



**National Council of  
Women of New Zealand**

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Wahine O Aotearoa

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**Submission to IBAC on the Economic Implications of a First Release of Genetically  
Modified Organisms in New Zealand: A Discussion Paper**

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S00.09

The National Council of Women of New Zealand (NCWNZ) is an umbrella organisation representing 46 nationally organised societies. It has 36 branches spread throughout the country to which women from some 150 societies are affiliated.

Comment was received from Auckland, Dunedin, Rotorua, and Thames branches; Consumer, Economics, and Health Standing Committees, as well as a number of women affiliated to these groups. Opinions ranged from those adamantly opposed to any release of GMOs to those prepared to consider the release under certain conditions.

NCWNZ policy states that stringent control measures and ongoing surveillance be applied to all genetically modified organisms and genetically modified food. Our policy also requires the labelling of all genetically modified food sold in New Zealand.

**General comments:**

The general feeling was that this discussion paper was well-balanced taking an objective look at a topic which captures a good deal of emotion. NCWNZ commends IBAC on a simply presented easily understandable paper.

NCWNZ looks forward to receiving future discussion documents concerning other aspects of the issues, namely environmental, ethical, social and health - especially as it was difficult to assess 'economic' issues in isolation.

To this end, NCWNZ believes that as the umbrella group of women's organisations it is an important community contact for IBAC. NCWNZ can access 'the public' to a greater degree than many other groups, and our membership covers a broad section of society.

NCWNZ members are very concerned that perceived short-term economic benefits may influence the decision making, as long term health and environmental concerns are difficult to quantify in the short term.

NCWNZ supports the concepts that were endorsed internationally when Agenda 21 and other outcomes were signed at Rio de Janeiro in 1992, ie the adoption of a 'precautionary approach' – this is what we see in the 2nd to last paragraph on page 17 and what we should like to reinforce. If there is any risk, hesitate and don't do it.

The cautionary approach is urged with the first release of a GMO. This is influenced by the degree of uncertainty over the long-term environmental risks of genetically engineered species or their hybrid derivatives becoming established in the wild to the detriment of our biodiversity. The concern is not only with the possibility of cross fertilisation of wilding plants with GE plants, but the impact that would result on the wider ecosystem - insect life, bird life etc, whose food supply could be altered or reduced.





It was acknowledged that there is no going back once a GMO is released; and it was recognised that it is difficult or impossible to gauge the reactions of other countries to decisions New Zealand may make. The penultimate paragraph on page 17 is the crux of this discussion document:

*Once a GMO is released, it cannot be contained again. But if a GMO is not released, the opportunity for release in the future has not been lost. Reversibility has an economic value – the value that comes from keeping options open.*

## **1. Introduction**

It is our members' opinion that it is unlikely that New Zealand would commit to 100% organic farming.

The remaining concerns are about the ability to control plants during trials in an open-field situation - even bagging the flowers cannot guarantee that pollen will not escape. Trials with animals can be more strictly controlled.

The economic perspective should not dominate, nor should the immediacy of economic return be a driving force in the decision making.

There is ongoing concern over the level of monitoring - no one group of people has the full responsibility, funding or human resource, so members questioned the potential for mishap. NCWNZ appreciates that this is not a part of this discussion, however the responsibility for monitoring conditions set by ERMA is divided and funding is probably below what is needed to reassure the public. Amendments might be needed to the HSNO Act to ensure monitoring is well carried out, the funding is available to carry it out and the public can see that this is true. Members questioned the degree to which the ethical and precautionary long-term implications of each application are considered.

## **2. What is GE-Free Status?**

NCWNZ agrees that perceived issues about genetic engineering and food safety drive consumer concern. Experience has shown that even where GE bacteria are used in drug production, for example "human insulin", it has been found that consumers have adverse reactions. A large proportion of our members are also concerned at the wider implications, of genetic engineering of any plants and the potential impact on New Zealand's indigenous flora and fauna.

It was felt that there was not enough known, in a general way, about genetic engineering. Awareness needs to be raised in the community about the likely developments, and the consequences of implementing them. The ideal medium for education would be television, as that is the media most used. Reassurance about issues surrounding new developments would allay fears.

The needs of ethnic cultures in New Zealand must also be considered.

