



Department of
Agriculture and Food



An investigation of labelling genetically modified food



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1 Executive summary

This study arose from public debate in Western Australia following the announcement on 22 December 2008 by the Minister for Agriculture and Food, the Hon Terry Redman, that the State Government had approved limited commercial-size trials of genetically modified (GM) canola.

An Interdepartmental Committee was established to investigate the labelling of GM food, comprising the Department of Agriculture and Food, Western Australia, Department of Health, Department of Commerce (Consumer Protection), Department of Local Government and the Western Australian Local Government Association. The Committee met five times throughout 2009 and 2010, commissioned an independent phone poll of 400 Western Australian consumers (June 2010, Appendix 5), consulted widely with stakeholders and reviewed literature on the subject from Australia and around the world (see Appendix 1 for Terms of Reference).

The Committee's investigation explored labelling of GM food in Australia. It aimed to answer the following questions:

- does current GM food labelling support informed consumer choice?
- what are the limitations to requiring additional GM food labelling?
- what can the State Government do to educate and support consumer choice about GM food?

The Committee was cognisant of the Australian food labelling regulatory system, where standards are set at a national level, enabling legislation is enacted by State Governments and, in WA, compliance and monitoring is undertaken by Local Governments. The present Food Standards Australia New Zealand (FSANZ) *Standard 1.5.2: Food produced using gene technology*, of the Australia New Zealand Food Standards Code (the Code), has been a regulation since 2001. This standard requires that 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 and/or protein from an approved GM variety is present in the final food.

Importantly, foods labelled GM in Australia are assessed for pre-market risk and safety prior to being approved by FSANZ. That is, those GM foods listed in *Standard 1.5.2* are deemed to be safe for human consumption and comparable to the equivalent non-GM counterpart.

The Committee explored the consumers' *need to know* and *right to know* arguments for enhanced GM food labelling regulation. The 19 written submissions reflected these two lines of argument. The choice of voluntary versus mandatory labelling and associated education, monitoring and compliance mechanisms for a GM food labelling system are driven by the preference between these two lines of argument.

The Committee's 10 findings, five recommendations and assembled material are provided as a basis for further debate by industry, consumer, community and government stakeholders in the lead up to the release of the national *Review of Food Labelling Law and Policy* and any subsequent decisions about labelling regulations.

The Committee's recommendations offer direction but leave the scope, scale, responsibility and timing of any action contingent upon the national *Review* and further analysis. The Government's response should account for the Federal Government's role in labelling and the trade-off between the costs and benefits of any changes.

2 Findings

- 2.1 Some consumer, environment and health representative groups are campaigning for food labelling which indicates 'processing' and 'derivation' from a GM source, as applies for labelling of GM foods in European Union (EU) countries. These groups argue that such labelling information allows consumers to choose to avoid using a food product which has novel GM deoxyribonucleic acid (DNA) and/or protein in it, or has none, due to its removal through processing.
- 2.2 Written submissions were received from 19 organisations (Appendix 2). Eight organisations, including three peak bodies representative of the national grocery and retailing industries, indicated satisfaction with the present FSANZ *Standard 1.5.2*. These groups upheld the intent of this Standard, its scientific basis and adequacy in providing sufficient information about GM food contents for consumer choice. In contrast, 11 organisations representative of consumer, health and environmental interests, favoured fuller EU-type labelling which indicates all GM derivation including animal products where animals have been fed on GM stock feeds.
- 2.3 The Committee commissioned a survey of 400 Western Australian consumers (see Appendix 5 for results). The main survey findings included:
 - Only one respondent (0.25 per cent) spontaneously mentioned checking a food product label for not having GM ingredients.
 - 53 per cent of all consumers were concerned about the presence of approved GM ingredients in the processed foods they buy, while 26 per cent were not concerned and 21 per cent were neutral (i.e. had no opinion).
 - 40 per cent of all consumers were concerned about buying/using oils when the GM ingredients were removed while processing, while 29 per cent were not concerned and 22 per cent neutral.
 - 69 per cent of consumers were interested in more detailed information about GM ingredients on food labels, while 22 per cent were not interested.
 - Of the 69 per cent interested in more information on food labels, 31 per cent wanted information about the 'specific GM ingredients', 27 per cent wanted an explanation of GM and 11 per cent wanted the safety/health of GM foods explained on the label.

- 2.4 The Committee also examined the results from other Australian and international surveys. The major findings were:
- When consumers are asked to list concerns about food, GM foods are not ‘top of mind’ concerns, with consumers more frequently expressing concerns about food freshness (use-by dates), safety/hygiene, amounts of fats and sugar and country of origin.
 - However, when asked specifically about GM food labelling, up to 90 per cent of Australian, American, Canadian, EU and United Kingdom consumers preferred mandatory (including comprehensive) labelling of GM food.
 - Although consumers indicated a preference to avoid GM foods, studies show this is often not translated into buying behaviour.
 - Large food companies and retailers receive very few enquiries about GM foods.
- 2.5 If industry were compelled to increase the information about GM foods on labels, then this would result in considerable additional costs to food manufacturers and consumers.
- 2.6 The Western Australian Local Government Association (WALGA) advised the Committee that Local Government Environmental Health Officers (EHOs) assess food businesses based on the level of risk of the food-related activities occurring within the business operation. Food labelling forms part of EHOs’ routine food business assessments, but is not the main focus. Compliance and monitoring activities are mostly focused on areas of food regulation where the risk to human health is high.
- 2.7 There was broad consensus from food industry, consumer and health representatives for an increase in public education about GM foods and labelling of GM foods.
- 2.8 Resources for testing and monitoring of labels and testing of GM food by State and Local Government enforcement agencies are limited. A National Compliance and Monitoring Strategy for GM food has recently been finalised and will coordinate monitoring and enforcement resources and activities related to GM food across Australia and New Zealand.
- 2.9 The food industry is likely to continue adopting new technologies. Consumers are demanding more information about the food they eat, so there is greater pressure on industry to provide more information about its products. Given the high costs to industry from increased mandatory labelling, it is in the interests of industry to voluntarily provide more information about GM foods via labelling.
- 2.10 Information channels used for food labelling education programs include websites, phone hotlines for consumers, education in schools, brochures and TV campaigns. A partnership between industry and Government providers such as FSANZ and State/Territory Departments of Health, has worked best to develop and implement such programs. This could be complemented with regular forums

about new food technologies (such as GM, nanotechnology and food irradiation) with the assistance of expert opinions.

3 Recommendations

- 3.1 Public education programs should be developed to improve understanding about GM foods and their labelling.
- 3.2 The present *Standard 1.5.2* provides sufficient labelling information to indicate the presence (or not) of GM ingredients in foods, thereby enabling consumers to exercise choice.
- 3.3 Increased mandatory labelling of GM food to indicate which GM DNA and/or proteins have been removed through processing is not supported.
- 3.4 Industry should be encouraged to adopt more informative labelling of GM food and provide information on GM to consumers on a voluntary basis.
- 3.5 The recommendations of the national *Review of Food Labelling Law and Policy* related to labelling of GM food should be considered and assessed for applicability to WA circumstances.

4 Introduction

In Western Australia, the *Food Act 2008* (the Act) and *Food Regulations 2009* are the food laws administered, monitored and enforced by the Department of Health and Local Governments. The Act adopts the standards in the Code for which all food must comply, regardless of whether it is locally produced or imported. The Code is written by FSANZ, in accordance with its objectives under the *FSANZ Act 1991* which are to protect public health and safety, to provide adequate information to enable consumers to make informed choices and to prevent misleading and deceptive conduct. Food labelling laws, including those specific to GM food, are outlined within the Code.

This study arose from public debate in Western Australia in response to the announcement on 22 December 2008 by the Minister for Agriculture and Food, the Hon Terry Redman, that the State Government had approved limited commercial size trials for genetically modified canola (Appendix 3). These trials on 20 farms sought to demonstrate whether the Western Australian grains industry could effectively segregate non-GM canola from GM canola and to examine the performance of Roundup Ready® GM canola in WA.

In the same announcement, the Minister acknowledged concerns in the community about labelling of GM food products. In response to this, an Intergovernmental Committee was established to investigate strengthening of GM food labelling to assist consumers in making more informed choices. The Committee was expected to investigate consumer perceptions about GM food, labelling and existing GM food compliance and enforcement measures, such as label checks and testing products.

5 Background

5.1 *What are Genetically Modified (GM) Foods?*

Genetically modified (GM) foods are derived from organisms which have been developed using the process called ‘modern biotechnology’, ‘gene technology’, ‘recombinant DNA technology’ or ‘genetic engineering.¹ Using gene technology, a gene (or genes) which control a specific desired trait or characteristic in one organism are transferred into another organism and can also be transferred between non-related species.²

The use of gene technology allows for a more precise transferral of the desired traits/characteristics and in a much shorter time-frame than is possible using traditional plant or animal breeding techniques. Although biotechnology processes are able to be applied to plants, animals and microbes, most GM foods produced have been obtained from GM plants, principally soybean, corn, cotton and canola. Current GM crops mainly aim to increase the level of crop protection by introducing resistance against plant diseases caused by insects or viruses or through increased tolerance towards herbicides.³ For example, Roundup Ready canola has been modified to tolerate a herbicide called glyphosate. Future developments in GM crops could create new nutritional properties in foods.

