

Questions and Answers on Coexistence

What exactly is coexistence?

Coexistence refers to a state where different primary production systems, including non-GM systems such as organic production, conventional agriculture and GM systems can each contribute in their own way to the overall benefit of New Zealand. Coexistence does not mean that there would necessarily be widespread release of GM organisms, but it does mean that each application would be treated on a case-by-case basis to preserve opportunities for all New Zealanders.

Coexistence is not a new concept. It has essentially been occurring for many years between different non-GM production systems, eg the organics industry working smoothly alongside conventional production.

Why is the principle of coexistence between GM and non-GM crops so important?

Coexistence underpins the Government's policy of proceeding with caution with GM while preserving opportunities to ensure that different primary production systems, including non-GM systems such as organic production and conventional agriculture, can each contribute effectively in their own way to benefit New Zealand.

This is in line with recommendations from the Royal Commission on Genetic Modification that stated.

"Our recommendations aim to encourage the coexistence of all forms of agriculture. The different production systems should not be seen as being in opposition to each other, but rather as contributing in their own ways to the overall benefit of New Zealand"

How could coexistence work?

Applications to release GM organisms would be considered case-by-case. This is because the risks associated with using GM organisms depend on the characteristics of the organism, and where and how it is used.

Any possible effects the organism may have beyond the operation in which it is used would be considered during the assessment and, where appropriate, conditions could be imposed on users of the GM organism by ERMA in order to ensure that different production systems can coexist. Conditions could include registering plantings of GM crops on a database, requiring separation distances from other compatible crops (buffer zones), and details of monitoring required as well as specific post-harvest handling or storage requirements for produce. If ERMA determined that the risks could not be appropriately managed it could not approve an application.

It is important to remember that coexistence does not mean that all forms of each production system must be occurring simultaneously or adjacent to one another.

How could the regulatory environment ensure that coexistence would be effective?

In February the Government announced changes to the Hazardous Substances and New Organisms Act to improve the way it works for decisions on organisms that are new to New Zealand.

One of the critical changes includes a new category of "conditional release". This allows ERMA to impose conditions on any releases to manage the risk of a new organism to an acceptable level. For example, conditions could be imposed to prevent an organism moving into the wider environment. ERMA could also specify where and how organisms are used.

In practice, there could be different approaches to achieving coexistence for different GM organisms ranging from vaccines to animals to plants. For example, large animals can be contained by fences and are able to be electronically "tagged" so that they can be identified and retrieved should they escape, or to prevent entry into the food chain if desired. With plants, controls could be imposed to prevent or minimise the spread of pollen (as currently happens in certified seed production). The extent to which pollen movement needed to be managed would be addressed on a case by case basis. ERMA could decline an application for release if it considered that the risks resulting from the spread of pollen could not be adequately managed.

Managing pollen is usually a species-specific issue. For example, male-sterile lines of GM crops or crops that are harvested before they flower (e.g. onions or carrots) will not release large amounts of pollen to the environment. Non-compatible crops cannot cross-pollinate one another (e.g. GM potatoes being grown alongside non-GM peas) and so would not pose a marketing concern from a pollination perspective. Buffer zones could be designed to minimise any cross-pollination between unmodified crops and compatible GM crops. Conditions can also be imposed on when crops are planted and harvested.

While a number of tools are available to manage the effects of pollen dispersal, the key to effective coexistence of GM and non-GM production would be a cautious case-by-case assessment of the risks, costs and benefits of each specific application of using a GM organism. This is the approach taken by ERMA.

How could you ensure that farmers who grow GM material would be careful and comply with all their conditions?

It must be remembered that co-existence is not a new concept and different non-GM production systems (e.g. organic, integrated pest management and conventional farming) have operated alongside one another successfully here for many years.

Any conditions imposed by ERMA on the production of GM crops would be enforced by MAF.

In addition to this, the government has recently agreed to enhance the liability regime under the HSNO Act to further encourage compliance with the regulatory regime. These include:

- strict civil liability for harm caused by those who are in breach of the HSNO Act. In these cases the person who has been harmed would not have to prove negligence when taking legal action to seek compensation, and
- civil penalties to enable the State to bring civil proceedings to have a penalty imposed by the Court for breaching the HSNO Act, whether or not the breach has resulted in any harm to individuals, the environment or public safety.

For activities that comply with the HSNO Act, the general law relating to liability would continue to apply.

What effect would the introduction of GM crops have on the organic sector?

Organic producers feel they would be financially disadvantaged by the release of any GM crops grown in New Zealand. Most countries growing GM crops, however, also have expanding areas of organic production. For example, Argentina is the world's second-largest producer of GM crops and has the second-largest area of certified organic production. Argentina's main market for both types of crops is the European Union.

The impacts on the organic sector would be taken into account by ERMA when evaluating any application to release a GM organism in New Zealand.

Could interested parties such as neighbouring properties make submissions to ERMA about a particular proposal?

Yes. ERMA's process allows anyone, including individuals, iwi, companies or organisations, to make a submission about any application being considered. This ensures that all relevant issues, including the economic impacts both for individuals, industry and the country as a whole, are considered before a decision is made.

Beekeepers, in particular, are very concerned about the impact of the release of GM flowering plants on bee products and markets. How would the regulations mitigate against unwanted GM material in bee products?

ERMA would assess the risks, costs and benefits of each application, including the impacts on bee products and markets. ERMA would reject an application if the costs and risks exceeded the benefits, or it could impose conditions on releases where appropriate, in order to mitigate impacts on the beekeeping sector. For instance, it could provide for a geographic concentration of planted areas that would enable beekeepers to locate their hives away from GM crops, or require growers to prevent flowering where it was not essential for the intended use. ERMA would be able to provide information about the location of any conditionally-released GM crops so that beekeepers could take any additional management measures they wished to take.

What GM organisms would New Zealand be most likely to use and when?

The most likely use for GM organisms in primary production in New Zealand in the short term is the ongoing contained use of GM animals for research or pharmaceutical production,

and GM plants in contained field trials to determine the crops' potential. The mix of crops likely to be considered for use in New Zealand is very different from the strong emphasis overseas on GM commodity crops (e.g. GM soybeans, GM corn) because our climate, market needs and crop industry are different.

After the constraint on applications to ERMA for releases to the environment expires in October 2003 there could be applications to ERMA for further trials and evaluation (rather than immediate commercial release) of GM onions and GM potatoes modified for herbicide tolerance or insect resistance, respectively. Medicines, animal vaccines and pasture species are other areas where there could be applications made for release of organisms containing GM material.