

How applicators can reduce risks to bee pollinators

- Know the risks.
- Apply pesticides only when necessary as part of a pest management programme.
- Always read and follow the instructions on the product label.
- Select short residual and low hazard formulations.
- Never treat crops in flower.
- Check nearby for foraging bees on flowering weeds – eliminate weeds by mowing or tillage.
- Never apply pesticides during daylight hours where bees are actively foraging and pollinating.
- Adjust your spray programme to weather conditions – time of day, temperature and wind.
- Communicate with neighbours.
- Communicate with beekeepers.

Beekeepers

It's important that beekeepers understand the cropping and pest management practices used by farmers near their apiaries.

Farmers and agrichemical applicators

Sensitivity to the locations of apiaries, a basic understanding of bee behaviour and knowledge of which substances and practices are hazardous to bees are essential to the health of our bee populations.

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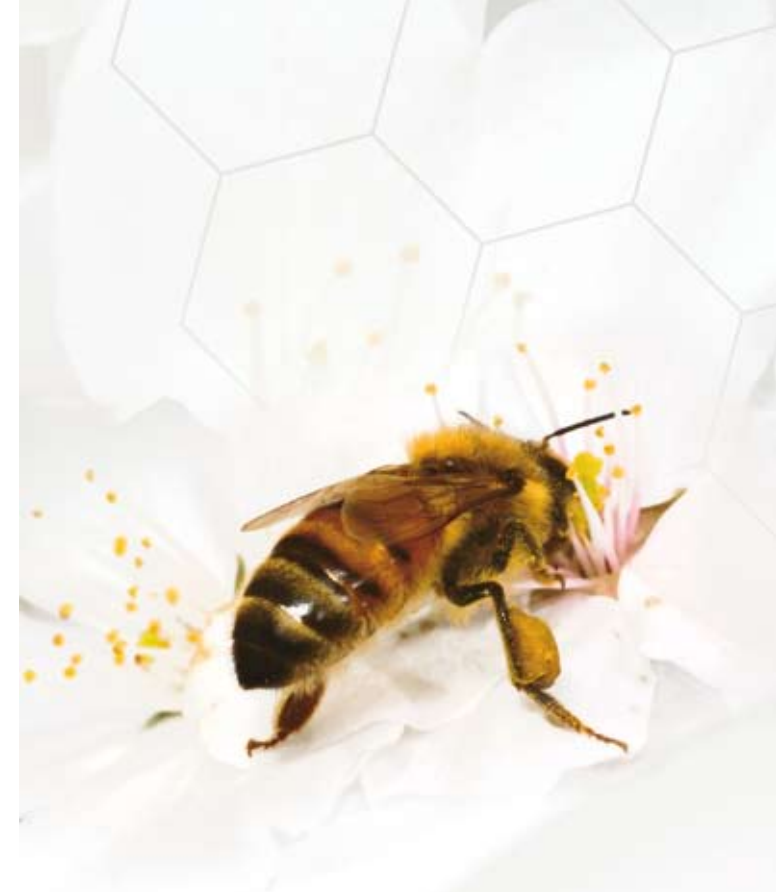
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Photography – Brendan White



**To continue their work
bees need your help**



New Zealand needs bees...

and bees need your help to ensure they continue to do their important work.

Bees are extremely important to New Zealand agriculture, horticulture, the home garden and our native fauna – and not only because they produce honey, beeswax, pollen, royal jelly and propolis. They are extremely good pollinators of crops, so they contribute substantially to New Zealand's multi-billion dollar agricultural economy. Pollination is essential for plants to produce fruits and seeds and to assist with nitrogen regeneration in clover pastures.

Bees are also invaluable as pollinators of plants that provide food and shelter to the vegetation which helps prevent soil erosion. Ultimately pollination is as important as soil fertility, irrigation and pest control.

New Zealand is home to about 40 native and introduced species of bees. Most live in the wild while honey bees and some bumblebees are kept in managed hives and used as pollinators in the agricultural and horticultural sectors.

Because healthy bee populations are so important for the maintained productivity of New Zealand agriculture we need to ensure that we put in place a strategy to protect bees and other pollinators.



Protecting bees from exposure to agrichemicals

Pesticides are also important to New Zealand agriculture, as they can stop pests and diseases damaging valuable food crops.

Pesticide is a general term for a substance which kills target pests such as insects (insecticide), mites (miticide), weeds (herbicide) and organisms which cause plant diseases such as fungi (fungicide).

Unfortunately, many agricultural pesticides are harmful to bees. When bees come into contact with pesticides, the result may lead to bee deaths, contaminated honey, or reduced pollination, all of which also have an impact on beekeepers and the growers of the crops needing to be pollinated.

Reducing the impact of pesticide on bees requires communication and co-operation between beekeepers, farmers and applicators.

BEFORE applying pesticide you need to consider:

Plant growth stage Most poisonings occur when pesticides are applied to flowering crops, weeds and forest understorey.

Mixing Mixtures may be more toxic to bees. The mixing of two or more sprays may alter the toxicity of the spray and negate any manufacturer product label claims.

Relative toxicity Pesticides vary in their toxicity to bees. The toxic substance may be the active ingredient, the surfactant, adjuvant or the wetting agent in the formulation.

Choice of formulation Different formulations, even of the same pesticide, can have variable toxicity to bees. Granular products are generally less hazardous, whereas dusts and wettable powders may stick to body hairs on bees and then be taken back to the hive.

Residual action The rate of degradation of the pesticide is important. A pesticide which degrades within a few hours of application can be applied with minimal risk when bees are not foraging. Products with extended residual activity of greater than eight hours merit extra precautions.

Spray drift It may be quite safe to spray the target crop, but spray drift on to adjacent crops or weeds may pose a risk to foraging bees.

Temperature Unusually warm temperatures in the early morning or evening may result in bees foraging when they would normally be back in their hive. However, if temperatures are unusually low, pesticide residues may remain toxic for longer.

Distance The distance of the bee colony from the treated area is important. Bees forage on average within 1.5 to 3 kilometres of their hive, but sometimes up to 8 kilometres during a pollen or nectar shortage.

Communication Reducing bees' exposure to pesticide requires communication and co-operation between beekeepers, farmers and pesticide applicators.