GM foods derived from genetically engineered animals are not presently available for consumer sale.⁴ However, the United States Food and Drug Administration (USFDA) announced on 27 August 2010 that food from a GM salmon “... is as safe as food from conventional Atlantic salmon ...” and “... there is a reasonable certainty of no harm from consumption of food from this animal.”⁵ The GM salmon was genetically engineered to grow quickly, reaching market size in 16 to 18 months instead of the normal 30 months for Atlantic salmon. Genetic modification of animals is also aimed at improving nutritional characteristics in the food product or improving animal husbandry, welfare or health in the production phase. This science is at various stages of development in the United States of America, especially for genetically engineered cows, pigs and chickens.⁶ In Australia, GM animals would be regulated by *Standard 1.5.2*.

5.2 *Challenges and Benefits of New Food Technologies*

As new food technologies emerge and are adopted by industry (e.g. genetic modification, nanotechnology and irradiation), the community is likely to demand information about them, either by product labelling or other methods. The cost of providing this information must be weighed against the risks posed and the benefits and rewards offered by the new technology. For the Western Australian food chain, these factors include concerns about global food security, local business viability and potential affects on community health.

International interest in genetic modification and biotechnology has been heightened by the potential benefits the technology promises. From Canada, Heslop (2006)⁷ asserted:

“Biotechnology innovations are expected to have more profound impacts on people’s lives and on economic development in the next 20 years than the computer and telecommunications industries have had in the last twenty. Breakthrough research in the understanding of genetic structures and the abilities to manipulate them suggests unimaginable possibilities for effects on our lives and on the industries of the future.”

Introducing GM plant varieties to Western Australia provides growers with the choice to adopt new cropping technologies designed to overcome specific challenges, such as a changing climate. This strategy forms part of the State Government’s commitment to improve profitability for growers and bolster the State’s food security, while at the same time keeping the community apprised of the new technology. The State Government approved commercial cultivation of GM cotton in the Ord River Irrigation Area and limited commercial-size trials of Roundup Ready canola in late 2008. It subsequently lifted a moratorium on commercial cultivation of GM crops in early 2010, which had been imposed by the previous State Government in 2004.

5.3 *Global Trends in Production, Distribution and Labelling of GM Food*

Since the first commercial GM soybean, corn and cotton crops became available in 1996, worldwide adoption by farmers has increased from 2.8 million hectares to 67.7 million hectares in 2003.⁸ This almost doubled between 2003 and 2008, with over 121 million hectares of GM crops grown in 25 countries. In the USA, approximately 91 per cent of the soybeans, 88 per cent of the cotton and 85 per cent of the corn grown in 2009 were GM varieties.⁹ Correspondingly, it is estimated that 60–70 per cent of processed foods on supermarket shelves in 2006 in North America contained some ingredient that was derived from GM seeds, primarily in the form of corn, soy and canola.¹⁰

In March 2010, *Choice* consumer magazine¹¹ estimated that almost all manufactured foods in Australia may contain GM ingredients from imported GM crops such as soybeans, canola, corn, rice, sugarbeet, potatoes and cotton. The GM food components are typically via food additives such as soy lecithin (an emulsifying agent) or ingredients such as glucose, fructose, maltodextrin and modified starches derived from GM corn.

Since the introduction of GM foods, some consumers and consumer advocate groups have sought improved labelling to clearly indicate if a food contains GM substances or is derived from a GM crop or substance (even though the final product may not contain traceable GM components). These groups have argued that this would enable consumers better choice where they may perceive:

- uncertainty about the science of GM foods

- potential risks to human health (for example potential allergenic reactions or potential antimicrobial resistance) from GM foods
- a lack of clear labelling for traceability to any GM source, including for foods derived from animals fed GM feeds
- a potential for GM crops to cause environmental harm, e.g. crossing with non-GM crops or other species including weeds (diminishing biodiversity), increased use of herbicides and pesticides in agriculture and the associated risk of increased resistance to chemicals by targeted weeds/pests
- a potential for GM crops to contaminate other crops including organic production
- large multinational companies exerting undue power/influence/control over producers in the marketing/pricing/contractual arrangements for their GM crop seeds and the associated intellectual property rights.

5.4 *Labelling of Genetically Modified Food in Australia*

FSANZ's guiding principles and objectives for all food labelling are to protect public health and safety, to provide sufficient information to allow consumers to make informed choices and to prevent misleading or deceptive conduct. GM food labelling regulation in Australia is governed by FSANZ via the Code which includes *Standard 1.5.2* specifically for GM food labelling.¹² The Standard requires:

- a packaged or unpackaged food, food ingredient, additive or processing aid which contains novel DNA or novel protein (from an approved GM food) is to be labelled with the words 'genetically modified'
- an approved GM food which is unpackaged must also indicate 'genetically modified' in connection with the display of the food at the point of sale
- additional labelling information is required where GM foods have altered characteristics (different to non-GM counterpart foods)
- exemptions to GM labelling requirements include:
 - highly refined foods (e.g. soybean or canola oils) where they contain no DNA or protein from the plant
 - where there is unintentional presence of a GM component in the (approved) food or ingredient at less than 1 per cent
 - flavours added to food in concentrations of less than 1 gram per kilogram
 - foods intended for immediate consumption (as for restaurants, takeaways and catering organisations).

Various reviews and public debates of the food regulation system in Australia and New Zealand raised several labelling issues, including consumer difficulties in understanding and using label information,

costs to businesses and consumers of meeting labelling standards, inconsistent enforcement of labelling laws across jurisdictions and concerns about the accuracy and truthfulness of labelling.

Accordingly, the Council of Australian Governments (COAG) agreed that the Australia and New Zealand Food Regulation Ministerial Council (ANZFRMC) would commission a comprehensive national review of food labelling. Submissions from food industry stakeholders, public and government were called for in November 2009 and May 2010. The review panel released an Issues Consultation Paper in March 2010¹³ and then travelled throughout Australia and New Zealand from March to May 2010, conducting public consultations and gathering further data. The subject of GM food labelling was prominent in the public submissions to the review.

The Interdepartmental Committee informed the national review of pertinent findings of this study. This was communicated to the review panel by email on 27 August 2010 as per Appendices 1 and 4. The national review is due to provide an update to the Food Regulation Ministerial Council in December 2010 and to deliver its final report in early 2011.

5.5 *Methodology of the Investigation*

The Committee gathered primary and secondary data about the Australian food labelling system plus the views and preferences of stakeholders. The report consolidates those views and provides some potential responses for the State Government to consider.

The main activities of the Committee included:

- Five planning and progress meetings between October 2009 and September 2010.
- Consultation with a wide variety of audiences where:
 - Thirty-eight State and national food industry stakeholders were contacted by letter (13 May 2010) for their opinions on GM food labelling issues. The Committee received 19 written responses, the majority of which are summarised later in the report.
 - The WA Local Government Association (WALGA) was consulted for a position statement on resources available to Local Government authorities for the monitoring and enforcement of food labelling regulation.
 - A telephone survey was conducted by a market research consultant (sample comprising 300 metropolitan Perth and 100 rural respondents) in the week 8-11 June 2010. The survey was targeted at respondents over 18 and the survey error was estimated to be ± 4.9 per cent at the 95 per cent confidence level. The results of this survey are summarised in later in this report.
- The Department of Agriculture and Food librarian conducted an extensive literature search of national and international peer-reviewed journals for current issues and perceptions of GM food

labelling and compliance and the results were considered by the Committee (see Bibliography).

- In August 2010, the Interdepartmental Committee forwarded the key results of the June 2010 Western Australian survey and the major stakeholder observations about GM food labelling to the National Review of Food Labelling Law and Policy (Blewett Review).

6 Views of Stakeholders

The following section summarises the views of each respondent to the invitation to provide a written submission to the Committee. These summaries are presented in alphabetical order of the respondent's name and are presented in good faith simply to allow the reader to understand the range of views presented to the Committee. Any misrepresentation of views is an unintended consequence of the process of summarisation. A copy of each submission is posted on the Department of Agriculture and Food's website at www.agric.wa.gov.au.

Agrifood Awareness Australia Limited (AAAL), PO Box E10, Kingston, Australian Capital Territory 2604

AAAL supports Australia's current GM labelling laws, believing they provide consumer choice and are practical, realistic, proven and enforceable.

AAAL does not support changing laws to incorporate labelling of highly refined GM products from GM crops, since they cannot be differentiated from products made from conventional (non-GM) crops.

Australian Food and Grocery Council (AFGC), Level 2, Salvation Army Building, 2–4 Brisbane Avenue, Barton, Australian Capital Territory 2600

AFGC recognises that GM food labelling remains a controversial issue, particularly among some elements of the community and considers the current GM food labelling requirements are supportable and that there is not a strong case for amendment, either to relax them or tighten them.

AFGC contends that gene technology labelling is not a food safety issue. From numerous official studies worldwide, none has identified any health risks associated uniquely with GM technologies. There has not been a single case of ill health associated with the GM nature of the food product.

If there is a public benefit in providing further (label) information, the benefit would need to exceed the additional private cost to the industry and to enforcement agencies and may need to also exceed any additional costs associated with lost trade opportunities.

AFGC supports the current provisions of *Standard 1.5.2* as an appropriate, practical means of providing consumers with meaningful information about the presence of food components changed as a result of genetic modification.

Australian National Retailers Association (ANRA), Unit 8, 16 Bougainville Street, Manuka, Australian Capital Territory 2603

ANRA recommends preserving current nationally consistent labelling requirements which effectively balance delivering practical, useful and relevant consumer information, with the capacity to ascertain product information. The current framework ensures that labelling provides the greatest amount of information about GM content, subject to scientific limitations and cost burden and according to its benefit.

ANRA does not support the labelling of GM-derived produce where DNA and/or proteins have been removed or denatured. Overwhelmingly, scientific evidence has found that this is of no material benefit to consumers — GM products and non-GM products being scientifically indistinguishable.

