

# GM field trials 1998-2010 in New Zealand

## Applications and ERMA Approvals

Organism	Operator	Application Code	Year	Submissions				Outcome (commercial or otherwise)	Cost to applicant (& to NZ taxpayer) for application	Location	Length of trial	Scale of trial	Breach/ Breach response	Who identified breach
				Total	For	Ag.	Other							
<b>Sugarbeet</b>	Kimihi Research Centre	GMF98004	1998	9	1	7	1	Nil.	Private sector	Lincoln	12 months	0.5 ha		
<b>Potatoes</b>	Crop and Food	GMF98007	1998	17	1	15	1	Nil thus far	\$3,167.77	Lincoln	5 years		Destruction of field trial site (1999) and unexplained volunteer plants (2002) New controls. No disciplinary action.	Community Volunteers
<b>Potatoes</b>	Crop and Food	GMF98008	1998	15	1	13	1	Nil thus far	\$3,212.77	Lincoln	5 years		Destruction of field trial site (1999) and unexplained volunteer plants (2002) New controls. No disciplinary action.	Community Volunteers and MAF
<b>Sheep</b> (Human alpha-1 antitrypsin (hAAT))	PPL Therapeutics	GMF98001	1999	30	19	9	2	Nil. Adverse reaction in subjects	Private sector	Whakamaru, Waikato	No time limit	144 ha; two flocks of max 5500 sheep		
<b>Petunia</b>	Crop and Food	GMF98002	1999	8	0	8	0	Nil thus far	\$2,563.78	Palmerston North	3 months	42m <sup>2</sup> -120 plants		
<b>Canola</b>	CropMark	IAG42	1996 R* 1999	Pre-ERMA. No public consultation				Nil thus far	Private sector	Pukeuri, North Otago	Post harvest monitoring until 2007	0.5 ha		
<b>Canola</b>	Bayer Crop Science	IAG43	1996 R* 1999	Pre-ERMA. No public consultation				Nil thus far	Private sector	Dromore, Canterbury and at St Andrews, South Canterbury	Post harvest monitoring until 2007	0.5 ha		
<b>Canola</b>	CropMark	IAG60	1997 R* 1999	Pre-ERMA. No public consultation				Nil thus far	Private sector	Hendley Block, Lincoln	Post harvest monitoring until 2008	0.36		

<b>Vaccine</b> (hydatids)	AgResearch	GMF98010	1999	5	2	0	3	Nil. Trial not conducted	\$2,513.32	Gracefield, Lower Hutt	No time limit	Vat fermentation		
<b>Maize</b> (herbicide resistance)	Pioneer NZ Ltd	GMF98005	1999	10	1	9	0	Nil. Trial not conducted	Private sector	Pukekohe	2 seasons	0.4 ha		
<b>Maize</b> (insect resistance)	Pioneer NZ Ltd	GMF98006	1999	9	1	8	0	Nil. Trial not conducted	Private sector	Pukekohe	2 seasons	0.4 ha		
<b>Cattle</b> (Human casein and lactoglobulin in milk)	AgResearch	GMF98009 Part I	1999	30	5	23	2	Nil thus far (lactoglobulin not viable). No current Activity.	\$15,892.02 (Parts I and II)	Ruakura, Hamilton	Expires when cattle alive in Nov. 2008 are dead	45 ha, max 200 cows		
<b>Trees</b> (Pinus radiata)	Carter Holt Harvey	GMF98011	1999	13	1	11	1	Nil. Trial not conducted	Private sector	Tokoroa and Rotorua	2.5 years	120 trees max		
<b>Salmon</b> (Chinook Salmon with anti-freeze protein and growth hormone)	King Salmon Co Ltd	GMD99003	1994 R* 2000	Pre-ERMA. No public consultation				Nil. commercial use. Trial terminated in 2002 due to deformities	Private sector but \$200,000 in public funds to reassess in 2000 <sup>1</sup>	Marlborough	No expiry date	Outside grow-out race-ways (40m x 3m x 1,3m)	Possible breach of gametes; GM fish disposed of at MDC landfill	Community Volunteers
<b>Multiple Plant Species</b> (Cress species, forage rape, swede, broccoli, broccoflower, cauliflower, cabbage, brussel sprouts, kale, turnip, chinese cabbage, wasabi)	Crop and Food	GMD01086	2000	Not notified				Ongoing	No charge to applicant	Lincoln	No expiry	Indoor trial (for GMF06001)		
<b>Sheep</b> (Human myostatin gene)	AgResearch	GMF99004	2000	80	3	77	0	Nil. Trial not conducted	\$84,978.60	Ruakura, Hamilton	5 yrs	45 ha, up to 100 sheep		
<b>Trees</b> (Pinus radiata)	Scion	GMF99001	2000	735	15	709	11	Nil as yet. No current activity	\$74,384.72	Rotorua	22 years	8000 m <sup>2</sup> , up to 330 trees	Fence Breach 2008 Site closed down. No disciplinary action. Approval still active.	Community Volunteers and Scion
<b>Trees</b> (Pinus radiata & Picea abies)	Scion	GMF99005	2000	735	15	709	11	Nil as yet. No current activity	\$67,582.45	Rotorua	11 years <sup>2</sup>	8000m <sup>2</sup> , up to 330 trees	Fence Breach 2008 Site closed down. No further action	Community Volunteers and Scion
<b>Cattle</b> (Myelin Basic Protein (hMBT))	AgResearch	GMF98009 Part II	2001	30	5	23	2	Nil thus far. (deformities, high mortality, failure to maintain pregnancy). No current activity	\$15,892.02 (Parts I and II)	Ruakura, Hamilton	Expires when all cattle alive on 23.5.10 are dead	45 ha, max 200 cows		

<sup>1</sup> Weaver, C.K. and J. Motion. 2002. Sabotage and subterfuge: public relations, democracy and genetic engineering in New Zealand. *Media, Culture & Society*.

