



Submission GE Free NZ in Food and Environment proposed Waikato District Plan.



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Environment



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 safeguard the the Environment.
 - ❖ life supporting capacity of air, water, soil and ecosystems
- ❖ To avoid, mitigate adverse effects
- ❖ To meet the needs of future generations.

RMA 5



RMA responsibility once released **from HSNO.**

- 2A(1). The Organism is not a new Organism if-**
- (b) the organism is a genetically modified organism**
 - (i) an approval is granted under sec 38 to release an organism of the same taxonomic classification with the same ...modification.**
 - (ii) an approval....same genetic modification without controls.**

(2) An organism ceases to be a new organism when approval is given for release or release from containment

HSNO Amendment 2003.



RMA 3- Effects

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



Climate Change Storm Flooding



Waikato flooding



Erosion, Mercer



Tornado, Waihou

pWDP 2020 8B-GMO



Metservice and Stuff pictures

GE Free NZ in Food and Environment



Farmland flooding

Would a fence stop GE escape?

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



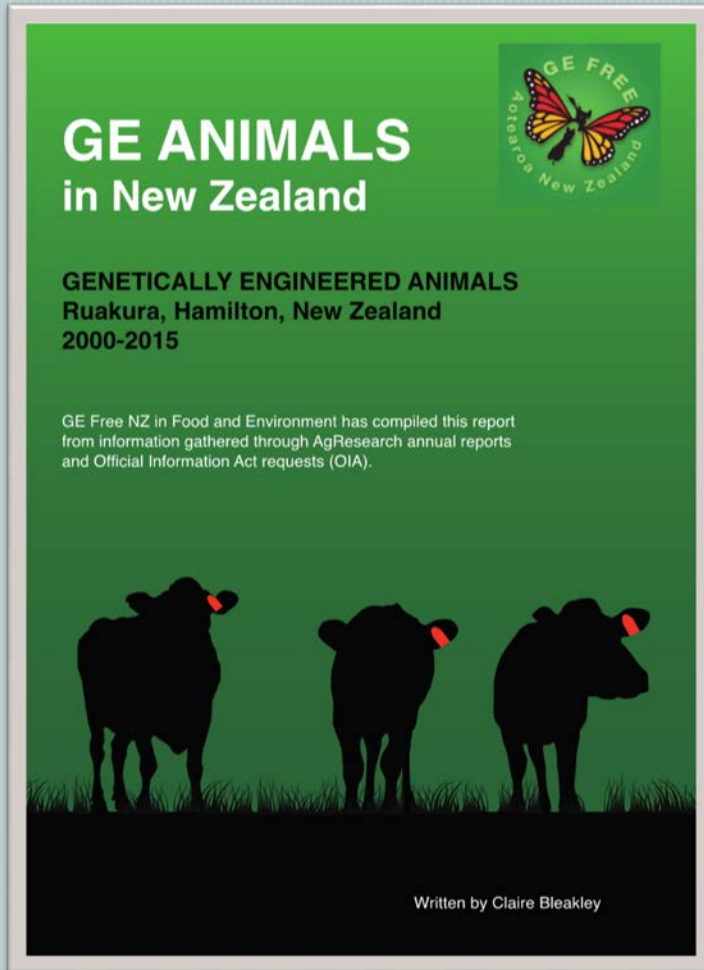
GMO contamination?



Whakamaru Pit GE sheep ashes (2014)



