data given to it by these companies⁴. Furthermore, FSANZ does not require any human or animal safety studies to be conducted whatsoever before assessing a GM crop to be safe to eat⁵. Yet it will accept unpublished animal production studies from GM crop companies that do not measure matters relevant to human health as evidence that GM crops are safe to eat⁵. In addition, it has no mechanism to review the safety of a GM crop if adverse health effects are found after approval.

FSANZ has also clearly disregarded legitimate scientific concerns from key scientists who have written to it. For example, Prof Jack Heinemann, Director of the Centre for Integrated Research in Biosafety in NZ, wrote to FSANZ with almost 100 concerns about one particular GM corn variety⁶. Although Prof Heinemann has served as an advisor to three governments (the US, Norway and New Zealand) on GM organisms from the early 1990s and is listed on the UN's Biosafety Roster of Experts, FSANZ did not seek further information from the applicant company on key hazards identified by Prof Heinemann but simply argued that its existing assessment was good enough. Another example is provided by Dr Judy Carman, Director of the Institute of Health and Environmental Research. She has nine years' experience in reviewing the safety of GM crops. The WA government not only consults with her on the safety of GM crops and foods, but has also provided her with funds to conduct the first thorough, long-term, independent safety assessments on GM crops that measure human health end-points. Yet FSANZ has not only consistently ignored her communications to it but has responded by repeatedly criticising her to the point of defamation.

While GM crop companies and our regulators are assuring us that GM foods are AT LEAST as safe to eat as "normal" food, there is clear and accumulating scientific evidence that this is not the case. A recent review of the safety of GM crops published in a peer-reviewed scientific journal found extraordinarily few published studies on GM crop safety⁷. It also found that a substantial proportion of these studies showed adverse health effects. Australia's independent expert, Dr Carman, has not only found Australia's regulatory system to be inadequate⁵ but has also reviewed a collection of GM studies used by pro-GM activists to "prove" that GM crops are safe to eat. She found that most of the studies did not measure health outcomes at all and of those that did, the majority showed adverse health effects⁸.

Furthermore, while there is an obvious need for safety assessments to be conducted by researchers who are independent of GM crop companies, vested interests have vigorously tried to prevent them. GM crop companies write into their Technology User Agreements that buyers of their seed cannot do any research on the seeds nor give them to anyone else to do research on either. Moreover, researchers who attempt such research are subjected to vicious personal attack by vested interests. Dr Arpad Pusztai was sacked and villified when he went public with

adverse health effects in animals that ate his GM potatoes. In Dr Carman's case, GM crop companies refused access to GM crop materials or placed such prohibitive restrictions on obtaining the materials that the research group could not agree to the conditions, the WA government was lobbied to try to get it to reverse its decision to fund these studies and Dr Carman came under repeated personal attack for undertaking the studies.

Comprehensive and recent reviews of the dangers, risks and significant health hazards of Genetic Engineering have been done by a number of authors including Denise Caruso⁹, David Murray¹⁰ and Jeffrey Smith^{11,12}. Smith, for example, needed an entire book to document the scientific evidence of the health dangers of this technology and its products as well as the dangerously negligent way regulatory authorities have approved and allowed this technology and its products into our environment and food chain¹². A copy of this book was sent to every member of parliament in November 2007 and a further copy is attached here. In it, he stated:

*“The new evidence presented in my book **Genetic Roulette** is sufficient to call for a ban of GMOs in the food supply. I worked with over 30 scientists for the past 2 years to document the known health risks of GMOs. This book presents 65 health risks, which constitute a checklist for GM food safety. The biotech industry must counter each risk with rigorous scientific evidence. If not, there is no basis for keeping GM foods in our diet.”*

It is important to understand that every Australian eats these foods. Because of this huge level of exposure, it is important to understand the social and financial impact on Australia if the adverse effects found in animals are translated into the Australian population. If only 1 in 1,000 Australians gets ill as a result of eating GM foods, 21,000 Australians would be ill. If the situation is worse and 1 in 100 get ill, 210,000 Australians would be ill. While vested interests and FSANZ argue that no-one has been proven to have gotten ill from eating GM foods, this is in fact a measure of ignorance and provides little comfort. Diseases can take years to develop. Cancer can take decades. Furthermore, no country has a surveillance system in place to monitor the effects of GM foods on health and no-one is analysing the surveillance systems we do have. Even so, there is some evidence that GM foods may be causing an increase in one health measure - allergies. Rates of allergy in several countries including Australia have soared in the last few years¹³ and allergies currently cost Australia \$21 billion per annum¹⁴ (Appendix 1). In the UK, a significant increase in allergies to soy was noted just after the introduction of GM soy into their food supply¹². More recently, solid experimental evidence about the allergenicity of GM foods was recently supplied by our own CSIRO. It made a GM pea and conducted allergy studies on it in animals that no regulator required. The pea was found to cause serious immunological reactions in animals that indicated that it may not only cause allergic reactions in people but may also “cross prime” them to be allergic to other, unrelated foods¹⁵. As a result, the pea was not released into the marketplace.

