Witness Brief Form 2

Royal Commission on Genetic Modification

1. Contact Information (Not for Publication)

Name and Address of Witness

This should be the name of the witness

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1. Confidential Information (Not for Publication)

Confidential Information

Please indicate whether or not your brief contains any confidential information

Yes / No No

Please provide an explanation for any sections of the brief that you wish to remain confidential to the Commission

Response

These sections should be removed from the body of the brief and provided as a separate document marked CONFIDENTIAL

Confidential information should follow the same format as the submission

Clear reference to the existence of confidential information should be included in the body of the submission

1. Signed (Not for Publication)

Signed

Signature of the witness

Sol Morgan_____ 29.10.2000 _____

Signed Date

Witness Brief Form 2

Royal Commission on Genetic Modification

(For Publication)

1. Name of Witness

Sol Morgan

1. Name of "Interested Person" (on behalf of whom the Witness will appear)

Nelson GE Awareness Group

1. Witness Brief Executive Summary

Executive Summary

Provide an overarching summary of the evidence and recommendations made [in respect of items (1) and (2) of the Warrant]. The Executive Summary should be no more than **3** pages in length

Please note that individual section summaries will be required and therefore the Executive Summary should focus on summarising the issues addressed in the brief and provide cross references to the sections in which the issues are covered rather than summarising the substantive content

Response

1. Evidence by Section (as specified in the matters set out in the Warrant)

Evidence by Section

Witness briefs are to be structured in line with the matters specified in the Warrant and the sections numbered accordingly

Each section should stand alone, and include a section summary, identifying the issues addressed in the section

Witness briefs may address **all** or only **some** of the sections (as specified in the Warrant). However section numbers should be retained, for example, if a brief addresses matters (a), (c) and (e), the sections shall be numbered (a), (c), and (e), rather than a, b, and c

Witness briefs may, within each section, adopt a sub-section approach using different headings; however, each paragraph should be consecutively numbered

Section A Recommendations

The Warrant has set the Commission the task of receiving representations upon, inquiring into, investigating, and reporting on the items set out in Section A (1) and (2) below

Section A (1)

A (1) the strategic options available to enable New Zealand to address, now and in the future, genetic modification, genetically modified organisms, and products

Section A (1) Summary

Response

A (1)

Response

Section A (2)

A (2) any changes considered desirable to the current legislative, regulatory, policy, or institutional arrangements for addressing, in New Zealand, genetic modification, genetically modified organisms, and products

Section A (2) Summary

Response

A (2)

Response

Section B Relevant Matters

The Warrant has set the Commission the task of receiving representations upon, inquiring into, and investigating, the matters set out in Section B (a) – (n) below

Section B (a)

B (a) where, how, and for what purpose genetic modification, genetically modified organisms, and products are being used in New Zealand at present

Section B (a) Summary

1. To my knowledge GE crops are being researched by CRI in NZ for the purpose of expanding the control that conventional agriculture / horticulture has over the environment. This will only enhance the unsustainability and dominance of this current mode of production.

B (a)

2. It is important to highlight the fundamental differences of purpose behind both organic and conventional production systems. Organic production is based on the fundamental belief that humans must learn to live in harmony with the earth, if we are to survive as a species. Organic is the functional manifestation of the precautionary principle. Conventional production is based on the exact opposite belief - namely, we must conquer and control nature, even at the cellular level. Genetic engineering is an extension of the conventional, industrial model, which creates new ecological problems, with risks assessed after new technologies are introduced. While organics is based on empowerment, GE is based on corporate control.

3. Therefore the underlying purpose behind GE research in NZ must be to enhance the corporate control of our food supply. Thus further dis-empowering our local communities and our countries long term sustainability.