GE Animals in New Zealand



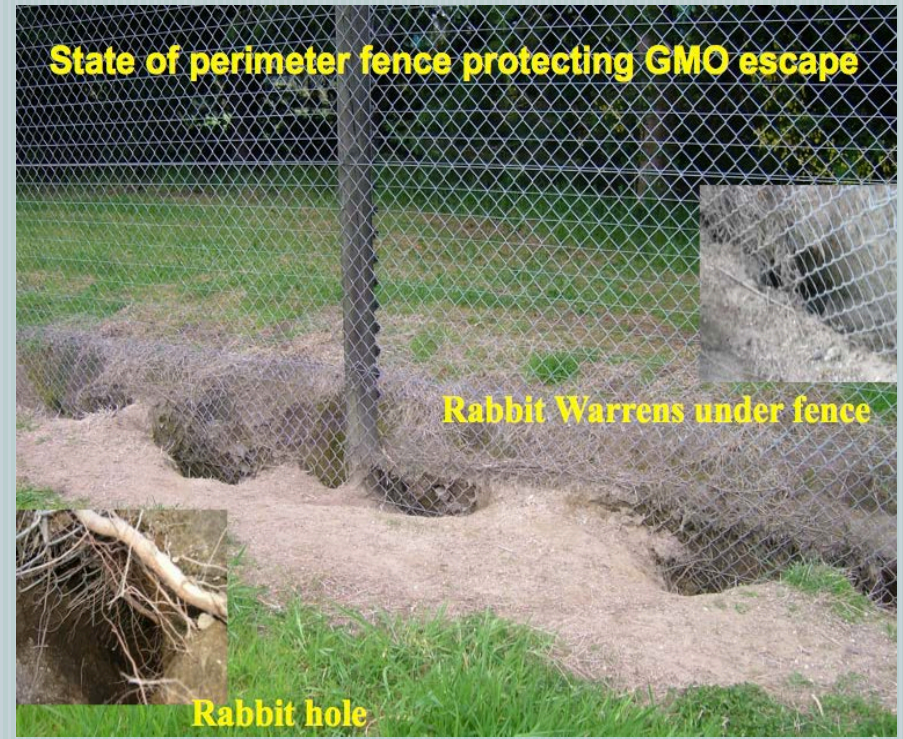
- ❖ The live birth rate 0 - 7%.
- ❖ Chronic illness,
- ❖ Sterility
- ❖ Sudden death
- ❖ Congenital deformities
- ❖ Transgenic protein not human similar.
- ❖ Life threatening reactions in human subjects.



Crown Research Institute Breaches.



Crop and Food Brassica Breach



Forest Research Institute (SCION) breach



RMA 3 –Adverse Permanent Effects

Conducted 10 years after GM corn commercialisation.



GMO + RoundUp

Seralini 2 year Feeding Study (2014)

- ❖ Severe liver and kidney damage
- ❖ Endocrine Tumours
- ❖ Pituitary Tumours

Monsanto 90-day feeding trial (2004)

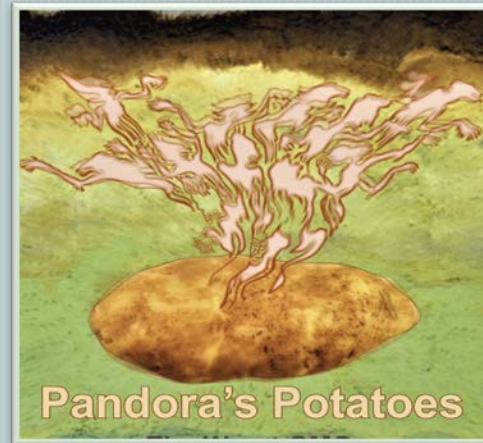
- ❖ Liver and kidney damage.

Not biologically meaningful

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.



RMA 3 – Long Term Cumulative Effects



**GM Mosquitos
GM Potatoes
Approved by
Regulators and it
was after release
the problems were
discovered.**

**GM Hornless
Cattle FDA
detected the
problems.**

2019



RMA 3 – Animal Unexpected Effects

Deformities in piglets



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



RMA 3 – Community effects

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

Fabian Tomasi



Alsa Cano



Increase in birth defects: maternal exposure to GE & pesticides (per 10,000)

- ❖ 1997 - 19.1:
- ❖ 2008 - 85.3:
- ❖ Limb reduction,
- ❖ Urogenital anomalies,
- ❖ Orofacial clefts, Ocular
- ❖ Heart conditions,
- ❖ CNS defects
- ❖ Spina bifida
- ❖ Childhood leukemia

Vazquez M & Nota C. (2010)



