

3. ROYAL COMMISSION ON GENETIC MODIFICATION

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The purpose of this report is to introduce to the Committee the report of the Royal Commission on Genetic Modification and highlight some key findings with respect to some of the issues regarding genetically modified food in particular.

INTRODUCTION

The Warrant establishing the Royal Commission on Genetic Modification directed it to receive representations upon, inquire into, investigate and report upon:

1. the strategic options available to New Zealand to address, now and in the future, genetic modification, genetically modified organisms and producers and
2. any changes considered desirable to the current legislative, regulatory, policy, or institutional arrangement for addressing, in New Zealand, genetic modification, genetically modified organisms and producers.

In simplified language, “genetic modification”, as defined in the Warrant, is:

- the deletion, change or moving of genes within an organism, or
- the transfer of genes from one organism to another, or
- the modification of existing genes or the construction of new genes and their incorporation into any organism.

The Commission considered the term “genetic modification” to be equivalent to and interchangeable with “genetic engineering”.

The Commission’s processes included, amongst others, 15 public meetings throughout New Zealand, a public opinion survey, a public submissions process resulting in more than 10,000 written submissions, formal hearings lasting 13 weeks involving more than 100 Interested Persons and nearly 300 witnesses, many from overseas, and a Maori consultation programme involving 28 workshops and 12 hui.

SUMMARY OF FINDINGS

Genetic modification has been used freely in New Zealand for more than a decade as a research tool, for medical purposes and in food ingredients. It holds exciting promise, not only for conquering diseases, eliminating pests and contributing to the knowledge economy, but for enhancing the international competitiveness of the primary industries so important to our country’s economic well-being.

The Commission’s consultations with the people of New Zealand showed that, while most were comfortable with genetic modification for medical purposes, many strongly opposed other uses. Many of the submissions to the Commission focused substantially on food and crops. They stressed that the safety and certainty of the science have yet to be proved, reflecting the fact that, at least for the moment, world consumer preferences are against the use of genetic modification in food. First generation genetically modified crops have shown few obvious benefits for consumers.

The Commission’s major conclusion is that New Zealand should keep its options open. It would be unwise to turn our back on the potential advantages on offer, but we should proceed carefully, minimising and managing risks. At the same time, continuation of the development of conventional farming, organics and integrated pest management should be facilitated.

The major theme of the Report is Preserving Opportunities. The Commission’s recommendations aim to encourage the coexistence of all forms of agriculture. The different production systems should not be seen as being in opposition to each other, but rather as contributing in their own ways to the overall benefit of New Zealand.

GENETICALLY MODIFIED FOOD

From the submissions received and the statements made at the public hearings it was clear to the Commission that genetically modified food was one of the issues that dominated the discussion. This was no surprise. Food is a matter of personal importance to individual New Zealanders. As food production for domestic consumption and for export contributes significantly to the economy, it is also of national importance.

Genetically modified food may have been on the New Zealand market for as long as a decade. The Grocery Marketers Association stated that the first food products modified by gene technology were a yeast used in baking, which was approved for use in the United Kingdom in 1990, and chymosin, the enzyme used in cheese making, which was approved for use in the United States also in 1990. The Flavr-Savr tomato, which was the first whole food produced using gene technology, received approval in the United States in 1994. Transgenic soybeans, corn, cotton and potato, from which many ingredients are now derived, were approved overseas during the 1990s. These foods could have come into New Zealand as ingredients in imported food.

The Commission found it difficult to establish the nature and range of the genetically modified food available on the New Zealand market. The submission from the Grocery Marketers Association stated there are “no whole genetically modified foods on the market” in New Zealand. At the time of the Commission’s hearings, therefore, all genetically modified foods were used as ingredients in imported foods. The Association provided a list of examples of the products that might be present in foods currently available in New Zealand but stated that it is not possible to state the extent to which the products listed are used in New Zealand.

None of the organisations involved in the research and development of food crops or in food production and distribution, however, suggested that the safety of genetically modified food should be assumed. They supported the Australia New Zealand Food Authority (ANZFA) view that, in the absence of a history of safe use:

...a cautious approach is applied to these foods that involves scientific risk assessment prior to their being permitted for sale in the food supply.

The Commission considered this to be the appropriate approach to follow. Witnesses said that there may be risks associated with the application of gene technology to food. While the Commission accepted that, they also found that to date there has been no evidence of unsafe foods entering the New Zealand market, and there is always a possibility of adverse effects from unsafe food.

The Commission was in agreement with the statement made by the New Zealand National Commission for UNESCO that :

If genetic engineering can lead to increased productivity of crops, growth rates and usable plant product; quality of crops including nutritional quality and storage properties, adaptation of plants to specific environmental conditions, a broadening of plant tolerance to environmental stress; increase in disease and pest resistance and less need for the use of agrochemicals; production of substances in food crops of importance to human health and the utilisation of hitherto unused species for human consumption, then these benefits for humanity cannot be foregone.

Many witnesses said that the ‘second wave’ of genetically modified foods will have greater direct benefits for consumers. The Commission did not therefore, consider it would be in the best interests of New Zealand to ban genetically modified food. They did however, consider that consumers should be protected by rigorous scientific assessment processes and by proactive and effective post-market monitoring systems, and should also be able to exercise their own choice as to whether or not they consume genetically modified food.

