



17 February 2025

Committee Secretariat
Health Committee
Parliament Buildings
Wellington
Via email: he@parliament.govt.nz

Tēnā koe

Re: Gene Technology Bill

Thank you for the opportunity to submit on the Gene Technology Bill.

We wish to verbally provide a submission to the Health Committee and are happy to answer any questions the committee may have.

About Apiculture New Zealand

Apiculture New Zealand (ApiNZ) is the national body representing the apiculture industry in New Zealand. It covers the full range of sectors, from beekeepers to honey exporters, packers and suppliers.

ApiNZ aims to support and deliver benefits to the New Zealand apiculture industry by supporting a thriving long-term future for New Zealand honeybee products and services, one that is founded on a healthy bee population, and an international reputation for quality, premium honeys.

The New Zealand apiculture industry has grown strongly over the past 20 years developing into a multi-million-dollar export sector (\$419 m as at 30 June 2024), largely due to the growth and investment into premium honeys like mānuka honey.

The sector has over 8000 registered beekeepers and also plays a critical role in providing pollination services for agriculture, seed and horticulture sectors.

Apiculture New Zealand acknowledges that has a range of views on the use of gene technology. Some are supportive, some are opposed, many have not engaged given the timing of the submission falls in the middle of the busy honey season.

Executive summary

Apiculture New Zealand can see that the environmental release of organisms bred using genetic technologies has potential benefits for our sector, particularly in relation to new advancements to manage pests and diseases, like the varroa mite and wasps. However, gene technology also presents significant risks to ecosystems, biosecurity, market access and trade. This has not been well considered in the Gene Technology Bill, and it is critical that the regulator is appropriately tasked to assess and manage these risks.

We recommend that the Government take a very cautious approach and undertake more rigorous analysis of how all primary sector participants including apiculture may be affected by the reform. More specifically, we believe that the Government should put aside those aspects of the bill focused on outdoor use of GMOs for later parliamentary consideration, while the way is cleared for other uses [medical, etc]. This would allow time not only for the economic and risk analysis to be completed, but also the key discussions that need to occur and that have been called for by the primary sector.

Through our conversations with members, input from our key science and consumer-related focus groups, we have established the following key issues for our sector.

Main points from our submission include:

1. General concerns

- **Lack of consultation and consideration of the impact of this technology on the honey and bee sector**
- **The need to define risk tiers more clearly**
- **The need for an independent regulator**

2. Critical issues for the apiculture sector

- **Risks to consumer confidence and importance of GMO-free brand**
- **Risks of Potential GMO contamination**
- **Risks to bee health and numbers**
- **Māori view**

We set out these concerns in more detail over the page.

1. General Concerns

1.1 Lack of Consultation and Consideration

The purpose of this Bill is “to enable the safe use of gene technologies and regulated organisms by managing their risks to a) the health and safety of people; and b) the environment”.

The “environment” is defined in the Bill (clause 7) as including “ecosystems and their constituent parts” and “natural and physical resources”. Bees, given their role as pollinators, are an essential and important part of many ecosystems within New Zealand and are a critical natural resource.

Given the fundamental importance of bees to our natural environment and to many different types of industries, and the implications that the Bill will have for the apiculture sector, we were surprised to see that our sector had not been included in the [Industry Focus Group](#) set-up to provide advice to MBIE on “gene technology regulation impact focussing on trade, market access (global regulations), consumer perceptions, New Zealand branding, competitiveness in the global market, commercial and economic impact”.

The lack of apiculture representation and input at this early stage has been a missed opportunity in shaping this legislation, given the unique nature of bees as key pollinators critical to food production. This points to the need for the Government to set aside the provisions of the Bill governing the outdoor use of GMOs for now, so that it can ensure that proper consultation and analysis can be undertaken. We would also like to add our disappointment to the short timeframe given to respond to the Bill with the deadline in the middle of the honey season.

We request that ApiNZ be consulted with on any secondary legislation that relates to the environmental release of any GM crops or any other aspect of the new regime that may impact bees or the apiculture industry.