Members have drawn on the parallel between a GE-free status and New Zealand's nuclear-free status. The parallel lies in the fact that nuclear free did not mean a complete and utter absence of nuclear, only the absence of certain aspects, and the same will apply for a GE-free New Zealand. At this stage, genetic engineering must be restricted to research in a completely controlled situation in the laboratory, or occasionally field trials under strict monitoring controls, with a moratorium on general release. Unlike the nuclear issue, the boundaries might, and probably will, need to be changed over time. It would be impossible to be absolute and definite about being totally GE-free. Based on current knowledge, this concept is practical until there are further assurances of safety after adequate scientific long-term trials have been conducted.



Similarly, the continuum of acceptability should range from totally unacceptable for any GE permits at all to totally acceptable for all applications. Concern was raised over how to define GE food (as outlined in the soy bean example on page 5). Acceptance should be based on defined criteria. A slippery slope approach can be very difficult to stop. Some parallels were drawn with the introduction of reproductive technology and cloning. New Zealand should take the precautionary approach by not allowing any applications until the potential risk is fully understood.

Decisions need to be made to ensure on-going choices.

The proposal that New Zealand develop a GE-free 'niche' market received favourable comment.

### 3. The International Context

Researchers have shown that bioengineered genes can travel from farmer's crops to other plants (Into the Wild in Findings in Natural History 10/99). Our members have raised concern about our plant genes, which could impact on both our flora and insect life, let alone on our export trade. It is too early to determine what long-term impact such gene transfer has had, or will have, on ecosystems.

NCWNZ members voiced concerns about the genetically modified crops that are grown in Australia. It was pointed out that we do have a large trade with Australia, which presumably must have been growing more GE crops/products in recent years. The economic ramifications of Australia, our closest neighbour, following the GE crop route were not identified. Nor were figures given for the existing volume of trade in food products and the likely impact should our major trading partners take a stance in favour of GE-free food.

It is simplistic to say, in a discussion document, that "first generation" GE crops were developed *to reduce production costs* by lowering herbicide or pesticide use. Herbicide spraying agriculture is suited to large-scale industrial farming and needs the application of sophisticated machinery and quantities of water – a type of farming that does not deliver a reduction in costs for third world or small farmers. Only commercial considerations were behind the development of "first generation" GE crops. Our members are saying that future developments must take full account of broad social, ethical and environmental issues.

The statement that *the need to segregate GE seed and GE-free seed leads to higher handling costs* was queried. The extra production costs are surely a negative externality created by the grower of the GE seed. If this is the case, these costs should not be considered only as a production cost for the GE-free grower.

Several people queried why the USA was pushing GE inclusion.

Concern was expressed about the effects of "first generation" GMOs on the food chain. Again it was emphasised that once release occurs there is no way back.

Decisions made for New Zealand should not be based solely on overseas information sources, as our environment is different.

The threat implied in the final paragraph, that *rejection of an application for a first release by an offshore applicant could lead to a complaint to the WTO*, was discussed and accepted. Use of international treaties and conventions is considered to be part of normal trading practices. The Montreal UN Biosafety Conference (January 2000) has agreed on a protocol that will uphold New Zealand's right to determine whether or not to release GMOs into our environment. Countries now retain the right to keep GMOs outside their borders.



#### 4. The Market Model

In our opinion it is inconclusive that GE food attracts higher prices. It is considered that more independent research is required to establish the validity of this claim. Genetically modified crops have not proved to have economic benefits. Members queried whether the perceived nutritional benefits of some GE crops, eg vitamin boosted rice, will result in prices that are beyond the developing countries ability to pay. Whether the proposed “second generation” of GE plants will be accessible and affordable by third world countries is open for debate.

There appears to be an underlying assumption in this paper that GE crops will be cheaper.

Considering particular genes in isolation could be dangerous. Organisms depend on the functioning of all genetic components working together like ecosystems.

Not noted in this discussion is the possibility of a GE disaster where GE crops are cultivated. Such a disaster would exponentially increase the value of GE-free products. Also, the market may never become saturated with GE-free foods.

The impression given is that New Zealand’s economic development will suffer unless GE cropping is grasped with open arms. The simple equation of *Profit = Price minus Production Costs* sums it all up. However, the definition given for this equation is considered simplistic. There is no definition of production costs, eg whether this includes only dollar costs, or whether the impact on the land resource is included. An example given was that a farmer could keep the profit level up one year by omitting fertiliser from the year’s costs, whereas the following year profit would be lower because the yield would be down.