ANRA supports ongoing opportunities for its members to voluntarily undertake education programs and voluntary labelling as a means to provide more information for the consumer about GM foods.

Cambinata Yabbies, Collie Lake King Road, Kukerin, Western Australia 6352

Cambinata Yabbies argues all GM-derived food should show from where the food is derived. It is essential that consumers can trust labelling.

Many (particularly those with more disposable income) do not want GM in their food. This is evidenced by the growth of the organic industry. There is a growing demand for non-GM food by those who can afford to pay premium prices.

Eighty per cent of food purchasers are women. They should be consulted about what products they want.

Choice – Australian Consumers’ Association, 57 Carrington Road, Marrickville, New South Wales 2204

Choice recognises that technologies such as genetic modification have the potential to deliver consumer benefits, such as food safety, improved nutrition, convenience and reduced use of herbicides and pesticides. However, given the emerging nature of these technologies, the full impact on health and the environment is not known.

Choice has long argued that current GM labelling laws fail to give consumers sufficient information about foods derived from genetic modification. Loopholes mean that highly refined products like oils are not considered to be ‘genetically modified foods’ under the Food Standards Code definition and are therefore not identified as being derived from genetically modified products.

The same applies to products from animals consuming GM feed such as canola meal. These do not require labelling on the grounds that GM protein cannot be detected in the end-products, such as eggs.

Choice wants Australia’s GM labelling laws strengthened so consumers can identify all products derived from genetic modification or containing GM ingredients, even when GM ingredients have been highly refined.

In response to the article in *Choice* magazine, ‘Who’s afraid of GM food?’ (22 March 2010), more than 200 consumers indicated support for more comprehensive labelling of GM foods. Consumer concerns registered

were: the right to know what is in their food; the need for better information to make truly informed choices for themselves and their family; concerns about unknown health implications of GM foods; concerns about transparency and industry controlling the food supply and not wanting to disclose what is in their products; and lack of consumer control over whether they support GM foods.

Coles Supermarkets Australia Pty Ltd, PO Box 480, Glen Iris, Victoria 3146

Coles state that GM food labelling is not a major consumer issue for their business, claiming that: "In fact, only 0.046 per cent of all customer contacts received by our National Customer Care Centre this year [2009-2010] have been about GM food labelling."

Coles argue the current FSANZ requirements are sufficient to ensure that consumers are aware of the inclusion of GM ingredients in food products.

Coles argue that if the European Union food labelling system for GM foods and foods derived from GM crops were to be adopted, there would be increased costs for the food industry, from increased verification through the entire supply chain and potential labelling changes for products that may be derived from GM crops.

Coles argues that there is need for more education and awareness about GM labelling standards – possibly to be undertaken by FSANZ and Department of Health in each jurisdiction.

The Commercial Egg Producers' Association of Western Australia Inc. (CEPAWA), PO Box 6291, East Perth, Western Australia 6892

CEPAWA's Committee of Management argues that consumers have a right to know whether a product contains GM ingredients and products should be labelled accordingly.

The Committee does not support labelling of products that do not contain novel DNA or protein but which are derived from GM crops.

It notes the concern of possible consumer bias against hen eggs (may potentially damage the egg industry) if future labelling required eggs from GM-fed chickens to be labelled as such.

It supports further education of consumers – explaining about GM foods and why some support or do not support GM foods.

The Country Women's Association of Western Australia Inc. (CWA), 1176 Hay Street, West Perth, Western Australia 6005

CWA stated it is essential to maintain the standard for regulating the sale and use of GM foods in Australia and New Zealand via *Standard 1.5.2*.

It suggests an additional symbol or indicator for products that do not contain novel DNA or protein but which are derived from GM crops.

It supports improved education about GM labelling.

GM Free Consumers Network, PO Box 535, Mount Hawthorn, Western Australia 6915

The GM Free Consumers Network (the Network) has concerns that current inadequate labelling provides no choice to those wishing to avoid GM ingredients in their food. Hence the Network is calling for comprehensive labelling from both State and Federal Governments (as per submissions made to the national Review of Food Labelling Law and Policy).

The Network wants the introduction of full labelling of all food ingredients produced by a process of genetic modification, including (i) processed oils, refined sugars and starches, (ii) food from animals fed GM feed, and (iii) enzymes and additives that have been genetically modified or have been derived from a GM crop.

The lack of transparent GM labelling in Australia has been one of the Network's major concerns. The Network is campaigning for a level of GM food labelling following the European model, where all GM ingredients are labelled, including in animal feed.

The Network cites polls within Australia show that 90per cent of consumers would welcome transparent GM food labelling to enable informed choice.

The Network argues there is potential for some GM foods to cause harm to some people, particularly those in vulnerable health such as the elderly, the young, the pregnant, the sick or those with immune deficiency.

Transparent GM labelling would allow traceability which could be used to show if there is a possible link between the introduction of GM food and an increase on anaphylaxis admissions. Traceability is a fundamental requirement of a quality management system. Additional costs associated with the introduction of transparent labelling should be borne by the GM industry.

Greenpeace Australia Pacific, Level 2, 33 Mountain Street, Ultimo, New South Wales 2007

Greenpeace referred this investigation to the views expressed in its submission to the national Review of Food Labelling Law and Policy, as detailed below. Correspondence to DAFWA (email 6 August 2010) also advised a petition organised by Greenpeace was presented to the panel conducting the Review in May 2010. The petition, containing 30,000 signatures, called for labelling of all GE-derived products, including products from animals fed GE stock feed.

The Greenpeace submission recommended:

comprehensive labelling is enacted for all food derived from GM crops
current exemptions to GM labelling requirements are removed so that GM labelling includes:

- products derived from animals fed GM feed (such as meat, milk and eggs)
- highly refined GM ingredients (such as cooking oils, sugars, starches)
- food prepared at bakeries, restaurants and takeaways.

In regard to the present FSANZ ruling (within *Standard 1.5.2*) whereby labelling is not required for foods where the unintentional presence of a GM component is less than 1 per cent, Greenpeace recommends ‘unintentional presence’ be redefined as ‘accidental presence’. Greenpeace contends there is room for food producers to exploit the word ‘unintentional’ and not label food which has been, or is likely to have been, contaminated with products derived from GM crops, but is not GM itself (for example, imported corn starch and syrups from the United States are likely to contain GM DNA). If thresholds are to be assigned at all, they should only apply for truly accidental contamination.

Greenpeace recommends the establishment of a traceability regime for GM foods (as with EU regulations since 2004). Greenpeace asserts that, based on the EU example, explicit labelling can be achieved with minimal regulatory costs to business.

Greenpeace seeks clarification of the areas of responsibility relating to labelling enforcement and an increase in the resources devoted to this. It notes that since this involves multiple jurisdictions, such as FSANZ, Australian Quarantine and Inspection Service (AQIS), Office of the Gene Technology Regulator (OGTR) and the State Governments.

Greenpeace argues that many people indicate they do not want to eat GM foods and do not want to support the GM food industry with their purchases. Therefore present GM food labelling is not adequate for them to merely be assured that detectable DNA is no longer present in a final product. Greenpeace argues that this level of labelling does not uphold the rights of consumers who make decisions based on ethical, religious or environmental grounds.

The Health Consumers' Council (WA) Inc, Unit 13–14, Wellington Fair, 4 Lord Street, East Perth, Western Australia 6000

The Council has concerns about the long-term effects on the human body of GM food, the spread of pollen from GM crops to organic crops and animal products for humans from animals fed GM feeds.

The Council argues that GM food labelling (including for every ingredient) should allow consumers to choose between GM and non-GM foods. GM food labelling is also important where trace-back is required for gauging effects of such foods on humans.

The Council considers there is a great need to educate people on GM foods and suggests a recognisable symbol should be developed.

Horticulture House WA (comprising Potato Growers Association, vegetablesWA and Western Potatoes Pty Ltd), 103 Outram Street, West Perth, Western Australia 6005

The Committees of the WA vegetable and potato industries are eager to understand the implications on their industry of GM crop production using a supply chain perspective, that is, from grower to consumer. Both industries are cautious about GM and are proceeding as non-GM at this time.

The Committees argue that labelling should allow consumers to make educated decisions about purchasing, whether a product includes GM ingredients or not.

The Committees consider there is a great need for improved education about GM foods that is science-based to counter misinformation, using mediums of TV, education in schools, brochures/pamphlets and a website for media and education.

MADGE Australia Inc., Mothers are De-mystifying Genetic Engineering, PO Box 10, 287 Brunswick Street, Fitzroy, Victoria 3065

MADGE referred the Committee to their submission to the National Review of Food Labelling Law and Policy, highlighting the following key points about GM food labelling:

The most important principle guiding decisions about government regulatory intervention on food labelling should be the consumer's right to know and make informed decisions about the food they buy.

Consumers are expected to *choose* to eat healthily and are assumed to have the choice to eat non-GM rather than GM foods if they desire. However, consumers cannot make those choices unless they are given adequate information and food labelling is an important part of that.

MADGE urges full labelling of all food ingredients produced by a process of genetic modification, including:

- processed oils, refined sugars and starches
- food from animals fed GM feed
- enzymes and additives that have been genetically modified or have been derived from a GM crop.

Several surveys have shown that Australian consumers want all GM foods to be labelled and that they want labelling to be based on the process of genetic modification (as it is in the EU), not on the presence GM DNA or protein in the final food. MADGE urges the adoption of 'process-based' GM labelling as exists in Europe.

MADGE calls for process-based labelling, where all ingredients, fully or partly derived from GM crops or GM-based processes, are labelled as genetically modified. MADGE argues that the long term effects on the human body from ingredients derived from novel technologies such as GM, nanotechnology or affected by irradiation are not well enough known.

