

Submission GE Free NZ in Food and Environment FNDC PPC18 / WDC PPC131.



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Joint presentation – AGEFC, Jon Carapiet, Charles Drace, Peta Kirkwood, Michael Trott.



Outline Tēnā tātou katoa.

RMA and HSNO
GMO Effects
laboratory studies,
on farm use
community effects
GMO threats to farmers livelihoods





Principles and Purposes HSNO & RMA



To protect the health of the **Community**.

To <u>safeguard</u> the Environment.

- Ife supporting capacity of air, water, soil and ecosystems
- To <u>avoid</u>, <u>mitigate</u> adverse effects
- To meet the needs of <u>future generations</u>.

RMA 5 2



<u>RMA responsibility once released</u> <u>from HSNO.</u>

2A(1). The Organism is not a new Organism if-(b) the organism is a genetically modified organism

(2) An organism <u>ceases</u> to be a new organism when approval is given for release or release from containment.

HSNO Amendment 2003.

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RMA 3- Effects

- (a) any <u>positive</u> or <u>adverse</u> effect;
- (b) any <u>temporary</u> or <u>permanent</u> effect;
- (c) any past, present, or future effect;
- (d) any <u>cumulative</u> effect which arises over time or in combination with other effects regardless of the <u>scale</u>, <u>intensity</u>, <u>duration</u>, or <u>frequency</u> of the effect
- (e) any potential effect of high probability;
- (f) any <u>potential</u> effect of <u>low probability</u>, which has a <u>high potential</u> impact.



Now RMA Responsibility 10 years on - GMO contamination. Is it safe to farm or build on?



Whakamaru Carcass Pit and GE sheep ashes (2014)

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GE Animals in New Zealand



Deformities congenital and heritable.

- Internal organs missing,
- Uterine And ovarian rupture
- Hormonal and metabolic problems
- heart abnormalities
- Iimbs imperfectly formed or fused together.
- Failure to create some GM lines.
- ✤ 0-7% live birth for embryo transfer.
- F1-F2 generations sterile



Failure of compliance - SCION.



"MAF is still investigating the cause of these holes, and has not ruled out the possibility these were man-made for publicity purposes".

State of perimeter fence November 2007

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Police launched an investigation following the break-in at the Scion GM trees site.



Bt Cauliflower were flowering breaching their conditions. When we were in court



One month later

ERMA control remove plants when heads were formed



December 21st 2008





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Our bees are dying.



A female native bee, *Lasioglossum sordidum,* covered in pollen.



Expert witness : Dr. Ngaire Hart – There is little known about native bees importance for pollination. And we know that there is nothing about the impact of GMO's on them.

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What are the unexpected unknown, long term effects?



Harvesting the corn crop, tall green plants are roundup resistant weeds

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Risks – 15 years after commercial release

Conducted 10 years after GM corn commercialisation.



Seralini 2 year Feeding Study (2014)
Severe liver and kidney damage
Endocrine Tumours
Pituitary Tumours

Monsanto 90-day feeding trial (2004) Liver and kidney damage.

Not biologically meaningful

GMO + RoundUp

Séralini, G. E., *et al* (2014). Republished study: long-term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize. *Environmental Sciences Europe*, *26*(1), 1-14.

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RMA 3 – Husbandry Effects



Argentina is the world's biggest user of RoundUp the herbicide used to control weeds in genetically modified (GM) crops.

Daily Mail May 20th 2016



RMA 3 – Animal Effects

Danish farmer lb Pedersen's piglets



Sows gave birth to piglets with extreme deformities after eating GM soy.

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RMA 3 – Human effects

Agrichemical Companies Have Destroyed Argentina's Farming Towns With Soaring Cancer Rates And Quadrupling Birth Defects





Increase in birth defects: maternal exposure to GE & pesticides

- * 1997 19:10,000
- 2001 28:10,000
- 2008 85:10,000
- Limb reduction,
- Urogenital anomalies,
- Orofacial clefts, Ocular
- Heart conditions,
- CNS defects
- Spina bifida
- Childhood leukemia



Storm Flooding







Otiria Marae

Moerewa





Metservice and Stuff pictures



Northland

Would a fence stop GE escape?

What safeguards are you putting in place to protect the environment and communities from GE escape??

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RMA 3 – Meaning of effects

GM Contamination Organic farmer survey 2012

1:3 farmers contaminated > 17% contamination 52% loads rejected **\$**\$20,000 av. loss 67% delayed planting **\$**\$25,000 av. loss from delay ♦ \$4000 av. management cost. **♦\$ 50,000 av. total loss**.





Precautionary Approach

Organic can feed the World. Now let us get on with feeding the World WELL





FROM FST, we have found that:

- The organic systems were nearly three times more profitable than the conventional systems. The average net return for the organic systems was \$558/ acre/year versus just \$190/acre/year for the conventional systems.
- Even without a price premium, the organic systems are competitive with the conventional systems. Marginally lower input costs make the organic systems economically competitive with the conventional system, even at conventional pricing.
- The most profitable grain crop was the organically grown wheat netting \$835/acre/year.
- No-till conventional corn was the least profitable crop netting just \$27/acre/year.

INCOME, EXPENSES & RETURNS IN FST ORGANIC AND CONVENTIONAL SYSTEMS



The economic analysis covers only the time period 2008-2010 to reflect data collected for the most recent cropping system comparisons.

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Long term risks to flora and fauna unknown
Financial risks to local bodies unacceptable.
Financial risks to Landowners unacceptable.
Environmental effects are unacceptable







GE Free Aotearoa NZ



Fully support the precautionary approach to the land use of GMO's in the FNDC PPC 18 and WDC PPC 131 rules, policies and objectives.

Tēnā koutou, tēnā koutou, tēnā tātou katoa

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