Organisations such as the Safe Food Campaign suggested that a prohibition on genetically modified food and a thrust to make New Zealand “an organic nation” would lead to increased consumption of organic food with a commensurate improvement in public health. The Commission saw no evidence to support this assertion. They acknowledged the importance to people of being free to choose food produced through a process they consider to be safe. Based on the evidence it heard the Commission saw no reason to assume that the continued presence of genetically modified foods assessed to be safe by the appropriate regulatory body would prevent individuals being able to exercise their choice to eat organic food. Steps should be taken however to avoid the contamination of organic food crops growing in New Zealand and this is discussed further in the report.

ENFORCEMENT OF FOOD STANDARDS

In New Zealand, enforcement of food standards is the current responsibility of the Ministry of Health. It is a function that the Commission assumed would be moved to the proposed Food Administration Authority. This Authority has still to be formed at this time. The report notes that given the level of public concern about the safety of genetically modified food for human consumption, it is important that the Food Administration Authority, when established, and until then the Ministry of Health, are proactive in enforcing standards and in providing the public with the assurance that the safety of genetically modified food is closely monitored. The Commission is concerned that this appears not to have been done in the past nor was the capability there to do so.

The Ministry of Health advised that genetically modified food is not routinely tested to ensure compliance with the relevant Standard A18. Once the amended mandatory labelling regime comes into force, the Ministry intends to investigate substantiated complaints of breach of the Standard, as well as undertaking a project to look at compliance with the labelling requirements.

The Commission felt that it is not sufficient for the Ministry to rely on complaints before initiating an investigation. Testing for the presence of unauthorised genetically modified material in foods is an issue of food safety, not of regulatory compliance. The Commission noted that the Ministry has contracted the Institute of Environmental Science and Research to establish and maintain analytical capability to test genetically modified food. They expect that such tests will be carried out routinely as part of the Total Diet Survey, which already tests for pesticide residues and heavy metals in food.

PRESERVING OPPORTUNITIES IN RESEARCH, FOOD AND MEDICINE

The Commission considered that a strong research base is essential if New Zealand is to be able to pursue all possible opportunities. The acquisition and application of new knowledge, to develop new technologies and new processes, is basic to the establishment of a knowledge economy. A skilled research workforce contributes to an internationally recognised education system and the growth of the economy in diverse areas. Without cutting-edge research capability, New Zealand's ability to develop biosecurity systems or environmental impact analyses would be limited.

The Commission supports the continuation of genetic modification research within the regulatory framework set out in the report as a part of New Zealand's overall research programme.

New Zealand imports a great variety of processed foods, many of which contain genetically modified components. It is not realistic, and would compromise freedom of consumer choice, for such foods to be banned. In the future there will be more genetically modified foods available, with the potential to bring nutritional, health and price benefits to consumers. At the same time the content and safety of such foods must be rigorously assessed, and each product adequately labelled to ensure the well-being of consumers, and informed choice.

Genetic modification in medicine is already proving of benefit in terms of the production of drugs such as insulin, and in the diagnosis of disease or disability.

To regulate the use of genetically modified medicines, we recommend the enhancement of our drug approval agency, Medsafe. This will enable it to better conduct the risk assessment needed to protect our environment. For drugs and vaccines containing live genetically modified organisms, this will avoid the necessity for Environmental Risk Management Authority (ERMA) evaluation as well, and safely preserve the opportunities for appropriate use.

Gene therapy is on the horizon with the first treatments being given to patients in New Zealand as part of international medical trials. For afflicted families this therapy promises hope and abatement of guilt; for our community it raises deep anxiety about eugenics, disability and discrimination. Toi te Taiao: The Bioethics Council will develop guidelines to help patients, health professionals and regulatory agencies manage these challenges posed by the rapidly expanding understanding of the genome.

THE RECOMMENDATIONS WITH REGARD TO FOOD

There are a great many recommendations that fall out from this comprehensive report, but given that food issues are of primary concern to the public, the Committee may be interested to note the relevant recommendations with regard to food.

- 8.1 that the Food Administration Authority monitor research studies on stock feed and act on any that indicate a need for stock feed to be assessed in relation to human health.

- 8.2 that Government facilitate the development of a voluntary label indicating a food had not been genetically modified, contains no genetically modified ingredients and has not been manufactured using a process involving genetic modification.
- 8.3 that, as a matter of priority, the Food Administration Authority disseminate information on the labelling regime for genetically modified foods and consumer rights in relation to foods made available for consumption at restaurants and takeaway bars.
- 8.4 that the Food Administration Authority produce and distribute consumer information on the use of gene technology in the production of food.

CONCLUSION

Most of the Interested Persons who appeared before the Commission urging caution suggested that the risks of gene technology were such that further research must be carried out and more scientific knowledge developed before the hazards and risks of genetic modification could be properly assessed. Some clearly thought that, because of the inherent uncertainties of the technology, it was unlikely there would ever be sufficient knowledge to provide an adequate assurance of safety. The point of tension between those who saw genetic modification as having the potential to provide benefits to the environment and those who saw it as having the potentially catastrophic impacts lay, therefore, in the belief or otherwise that the risks of the technology could be subject to current scientific risk assessment processes and risk management techniques.

Issues relating to genetic modification do not give rise to easy debate. Nevertheless, the Commission considered all the stakeholders in biotechnology should be prepared to continue the exchange of views and information that has been an important part of the Commission's process.

Committee members will recall that a seminar was held in April 2000 regarding the matter of a request to declare Christchurch a GE-free city. After considering the proposals the Committee decided:

That no action be taken on the matters raised by Groundswell until the Council examines the Report of the Royal Commission on Genetic Modification.

This recommendation was confirmed by the Council at its meeting on 24 August 2000.

The Government has yet to release its formal response to the Report of the Royal Commission on Genetic Modification.

Chairman's

Recommendation: For information.