<sup>2</sup> Picea Abies trees disposed of because they were stunted (10-20cm) in height and very unhealthy (ERMA response to Official Information Act request). In December 2009 the duration of the field test was extended for a further 8 years by ERMA in a decision which was not open for public consultation (ERMA).

<b>Brassica</b> (cauliflower, broccoli, forage kale)	Crop and Food	GMF06001	2001	959	17	941	1	Nil thus far. Trial closed down due to breach of controls	\$39,375 <b>Ca\$389,000 (cost to ERMA)</b>	Lincoln	10 years	0.4 ha	Breach of Controls (2008) Clean-up Required. No disciplinary action	Community Volunteers
<b>Cattle</b> (GM, Cloning) (Lactoferrin follicle stimulating hormone)	AgResearch	GMD02028	2002	863	No break down data			Nil. Deformities, high mortality, failure to maintain pregnancy. No current activity	\$107,043.13	Ruakura, Hamilton	Due to expire: 30.3.10, extended until 30.9.12	45 ha		
<b>Onions</b> (herbicide resistant)	Crop and Food	GMF03001	2003	1933	7	1915	11	Nil. Failure to perform. Closed down early.	ca \$110,000	Lincoln	10 years	Max 2,700 plants at any one time		
<b>Allium</b> (garlic, onion, leek, spring onion)	Crop and Food	GMF06002	2008	124	5	117	2	Nil. Trial not commenced	\$39,375 <b>\$400,641.23 (cost to ERMA)</b>	Lincoln	10 yrs	2.5 ha		
<b>Livestock</b> (cattle, sheep, goats. Human proteins in milk)	AgResearch	ERMA200223	2010	1545	4	1535	6	Ongoing	\$67,500 <b>\$266,173.95 (cost to ERMA)</b>	Ruakura, Hamilton	20 yrs	45 ha		
<b>Trees</b> (Radiata pine, multiple traits)	Scion	ERMA200479	2010	234	6	217	11	Not yet commenced	\$39,375	Rotorua (further undisclosed sites may be approved)	25 yrs	4 ha. No limit on tree #s. Applicants say up to 4000		
<b>Apples</b>	Hortresearch	GMF98003	1998	5	0	5	0	Application withdrawn before hearing	\$2,812.50	Mt Albert, Auckland		168m <sup>2</sup> 444 plants		
<b>Wheat</b>	Crop and Food, Monsanto	GMF99003	1999	1410	0	1349	61	Application withdrawn before hearing	Private sector	Lincoln		2,5 acres		

<b>Livestock</b> (cattle, sheep, deer, goat. Human genes to express)	AgResearch	GMD01194	2001	ca 400	No break down Data			Application withdrawn before hearing	\$66,286.57	Ruakura, Hamilton		45 ha, up to 200 cattle		
<b>Multiple Animal Species</b> (cattle, buffalo, sheep, pigs, goats, llamas, alpacas, deer and horses)	AgResearch	GMD07074 GMD08012 GMC07012 GMF07001	2008	1760	14	1744	2	Application withdrawn Before hearing	\$56,250 <b>\$717,236.42</b> (cost to <b>ERMA-</b> <b>including</b> <b>\$347,511.16</b> <b>legal costs)</b>	Ruakura. Intention to establish other unidentified locations in NZ (Waikato, Taranaki, Canterbury & Southland).				

## Notes

### R\* Reassessed

This table covers all field trial and outdoor experimental activities approved by ERMA. The last four applications listed in italics were withdrawn prior to full assessment and decision by ERMA.

**Cost of applications to taxpayer:** With regard to total cost to the New Zealand taxpayer for regulatory assessment of each application, ERMA states: “The full cost may not necessarily rest with the applicant” (Official Information Act request, 1 April 2011). For example the cost to ERMA for the application process of a GMO field test and outdoor development between 2007-2010 was \$400,600, the cost to ERMA for the application process of one GMO notified conditional release during the same period was \$197,300 (ERMA’s Annual Report 2010, p.23). These costs identified do not include the cost of developing GMOs.

**Breaches of containment:** In addition to officially recognized breaches of containment, monitoring by community groups has identified a lack of rigour employed in the disposal of carcasses and waste genetic material (in particular in the trial run by PPL Therapeutics, past and current practices at Ruakura and MAF’s allowing of GM contaminated soil from field trial GMF06001 (Brassicac) to be dumped at the Kate Valley Landfill. There has also been documented evidence of compromised security at sites due to flooding, and potential for compromise from earthquakes, erosion and (given the high abortion rate experienced by GM animals) transgenic material being carried off site by hawks and other predators and scavengers.