The paper does not address the high costs associated with being at the forefront of any experimental work. Sometimes those costs are dollar ones; sometimes they are environmental ones. Such costs are difficult to assess in isolation from environmental factors.

A cost benefit analysis would identify the irreversible loss of opportunity to use GE-free status as a comparative trade advantage against any collective benefit from remaining GE-free.

The paper expresses how consumers may have to pay higher prices for food that is GE-free because of concerns for food safety. While such consumer fears may increase the prices for GE-free food, not everyone will be able to afford to pay the premium. As individual products are proven safe or not safe, consumer demand will change. “Second generation” food production with increased nutritional value may well be acceptable at a higher price in future. Price elasticity of demand will determine the ultimate effect of higher prices on demand if a distinction becomes necessary between GE-free food and non GE-free food.

#### 5. Failures of the Market Model

In general, this section has covered most issues.

However, the validity of the statement in the first bullet point “*that environmental protectionism is set to become a major trade barrier*” was questioned. Also, spray drift is not always reversible. It depends on the type of spray and the type of crop onto which it drifts. NCWNZ knows that it is a lethal problem in the bee industry and it may detrimentally affect an organic farmer for several years.

#### 6. Physical contamination

This section states NCWNZ concerns well.



Positive comments were received, eg that antibiotic insecticide contamination has been considered as the effect of these could have economic and other risks. Generally it would have irreversible and disastrous economic consequences.

The confusion over GE-free seed and GE seed illustrates that 'gentlemen's agreements' do not work. It would be essential for the original seed to be stored should GE products be introduced for growing

It should also be noted, though, that not everyone understood what is meant by the phrase *antibiotic marker genes*. More explanation is needed with this example for people to understand the full implications. Concerns were also raised about pesticide and herbicide contamination of food products.

The discussion paper needs to acknowledge the pattern that is part of New Zealand farming history when using phrases such as *deliberately interbred*. Often it is an individual who decides they know better. Examples in New Zealand are the release of the calici virus into rabbits, the release of the first deer into the Coromandel Peninsula, the release of carp into New Zealand waterways.

## 7. Image Contamination

Paragraph 4 alludes to pitfalls faced by marketers who need to be wary with advertising as this could have huge economic implications. The point was reinforced about losing the opportunity to retain choices, to remain GE-free: once lost, the choice is lost forever.

Image contamination is important and must be carefully considered before decisions are made.

## 8. Calculating the "Answer"

Generally the respondents felt that thorough investigation should be done and that New Zealand should be GE-free. However, there are too many unknowns at this point to be able to proceed.

## 9. What are the options?

It is important to assess as many of the costs and benefits of each of the alternatives before a decision is made. Not only are general discussion points relevant, but also quantification of as many of the costs and benefits as possible through economic analysis.

Overall, the second option was favoured, *the retention of GE-free food production nationally*, until such time as the third option, *the adoption of some GE food production, subject to approval by ERMA of the release of specific genetically modified organisms*, can be safely established and absorbed into the second.

A close check must be kept on what genes are put where and for what reason. A central record must be kept of all research and outcomes, so that there is clarity about what genes have been put where.

NCWNZ agrees that the moratorium on the first release of a GMO should not result in loss of research personnel, including students. NCWNZ members expressed concerns on the level of research and study undertaken in New Zealand should government funding levels decrease. It is recommended that government funding is made readily available to research scientists in New Zealand. Members also queried the consequences should there be more privately funded research. Particular concerns were raised about how Corporates would influence the research that is carried out, and whether it could potentially (wittingly or unwittingly) skew research results. Concern was also expressed that Corporates would only provide more money for research and trials if economic benefits follow.



## **Conclusion**

Although one person felt very strongly that all work should be stopped, what most want, is, as IBAC suggests, a moratorium, ie a time to think, research and assess what is best long term for New Zealand. This needs continual ongoing assessment, and the public need confidence that the safety aspects have been fully addressed.

'Contained' research in New Zealand must be continued on a long-term basis. Much of this work will need to be government funded if it is to remain totally independent and unbiased.

Basically NCWNZ members felt genetic engineering per se cannot be stopped. Our outstanding concern is for guidelines to be established before any release of a GMO. It is important to have good information made readily accessible, intellectual integrity, good legislation, and good controls.

Thank you for the opportunity to comment on this document. Our members are eager to continue to be involved with all aspects of consultation on this important issue.

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