Organic Farming Systems (OFS), PO Box 419, Cottesloe, Western Australia 6911

OFS argues that food derived from a GM crop should be labelled as such and a balanced argument (pro-GM foods and anti-GM foods) needs to be presented for the consumer. Consumers may want labelling to indicate ingredients derived from a GM source if they wish to avoid GM crops and foods, not just for health reasons but for ethical and environmental health reasons.

OFS believes that counter arguments about GM foods advanced by scientific opinion need to be considered.

Public Health Association Australia (PHAA), Keep Australia Beautiful Building, Units 2 & 3, 20 Napier Close, Deakin, Australian Capital Territory 2600

The PHAA notes that 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 foods. The PHAA states that there are still remarkably few independent assessments of the effects of GM foods on these matters.

PHAA argues that there is considerable consumer resistance to consuming GM foods and hence strong demand for more thorough labelling of GM food. It also argues that there is currently no policing of GM food labelling laws, that a DNA test to determine the GM content of various foods is expensive and that none of the Federal, State or Local governments are currently doing these tests. The PHAA argues that manufacturers are therefore unlikely to get caught if they do not appropriately label foods containing GM ingredients.

The PHAA argues that 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.

PHAA advocates 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.

PHAA also notes a concern with GM crops, that they may produce new allergens, asserting that if allergy testing is done, it rarely involves any *in vivo* testing.

WAFarmers (Western Australian Farmers Federation), Ground Floor, 24 Thorogood Street, Burswood, Western Australia 6100

WAFarmers aligns with National Farmers Federation (NFF) policy which supports the current regulatory arrangements that ensure the safety of foods and ingredients derived from GM crops through approvals made by FSANZ. This ensures that GM ingredients approved for use in Australia have undergone a scientific assessment of their safety.

WAFarmers and NFF also support the current arrangements for labelling of highly refined products derived from GM crops, such as oils and sugars. Both argue that, where food products derived from GM crops cannot be differentiated from conventional (non-GM crops), there is no scientifically defensible rationale for labelling.

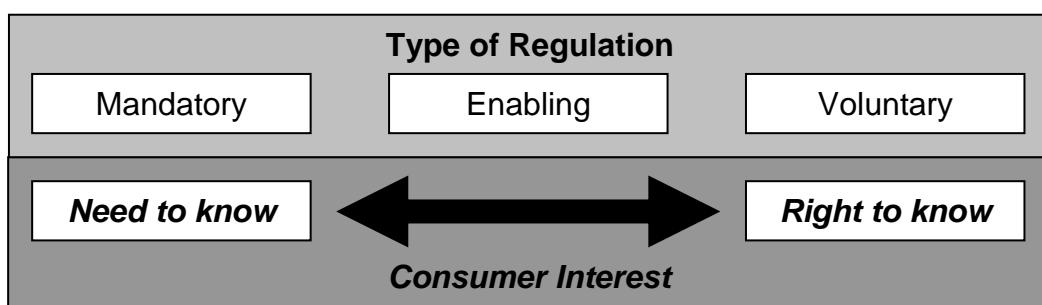
WAFarmers and NFF do not support changing the current food labelling laws to include the labelling of animal products such as meat, eggs and milk produced from animals fed products which include GM ingredients. Both argue that food products from animals fed non-GM feeds or GM feeds are identical and that there is no international precedent for differentiating the labelling of animal products fed GM and non-GM diets. Both argue to implement mandatory labelling would involve expensive trace-back, processing and handling systems for both animals and their feed.

7 Review of Issues Raised

7.1 Regulation for consumer 'need to know' and 'right to know'

Regulatory systems aim to encourage specific behaviours in a community that reduce costs and increase benefits to society and empower its 'users' to make choices that suit their personal concept of well-being. The basic aim of a food regulatory system is to reduce the costs of unsafe food and increase the benefits of healthy food production and consumption. The choice of food regulation therefore spans a spectrum of options, from mandatory rules to voluntary guidelines.

This spectrum can be further differentiated by a consumer's *need to know*, where the consumer must be provided with surety about certain attributes of their food (for example, food safety), and their *right to know*, where a consumer has a right to know certain attributes of their food (for example, the production process).¹⁴ The following figure depicts this distinction and the associated regulation.



Differentiating regulations in this way allows for the preceding stakeholder views to be grouped and clarified. This also allows a discussion of regulations appropriate for the various attributes of GM foods. For instance, regulation for attributes of GM foods that consumers 'need to know' would include the product safety and content of GM in foods. As several stakeholders have expressed, the current regulatory system does allow this type of information to be communicated to consumers through the pre-market assessment by FSANZ and the labelling of GM ingredients.

Some regulation may be required to enable consumers to purchase product on attributes that they may have a 'right to know'. These attributes include the production process of food products. A type of regulation that enables this kind of communication is the system of Australian Standards, which allows a recognised definition of a product attribute to be used by the industry to communicate to their consumers. The recently introduced Australian Standard for organics is an example of this type of enabling regulation.

Consumers are also expected to express their 'right to know' about the food for sale by exercising their purchasing power. This power is translated into voluntary 'regulation', where the industry communicates product attributes based on their purchasing habits. Product brands and some nutritional information would fall into this category. If the number of consumers seeking out and willing to pay for a specific attribute is

large enough, then there is a commercial incentive for food producers to provide such products. Examples of product attributes in this category include kosher, halal, low fat and organic foods.

Some groups are seeking mandatory labelling of GM foods in *addition* to that which is already required in Australia by the Code. Action groups such as the environmental group Greenpeace and consumer groups such as *Choice*¹⁵ and MADGE¹⁶ advocate a strengthening of Australia's GM food labelling laws so consumers can identify from the label, all products derived from genetic modification or containing GM ingredients, even for those products where GM DNA or protein have been removed through processing. These groups wish to see 'process' label information which indicates where a product (for example meat, milk or eggs) was derived, especially whether the animal was fed with GM feed and/or whether the food product contained GM additives or enzymes.

These groups argue that present labelling information does not provide sufficient information to make an informed choice to use or avoid GM foods. The reasons a consumer may wish to avoid using GM foods are various, including perceived potential health risks (e.g. allergenicity or toxicity) and a range of ethical, environmental and religious motivations. These organisations argue that consumers have a 'right to know' what is in their food and how it was produced. In some jurisdictions, this consumer interest is translated into mandatory regulation. For example, these groups recommend Australia emulate the EU labelling system which, since April 2004, has required labelling for all products which are derived from GM sources, whether GM components are detectable in the final product or not. A further requirement is for records to be kept at all stages of processing to assist traceability if requested.

In contrast, the current charter for FSANZ is to ensure the safety of foods for human consumption, while providing adequate information about food to enable consumers to make informed choices. In discharging this responsibility, FSANZ compares GM foods with similar, commonly eaten conventional (non-GM) food for a molecular, toxicological, nutritional and compositional comparison. FSANZ has identified no safety concerns with any of the GM foods it has assessed. Other national regulators who have independently assessed the same GM foods have reached the same conclusions. Even so, these regulators have assessed consumers 'need to know' about the presence of approved GM ingredients in their food.

FSANZ has not considered this 'need' should extend to the production process where the final product is not distinguishable from its conventional counterpart, such as where GM feed is included in the diets of animals or the GM content has been processed out of the final product. While some action groups are calling for strengthened GM food labelling laws in Australia, other food industry and associated organisations endorse this approach to GM food labelling requirements by FSANZ, for example the Australian National Retailers Association (ANRA), Australian Food and Grocery Council (AFGC), Coles, Agrifood Awareness Australia Limited and the Western Australian Farmers Federation (WAFarmers). These groups cite the difficulties in enforcing

more stringent regulations and the alternative enabling or voluntary regulation that would better suit this ‘right to know’.

7.2 FSANZ requirements for labelling GM food

The following extract from a letter to the Committee dated 1 June 2010 from the office of the Chief Executive Officer, FSANZ, describes the FSANZ position:

“Food Standards Australia New Zealand (FSANZ) is the independent statutory authority responsible for the development and maintenance of food standards and other food-related regulatory measures in Australia and New Zealand. Food produced or imported for sale in Australia and New Zealand must comply with the food standards that are contained in the *Australia New Zealand Food Standards Code* (the Code).”¹⁷

Provisions for the labelling of GM foods are contained in *Standard 1.5.2 – Food produced using Gene Technology* (became law in December 2001). *Standard 1.5.2* requires a food, food ingredient, additive or processing aid which contains novel DNA or novel protein that has come from an approved GM food to be labelled with the words ‘genetically modified’. The statement ‘genetically modified’ must be used in conjunction with the name of the food or in association with the specific ingredient in the ingredient list. If the food is unpackaged, then the information that otherwise would have been on the package must be displayed on or in connection with the display of the food at the point of sale.

There are additional labelling and information requirements for GM foods that have ‘altered characteristics’; that is, any GM foods that differ from their conventional (non-GM) counterpart in relation to:

- significant composition or nutritional values;
- factors known to cause allergic responses in particular sections of the population; or
- its intended use.

There are some exemptions to the GM food labelling requirements. Foods that do not need to be labelled as ‘genetically modified’ include highly refined foods that contain no novel DNA or protein. For example, highly refined oils such as GM soybean oil or canola oil are not required to be labelled where they contain no DNA or protein from the plant, and they are indistinguishable from conventionally produced oils.

In addition, labelling is not required for foods where the unintentional presence of a GM component is less than 1 per cent of the relevant food or ingredient. GM foods that are not approved in the Standard, however, are not permitted in any food either intentionally or unintentionally.