1.2 Need to define risk tiers more clearly

Under the Bill, certain activities can be made 'exempt' and 'non-notifiable'. We are concerned about the limited guidance currently available as to what kinds of activities will meet the 'not distinguishable', 'minimal-risk' or 'very low risk' thresholds. While further guidance might be provided in secondary legislation, we believe it is important that these thresholds are defined in the primary legislation and are defined with reference to specific types of activities. This is because:

- **the risks relating to the release of GMO crops are very different from (for example) the risks relating to the genetic modification of agricultural animals;**
- **certainty/clarity is required at this early stage for the public to have sufficient assurance about how the Bill will play out in specific circumstances; and**
- **the secondary legislation is unlikely to be subject to the same level of scrutiny as primary legislation.**

We also think it is critical that the primary legislation clearly states that all claims relating to risk and safety will be subject to rigorous scrutiny.

1.3 The need for regulatory independence under the Bill

The third area of concern about the Bill relates to a lack of independence in regulatory oversight. We are concerned that the Bill allows the Government to change the regulator's decision-making parameters. While clause 111(1)(a) of the Bill requires the regulator to act independently of the EPA and the Minister, clause 111(1)(b) of the Bill provides that the regulator's functions, duties and powers are subject to "general policy directions given by the Minister". This means that the Minister can intervene if the regulator acts contrary to the Minister's policy objectives. While clause 111(2) limits the Minister's power to an extent, that limitation does not go far enough.

The Minister can still limit the Regulator's ability to make independent decisions with non-specific policy directions. As such, we believe the regulatory model established by the Bill is not an independent one and we are concerned that this could open New Zealand up to overseas companies taking advantage of New Zealand's lax regulations.

We believe the regulator should be a totally independent statutory officer within the Ministry of Business, Innovation and Employment (MBIE) or the Environmental Protection Authority (EPA).

2. Critical issues for the apiculture sector

ApiNZ acknowledges the benefits that could be attained through amendments to legislation around genetic engineering outside of the laboratory, particularly in relation to new advancements to manage pests and diseases, like the varroa mite and wasps.

However, the Bill has raised several questions and concerns among ApiNZ members, notably around:

- **Risks to consumer confidence and importance of GMO-free brand**
- **Risks of potential GMO contamination of honey and other bee products**
- **Risks to bee health and numbers**
- **Māori view**

2.1 Risks to consumer confidence and the importance of the GMO-free brand to the apiculture industry

New Zealand's honey export industry, as with many primary sector industries, has a strong GMO-free brand status.

Many consumers want natural (GMO-free) products. Our GMO-free status is a marketing advantage which is widely referred to by New Zealand honey exporters. The GMO status is particularly important to organic honey producers. Many in the apiculture industry are worried about the risk of losing our competitive advantage with consumers as a result of the proposed legislation.

A [2024 Master's thesis](#) on consumers attitudes towards GM foods in China found that 0.0% of respondents think that GM food is safe, 18.8% think that GM food may be safe, 50.4% think that it may not be safe, 20.4% think that it is not safe, and 10.4% don't know whether GM food is safe or not.

The thesis includes a useful table on page 7 outlining results from 20 prior studies - % of consumers 'opposed' to GMO foods ranged from 11% - 66.8%.

2.1.1 Ability to stay GMO-free if desired

During the first reading of the Gene Technology Bill in Parliament, the Government advised that gene technology is widely used in New Zealand's key overseas markets and that growers who want to remain GMO-free can still do so. However, this is challenging for our sector as honey bees are by definition free range and bees can never be excluded from obtaining honey, pollen and propolis resources from any commercially produced outdoor crop.

In its 'gene technology media pack', MBIE responded to the concern that genetically modified crops, if allowed outside the laboratory, would contaminate crops growing around them, stating that, *"The gene technology regulator can apply conditions to the licence to manage the risks. In this example the regulator may require a boundary or a particular distance to be applied to the perimeter of the GM crop (similar to conditions currently imposed on use of sprays). Industry bodies will ensure they have suitable assurance programmes (which will not be overseen/regulated by the gene technology regulator)."*

However, MBIE's answer does not alleviate our concerns. We would need to have certainty that the risks are well-managed in considering the honey and bee sector. For example, under the MBIE scenario, the boundaries would need to take into account the flight path of honey bees. The average distance a foraging honey bee flies from the hive is 2-5km but bees have been known to fly as far as 10km in search of food. In order to have confidence that the release of genetically modified crops would not result in contamination of bee products, those sorts of boundaries and perimeters would need to be a basic requirement of licences and other authorisations granted under the Bill.

