

Mutant cows die in GM trial

By [Eloise Gibson](#)

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Genetically modified cows were born with ovaries that grew so large they caused ruptures and killed the animals.

The bungled experiment happened during a study by AgResearch scientists at Ruakura, Hamilton, to find human fertility treatments through GM cows' milk.

AgResearch is studying tissue from one of three dead calves to try to find out what made the ovaries grow up to the size of tennis balls rather than the usual thumbnail-size.



Photo / Hawke's Bay Today

Details of the deaths – in veterinary reports released to the Weekend Herald under the Official Information Act – have reignited debate over the ethics of GM trials on animals.

AgResearch's applied technologies group manager, Dr Jimmy Suttie, said he did not see the deaths as a "big deal", and they were part of the learning process for scientists.

But GE-Free NZ spokesman Jon Carapiet said details of the calf trial showed the animal welfare committee overseeing AgResearch's work was "miles away from the ethics and values of the community".

The calves died last year, aged six months. They were formed when human genetic code injected into a cow cell was added to an egg from a cow's ovary and put into a cow's uterus.

The scientists hoped that the genetic code, a human follicle stimulating hormone (FSH), would enable the cows that were produced to produce milk containing compounds that could be used as a human fertility treatment.

Under permits issued by the Environmental Risk Management Authority last month, AgResearch can put human genes into goats, sheep and cows for 20 years to see if the animals produce human proteins in their milk.

The proteins could eventually be used to treat human disorders.

Anti-GM groups said the cost to animal welfare was too high, citing cases of aborted and deformed fetuses, deformed calves and respiratory conditions among animals bred at Ruakura.

The Official Information Act documents show a Ministry of Agriculture and Forestry (MAF) investigation found deformities and respiratory problems among animals at the facility – something AgResearch had been open about – but said that was a foreseeable by-product of the project.

Overall, the investigator found cows were better cared for by vets at Ruakura than they would be on a standard dairy farm.

Scientists noticed that four calves carrying the FSH gene grew more quickly than their clone sister, which did not have the gene.

The FSH calves had bigger abdomens and thicker necks but seemed otherwise healthy, apart from one that easily grew short of breath, said a vet's report.

Dr Suttie said the abnormalities were reported to the animal ethics committee, which told the company to monitor the calves.

Tests five months later found three of the four calves had abnormally large ovaries.

When the calves were six months old, one died suddenly of a haemorrhage to her uterine artery, probably because of stretching and distortion caused by her deformed ovaries.

Five days later, a second calf died, after her ovary became twisted and separated from her uterus.

The third calf with over-sized ovaries was killed the same day so scientists could study her tissue.

Dr Suttie said the root of the trouble was that the human FSH genes had affected the whole calf and not the mammary glands only, as was intended – a problem that did not show up in trials on mice.

"This was not intended to happen. But, bluntly, this is what research is all about."

Emails between AgResearch and MAF reveal Agriculture Minister David Carter sought more information about animal welfare when he learned of the calves deaths last year.

He said yesterday that he was satisfied with AgResearch's response.

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