Furthermore, in survey after survey over many years, Australian consumers have repeatedly informed the governments of Australia that they do not want to eat GM foods^{16,17} and they want sufficient labelling to be able to avoid eating them. Unfortunately, our GM food labelling laws fall well short of the EU's and there is virtually no policing of those laws. Since every man, woman and child in Australia consumes food, this means that millions of Australians are currently eating GM foods when they do not want to do so. Of considerable importance here is the issue of oils from GM crops. These are not labelled, even though approximately 300,000 tons of cottonseed oil, most of which comes from GM cotton, is brought into the Australian food supply annually¹⁸. Now that at least two Australian States will be dropping their moratoria against growing GM canola, a large amount of oil from GM canola can be expected to come into the Australian food supply unlabelled. This is likely to cause considerable concern to the Australian public, particularly when they become aware that oil from GM canola, or any other GM crop, has never been safety tested on animals or humans.

Finally, we note that the frequent statements from GM crop companies that GM crops have a higher yield and will feed the world have been exploded as myths. When the International Assessment of Agricultural Science and Technology for Development, a major international project designed to look at how to feed the world's growing population, determined there were risks in planting GM crops and they could pose problems for the developing world, GM crop companies walked out of the proceedings¹⁹ (see Appendix 3).

Conclusion

We have presented evidence that the Howard government ignored concerns from health experts, farmers and the public and followed a policy of providing a pathway to market for GM crops and foods. We have also provided evidence that this policy was indeed implemented by government regulators and that it has resulted in a regulatory system and bureaucratic culture that disregards the risks of something that every Australian is exposed to: GM crops, GM foods and animal products from animals fed GM feed.

We assert that these bodies have done this to the extent that they may be fundamentally negligent. For example, in 2006, Fox et al argued that the OGTR was not complying with the Gene Technology Act 2000 because it was failing to require applicants to provide certain key information²⁰. As a result, we assert that the fundamentally important GM food safety standards outlined in your undertaking to the Australian people are not being met by the current system. We simply ask that you uphold your pre-election promise to the Australian people by immediately ordering a comprehensive and exhaustive review of the scientific evidence by independent public health and safety experts.

We therefore respectfully request the following on behalf of the Australian people:

1. Please honour your election promise and only permit into the Australian food supply those GM crops that have been found to be safe beyond reasonable doubt according to the standards of your government, the medical community, the consumer community and the farming community.
2. Please convene a meeting between yourself and the Federal Ministers of Health, Agriculture and the Environment, and invite the following independent, internationally-recognised experts on the effects of GM crops and foods on farming, health and the environment. We are happy to work with you to invite them. In alphabetical order, they are:
 - Dr Michael Antoniou PhD, molecular geneticist, King's College London, conducts human gene therapy research and hence can describe the risks of GM technology.
 - Dr Susan Bardocz PhD, DSc, biochemist and nutritionist, formerly of the Rowett Institute in the UK, one of the leading experts on GMO safety assessments.
 - Dr Charles Benbrook PhD, former Director of the Board on Agriculture of the US National Academy of Sciences, has agronomic evidence refuting claims that GM crops increase yields and reduce pesticide use.
 - Dr Judy Carman PhD MPH, nutritional biochemist and epidemiologist, a Director of the Institute of Health and Environmental Research, Adelaide, consulted by WA Minister of Agriculture and Food Kim Chance on GM foods, conducting the most comprehensive animal feeding studies into GM crops in the marketplace ever done.
 - Emeritus Professor Joe Cummins PhD, geneticist, University of Western Ontario, Canada.
 - Dr Phil Davies PhD, plant geneticist and a Director of the Institute of Health and Environmental Research, Adelaide.