Food intended for immediate consumption, that is, prepared and sold from food premises and vending vehicles is also exempt from GM food labelling requirements. Types of food premises captured by this exemption include restaurants, takeaway outlets, caterers and self-catering institutions. Where food is sold in these situations, the onus is on the food business to supply information about the product which is not misleading or untruthful. These mechanisms enable the consumer to obtain the information required to make a purchasing decision.

In brief:

- All approved GM foods (including food ingredients, additives or processing aids) where the novel DNA and/or protein remains in the final food, must be clearly labelled, ‘genetically modified’.
- Additional labelling and information requirements apply for GM foods that have ‘altered characteristics’ (i.e. GM foods that differ from non-GM counterparts).
- Exemptions (GM labelling not required) – for highly refined products where GM DNA/protein is removed through processing; for additives or processing aids (unless the novel GM DNA/protein remains in the final food); foods containing GM flavouring of less than 0.1 per cent of the final food; foods prepared at the point of sale; and for foods where the presence of GM is unintended and makes up no more than 1.0 per cent of the final food.”

These labelling standards are enforceable regulations or mandatory requirements. FSANZ also conducts a thorough safety assessment of all GM foods, including imported GM foods, before they are allowed in the food supply. The aim is to ensure that approved GM foods are as safe and nutritious as comparable conventional foods already in the Australian and New Zealand food supply.

From the above explanation and the FSANZ risk and safety assessment process (Appendix 4), FSANZ considers it provides the public with labelling information which the consumer ‘needs to know’.

7.3 *Consumer surveys about labelling of GM food*

This investigation examined a wide range of survey results to clarify public opinion on GM food labelling. In addition, a telephone survey of 400 Western Australian consumers was carried out in June 2010 (see Appendix 5 for summary of results).

In 2007, FSANZ commissioned a comprehensive survey¹⁸ of consumer attitudes to food issues in Australia and New Zealand. Although only indirectly touching on matters concerning GM food labelling, this survey provided a useful indication of consumer perspectives on GM foods relative to their other concerns about food. The Australian sample comprised 1200 respondents 14 years or older.

In the Australian results, 25.3 per cent of respondents nominated GM foods as an issue. Much more frequently cited were concerns about food poisoning (48.4 per cent), storage times of food sold as ‘fresh’ (47.6 per cent), use of preservative/colouring additives (37.2 per cent), amounts of fat in foods (33.7 per cent) and use of pesticides to grow foods (32.9 per cent).

In the same survey a subset of consumers who had a role in grocery shopping were asked what information they particularly looked for when purchasing a product for the first time. Whether a food contained GM or not was not among the top categories of labelling information sought. The following label information topics were cited by more than half the respondents:

- the best before/use-by date (73.1 per cent)

- the amount of fat (61.8 per cent)
- country of origin (59.1 per cent)
- the amount of sugar (56.5 per cent)
- the ingredient list generally (52.7 per cent)
- the amount of saturated fat (50.4 per cent)

In its November 2009 Genetic Engineering Campaign submission¹⁹ to the national Review of Food Labelling Law and Policy, Greenpeace Australia Pacific stated that a Newspoll in 2008 revealed that 90 per cent of Australian consumers want all food derived from GM crops to be labelled. Marchant *et al.* (2010)²⁰ stated that some opinion polls in the United States claim that 90 per cent or more of Americans support mandatory labelling of GM foods, at least when the costs of such a program are not mentioned. The United States presently pursues a voluntary labelling policy for disclosure about GM in foods.

As in the 2007 FSANZ survey, GM food labelling seems not to be a high priority for consumers, unless the survey question prompts the respondent to specifically consider the issue. Hallman and Aquino (2005)²¹ cited a national survey of 600 Americans conducted in 2003 by the Food Policy Institute, Rutgers University, New Jersey. When unprompted about GM and GM food labelling and asked what additional information respondents would like to see on food labels, only 1 per cent said they would like labels to indicate whether a product contained GM ingredients. However, when GM food labelling was raised specifically, 94 per cent said they favoured labelling of GM foods.

Similar responses were obtained from a telephone survey conducted in June 2010 in Western Australia of 400 respondents (see Appendix 5 for results). Only one respondent (0.25 per cent) spontaneously mentioned checking a food product label for not having GM ingredients. Yet, when asked if respondents would be interested in more detailed information about GM ingredients in food labels, 69 per cent replied in the affirmative.

Australian researcher, Craig Cormick, Biotechnology Australia, reported in a 2005 study²² some common themes about consumer attitudes to GM foods, analysed from a wide range of surveys reported in the literature. These include:

“... surveys, being indicative rather than definitive, can come up with conflicting and contradictory data depending on how they were designed and conducted.”²³ “... there is no single public, but many different ‘publics’ and the better the different segments of the general public are understood, the better differences in drivers of diverse attitudes can be understood.”²⁴ “Different interest groups go to considerable lengths to spin available statistics to their ideological benefits and seek to dominate the media and public debate with their points of view. They often represent the polarised extremes of the existing public viewpoints better than they represent actual public attitudes.”²⁵

“Surveys are useful indicators of attitudes, but are not definitive. Consumer studies have shown a gap exists between survey responses and actual behaviour.”²⁶

“... attitudes towards GM foods are more driven by general attitudes towards food than attitudes towards gene technology.”²⁷

“As a relative concern, GM food concerns are comparable to concerns about artificial preservatives.”²⁸

“There is a poor understanding of what genetically modified actually means and what foods are genetically modified ...”²⁹

“... somebody who is somewhat against GM foods might change that opinion to being somewhat in favour of GM foods if they perceived a community good from them, where that was a strong value for them.”³⁰

A further study by Cormick³¹ contends that those with highly active concerns about GM foods are not so concerned about the food itself, rather they identify with strong ideologies, including fear of new technologies and multinational companies controlling the food chain. Those who regard GM food favourably tend to have a high trust in science and regulators and are supportive of new technologies.

Cormick also states that understanding public attitudes is crucial to policy development, in order to gain public acceptance for GM crops and foods. This will apply also to other emerging food technologies such as the use of irradiation and nanotechnology. Cormick says it will be important to engage with the general public, including the younger generation, to explain GM technology and GM foods in two-way awareness-raising consultation, since one-way consultation tends to increase concerns.

7.4 *The European Union regulatory system*

There are several ‘styles’ of regulation around the world that deal with the labelling of GM food, so a detailed review of regulation in all jurisdictions would provide insights. However, apart from being overly costly to conduct, the response from stakeholders and the difference in systems between Australia and the EU suggested they be assessed in detail for comparisons and contrasts.

Some stakeholders (such as Greenpeace, Choice, MADGE) suggested Australia should adopt the EU-type system of GM food labelling. These stakeholders contend that the EU regulations improve a consumer’s ability to make informed choices to purchase or avoid products, based on more comprehensive labelling about GM.

One argument posed in favour of Australia adopting the EU system is the EU’s application of the ‘precautionary principle’, which states that when an activity may cause harm to human health or the environment, cost-effective precautionary measures should be taken even in the absence of scientific consensus about the cause and effect relationships. In this way, cost-effective measures are implemented to mitigate a risk that is uncertain.

For example, applied to labelling of GM foods, regulations would specify GM ingredients of foods so that they could be traced to their source in case of an event which adversely affected human health (e.g. allergenicity or toxicity). This type of labelling in the EU indicates ingredients that are or may have been derived from a GM source, even though there may be no novel DNA and/or protein (i.e. GM content) in the final product. By contrast, the Australian *Standard 1.5.2* does not require a food to be labelled ‘genetically modified’ where novel DNA and/or protein is not evident in the final food.

Since 2004, the EU regulations require:

- full traceability (auditable document trail) throughout all steps of the food supply chain, including segregation processes
- inclusion of animal feeds, as well as all foods that contain or are produced from a GM food. This establishes derivation, although there are exceptions for meat, eggs and milk from animals fed GM feeds
- GM foods to be labelled even where novel DNA and/or protein is no longer present in the final product
- food flavourings to be labelled if derived from GM products, irrespective of the amount in the final food.

A notable exception to this approach is that processing aids used during the food or feed production process are excluded from the EU requirements, even where novel DNA and/or protein remains. In contrast, *Standard 1.5.2* requires additives and processing aids which contain novel DNA and/or protein to be labelled genetically modified. Also, the EU regulations allow the presence of non-approved GM ingredients in a food up to a threshold of 0.5 per cent (if a favourable safety assessment is documented), whereas, *Standard 1.5.2* allows the ‘unintended’ inclusion of only approved GM ingredients up to 1 per cent of the final product.

In its *Report on the Review of Labelling Genetically Modified Foods* (2004)³², FSANZ summarised the concerns of industry if an EU-type system of regulating for GM foods were introduced to Australia:

“Many of the submissions from industry oppose the EU regime and state that there is no scientific justification for such requirements. They indicate that this type of regime would be difficult to monitor and enforce given that it requires food to be labelled even where novel DNA and/or novel protein is not present in the final food and as such no scientific analysis could confirm that a manufacturer is actually complying with the labelling requirements. Industry submitters have indicated that compliance would also be costly for industry, as it would require sophisticated supply chain management, traceability, segregation and documentation systems to verify whether highly refined foods, in particular, should be labelled. Some submissions also raise the issue that such a regime could be seen as an unnecessary barrier to trade.”