2.1.2 Economic impact of testing requirements

Additionally, we are concerned that consideration may not have been given to any labelling/testing regulations introduced for GMO content in foods. This is relevant for our sector. For example, the European Union (our third largest honey export market), maintains a zero-tolerance policy for GMO imports. Additional testing requirements to prove products are GMO-free could mean extra costs for exporter.

We note that the Ministry for Foreign Affairs and Trade (MFAT) has outlined its concerns about implications for international trade in [the regulatory impact statement](#) it prepared on the Bill. They advise that *"the regulator should be required to consider trade and market access risks in assessing organisms for environmental release. This is due to the complex assurance processes for gene technology in key export markets, and the unpredictable nature of the international trading environment where gene technology has been historically controversial."*

We agree with MFAT's statement and recommend that trade and market access risks be added to the factors that the regulator is required to consider when assessing organisms for environmental release. To pass the Bill without those considerations in it would be inconsistent with the coalition Government's commitment to "reducing regulatory barriers for industry and increasing the value of New Zealand exports" ([Govt consulting on cutting red tape for exporters | Beehive.govt.nz](#)).

2.2 Risks of potential GMO contamination of honey and other bee products

2.2.1 Risks to pollinator activity

From an apiculture perspective, the release of GMO crops into the environment poses three key risks:

- **The risk of transfer of pollen from GMO crops to non-GMO crops by pollinating insects.**
- **The risk that the genetic modification of the crop results in the crop ceasing to be a food source for honey bees or becoming less attractive as a food source for honey bees.**
- **The risk that if honey containing nectar or pollen collected from GMO crops cannot be considered (or marketed as) GMO-free in New Zealand and/or its major export markets.**

According to MBIE's information regarding agricultural crops, the Government expects that:

"GM crops for environmental release will be assessed for risk and if they require a full assessment then there will be a public consultation before the regulator is satisfied the risks can be managed and the regulator can issue the licence."

This statement does not provide enough reassurance to ensure all risks including contamination are appropriately managed. We strongly recommend that:

- **It be mandatory for all GM crops for environmental release to undertake a full assessment and public consultation, at a minimum.**
- **We be consulted as a matter of course in such consultation processes.**
- **The following risks be assessed as a basic part of the statutory assessment process:**
 - **the risk of contamination of honey and bee products if bees collected pollen and other materials from genetically modified plants ***
 - **the risk of cross-pollination of non-genetically modified crops by pollen from genetically modified plants (Noting that there are many other pollinators besides honey bees that could be moving pollen around.)**

**Honey is produced from the nectar of plants and is not exposed to artificial manipulation in a laboratory. Pollen grains are the only component of honey in which genetically modified proteins might be found.*

We also refer to the two examples provided in the background material released by MBIE. This information provided names both wilding pine (often used by bees for propolis) and white clover as two crops that could benefit from genetic modification. In relation to bees we specifically address the white clover crops.

White clover example

In the case of the white clover example, MBIE highlighted the potential to reduce methane emissions through genetically modified white clover. While our sector can see the benefits of this in relation to the dairy industry, there is no reference on how this could impact bee pollination or honey production. There are very few examples of these crops being produced internationally that can be drawn on. The majority of international crops that are genetically modified are wind-pollinated or self-pollinated.

Clover honey is an important honey crop for New Zealand and a major feed stock for bees. And through clover pollination, farmers also benefit as the pollination process increases nitrogen content in soils (reducing the need for synthetic fertilisers).

Even with these benefits, however, there are a number of risks that we think must be assessed (both through a rigorous risk management process and a transparent and independent consultation process as outlined earlier in this submission).