- Dr Irina Ermakova PhD, Institute of Higher Nervous Activity and Neurophysiology of the Russian Academy of Sciences and Vice-President of the Russian National Genetic Safety Association, conducted a study into the effects of GM crops on reproduction.
 - Dr Adrian Gibbs PhD, Canberra, virologist, ex-Professor.
 - Dr Doug Gurian-Sherman PhD, senior scientist, Union of Concerned Scientists, formerly a reviewer of the safety of GM crops with the Environmental Protection Agency (EPA) of the US and science advisor on GM food safety to the US Food and Drug Administration (FDA). He has demonstrated how the GM regulatory system can't protect the public from health risks.
 - Prof Jack Heinemann PhD, molecular geneticist, Director, Centre for Integrated Research in Biosafety, University of Canterbury, New Zealand. He has thoroughly reviewed and critiqued some FSANZ safety assessments.
 - Dr Manuela Malatesta PhD, University of Verona, has published experimental research on adverse effects of GM soy on health.
 - Ms Julie Newman, farms 10,000 hectares in WA, sorts a significant proportion of WA's grain and has been a member of various grains councils. She is spokesperson for the Network of Concerned Farmers and is Australia's independent expert on the likely effects of introducing GM crops on Australian farming and markets.
 - Dr Arpad Pusztai PhD, experimental biologist, formerly of the Rowett Institute in the UK, Fellow of the Royal Society of Edinburgh, one of the leading experts on GMO safety assessments, conducted one of the most comprehensive studies into the health effects of GM crops ever published.
 - Professor David Schubert PhD, molecular biologist and protein chemist, Salk Institute for Biological Studies, San Diego.
 - Prof Gilles-Eric Seralini PhD, toxicologist, University of Caen, France, President of the Scientific Council for the Committee for Independent Research and Information on Genetic Engineering (CRIIGEN), a member of two French commissions on GMO evaluation and an expert panel for the European authorities. He obtained GM industry data on a GM corn variety from a court ruling, reviewed the raw data and not only found evidence of toxic effects to livers and kidneys but also found the previous analysis conducted by the GM crop company and given to regulators to be seriously flawed.
 - Mr Jeffrey Smith, Iowa, compiled the largest ever body of evidence into the ill-health effects of GM crops and foods.
 - Dr Rosemary Stanton, PhD, nutritionist, Visiting Fellow, School of Medical Sciences, University of NSW, member of the NSW Health Department's Food Advisory Committee.
 - Dr Terje Traavik PhD, Director of the Norwegian Institute for Gene Ecology, Norway.
 - Prof Rene Van Acker, PhD, Professor and Chair of the Plant Agriculture Department, University of Guelph, Canada. He has written extensively on how GM crops such as canola contaminate non-GM crops.
3. Please refer to the extensive list of health risks in Jeffrey Smith's book "Genetic Roulette" and use that with the advice from the experts listed above to develop a comprehensive risk check list for GM foods. Then, please require GM crop companies to provide hard scientific evidence that they have investigated those risks for each GM crop and found no evidence of harm. If this cannot be done for a given GM crop, then there is really no basis for allowing that GM food to remain in the Australian diet.
 4. Please prevent any GM crops from being released into the Australian environment until the meeting with experts takes place. The OGTR has recommended that the unfettered commercial release of GM canola into the Australian landscape occur and if this is acted-

upon before a review is conducted, it will result in irreversible contamination of the Australian landscape and food supply with GM canola before any review of the OGTR and its decisions can occur.

