



Proved Risk of GM Peas

A decade-long project on pest-resistant peas was abandoned after an immune response study demonstrated that mice fed with such peas suffered adverse reactions and lung inflammation. The work strongly supports the need for case specific examination of genetically modified plants and the importance of science in decision making related to the cultivation of GM crops.

Genetically modified plants (GMP) are a growing issue of concern for science and the public. Multiple societal, ethical, economic and other factors are considered in evaluating the potential benefits and risks of this technology.

But in the decision making related to GMP, the major role should be played by sound scientific knowledge built on effective scientific assessments of the health and the environmental impacts of each genetically developed plant.

The recent findings of a risk assessment study on GM field peas in Australia emphasise the importance of strict regulations on health and safety requirements for the commercial release of genetically modified crops.

The project in question has been carried out for the last 10 years by researchers at the Australian Commonwealth Scientific & Industrial Research Organisation (CSIRO). The scientists and their collaborators were working on genetically modified peas that can resist to the attack by fungi and the pea weevil. The latter alone can cause annual losses of up to 30% in the 100 million dollars field pea industry.

Since beans, unlike peas, are not attacked by pea weevil the scientists managed to identify, extract and transfer the bean gene to the peas. This gene produces the protective protein causing weevil larvae to starve. Subsequent field trials showed that such GM peas were 99,5% resistant to pea weevils.

Such GM peas also underwent a number of tests during development, including laboratory tests, performance studies in the field, gene flow studies, and feeding trials, but the regulations did not allow their commercial release unless it satisfied all health and safety requirements one of which is detailed immune response tests performed on mice.

The results of the latter requirement showed evidence of an immune reaction in mice fed with GM peas after two weeks with the response increasing after four weeks. The reaction in mice was evident by inflammation in the lungs and increased serum antibodies. These findings severely put in question the safety issues of GM peas and caused the immediate abandonment of further research and the disposal of all pea plants produced during the project.

The case of Australian GM peas emphasises the importance of case-by-case evaluation of GM plants and the important role science can play in decision-making related to the release of GM crops.

For more information: <http://www.csiro.au/csiro/content/standard/pssp,,.html>

Theme(s): Biotechnology