



Smart Farming For Healthy Bees

— BEE FRIENDLY LAND MANAGEMENT —

REGION - SOUTHLAND October 2009



Photo: Neil Fitzgerald © Landcare Research

Honey bee on Kāmahi (*Weinmannia racemosa*)

STRONG AND HEALTHY BEES ARE A CRITICAL PART OF PROFITABLE AGRICULTURE



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To ensure the future of farming, all farmers need to play their part in protecting the honey bee. The bee is one of the hardest workers in horticulture and agriculture; about \$3 billion of our GDP is directly attributable to the intensive pollination of horticultural and specialty agricultural crops by bees. In addition there is a huge indirect contribution through the pollination of clover, sown as a nitrogen regeneration source for the land we farm. This benefit flows on to our meat export industry through livestock production and sales.

The beekeeping industry is facing some of its biggest challenges with increasing bee pests and diseases. This is of great concern because, in terms of the food we eat, about a third of the calories and three-quarters of the diversity rely on bees for pollination.

The most important issue leading to a bee crisis in NZ is declining floral resources and the subsequent scarcity of quality pollen, which leads to bee malnutrition. The key to good bee health is a continual supply of diverse pollen and nectar from natural sources.

Bees consume pollen as a protein and vitamin source and nectar for energy. While gathering these resources, they move pollen from one plant to another thus benefiting the farm by pollinating crops. Availability of quality pollen resources is critical during spring when beekeepers are building up bee populations for pollination services. Any shortfall leads to protein stress that weakens bees making them more susceptible to diseases and pests (e.g., varroa mite); it also dramatically slows the queens breeding output and this results in low field strength and under-performing pollination services.

Today, farmers can reverse this trend by choosing bee friendly trees and shrubs for planting in waterway margins, windbreaks, field edges, under pivots and along roadsides. Fortunately a number of shelter and erosion control plants have abundant flowers to feed bees so selecting multi-purpose plants is smart farming for healthy bees.

This fact sheet will help you provide pollen that these vital creatures need. To find out where to source the plants on this list please go to www.plantfinder.co.nz or ask at your local nursery.

www.fedfarm.org.nz/ourcampaigns

Native Trees and Shrubs for Bees

Native plants are the best choice to increase "on-farm" native biodiversity and benefit both the honey bee and the environment.

Cabbage tree (*Cordyline australis*) --- Tree, 15m, Oct-Dec
Horoeka (*Pseudopanax crassifolius*) --- Tree, 15m, Jan-Apr
Kakaha (*Astelia nervosa*) --- Tufted, 1.5m, Oct-Dec
Kāmahi (*Weinmannia racemosa*) --- Tree, 20m, Dec-Jan
Kānuka (*Kunzea ericoides*) --- Tree/Shrub, 15m, Sep-Feb
Kohuhu (*Pittosporum tenuifolium*) --- Tree, 6m, Oct-Jan
Koromiko (*Hebe salicifolia*) --- Shrub, 3m, Jan-Feb-(Apr)
Lemonwood (*Pittosporum eugenioides*) --- Tree, 10m, Oct-Dec
Manuka (*Leptospermum scoparium*) - Tree/Shrub, 5m, Sep-Mar
Matagouri (*Discaria toumatou*) --- Tree/Shrub, 5m, Oct-Jan
Mingimingi (*Leucopogon fraseri*) --- Shrub, 0.2m, Sep-Nov
Narrow-lv lacebark (*Hoheria angustifolia*) --- Tree, 10m, D-M