Section B (b)

B (b) the evidence (including the scientific evidence), and the level of uncertainty, about the present and possible future use, in New Zealand, of genetic modification, genetically modified organisms, and products

Section B (b) Summary

4. There no research that I have seen that suggests the use of GE is safe, in fact quite the contrary exists. How can science predict the combined effects of GE within the environment and on human health , with so many factors involved. Therefore the uncertainty is infinite. Just because we can genetically engineer new organisms and food doesn't mean we should. We still haven't realised the full impact of chemicals on human health and the environment (even when we know they're poison!), let alone the irreversible impacts that GE will have if we continue to develop this technology...

B (b)

5. Some questions to consider:

   - Shouldn't sound science be used to establish a product's safety **before** it is released into the environment and placed in the food chain?
   - What are the long term impacts of GE crops on human health and the environment, E.g increased Bt toxins on soil ecology?
   - Once GE contaminants enter the environment they will be potentially be impossible to remove. E.g. How can genetically engineered toxins be removed from the environment once they have been introduced?

Section B (c)

B (c) the risks of, and the benefits to be derived from, the use or avoidance of genetic modification, genetically modified organisms, and products in New Zealand, including:

(i) the groups of persons who are likely to be advantaged by each of those benefits

(ii) the groups of persons who are likely to be disadvantaged by each of those risks

Section B (c) Summary

6. There are significant risks associated with GE upon:

1. The bio-diversity of ecosystems:

- E.g. Research at Cornell and Iowa State Universities has confirmed that Bt corn pollen kills Monarch butterflies and other Lepidoptera. This impact on non-target species was not predicted prior to the release of Bt corn. Every cell of the Bt corn carries the Bt toxin, and the plant itself is a registered pesticide.

- E.g. Lab research by May Berenbaum at the University of Illinois has recently shown that over 80% of the black swallowtail larvae exposed to pollen from Novartis corn variety Max 454 died after just 2 days.

- E.g. Research in Europe shows that GE crops damage beneficial insects, including lacewings and ladybugs. Beneficial insects that prey on aphids which have consumed Bt toxins have lower survival and reproduction rates than those which feed on healthy aphids. This impact of GE Bt was not researched or anticipated.

- Evidence suggests that the out-crossing of Ge crops can create super weeds (Research in Canada shows that herbicide resistant canola cross-pollinates with wild and domestic relatives, creating "superweeds" which are resistant to herbicides.) and contaminate neighbouring open-pollinted crop seed.

2. The integrity of the organic system:

- Organic farmers and growers often rely on the ability to save open-pollinated seed for future crops. This can add significant costs to the organic producers , as they will have to buy organic seed instead.

- Organic growers also rely on the use of certain insecticidal organisms and plants to treat pest and disease problems. One good example of this is the ability to use Bt for control of white cabbage butterfly. It is inevitable that the planting of insecticidal GE crops, such as Bt corn, cotton and potatoes, will result in pesticide resistant pests, because the GE toxins are present in every cell of every plant at all times. Any biologist or entomologist knows that this is a recipe for resistance. As insects develop resistance, conventional growers will need to apply more and stronger insecticides, and organic growers will likely lose access to a previously effective, selective, least-toxic, and natural pesticide.

- Contamination of organic crops by GE crops will also result in the loss of certification, and thus the livelihood of organic producers will be put at risk.

- Contamination of the soil is likely to increase with the use of insecticidal crops, such as Bt corn and herbicide resistant crops, such as round up ready soya bean. Toxins from

genetically engineered Bt crops accumulate in the soil, killing organisms and altering soil ecology, according to research at New York University. The GE Bt toxin was found to exude from the roots of living Bt corn plants. After 234 days, the toxin had not degraded. The research abstract concludes "there may be a risk that non-target insects and organisms in higher trophic levels could be affected by the toxin.

Despite what the biotech industry would like us to believe, farmers are spending more on pesticides than ever before. Genetic engineering has not resulted in a decrease in pesticide use. In fact, herbicide resistant crops, such as Roundup Ready soybeans and canola, lead to increased use of pesticides, since the crops are repeatedly sprayed during the growing season. And, since Bt corn and cotton are registered pesticides, with every cell of every plant containing GE toxins, the growing of these crops has led to a vast increase in pesticides being introduced into the environment.