5. Please stop FSANZ accepting or approving any new GM foods for sale in Australia until the meeting is conducted, and health and safety findings are concluded.
6. If, as a result of this meeting, you find (as the current body of evidence would indicate) that GM foods are not safe beyond reasonable doubt, we ask that you do the following:
 - i. Please order an immediate product safety recall on all GM crops, GM foods and GM animal feed, and ban their importation into Australia.
 - ii. Please suspend the OGTR and review its decisions, structure and function with a view to vastly improving its understanding of public wishes, and its expertise in health and environmental science (eg the science of soil, water, air, native vegetation and native fauna). Since the OGTR is supposed to assess the effect of GM crops on the environment and health, we argue that the person who is the regulator, the OGTR staff and the OGTR advisory committees must consist of a majority of persons who have demonstrated training and experience in these areas. Please make the OGTR process totally transparent with all data supporting GM applications and all data reviews made public without "Commercial in Confidence" limitations. Please also make every OGTR staff appointment comply with a strong no-vested-interest screen which is transparent to the public, similar to that imposed by you on your Federal Ministers.
 - iii. Please review the structure and function of FSANZ and its decisions on GM foods with an aim to reducing its close association with industry and greatly increasing its associations with official consumer and health bodies. Furthermore, we argue that the staff and Board of FSANZ should be comprised of a majority of persons with training and experience in consumer issues and public health and with fewer career bureaucrats on the staff and fewer representatives from the food industry on the Board. We also argue that FSANZ should follow the precautionary principle and not allow a GM food to be passed as safe until comprehensive evidence can be found that it is indeed safe to eat from long-term animal feeding studies that measure human health end-points and that are conducted by scientists independent of GM crop companies. Please make the FSANZ processes totally transparent with all data supporting GM applications and all data reviews made public without "Commercial in Confidence" limitations. Please also make every FSANZ staff and Board appointment comply with a strong no-vested-interest screen which is transparent to the public.
 - iv. Identify all GM contaminated sites for decontamination and compensation requirements, with ongoing programs to identify and contain occurrences of cross-pollination and contamination.
 - v. Order an immediate review of personal injury claims and compensation for those who believe they have been injured by GM crops, GM foods or GM animal feed. For example, allergies to GM foods could result in significant costs to Australian families and they may wish to claim against the GM company.

Prime Minister, we respectfully ask you to treat this issue as a matter of national urgency.

We look forward to working with you on this vital national issue and thank you in anticipation for agreeing to convene a meeting with yourself, the Federal Ministers of Health, Environment and Agriculture and this distinguished group of scientists as part of a comprehensive investigation of this issue.

We suggest that a suitable time-table for this group to meet you and the Ministers would be early April 2008.

This letter and its request to you are endorsed by the list of significant Australians and organisations listed below, who keenly await your response.

We look forward to your earliest reply.

Yours sincerely

Peter Fenwick
Fenwick's Real Estate
56 Prospect Road
Prospect SA 5082
Phone 08 8344 8688

cc

The Hon Julia Gillard: Deputy Prime Minister

The Hon Nicola Roxon: Minister for Health and Ageing

The Hon Tony Burke: Minister Agriculture, Fisheries and Forestry

The Hon Peter Garrett: Federal Minister for the Environment, Heritage and The Arts

The Hon Simon Crean: Federal Minister for Trade

The Hon Senator Kim Carr: Minister for Innovation, Industry, Science and Research

References

1. O'Brien K. Labor's plan for primary industries. Federal Labor Party, 2007 Federal election. Available from:
http://www.alp.org.au/download/now/071119___labors_plan_for_primary_industries22.pdf
2. Shanahan D. Now to deliver. *The Weekend Australian*, 9-10 February 2008, p 17.
3. Statutory Review of the Gene Technology Act 2000 and the Gene Technology Agreement (2006). (S Timbs, Chair) Department of Health and Ageing. Commonwealth of Australia, Canberra, Australia.
4. Healy M, the then Chief Scientist of FSANZ, stated this to members of the Public Health Association including J Carman, during a meeting in the FSANZ offices on 23 August, 1999.
5. Carman C. Is GM food safe to eat? In: Hindmarsh R, Lawrence G editors. *Recoding Nature: Critical Perspectives on Genetic Engineering*. Sydney: UNSW Press; 2004. p.82-93, references 228-229.
6. Centre for Integrated Research in Biosafety (2006). Submission on the DAR for application A549 food derived from high-lysine corn LY038: to permit the use in food of high-lysine corn. Centre for Integrated Research in Biosafety, University of Canterbury, New Zealand. Available from:
<http://www.inbi.canterbury.ac.nz/Documents/submissions/submissionDARA549.pdf>
7. Domingo JL. Toxicity studies of genetically modified plants: a review of the published literature. *Critical Reviews in Food Science and Nutrition*. 2007; 47:721-733.
8. Carman J. Report on a list of abstracts on GM crop safety (2006). Institute of Health and Environmental Research, Adelaide. Available from: www.iher.org.au.
9. Caruso D. *Intervention. Confronting the real risks of genetic engineering and life on a biotech planet*. San Francisco: Hybrid Vigor Press, 2006.
10. Murray DR. *Seeds of concern. The genetic manipulation of plants*. Sydney: UNSW Press, 2003.
11. Smith JM. *Seeds of Deception: Exposing Industry and Government Lies About the Safety of the Genetically Engineered Foods You're Eating*. Melbourne: Scribe Publications; 2004.
12. Smith JM. *Genetic Roulette, The documented health risks of genetically engineered foods*. Fairfield: Yes! Books; 2007
13. Mullins RJ. Paediatric food allergy trends in a community-based specialist allergy practice, 1995-2006. *Medical Journal of Australia* 2007; 186:618-621.
14. McArthur G. Allergy blowout warning. *Herald Sun*, 14 November 2007. Available from:
<http://www.news.com.au/heraldsun/story/0,21985,22754236-24331,00.html>. See Appendix 1.
15. Prescott VE, Campbell PM, Moore A, Mattes J, Rothenberg ME, Foster PS, Higgins TJV, Hogan SP. Transgenic expression of bean α -amylase inhibitor in peas results in altered structure and immunogenicity. *J Agric Food Chem*. 2005; 53:9023-9030
16. Biotechnology Australia. Trends in Australian community attitudes regarding GM foods in 2006, Available from:
<http://www.biotechnology.gov.au/index.cfm?event=object.showContent&objectID=E6F3DEA2-960B-38D5-E1BADCE724181C1B>
17. Swinburne University of Technology. Swinburne National Science and Technology Monitor 2007. Available from:
<http://www.swinburne.edu.au/lss/acets/monitor/2007MonitorFull.pdf>
18. The Australian oilseed industry. Available from:
www.australianoilseeds.com/_data/assets/pdf_file/1533/AOF_Export_Brochure.pdf.
19. Adam D. Biotech companies desert international agriculture project. *The Guardian*, Tuesday January 22 2008. Available from:
<http://www.guardian.co.uk/environment/2008/jan/22/gmcrops.climatechange>.