7.5 Costs to business and consumer from mandatory labelling

Since labelling of GM food in Australia is already required by the Code, this report sought insights into the ‘extra’ costs that might be incurred from an increase in mandatory labelling. The literature suggests that the economic effects of labelling GM food are influenced by the presence or absence of domestically-produced GM crops and imports or exports of GM food products since businesses will be affected differently according to the amount of GM products they produce and the market they serve (Gruere and Rao, 2007).³³

Examples of the costs of mandatory labelling for GM foods from Gruere and Rao (2007) are provided below:

- For implementing mandatory GM food labelling in Canada, the cost was estimated at US\$35–48 per year per person. Gruere and Rao comment these costs are likely to be on the ‘high side’ since it was assumed by the data gatherers (KPMG International, in 2000) that 70 to 85 per cent of processed foods would incur the full cost of segregation, whereas the actual ratio may be lower.
- The introduction of mandatory labelling in Australia was estimated by KPMG (in 2000) to be US\$9.75 per person per year.
- For five different labelling scenarios in the United Kingdom (prepared by the National Economic Research Association, 2001), the per capita per year cost estimates were:
 - for ongoing EU regulations, US\$0.23
 - adding a voluntary scheme for GM-free food, US\$0.64
 - including products derived from GM ingredients but not meat or processing aids, US\$1.77
 - adding a voluntary labelling scheme for GM-free food to the third scenario, US\$2.01
 - including meat fed with GM, processing aids and products derived from GM ingredients, US\$3.89.
- To introduce mandatory labelling of GM foods to Oregon, USA (Jaeger, 2002), total annual costs per capita per year were estimated to be US\$3 to US\$10.
- To introduce mandatory labelling to the Philippines (estimated by De Leon *et al.* 2004) would increase manufacturing costs by 11 to 12 per cent, which would lead to increases of 10 per cent in consumer prices for some products.
- To introduce a mandatory labelling system in Quebec, Canada (Cloutier, 2006) estimated a set up cost of CAD\$161.75 million which would equate to US\$20 per person, followed by post-implementation annual costs per person of US\$3.50.

Hallman and Aquino (2005)³⁴ discuss the projected costs associated with crop segregation and other identity preservation methods required to ensure that GM and non-GM ingredients are kept separate. For introduction of mandatory labelling systems in the USA, they cite increased costs annually for an average consumer’s food

purchase of between US\$0.23 and US\$3.89 and food prices would increase by approximately 5 per cent.

AFGC's submission to this investigation states:

"... increasing the complexity of labelling for declarations of the use, source or processing of foods associated with gene technology imposes significant costs on the processed, manufactured food industry. These costs arise from the need for industry to obtain materials from a variety of sources, depending on seasonable availability, and subject to fluctuations in commodity prices or adverse weather or other events affecting supply and availability."

Further, AFGC state that if industry is required to increase the level of GM labelling requirements, the cost implications are as follows:

For manufacturers

- costs for producing and holding multiple lines of labels essentially for the same product but with different source or processing declarations;
- costs in redesigning labelling to accommodate the increased area required on the label for the declarations;
- costs to introduce complex requirements to track and control labelling of individual batches of food to ensure compliance with Trade Practices requirements for truth in labelling;
- costs due to supply chain constraints;
- costs for needing to produce new labelling if the crops for which forward purchasing orders have been made, fail, and crops are required to be sourced from another country; and
- costs associated with disruption of manufacturing activities due to compliance inspections/auditing by enforcement agencies to verify 'truth in labelling'.

For growers

- costs to local growers if manufacturers increase reliance on imported ingredients to reduce and simplify labelling and ensure continuity of supply and thereby reduce use of locally grown produce;
- costs to growers if manufacturers use Australian produce but pass labelling costs back on growers; and
- costs associated with damage to trade and export opportunities due to damage to Australian reputation through creation of an artificial trade barrier.

Two studies also indicate costs of labelling changes as a result of a regulatory change, for the Australian food manufacturer. In 2008, Price Waterhouse Coopers prepared a report³⁵ for FSANZ which presented a schedule which estimated the costs incurred by food companies when required to change food and beverage labelling as a result of regulatory changes. Minor, medium and major changes were examined by survey with costs estimated for packaging sub-categories of glass bottle and jar, metal (aluminium or steel) cans, plastic tub, fibre bottle or jar, folded or corrugated or liquid paperboard cartons, and flexible pouch or bag. In the 'medium change' category, changing labels varied from the least expensive of \$6,425 total cost

including materials and labour for corrugated carton packaging, to the most expensive total cost of \$12,133.

The other study of labelling costs was carried out for FSANZ by the Centre for International Economics (2006).³⁶ The study explored the feasibility of extending Country of Origin Labelling for ‘each major component of packaged food products containing two (or fewer) fruits or vegetables’. The study concluded that:

“On average, across the whole Australian fruit and vegetable processing sector, cost increases are estimated to be significant at around 1.4 per cent. But for small firms and product lines they could be severe at up to 14 per cent.”

Marchant et al. (2010)³⁷ observe that the cost burden of additional mandatory labelling would be distributed regressively. That is, the extra costs would fall disproportionately on low income consumers who spend a greater proportion of their income on food.

In its submission to this investigation, ANRA stated:

“ANRA notes AusBiotec’s view regarding GM-derived produce without DNA or, especially bulk commodities. Weighed against the added paperwork, transport and handling costs, additional labelling requirements would represent a significantly increased cost burden for retailers. ANRA submits that such cost burdens stand to directly flow to consumers, while delivering no benefit to the consumer for the reasons outlined above. AusBiotec stresses that pressing requirements for labelling in cases where the capacity for testing does not exist, the opposite consequences are likely to result to industry. In addition to the greater costs such as added testing and infrastructure requirements for storage and transport, a change to the current labelling laws could result in a situation where affected products may be widely, if not universally, labelled as ‘may contain’ a GM ingredient. This would not increase consumer choice but may in fact lead to consumer confusion.”

Commentators have also referred to the limited space on food labels for ‘additional’ information about the food product. However, there are alternative ways of communicating information to consumers through the product label. For example, new technologies in off-label databases are being trialled in Melbourne by industry whereby a person with an appropriate application in their mobile phone can scan a bar code on a food product to bring up on their phone screen extra information about the processing of the product and other information about its properties. Alternatively, they may take the product to an in-store scanner fitted with appropriate software to gain the extra information. These are examples of how technology could be used in the near future to assist the consumer obtain considerable amounts of information at the point of sale. Industry will need to evaluate the set up and operating costs for this new technology and determine the cost–benefit trade-off.

7.6 Compliance and monitoring

In Western Australia, food businesses are regulated in accordance with the *Food Act 2008* (the Act), *Food Regulation 2009* and the

Australia New Zealand Food Standards Code (the Code). The Department of Health, Western Australia (DOH) is responsible for the overall administration of the Act and works with Local Government Authorities who oversee implementation, monitoring and enforcement activities at a local level. Local Government Environment Health Officers (EHOs) undertake the primary role in identifying, registering and monitoring food businesses operating within their jurisdictions.

The assessment regime applicable for food businesses is based on the level of risk associated with the food produced and type of activities undertaken. This means food businesses determined to be higher risk are assessed more often. General compliance checks with the labelling requirements of the Code are included as part of the assessment.

For imported food, the Code remains the applicable requirement with which food must comply. The Australian Quarantine and Inspection Service (AQIS) has carriage of monitoring imported food at the border for compliance with the Code, where a labelling inspection is conducted on all food referred to AQIS for food safety inspection.

FSANZ has produced a *Compliance Guide to the Code for Standard 1.5.2: Food Produced using Gene Technology*, to assist food businesses with information to meet the requirements of this Standard. The Guide describes the appropriate use of GM food, the requirement for each new GM food to undergo pre-market assessment and approval and the specific labelling requirements for GM food and ingredients. Guidance is also provided on systems businesses may use to specify when ordering and tracking document flows which register that approved GM foods and ingredients are supplied.

In investigating how compliance with labelling of GM food may be strengthened, the Committee engaged with the WA Local Government Association (WALGA). According to WALGA, food safety control via proactive assessments of food premises and the collection of food samples for analysis continues to form a significant part of an EHO's role. EHOs work on the premise that foods labelled 'GM' will have been approved by FSANZ as safe for sale and consumption by the public.

Generally, compliance checks for labelling of GM food would involve a document review, where systems used by the business to verify the GM status of the food and its ingredients are checked, and product tested. Product testing can be used to verify the GM status of the food but such testing is costly and specific to the type of food and its genetic modification. Thus, specific GM properties need to be known before initiating the test.

A FSANZ compliance survey carried out in Australia in 2003³⁸ assessed levels of compliance for GM food labelling via product testing and document audits. Fifty-one product samples were tested and documents of 38 food businesses were audited. High levels of compliance were noted. Of the 51 product samples tested of non-GM labelled foods, 10 contained traces of GM material. However, all of

these products were within the 1 per cent threshold permitted for unintentional inclusion and therefore in compliance with the Code.

A new strategy for GM compliance has been developed in accordance with the *Food Regulation Agreement 2008* and advocates national consistency in implementation and enforcement of food laws. The recently released *National Compliance and Monitoring Strategy for Genetically Modified Foods*, seeks to provide a system which will deliver consistent and effective monitoring of GM food labelling across jurisdictions. The main aim of the strategy is to improve all aspects of monitoring and compliance for GM foods. It includes the enhancement of education and information for business owners to help in meeting GM labelling requirements.

The strategy recommendations provide the opportunity to implement improvements to compliance and monitoring for GM labelling, subject to available resources and capacity.

7.7 *Educating the public about labelling of GM food*

When food industry stakeholders and consumer and environment representative organisations were canvassed for their opinions on the need for consumer education about labelling GM foods, the following responses were received:

“...[ANRA] supports education by government which explains to customers the strong controls that are already in place in relation to the GM product. [ANRA] also supports voluntary measures. Should then be left to retailers to provide further information about GM in response to customer concern. This may be by labelling, extended labelling, or possibly web-based or customer hotline supplementary information” (Australian National Retailers Association).