3. Human health:

The increased use of herbicides with herbicide resistant crops will undoubtedly lead to increased levels of residues in our foods. Recently applications have been made to increase the allowable levels of pesticides on food crops. The risk therefore is borne by the consumers who will unknowingly eat this contaminated food.

B (c)(i)

7. Biotech companies , food corporates and large commercial growers are the only potential beneficiaries of GE production.

B (c)(ii)

8. Organic farmers, growers and seed savers will be significantly disadvantaged by the introduction of GE crops into our environment. This will impact negatively on local communities which are currently struggling to survive.. Consumers will be ultimately be the "guinea pigs" in this GE experiment.

Section B (d)

B (d) the international legal obligations of New Zealand in relation to genetic modification, genetically modified organisms, and products

Section B (d) Summary

Response

B (d)

Response

Section B (e)

B (e) the liability issues involved, or likely to be involved, now or in the future, in relation to the use, in New Zealand, of genetic modification, genetically modified organisms, and products
Section B (e) Summary

Response

B (e)

Response

Section B (f)

B (f) the intellectual property issues involved, or likely to be involved, now or in the future, in relation to the use in New Zealand of genetic modification, genetically modified organisms, and products
Section B (f) Summary

Response

B (f)

Response

Section B (g)

B (g) the Crown's responsibilities under the Treaty of Waitangi in relation to genetic modification, genetically modified organisms, and products
Section B (g) Summary

Response

B (g)

Response

Section B (h)

B (h) the global developments and issues that may influence the manner in which New Zealand may use, or limit the use of, genetic modification, genetically modified organisms, and products
Section B (h) Summary

Response

B (h)

Response

Section B (i)

B (i) the opportunities that may be open to New Zealand from the use or avoidance of genetic modification, genetically modified organisms, and products
Section B (i) Summary

9. The opportunity still exists to capitalise on NZs' "clean green image" internationally by expanding the already growing organic industry. The world markets are demanding clean , healthy GE free food and related products, which the organic industry fulfils. Based on overseas scientific evidence the impact of growing GM crops could seriously affect the ability of NZ to continue growing food organically. There is huge opportunity for communities within NZ to develop rural organic initiatives, thus aiding rural economies.

B (i)

10.

- The overseas markets for GE crops is limited , with major buyers in Europe, Japan, Canada, and Mexico not wanting GE crops.

- The organic industry both internationally and nationally provides significant premiums for produce. This then benefits all those involved in the organic industry and especially rural economies.

- The growth of the organic industry in NZ is demanding a supply of organic seed – mostly vegetable and arable crops. Organic growers are required as of July 2000 to purchase organic seed where possible. This has opened up a huge potential market for organic seed companies and seed growers to take advantage of. However, as mentioned before , the introduction of GE crops into NZ will seriously hinder this opportunity .

Section B (j)

B (j) the main areas of public interest in genetic modification, genetically modified organisms, and products, including those related to: **(i)** human health (including biomedical, food safety, and consumer choice) **(ii)** environmental matters (including biodiversity, biosecurity issues, and the health of ecosystems) **(iii)** economic matters (including research and innovation, business development, primary production, and exports) **(iv)** cultural and ethical concerns
Section B (j) Summary
B (j)(i)

Response

B (j)(ii)

11. There is mounting evidence to indicate that GM crops are significantly impacting upon the bio-diversity of the surrounding ecosystem and in particular on the bio-diversity of food plants.

12. Bio-diversity is vital for long term sustainability of any ecosystem. Current methods of conventional crop production i.e chemical use, mono-cultural cropping, lack of wilderness areas, limited crop varieties all impact negatively on the bio-diversity of surrounding ecosystems. Organic food however is food produced in harmony with the earth. Organic standards prohibit the use of toxic pesticides, synthetic fertilizers, sewage sludge, irradiation, and genetically engineered organisms. Organic farmers are required to implement ecologically sound management systems which build soil health and promote biological diversity. Organic farmers use cultural practices, instead of synthetic inputs, to raise crops and livestock. Certified organic farms and processing facilities must be inspected at least annually, and must prove that their operations comply with organic standards.