RMA 3 – Contamination effects

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

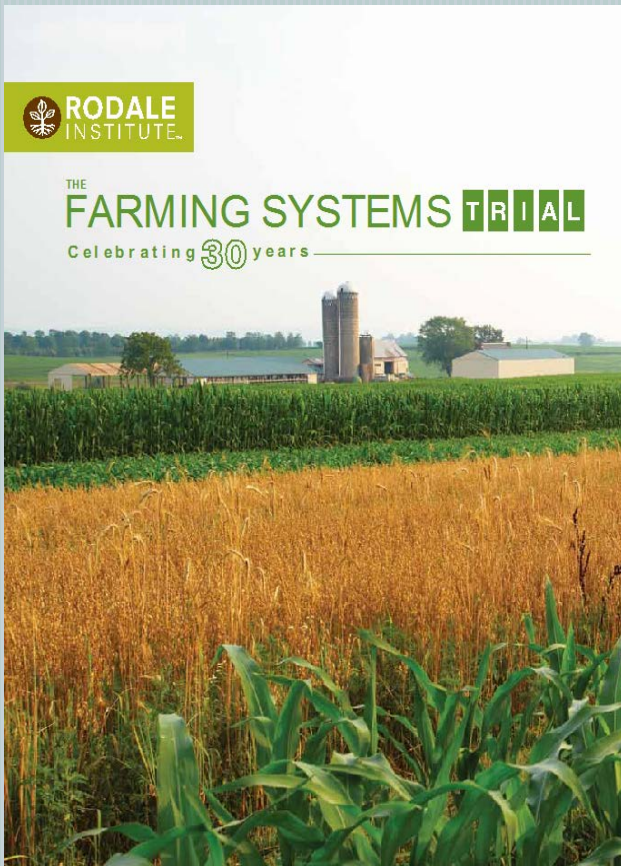


GM Contamination Organic farmer survey 2012



Precautionary Approach

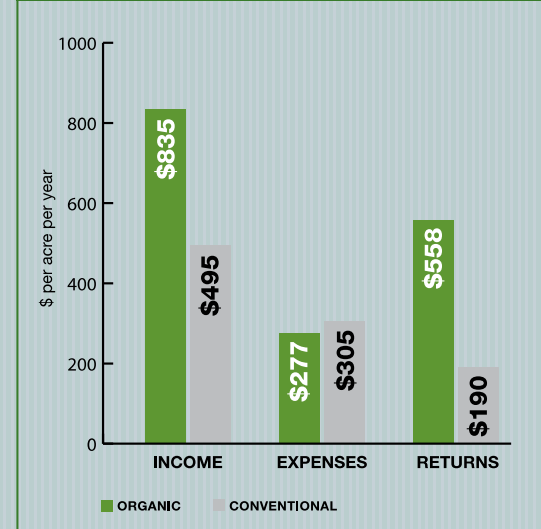
Organic can feed the World. Now let us get on with feeding the World **WELL**



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.



Summary



- ❖ **Maori whenua, tikanga and taonga unprotected**
- ❖ **Contamination risk to flora and fauna**
- ❖ **Financial risks to local bodies are unacceptable.**
- ❖ **Financial risks to Landowners unacceptable.**
- ❖ **Environmental risk effects are unacceptable**



GE Free Aotearoa NZ



Ask the WDP to adopt a precautionary approach to the land use of GMO's and place rules, policies and objectives in their plan.

Tēnā koutou, tēnā koutou, tēnā tātou katoa



References

Our submission refers to many references not recorded here.

Federated Farmers of New Zealand v Northland Regional Council - (ENV 2013 AKL 0001610) 12/5/2015 <http://www.gefree.org.nz/ge-free-court-actions/>

Food and Water Watch, Farmers pay price for GMO contamination, Issue Brief, March 2014,

Krüger M, Schrödl W, Pedersen Ib, Shehata AA (2014) Detection of Glyphosate in Malformed Piglets. *J Environ Anal Toxicol* 4: 230. doi: 10.4172/2161-0525.1000230

Vazquez M & Nota C. (2010) Report from the 1st NATIONAL MEETING OF PHYSICIANS IN THE CROP- SPRAYED TOWNS Faculty of Medical Sciences, National University of Cordoba. August 27th and 28th 2010, University Campus, Cordoba

Romano et al 2010. Prepubertal exposure to commercial formulation of the herbicide Glyphosate alters testosterone levels and testicular morphology.

Séralini G-E, Clair E, Mesnage R, Gress S, Defarge N, Malatesta M, Hennequin D. & de Vendômois J.S. (2014) Republished study: Long term toxicity of a Roundup herbicide and a Roundup-tolerant genetically modified maize *Environmental Sciences Europe*, 26:14

TESTBIOTECH (2013) High levels of residues from spraying with glyphosate found in soybeans in Argentina