“80 per cent of the buyers of food are women – it is time to ask them what they want rather than tell them what they should buy” (Caminata Yabbies).

“... there is a need for education and awareness on GM food labelling standards. This could be undertaken by FSANZ in partnership with the Department of Health in each jurisdiction” (Coles).

“... that government attention should be focused on improving GM labelling laws to give consumers better information about the GM ingredients in their foods, before resources are devoted to consumer education” (Choice).

“There is a need to educate consumers about GM on two levels. The first one explaining what GM technology is and then providing information as to why some people support the technology and others do not. It is not enough to only educate people on the science of GM as knowledge is only very limited. Only by doing both will the consumer be educated enough to make their own decision on the topic, and purchasing choice” (Commercial Egg Producers Association of Western Australia Inc.).

“Members agree that there must be additional education for consumers where any changes in labelling are involved. This can be done through various media outlets, workshops through local government, guidance for retailers of grocery stores or via the

internet" (The Country Women's Association of Western Australia Inc.).

"Our primary means of informing consumers is through the FSANZ website. The website contains a substantial amount of information about GM foods and labelling, including fact sheets, responses to frequently asked questions and a range of reports on the safety and labelling requirements of GM foods. This information can be accessed from www.foodstandards.gov.au/consumerinformation/gmfoods/"

(Food Standards Australia New Zealand).

"... public education may not be as useful as transparent labelling in enabling consumers to make informed choices, should the source of the information be compromised" (GM free Consumers Network).

"Education should begin in schools for future generations and there should also be a continuing media campaign. There is a great need to educate people on GM foods and a recognisable symbol should be developed." (Health Consumers' Council (WA) Inc.).

"If both sides of the debate are presented then you may find consumers will want labelling as they will wish to avoid GM crops, not just for health reasons, but for ethical and environmental reasons" (Organic Farming Systems).

"There is excellent evidence in the peer-reviewed scientific literature that refined foods from GM crops, including oils, and meat and milk from animals fed GM feed, should all be labelled under the current Food Standards Code. PHAA believes that there is indeed a need to educate consumers, governments and the food industry that this is the case. We believe that it is imperative that the Government of Western Australia assist in educating these sectors that these foods require labelling" (Public Health Association of Australia).

"There is far too much misinformation in the public forum about this topic and much of it is propaganda and is not scientifically correct. The types of strategies that should be employed include: TV campaigns, education in schools, brochures and pamphlets, and a website for media and education purposes" (vegetablesWA, Western Potatoes Pty Ltd and the Potato Growers Association represented by Horticulture House).

"Consumers are now further removed from the farm gate than ever before and subsequently may have little understanding about how food is produced. If a future education program is to be established, it should commence with a broad definition of modern, commercial agricultural production, plant and animal sciences, the different types of production methods employed by farmers, and how consumers can make purchasing choices for all of these, including through labelling" (WAFarmers).

Consumers often approach new technologies with caution, particularly those related to food, since they often have limited information. The industry and consumer representative responses above indicate a need for improved education for consumers about labelling of GM food and about GM technology in crops and foods. Such an education campaign for GM could be used to trial information dissemination approaches for campaigns about the introduction of other new food technologies, such as nanotechnology and irradiation.

Craig Cormick (2007)³⁹, says there is poor understanding of what GM actually means and what foods in Australia are GM, citing that:

“... only 31% of the Australian population claim to know enough about genetic modification to be able to explain it to a friend, and a significant percentage of people consider that almost any change to food is a genetic modification.”

Surveys of public attitudes to GM suggest that explaining these new technologies to the public must not only be a one-way flow of information since this can actually increase consumer concerns. It must be a two-way consultation to improve understanding and gain more of the public's confidence and support. Cormick also suggests that the facts need to be presented in a way sympathetic to the values and ideologies held by the public. It is just as important to raise the understanding about the science of GM as it is to answer consumer concerns about the impact of new technologies on the environment, the role of multinationals and potential health threats. Discussion forums, either live or on-line, could provide an opportunity for two-way consultation. These would need to include industry involvement and presence to debate the new and emerging food technologies, including GM.

Considering the implementation of such discussion forums or other consultation mechanisms highlights the need to apportion roles for this education function. Consumer trust of players in the debate needs to be taken into account. For example, Hallman and Aquino (2005)⁴⁰ report from focus group work undertaken by the Food Policy Institute, Rutgers University, New Jersey, that 74 per cent (combined figure) of respondents questioned on aspects of GM food labelling registered an increased willingness to consume GM foods where some form of safety certification was provided. The highest levels of confidence in safety endorsement by the consumer were accorded to the United States Food and Drug Administration (52 per cent reported an increased willingness to consume) and the United States Department of Agriculture (52 per cent), followed by medical/scientific organisations (44 per cent), the Environmental Protection Agency (43 per cent) and consumer/environmental groups (42 per cent).

The Government will need to consider the merits of such education programs, the potential co-funders and deliverers (especially partners such as other States and the Federal Government) and the scope, size and timing of programs.

8 Appendices

Appendix 1 – Terms of Reference of the Interdepartmental Committee

1. Purpose

The Committee has been established at the request of the Minister for Agriculture and Food to carry out investigations into information for consumers to allow them to make informed choices about GM food. The imperative to form the Committee arises from the Western Australian Government Cabinet decision of 3 November 2008, on Recommendation 1(d) Genetically Modified (GM) crops:

The investigation of strengthening labelling laws to identify GM and non-GM food products and improved compliance to assist consumer choice, through the relevant local, State and Federal agencies.

2. Membership

Peter Watt, A/Food Integrity Manager, Department of Agriculture and Food, Western Australia (Chair)

Jim Dodds, Director Environmental Health Directorate, Department of Health WA

Claire Nutter, Senior Policy Officer, Department of Commerce (Consumer Protection)

Frank Hough, Gingin Shire Councillor representing the WA Local Government Association

Sybille Rodgers, Policy and Research Officer, Department of Local Government WA

Stuart Clarke, A/Director, Food Industry Development, Department of Agriculture and Food, Western Australia

Amelia McColl, Executive Officer to the Committee, Department of Agriculture and Food, Western Australia.

3. Objectives

- I. Investigate options to strengthen Genetically Modified (GM) food labelling laws.
- II. Inform the national Review of Food Labelling Law and Policy (Blewett Review) of major findings of the investigation.
- III. Assess resources available to Local Government Authorities for monitoring and enforcing food labelling regulations.
- IV. Assess the enforcement and compliance costs to business associated with GM food labelling.
- V. Describe potential public education programs to build public knowledge about the role and issues of GM foods.

Appendix 2 – Stakeholder Consultation

On 13 May 2010, 38 stakeholders were invited to submit their views about labelling of GM food. The following is an extract from the letter of invitation.



Government of **Western Australia**
Department of Agriculture and Food



To whom it may concern
Labelling of genetically modified (GM) foods
NAME OF ORGANISATION

Dear Sir Madam

The Minister for Agriculture and Food, the Hon. Terry Redman MLA, has established a committee of State and local Government representatives to investigate labelling laws for the identification of genetically modified (GM) ingredients in food. As Chair, I write on behalf of the committee to seek input from your organisation.

Food Standards Australia New Zealand (FSANZ) is presently responsible for regulating the sale and use of GM foods in Australia and New Zealand via the Food Standards Code (1.5.2). This Standard has been in effect since 2001 and requires that all food and food ingredients that contain 1 per cent or more novel DNA and/or protein, or has 'altered characteristics', must be labelled as genetically modified.

The committee invites comment from organisations such as yours on the following:

- (a) What GM food related issues have consumers or members brought to the attention of your organisation? Please provide quantitative data.
- (b) To what extent should labelling be changed for products that contain GM ingredients and for products that do not contain novel DNA or protein but which are derived from GM crops?
- (c) If FSANZ follows the European Union food labelling system for GM foods and foods derived from GM crops, what cost implications would this have for your industry/members? [The EU system for labelling of GM foods requires labelling which indicates if a food product is derived from a GM food crop, even where there is no traceable GM (novel DNA or protein) in that food.]
- (d) Do you consider that there is a need to educate consumers about the standards for GM food labelling? If so, what type of education strategies should be employed?

The committee aims to report to the Minister for Agriculture and Food by 30 June 2010. The committee therefore asks that you send your response to the above questions and provide any other input you wish to provide by Tuesday, 1 June 2010. You may email your response to peter.watt@agrif.wa.gov.au or mail it to:

Peter Watt, Chair
Interdepartmental Committee on GM Food Labelling
Department of Agriculture and Food
Locked Bag 4 Bentley Delivery Centre WA 6983

Trade and Market Services
Locked Bag 4, BENTLEY DC WA 6983
Tel: 9368 3382 Fax: 9367 7389
www.agric.wa.gov.au

Of the 38 organisations invited to write to the Committee with their views about labelling of GM food, 19 responded, as shown in the table below.

Responded	Did not respond
Agrifood Awareness Australia Limited	Australian Institute of Food Science & Technology
Australian Food and Grocery Council	Australian Institute of Food Science & Technology (WA)
Australian National Retailers Association	Chamber of Commerce and Industry WA
Cambinata Yabbies	Dieticians Association of Australia
CHOICE	Food Industry Association WA
Coles	Golden Egg Farms
Commercial Egg Producers Association of WA	Goodman Fielder Food Services
Country Women's Association of WA	IGA Distribution WA Pty Ltd
Food Standards Australia New Zealand	Miss Maud
GM Free Consumers Network	Network of Concerned Farmers
Greenpeace Australia Pacific	Nutrition Australia WA Division
Mothers are Demystifying Genetic Engineering	Organic Federation of Australia
Organic Farming Systems	Pastoralists and Graziers Association of WA
Potato Growers Association WA	Small Business Development Corporation
The Health Consumers Council (WA) Inc	The Australian Medical Association
The Public Health Association Australia	The Australian Medical Association (WA)
WA Vegetable Growers Association	The Consumers Association of Australia
WAFarmers	The Wine Industry Association of WA
Western Potatoes Pty Ltd	Woolworths Supermarkets

Respondents were either in support of the FSANZ position in its present regulations for GM food labelling (*Standard 1.5.2*) or expressed a desire for more information to be shown about GM on food labels.