20. Fox S, Morrison-Saunders A, Katscherian D. Biotechnology risk assessment in Australia: a molecular perspective. *Environmental and Planning Law Journal*. 2006; 23:236.
Comment in: Heinemann J. Letter to the Editor. *Environmental and Planning Law Journal*. 2007; 24:157-160.

Appendix 1

<http://www.news.com.au/heraldsun/story/0,21985,22754236-24331,00.html>

Allergy blowout warning

Grant McArthur, medical reporter

November 14, 2007 12:00am

THE spiralling consequences of hay fever, eczema and other allergies is nothing to sneeze at, a new report reveals.

Allergies cost the Australian economy **\$7.8 billion a year** through lost productivity and medical costs, with more than **4 million Australians** suffering the symptoms.

An Access Economics report to be released today reveals the number of Australians with hay fever and eczema has doubled in the past 10 to 15 years.

Even worse, the number of hospital admissions for potentially fatal anaphylaxis has doubled in the past decade, including a five-fold increase for peanut allergies.

With 586 deaths blamed on allergies, including asthma, so far this year, Australasian Society of Clinical Immunology and Allergy president Raymond Mullins said the conditions were far from trivial.

"This is a tsunami that we are going to drown in if we don't take this seriously," Prof Mullins said. "This is a public health issue now because it is so expensive and has major health consequences for people's health, not just a trivial disorder.

People with allergies are likely to suffer multiple complaints, with 3.17 million cases of hay fever and 2 million cases of asthma diagnosed.

A total \$120 million a year is spent on over-the-counter allergy treatments, not including prescription medications and alternative therapies.

Victorians needing non-urgent specialist allergy treatment must wait an average 12 weeks as a public patient or eight weeks as a private one.

This compares with up to 84 weeks for Queenslanders or the national average wait of 18 weeks for public patients.

With lost quality of life factored in, the report estimates allergic disease costs \$21.5 billion -- double that of arthritis and hearing loss.

Appendix 2 Public Health Association of Australia Policy on GM foods



GENETICALLY MODIFIED FOODS

The Public Health Association of Australia notes that:

1. There is considerable controversy over the production and use of genetically modified (GM) foods because of concerns over the health, environmental, social, economic, ethical and political effects of these foods¹⁻³. There are still remarkably few independent assessments of the effects of GM foods on these matters⁴.
2. Most GM foods are made from GM crops. Most GM crops are made by inserting DNA from bacteria, viruses, plants or animals into a plant to get the plant to produce one or more proteins that it would not normally produce. The process is therefore very different from conventional plant breeding.
3. Proponents of GM food argue that gene technology has the potential to be useful in enhancing the quality, safety, nutritional value and variety of food available for human consumption and in increasing the efficiency of food production and processing^{2,5}.
4. Critics of GM food warn that there is insufficient evidence that these foods are safe for humans and the environment. In particular, the methods used to insert genes into plants could disrupt the functioning of the plant, resulting in changed production of existing substances and the production of completely novel toxic or allergenic substances⁶. In addition, the global economic, social, ethical and political implications of these crops are largely unknown. Some of the information which does exist points to deleterious effects on health, the environment and on the social and economic milieu, particularly in developing countries⁶⁻⁹.
5. At present, almost all GM crops currently eaten are herbicide-tolerant, or produce their own pesticide(s), or both. Herbicide-tolerant crops are designed to be able to withstand herbicide sprays without dying, leading to possibly higher residues of herbicides in food. Insect-protected plants make their own insecticides. Unlike agricultural sprays, these proteins have no withholding period applied to them before consumption and residues cannot be washed off by consumers as they are produced throughout the plant tissue.
6. In Australia, regulation of GM crops and foods is undertaken by three regulatory bodies. The Australian Pesticides and Veterinary Medicines Authority (APVMA) approves the use of insecticidal genes present in GM crops, including those from Bt crops and registers them as an agricultural chemical product. The Office of Gene Technology Regulator (OGTR) regulates the release of GM plants into the environment and any associated human health and safety and environmental issues. It does not deal with issues such as food labelling, the use of insecticides and herbicides, segregation of crops, marketability or trade implications. Food Standards Australia New Zealand (FSANZ) regulates foods derived from GM crops in Australia and New Zealand, including the regulation of imported foods and the labelling of GM foods.

7. Standard A18 of the Food Standards Code defines GM food, specifies the requirements for pre-market approval and labelling and prohibits the sale of GM food unless included in the standard.
8. GM versions of soya bean, canola, corn, potato, sugarbeet and cotton have been approved for sale in Australia by FSANZ. The foods are widely present in breads, pastries, snack foods, baked products, oils, fried foods, confectionary, soft drinks, and sausage skins. Labelling laws do not cover foods that are made from animals fed with GM feed (for example, meat, milk, eggs, honey), that are highly refined (for example, cooking oils, sugars, starches), or that are prepared at bakeries, restaurants and takeaways. These laws also exclude foods 'unintentionally' contaminated by up to one per cent per ingredient, that are made with processing aids or food additives using GM microbes, or that contain GM flavours present at less than one per cent^{6,10}.
9. There is considerable consumer resistance to consuming GM foods and hence there is strong demand from consumers for more thorough labelling of GM food¹¹⁻¹³.
10. There is currently no policing of GM food labelling laws. A DNA test to determine the GM content of various foods is expensive. None of the federal, State or local governments are currently doing these tests. Manufacturers are therefore unlikely to get caught if they do not appropriately label foods containing GM ingredients.
11. There are no surveillance systems set-up to determine the effects of GM foods on health, and no-one is paid to look in existing surveillance systems for problems.
12. A critique by a PHAA member of the safety assessments undertaken on GM crops⁶ points out that some GM crops have had no animal safety studies done on them before being approved as safe to eat. If animal feeding studies are done, they usually involve feeding only a single dose of the new protein that the GM plant is designed to produce and essentially watching for 7-14 days to see if any animals die. If animals are fed the actual GM plant, they are generally only fed for four weeks and measurements relevant to animal production tend to be taken, such as death rates, weight gain, and meat and milk production. Measurements relevant to human health such as measures of organ health and *in vivo* allergy studies are rarely undertaken. Moreover, the studies are often done on farm animals such as chickens, quail, trout and cows, when the physiology of these animals is quite different to humans. If autopsies are done, they are generally only gross autopsies where organs are not inspected for damage under a microscope. Others have similarly raised concerns about the adequacy of the safety testing of GM crops in the food supply^{4,14}.
13. One of the main concerns about GM crops is that they may produce new allergens. Yet if allergy testing is done, it rarely involves any *in vivo* testing. When an *in vivo* allergy test was recently done on a GM pea produced by the CSIRO, the pea was found to unexpectedly cause a strong allergic reaction in mice. Mice also spontaneously became allergic to other substances such as eggs¹⁵. Consequently, there is a need for *in vivo* allergy testing to be done on all GM crops.
14. GM crops are protected by patents on the genes inserted into them. Wherever these genes land, they belong to the patent owner or licence-holder. If the patented genes enter a farmer's crop via pollen, seeds spilled from passing trucks or contaminated seed stocks, the

farmer must still pay royalties for possessing the genes. Farmers signing Technology User Agreements to officially use these crops sign away many rights and attain liabilities. Farmers are also prevented from saving seeds from their crop. A high proportion of GM crops are dependent on the application of expensive herbicides to work effectively. There are therefore significant concerns about the effect of these crops on farmers' livelihoods, particularly in developing countries¹⁶.

