

## How to reduce risks to bees

01

Apply pesticides only when necessary as part of a pest management programme.

02

Always read and follow the instructions on the product label.

03

Select short residual and low hazard formulations.

04

Never treat crops in flower.

05

Check nearby for foraging bees on flowering weeds – eliminate weeds by mowing or tillage.

06

Never apply pesticides during daylight hours where bees are foraging.

07

Adjust your spray programme to weather conditions – temperature and wind.

08

Contact hive owners before spraying, including those on adjacent properties.

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# BEE RESPONSIBLE

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 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. Pollination is as important as soil fertility, irrigation and pest control.

Because healthy bee populations are so important for the maintained productivity of New Zealand agriculture we need to ensure that we protect them.



## Protecting bees from exposure to agrichemicals

Pesticides are important to New Zealand agriculture, as they can stop pests and diseases damaging valuable food crops. They kill target pests such as insects (insecticide), mites (miticide), weeds (herbicide) and organisms which cause plant diseases such as fungi (fungicide).

Agrichemicals can be harmful to bees and may lead to bee deaths, contaminated honey, or reduced pollination.

### Before applying pesticide consider:

#### Plant growth stage

Most poisonings occur when pesticides are applied to flowering crops, weeds and forest understory.

#### Mixing

Mixtures may be more toxic to bees.

The mixing of two or more sprays may alter the toxicity of the spray and negate product label claims.

#### Relative toxicity

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 change the 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 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.