For those organisations seeking changes to the present labelling requirements of FSANZ, the issues most commonly raised were:

- for the label to indicate free of GM
- presently insufficient label information to make an informed choice
- seeking label information which indicates where a food is derived from a GM crop or other GM source (even where GM material is removed through processing)
- potential risk to human health/safety, including the risk of allergies
- labelling to indicate if a food is derived from animals fed with GM feed.

Other concerns with GM foods, not directly associated with labelling but which motivate some consumers to avoid GM foods (hence their call to be assured by labelling that a product is not from a GM source), included:

- GM crops might contaminate other crops including organic crops
- fear of unknown science/technology associated with GM
- concern about effects of GM crops on environment
- concern about perceived undue influence/control by large multinational companies
- a requirement for more public education about GM in foods.

Appendix 3 – Minister Redman’s GM Crops Announcement, December 2008



Ministerial Media Statements

Search Media Statements



Terry Redman
Minister for Agriculture and Food; Forestry; Minister Assisting the Minister for Education

Thu 13 November, 2008

New potential for GM cotton production in the East Kimberley

Portfolio: Agriculture and Food

The State Government will lift the moratorium on the commercial production of genetically modified cotton at East Kimberley's Ord River Irrigation Area.

Agriculture and Food Minister Terry Redman made the announcement in Kununurra today, breaking Western Australia's moratorium on all large-scale growing of GM cotton.

Mr Redman said the decision had been taken after extensive GM cotton trials in the Ord River area during the last decade, under the supervision of the Office of the Gene Technology Regulator, Department of Agriculture and Food and CSIRO.

"The trial crops have been very successful from a production point of view, yielding almost 11.5 bales a hectare," he said.

"Over the years, trials of GM cotton in the Ord have frequently out-yielded Australian production by about 10 per cent.

"These trials have shown that there are no agronomic problems, including the control of insects, in growing GM cotton in the Ord. Importantly, there have been no environmental concerns with the crops."

The Minister said the issue of GM cotton had been widely canvassed by Governments with consultative processes within industry, the community and traditional owners of the land, the Miriuwung Gajerrong people.

"The go-ahead for GM cotton adds further impetus to the potential for an expanded Ord Irrigation area. Irrigation and land planning issues have been very carefully considered," he said.

"The Government is currently looking at the East Kimberley Development package which includes expanding the Ord Irrigation area from 13,000ha to more than 50,000ha of cropped land in the long term."

More than 90 per cent of Australia's cotton production was already GM.

"In the 1970s, WA tried growing non-GM cotton and it was a disaster, with the plants infested with pests," the Minister said.

"Growers had to spray pesticides up to 40 times each season. In comparison, our GM cotton trials have only required two spray applications with insecticides that are far more environmentally-friendly than the now banned DDT used in the 1970s."

Mr Redman said GM cotton should become a major new profitable industry for WA.

"The previous State Government-appointed reference group on GM crops released a report last year which estimated that GM cotton could be worth more than \$50million a year to the East Kimberley, generating more than 200 full-time jobs," he said.

"GM cotton is an alternative crop option which could help secure the future of the Ord as a major agricultural region. Cotton growers facing severe water shortages in the Eastern States will also have an alternative site that is well supplied with water all year round and we may see some of their operations move to the Ord, providing relief to the Murray Darling system.

"Today's decision to allow commercial production of GM cotton in the Ord provides growers with a new opportunity to re-launch the cotton industry for this State, this time with the likelihood of much better outcomes.

"I recognise the complexity of issues surrounding the introduction of GM crops and I believe in the delivery of market choice. The Government is continuing to look at the risk management issues surrounding GM canola, with no decision to allow trials as yet.

"Labelling is clearly one aspect of ensuring consumers are provided with adequate information to enable them to choose between GM and non-GM food products.

"Australia has a rigorous food safety system that stipulates labelling requirements for GM foods. However, I am keen to investigate whether there is opportunity for improvements to the current labelling laws and compliance of those laws to better assist in consumer choice."

Minister's office: 9213 6700

Page last revised: 25 Mar 2001

Appendix 4 – FSANZ Risk Analysis Framework

The Risk Analysis Framework for food-related health risks – FSANZ

The Risk Analysis framework used by FSANZ is modelled on the Codex Risk Analysis framework. The Codex Alimentarius Commission (Codex) was formed in 1961/62 through the Food and Agriculture Organisation (FAO) and the World Health Organisation (WHO). The main purpose of Codex is to protect the health of consumers and to ensure fair practices in food trade.

Risk analysis comprises three distinct and interrelated components:

- *risk assessment*, applying a science-based approach (experimentation and data gathering to evaluate the risk)
- *risk management*, managing the food risk in the broader context (including policy, consumer behaviour, economic issues) and
- *risk communication*, relaying the process of risk assessment (two-way exchange) to all concerned parties and stakeholders.

In regard to genetically modified foods, FSANZ bulletin, *GM Foods – Safety Assessment of Genetically Modified Foods* (2010) [available at website www.foodstandards.gov.au], states, “For genetically modified foods a modified risk assessment process is used, based on the principle that their safety can largely be assessed by comparison to their conventional counterparts having a history of safe use. The approach focuses on identifying new or altered hazards relative to existing conventional foods, with any identified hazards becoming the focus of further assessment.”

Principles used by FSANZ in assessing the safety of GM foods are:

- based on the best current scientific knowledge
- carried out on a case-by-case basis (because the safety concerns depend on the type of food and the nature of the genetic modification)
- fully consider the safety of each new component in a GM food (i.e., any new DNA and protein) separately
- consider both the intended effects of the genetic modification (for example, the presence of a new protein) and the unintended effects (for example, changes to the levels of toxins or allergens).

Appendix 5 – Western Australian Survey Results, June 2010

Principal results from a telephone survey conducted in Western Australia 8–11 June 2010 from a random sample of 400 respondents (300 in Perth metropolitan area and 100 in country WA). Respondents comprised males and females, 18 years and older.

Q1. When you are shopping for processed food products, apart from the price you pay, what are your main quality and health concerns about the food you buy and eat? Meaning, what do you look for when you buy food and what are your main concerns about the food you buy and eat?

'Country of Origin': the product being (West) Australian or made from (West) Australian ingredients' was the main quality/health aspect that consumers in Western Australia check when buying or eating processed food; 35 per cent of all respondents mentioned this aspect and 21 per cent mentioned this as the first response.

Other aspects considered important on a 'total mentions level' were: 'no artificial colours/ ingredients' (24 per cent); 'fat content' (23 per cent); 'freshness' (22 per cent); 'nutritious, good ingredients' (21 per cent); 'salt content' (17 per cent) and; 'sugar content' (16 per cent).

3 per cent of all respondents indicated that they had no (quality or health) concerns with bought foods.

Only one respondent (0.25 per cent of total) spontaneously mentioned checking the product for (not having) 'genetically modified ingredients' as a first response to the question about main quality and health concerns of processed food. After probing by the interviewers, one in 20 respondents (5 per cent of total) mentioned checking the product for (not having) 'genetically modified ingredients' as a concern with processed food.

Q2. How much are you concerned about the presence of approved genetically modified ingredients in any processed foods you buy and eat?

53 per cent of all consumers were concerned (25 per cent were very concerned). More mature respondents (57 per cent) and women (62 per cent) were relatively more concerned. 26 per cent of all consumers were not concerned and 21 per cent were neutral (no opinion).

Q3. Where processing has removed all genetically modified ingredients from canola and cottonseed oil derived from genetically modified crops, how concerned would you be about buying and using those oils?

40 per cent of all consumers were concerned (about buying/using such oils) when the genetically modified ingredients in processed foods are removed while processing (16 were very concerned). Mature respondents (43 per cent) and women (48 per cent) were relatively more concerned. Also people in the country (46 per cent) seemed somewhat more concerned than people in the Perth metropolitan area (38 per cent).

8 per cent answered that they would never buy these products (oils).

29 per cent of all consumers were not concerned, and 22 per cent were neutral (no opinion).

Q4. Would you be interested in more detailed information about genetically modified ingredients on food labels of the food products you buy and eat?

69 per cent of all consumers were interested in provision of more detailed information about genetically modified ingredients on labels of food products (41 per cent were very interested). Interest was relatively higher among more mature respondents (73 per cent) and among women (72 per cent).

22 per cent of all consumers were not interested.

For those respondents who had indicated that they were interested in there being more information about genetically modified ingredients on food labels (i.e. 69 per cent of all respondents), these respondents were asked the following question:

Q5. What information would you like to read on a label for food that contained genetically modified ingredients?

Answer categories were open-ended (not read out by the interviewers)

31 per cent were interested in the 'specific genetically modified ingredients in the food'.

27 per cent were interested in an explanation of what genetically modified is, on the label.

11 per cent were interested to see safety/health aspects of genetically modified foods on the label.

4 per cent and 3 per cent respectively, indicated interest to see information on food labels describing safety/health aspects of GM ingredients in respect of children/infants and in regard to breast feeding.

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