15. GM crops contain self-replicating genetically modified genes. Once they are released into the environment, particularly on a commercial scale, they cannot be recalled.

The Public Health Association of Australia affirms the following principles:

16. The primary objectives of food regulation are the protection of public health and safety and the provision of information to consumers to ensure informed decision making.
17. The precautionary principle should be applied in developing GM food as it is not certain whether there are serious risks to the environment or to human health involved in producing or consuming GM foods or their products.
18. Assessments of the effects of GM foods on matters such as health, agronomy and the environment should be based on thorough, independent experimental evidence rather than assumption. In particular, GM foods should not be assessed as safe to eat unless they have undergone long-term animal safety assessments utilizing endpoints relevant to human health and conducted by independent researchers.
19. The regulatory process should be independent and transparent to ensure public health and consumer interests are foremost.

The Public Health Association of Australia believes that the following steps should be taken:

20. Thorough independent research into the effects of GM foods on agronomy, health, society, the environment and the economy should be undertaken, and until this work is completed, all governments in Australia should impose an immediate and indefinite freeze on:
 - the growing of GM crops for commercial purposes
 - the importation of GM foods and food components
 - the patenting of genetic resources for food
21. A comprehensive monitoring and surveillance system to track the effects of GM foods should be instigated.
22. The labelling system should be improved to the standards desired by consumers, so that consumers can easily identify foods containing ingredients originating from GM animals and plants, and from animals fed GM feed.
23. There should be thorough policing of the labelling laws by FSANZ and State health departments and an annual budget set-aside for this.
24. There should be an assessment of the effects of intellectual property protection measures.

The Public Health Association of Australia resolves to:

25. Advocate for the continuation of state-based moratoria on the commercial planting of GM crops in Australia until thorough independent studies can be done into the agronomic, environmental and health impacts of GM crops in Australia, and the results are publicly disseminated and discussed.
26. Advocate for publicly funded and independent research into the health, agronomic, environmental, social, economic and political impacts of GM crops in Australia.
27. Advocate for the labelling of all foods (including fresh, processed, packaged, unpackaged, restaurant and fast food) derived from genetic engineering, foods containing ingredients which are the product of genetic engineering, and foods from animals fed GM feed, regardless of whether they contain new or altered genetic material and/or protein, and regardless of whether they contain this material below an arbitrary threshold level.
28. Advocate for the policing of labelling laws by FSANZ and State governments.
29. Communicate with other public health and consumer groups to enhance advocacy efforts.
30. Advocate for a strong public health presence in the staff, advisory committees and Boards of the APVMA, OGTR and FSANZ to improve safety assessment procedures.

References:

1. First Australian Consensus Conference on Gene Technology in the Food Chain 10-11 March 1999, website at: [<http://www.austmus.gov.au/consensus/02.htm>] (March 1999).
2. Jones L. Genetically modified foods. *BMJ* 1999; 318:581-584.
3. Dixon B. The Paradoxes of genetically modified foods. *BMJ* 1999; 318: 547-548.
4. Domingo JL. Toxicity studies of genetically modified plants: a review of the published literature. *Critical Reviews in Food Science and Nutrition*. 2007; 47:721-733.
5. Position of the American Dietetic Association: Biotechnology and the future of food, c1994, website at: [<http://www.eatright.org>].
6. Carman C. Is GM food safe to eat? In: Hindmarsh R, Lawrence G editors. *Recoding Nature: Critical Perspectives on Genetic Engineering*. Sydney: UNSW Press; 2004. p. 82-93, references 228-229.
7. Risks of genetic engineering, Union of Concerned Scientists, Cambridge, nd, website at: [http://www.ucsusa.org/food_and_environment/genetic_engineering/risks-of-genetic-engineering.html], Australian GeneEthics Network, website at: [<http://www.geneethics.org>], Australian Consumers Association, website at: [<http://www.choice.com.au>] and Consumers International, website at: [<http://www.consumersinternational.org>].
8. British Medical Association. *The Impact of Genetic Modification on Agriculture, Food and Health: An Interim Statement*. London: BMA Print and Design Unit, 1999.
9. Genetic roulette. The documented health risks of genetically engineered foods. Smith JM. Fairfield: Yes! Books; 2007.
10. Food Standards Australia New Zealand , website at: [<http://www.foodstandards.gov.au>].
11. Biotechnology Australia. Trends in Australian community attitudes regarding GM foods in 2006, Available from: <http://www.biotechnology.gov.au/index.cfm?event=object.showContent&objectID=E6F3DEA2-960B-38D5-E1BADCE724181C1B>