Key risks include:

- **Given that clover honey is a key food source for honey bees, what risks would there be to honey bee health (and numbers) if bee pollination is no longer required for genetically engineered clover crops?**
- **Assuming the ultimate aim is likely to be to have the majority of clover genetically engineered to produce less methane, what is the risk that insufficient amounts of clover nectar will be available for honey bees to make honey from?**
- **What is the risk that the genetic modification to the clover will change the nature of the plant to the extent that it becomes less desirable to bees as a pollen or nectar source? What risk could that have on bee health and numbers?**
- **What risks could genetically modified pollen have on bee health and numbers?**

2.2.2 Comparison with international GM experience

While some comparisons can be drawn with the use of genetic modification internationally, it is important to note that the New Zealand context is unique. Given that the Bill has been modelled on the Gene Technology Act 2000 (Australia), it is important to recognise that New Zealand has a considerably smaller land mass in which to attempt to separate GM crops from non-GM crops. And like the EU, New Zealand is an island nation that has traded on the image of its pristine, untouched environment. Additionally, the crops given as examples in the New Zealand context (white clover and wilding pines) are quite different from the intensive agricultural production of corn, soybeans and cotton found in the USA.

The potential for unintended consequences of genetic modification in this new context is a cause for concern for many in the apiculture industry and we recommend that legislators will proceed with caution by setting aside the provisions of the Bill governing the outdoor use of GMOs for now, so that proper consultation and analysis can be undertaken.

2.3 Risks to bee health and numbers

2.3.1 Risks to foraging bees

In addition to concerns around the impact of genetic modification of crops that are major honey bee food sources, there could be other unintended consequences that arise in terms of bee health and numbers (eg, habitat loss).

Currently, there is no firm scientific evidence that bees are affected by gene technology, and we recognise that there may be bees and other pollinators may benefit from some genetic modifications (modifications that reduce the need for pesticide use could improve the safety of bees and other pollinators). However, there are known examples where crops have been genetically modified to be herbicide resistant, and this has led to increased use of herbicides on those crops. This could pose a health risk to any visiting bees.

An increase in herbicide-resistant crops has been shown to decrease the availability of foraging resources, pollinator habitat loss and reduction in pollinator numbers. The [2018 study 'Bee genera, diversity and abundance in genetically modified canola fields](#) stated:

“growing genetically modified herbicide tolerant cultivars indirectly contributes towards pollinator declines through habitat loss. Canola, a mass-flowering crop is highly attractive to bee pollinators and the extensive adoption of the herbicide tolerant trait has led to depletion of non-crop floral resources. Extensive use of herbicide in and near fields with herbicide tolerant cultivars systematically eliminates semi-natural habitats around agricultural fields which consist of non-crop flowering plants. Planting pollinator strips provides floral resources for bees after crop flowering.”

2.3.2 Genetic modification of honey bees

Genetic modification of bees themselves is another area that would benefit from further study. There is potential for benefits to bees in terms of combatting pests and diseases. For example, a recent work on genetic modification is Leonard et al. (2020. Science 367: 573-576), in which the authors successfully genetically modify honey bee gut bacteria to produce a biopesticide targeting varroa and viruses.

This technology is available now for field testing and potential release. New Zealand researchers expect that direct potential genetic modification to the bee genome and other honey bee gut microbes, or pathogens and varroa itself, will be developed within the next 10 years. It is a very-fast developing field, and we recommend a cautious approach for the long-term health of honey bees and the pollination services they provide.

2.4 Māori view

ApiNZ works closely with the Mānuka Charitable Trust in supporting mānuka's status as a taonga unique to Aotearoa New Zealand. The Mānuka Charitable Trust is a pan-iwi organisation that was established in 2019 to protect the mana and mauri of mānuka along with other taonga species.

Mānuka honey currently constitutes more than 90% of New Zealand's honey exports. The indigenous story is important in terms of positioning this premium honey on the international stage and is a critical part of the industry's growth strategy.

We would want to see the Trust provide guidance via the Māori Advisory Committee on the protection of mānuka and other taonga species, in relation to the Gene Technology Bill.

Additionally, we note in [the regulatory impact statement](#), Te Puni Kokiri has advised that *“the proposal does not sufficiently provide for Māori to uphold kaitiaki relationships and directly benefit from the reforms. The regulator and Māori Advisory Committee should be required to agree how any detrimental impacts to the kaitiaki relationship can be mitigated.”* We support this statement and strongly recommend the involvement of the Mānuka Charitable Trust in this process.

Ngā mihi nui



Karin Kos, Chief Executive