13. The sustainability of our horticultural and agricultural industries relies upon developing suitable crop varieties that can be integrated into each ecosystem/ micro-climate with the least negative impact. Heirloom varieties for example have survived not because of large seed companies but because they are ideally suited to the micro-climates they have been grown in.

14. Developing crops that require the use of chemicals e.g. round-up-ready soya beans etc, or those which destroy bio-diversity e.g. Bt corn etc., are not sustainable options- but short term options that will have an infinite impact on the environment.

B (j)(iii)

15. The economic potential for NZ and especially local communities to develop the organic industry is huge. Research in NZ suggests that the potential growth of the organic industry in this country is 20% per annum. The development of the GE industry will seriously jeopardise this economic opportunity. Long term sustainability lies with strengthening local economies. There are already initiatives that are aimed at developing rural organic economies in NZ, such as organic growers co-operatives, organic seed production , community supported agricultural schemes (which benefit both the growers and the consumers). Development of the organic industry will increase local employment opportunities and therefore enhance sustainability of local communities.

B (j)(iv)

16. The ability of home gardeners, organic growers and rural communities to grow their own food, and save seed year after year is what has sustained the majority of human

civilisation up until recently. The continual control of our food supply is a food security issue. Communities are empowered when they can sustain themselves by growing their own food. The GE industry does not support the sustainability of our communities, but instead is continually eroding our ability to be self sufficient, and therefore our sense of self empowerment. This country was established by having strong rural communities- that is our cultural history. It is time to once again support initiatives that strengthen our communities, our culture. Initiatives that bring control back to the community, such as local food co-ops, regional organic seed companies etc….

17. As mentioned before, just because we can do it i.e GE, doesn't mean it's a good idea or that we should. The old saying come to mind "curiousity killed the cat". There is the sustainability of life on earth at stake with GE. Unlike any other human activity GE has the potential for irreversible, worldwide devastation. If were going to go down the GE path we at least need to be absolutely certain of the implications, for the sake of the environment and our children, of which we are guardians for. Personally and professionally I feel strongly that we don't need GE (especially GE food), we just need to look at approaching how we manage our resources. By taking a holistic systems approach we can fully realise how interconnected every living thing is to each other. GE will undoubtedly destroy the very fabric of life as we know it. I question even if we have the right to GE organisms, especially for the sole purpose of dominating more of the worlds food supply..

Section B (k)

B (k) the key strategic issues drawing on ethical, cultural, environmental, social, and economic risks and benefits arising from the use of genetic modification, genetically modified organisms, and products
Section B (k) Summary

18. You are faced with decision of whether to continue to support and develop the GE crop industry (with all its associated risks and likely impacts) or whether to stop the development of GE crop industry in favour of the huge organic industry potential for this country. I don't believe from my knowledge and experience that we can have both industries operating in NZ, not for long anyway.

B (k)

Response

Section B (l)

B (l) the international implications, in relation to both New Zealand's binding international obligations and New Zealand's foreign and trade policy, of any measures that New Zealand might take with regard to genetic modification, genetically modified organisms, and products, including the costs and risks associated with particular options

Section B (l) Summary

Response

B (l)

Response

Section B (m)

B (m) the range of strategic outcomes for the future application or avoidance of genetic modification, genetically modified organisms, and products in New Zealand
Section B (m) Summary

19. By avoiding GM production this country can develop the organic industry, thus capturing the market for healthy organic food

B (m)

20. While other countries further develop GM food production, NZ by avoiding this will undoubtedly find it has captured a niche market for healthy , clean organic food by its different primary production sectors.

Section B (n)

B (n) whether the statutory and regulatory processes controlling genetic modification, genetically modified organisms, and products in New Zealand are adequate to address the strategic outcomes that, in your opinion, are desirable, and whether any legislative, regulatory, policy, or other changes are needed to enable New Zealand to achieve these outcomes
Section B (n) Summary

Response

B (n)

Response