

**Testimony of Klaus Ammann at the occasion of his cross-examination through Greenpeace, on invitation of the Royal Commission on Genetic Modification of New Zealand, Sept. 11, 2001 in Wellington, New Zealand**

**Kaatz's bees** – A horizontal gene transfer from GM rapeseed to bacteria in the gut of a bee has occurred posing serious issues about dangerous transfers of GM material  
The Reality that the Royal Commission found:

Various submitters described a case of apparent horizontal gene transfer of a herbicide resistance gene into the intestinal microflora of honeybees. The Pacific Institute of Resource Management [IP84] said:

The German Television station ZDF reported on Sunday May 21, 2000 in "planet e" that a German researcher found a gene transfer from genetically engineered rapeseed to bacteria and fungi in the gut of honeybees. Professor Hans-Heinrich Kaatz from the Institut für Bienenkunde (Institute for Bee Research) at the University of Jena experimented during the last three years with honeybees on an experimental field with transgenic rapeseed in Saxony, Germany.

The rapeseed was engineered to resist the herbicide glufosinate. Professor Kaatz built nets in the field with the transgenic rapeseed and let the bees fly freely within the net. At the beehives, he installed pollen traps in order to sample the pollen loads from the bees' hind legs as they entered the hive. This pollen was fed to young honeybees in the laboratory. Professor Kaatz then took the intestine out of the young bees and spread the contents on growth medium to grow the microorganisms. He probed the microorganisms for the pat-gene, the gene that confers resistance to glufosinate. In some bacteria and also in a yeast he found the pat-gene. This indicates that the gene from the genetically engineered rapeseed was transferred in the bee's gut to the microbes.

Dr Beatrix Tappeser described this result as a "clear indication of horizontal transfer which has been, and is still, characterised as highly improbable". This case became a rallying point around which the discussions of horizontal gene transfer flowed. However Professor Klaus Ammann suggested that the results described were far from conclusive. Professor Ammann stated that he knew Professor Kaatz's work well and was "one of the committee members to revise his projects". He told the Commission that the research was a long way from being completed and had never been published in a scientific peer-reviewed journal, although Dr Tappeser stated, "Professor Kaatz had submitted his research to the science journal, Nature, but they had refused to accept it". Professor Ammann also considered that there was "no proof that this ... gene is not coming from normal sources". [added 2008 by K. Ammann: the other possibility is that this gene was detected due to the presence of a very widespread soil organism *Streptomyces* containing the same gene]. Under cross-examination from Greenpeace [IP82], Professor Ammann denied that horizontal gene transfer had ever been shown to be a significant risk:

There have been at least 100 experiments conducted to prove that there is horizontal gene transfer from a higher organism like [a] flowering plant to bacteria, and it has not been proven. And, I must say I am appalled by Greenpeace Europe who, on the basis of two lines in an announcement of the German TV channel, just made a big story out of it. I think that's not the way we should proceed ... I can understand concerns, but I cannot understand blowing up a case which has not been scientifically proven. ... I think everybody in this room should be concerned about horizontal gene transfer, but it just simply doesn't occur, you know. And, in many cases, where it would be really interesting

to know it occurs, there have been done lots of experiments and nothing has been proven, nothing. The scientific world awaits the publication of the final results of Professor Kaatz's research with interest. Until then, this remains an unproven case of horizontal gene transfer between a plant and intestinal microorganisms.