12. Swinburne University of Technology. Swinburne National Science and Technology Monitor 2007. Available from:
<http://www.swinburne.edu.au/lss/acets/monitor/2007MonitorFull.pdf>
13. Mark Ragg, 'Modified food must be labelled, say 93%', The Sydney Morning Herald, Tuesday, 3 August, 1999.
14. Freese W, Schubert D. Safety testing and regulation of genetically engineered foods. Biotechnology and Genetic Engineering Reviews. 2004; 21. Available at:
<http://www.intercept.co.uk/gb/not.asp?id=RS6HS3O6S6ROTD&rec=oui&pos=0&referer=%2Fgb%2Fdetail.asp%3Faction%3Dcurrent>
15. Prescott VE, Campbell PM, Moore A, Mattes J, Rothenberg ME, Foster PS, Higgins TJV, Hogan SP. Transgenic expression of bean α -amylase inhibitor in peas results in altered structure and immunogenicity. J Agric Food Chem. 2005; 53:9023-9030
16. Network of Concerned Farmers. Website at: [<http://www.non-gm-farmers.com>]

First adopted at the 1999 Annual General Meeting of the Public Health Association of Australia, amended at the 2002 Annual General Meeting and revised at the PHAA AGM 2007.

Appendix 3 Guardian article

<http://www.guardian.co.uk/environment/2008/jan/22/gmcrops.climatechange>

Biotech companies desert international agriculture project

David Adam

Tuesday January 22 2008

Biotechnology companies developing genetically modified crops have withdrawn from a major international project to map out the future of agriculture, after it failed to back GM as a tool to reduce poverty and hunger.

The International Assessment of Agricultural Science and Technology for Development (1) aims to focus attention on the problem of how to feed the world's growing population, as the Intergovernmental Panel on Climate Change has done for the challenge of global warming. Monsanto, Syngenta and BASF resigned after a draft report from the project highlighted the risks of GM crops and said they could pose problems for the developing world.

The companies argue the report should say their GM technology could secure future food supplies because it can boost yields and make plants more resistant to droughts and higher temperatures.

Bob Watson, director of the project, which is based on the work of 4,000 scientists and experts from around the world, said he was "very disappointed" by the companies' move.

He said: "It's very unfortunate that they have walked out even before we agreed the final version. If they can bring evidence forward that we have not been objective, or that the language is biased, then we could discuss that."

He also said the resignations would weaken the final report. "Our goal was to have them included. We wanted a multi stake holder group that included everyone, that was absolutely essential."

The project was due to agree its final report last week in Nairobi, but the meeting was postponed because of the unrest in Kenya. It is now expected to finish in April.

Croplife International, the agriculture industry trade body of which Monsanto, Syngenta and BASF are members, told the project's leaders it was unhappy that the views of its members had not been reflected in the draft report, and that they were pulling out.

Denise Dewar of Croplife International said: "We were concerned with the direction the draft was taking and that our input was not being taken appropriately. We were looking to see references to plant science technology and the potential role it can contribute."

The draft report says there is a "wide range of perspectives on the environmental, human health and economic risks and benefits of modern biotechnology, many of which are as yet unknown". It says it is not clear whether GM crops increase yields and warns that use of the technology in the developing world could concentrate "ownership of agricultural resources" in the hands of the companies involved, as well as causing problems with patents.

In an editorial criticising Croplife International's decision, the science journal Nature said: "The views outlined in the draft chapter on biotechnology, although undoubtedly over-cautious and unbalanced, do not represent the rantings of a fringe minority. The idea that biotechnology cannot

by itself reduce hunger and poverty is mainstream opinion among agricultural scientists and policy-makers."

Greenpeace, a member of the assessment project, urged the companies to reconsider. Jan van Aken, GM campaigner with Greenpeace International, said: "This assessment goes far beyond genetic engineering, it is about setting solutions for global agriculture and the world's poor and hungry. It is such a shame to withdraw from such a good initiative, simply because your business plans do not fit with sound science and experts voiced a more balanced opinion than yours."

1. <http://www.agassessment.org/index.cfm?Page=Overview&ItemID=3>
International Assessment of Agricultural Science and Technology for Development