NZ flax (*Phormium tenax*) - Tufted, up to 5m flw. stalk, Nov-Dec
Poataniwha (*Melicope simplex*) --- Shrub, 4m, Sep-Nov
Pokaka (*Elaeocarpus hookerianus*) --- Tree, 8m, Oct-Jan
Prickly mingimingi (*Leptecophylla juniperina*) --- Shrub, 2m
Raukawa (*Raukawa edgerleyi*) --- Tree, 10 m, Sep-Dec
Seven-finger (*Schefflera digitata*) --- Tree, 8m, Feb-Mar
Three-finger (*Pseudopanax colensoi*) - Tree/Shrub, 5m, Oct-Mar
Tree Daisy (*Olearia arborescens*) --- Tree/Shrub, 4m, Oct-Jan
Tree fuchsia (*Fuchsia excorticata*) --- Tree/Shrub, 12m, Jun-Jan
Weeping kowhai (*Sophora microphylla*) --- Tree, 10m,
Weeping matipo (*Myrsine divaricata*) --- Shrub, 3m, Jun-Nov
Whiteywood (*Melicytus ramiflorus*) --- Tree, 10m, Nov-Feb

Non-native Trees and Shrubs for Bees

Exotic plants are good choices because many are multi-purpose for farming and have excellent pollen and nectar.

Apple (*Malus domestica*) --- Tree, Sep-Nov
Hazelnut (*Corylus avellana*) --- Shrub, 5m, Sept-Nov
Peach (*Prunus persica*) --- Tree, Aug-Oct
Pear (*Pyrus communis*) --- Tree, Sep-Oct
Rosemary (*Rosmarinus officinalis*) --- Shrub, 1.5m, Sep-Nov
Weeping Willow (*Salix babylonica*) --- Tree, 25m, Aug-Sep

Cider gum (*Eucalyptus gunnii*) --- Tree, 37m
Ribbon gum (*Eucalyptus viminalis*) --- Tree, 40m, Jul-Apr
Silver gum (*Eucalyptus crenulata*) --- Tree, 8m
Silver dollar gum (*Eucalyptus cinerea*) --- Tree, 15m, Dec-Feb
Snow gum (*E. pauciflora* subsp. *niphophila*) --- Tree, 18m, Sep-Nov
Yellow box (*Eucalyptus melliodora*) --- Tree, 30m, Dec-Feb

To match plants to site, consult plant adviser, e.g., Pukerau Nursery at Email: pukeraunursery@woosh.co.nz; Phone 03 205 3801

The plants listed above are examples of good Bee Plants that are not on any list of pest plants (weeds) for Southland. See our website for further examples and guidelines. Although some plants are good for bees they are on pest plant lists because they are invasive. Planting them would be detrimental to farmers or to the environment and in some cases even illegal (e.g., Unwanted Organisms list). Lists of pest plants change regularly so it is best to consult your regional authorities.

1 **Southland Regional Pest Management Strategy** is listed at <http://www.biosecurityperformance.maf.govt.nz/>
 Plants listed in the strategy must not be planted for various reasons. Contact your Regional Council (Phone 0800 76 88 45; or E-mail service@es.govt.nz) or see Environment Southland www.es.govt.nz for advice in your area.

For example do not plant:

Sycamore maple (*Acer pseudoplatanus*) --- Tree
Hawthorn (*Crataegus monogyna*) --- Tree/Shrub
Gorse (*Ulex europaeus*) --- Shrub
Blackberry (*Rubus fruticosus*) --- Shrub
Scotch broom (*Cytisus scoparius*) --- Shrub
Spanish heath (*Erica lusitanica*) --- Shrub
Cherry laurel (*Prunus laurocerasus*) --- Tree

2 **The National Pest Plant Accord (NPPA)** is listed at www.biosecurity.govt.nz/nppa.
 Plants listed on the NPPA are unwanted organisms under the Biosecurity Act 1993 and cannot be sold, propagated or distributed even though some are high value bee plants. For example do not plant:

Crack willow (*Salix fragilis*) --- Tree
Grey willow (*Salix cinerea*) --- Tree/Shrub
Lantana (*Lantana camara*) --- Shrub
Scottish heather (*Calluna vulgaris*) --- Shrub

3 **The Department of Conservation (DOC) Weed List** contains around 20 high value bee plants that are aggressive environmental weeds. To protect the environment, please consult a DOC weed expert for your situation www.doc.govt.nz/conservation/threats-and-impacts/weeds/docs-weed-work/

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