

## Taking Precautions With Genetic Engineering

The Society's Executive has recently addressed the topic of genetic engineering.

Our concerns centre on the 'precautionary principle' and how this is applied. Specifically, we see two issues: that of the process for considering GE applications and that of the scientific work relating to the environmental effects of GMO's (genetically modified organisms).

At present all applications for work on, or release of, GMO's into New Zealand are processed through the Environmental Risk Management Authority (ERMA). We believe that it is very important for ERMA to apply the 'precautionary approach' in assessing applications. Issues such as 'Corngate' and the tamarillo trial ('Tamsam') in Northland need to be properly addressed and potential threats to the environment avoided. This applies particularly to any 'contained field trial' experimentation. What does 'contained' mean in situations where millions of bacteria are present and are able to move across boundaries easily?

Of even greater concern is the lack of scientific work on the potential environmental effects of GMO's. There seems to be very little understanding of the pathways that may occur when a GMO is either eaten by another organism or when it decays naturally in the soil or water.

The huge importance of bacteria in these breakdown processes seems to be little understood. The finding that 'free DNA' does not survive for long in the soil — say up to 28 days — seems hardly surprising, when zillions of bacteria are

present to gobble it up. Since bacteria are almost all pervading in nature, Forest and Bird is naturally concerned about where any genetically modified material ends up.

Then there is the issue of horizontal gene transfer (HGT) — that is the transfer of genetic material from one species to another (gene-hopping). A few years ago,

there was scant support in the scientific community for the possibility of HGT occurring, but more recently there has been an acceptance that not only does it occur, but that it occurs far more frequently than at first thought.

So why is the Society concerned?

Consider that a modified gene is incorporated into a crop and that this gene gives resistance to one or more herbicides. What happens if that gene jumps into an environmental weed? This weed would then not be controlled by the herbicide and could become a 'superweed' threatening our native forest or wetland. Or a pest could pick up a gene making it more resistant to pesticides. Or the gene for sterility, already being investigated for pines transfers to kauri or kahikatea.

You may think that these, like the toad genes in potato, are somewhat scary. Our worry is that we don't know what can happen because the science is in its infancy.

Genetic engineering has the potential for many beneficial applications, but also the potential for some disastrous environmental consequences. That is why the Society is promoting the 'precautionary principle'. We are however pleased to see that the Foundation for Research, Science and Technology (FoRST) is now funding research into some of the environmental issues surrounding genetic engineering. In the meantime — tread carefully!

Dr PETER MADDISON,  
Deputy National President

### World Trade and Nature

At the time of writing, our National President, Dr Gerry McSweeney, is away in Cancun, Mexico, as part of the New Zealand Government delegation to the World Trade Organisation conference.

The invitation from the New Zealand Government recognises that trade policy affects and can be important for the protection for nature.

Forest and Bird's policy is to ensure that trade and investment treaties support and do not undermine New Zealand's ability to protect our unique native plants, animals and natural features.

Gerry's attendance at the WTO Ministerial is an important step towards ensuring that international trade works better for the environment.

— DR PETER MADDISON

### Royal Forest and Bird Protection Society of New Zealand Inc. (Founded 1923)

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