

TREES FOR BEES CORNER

STAR PERFORMERS PART 5: ROSEMARY FLOWERS MOST OF THE TIME



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Trees for Bees has produced a series of fact sheets showcasing the 'best of the best' bee plants that will maximise nutrition benefits for your bees. In this issue of the journal, the team explains why rosemary is a 'star performer'. For more information, see www.treesforbeesnz.org.

Rosmarinus officinalis in the Mint Family (Labiatae)

Rosemary (*Rosmarinus officinalis*) is a star performer because the plants are highly attractive to bees and almost always in flower, especially in spring and autumn and sometimes in winter. At times it stops flowering if it is too dry in late summer or too cold. We see honey bees almost constantly visiting isolated shrubs everywhere, even in urban areas.

Rosemary is a hardy perennial native to the Mediterranean coast; it is drought-tolerant but slightly sensitive to frost. Because the plant is used extensively in cooking and in soaps, lotions, and creams, it is grown widely in gardens and on farms. The prostrate form is great for trailing over a bank or garden wall. Upright forms can be pruned for hedges or topiary. The cultivar 'Tuscan Blue' is a robust upright form with a high density of large flowers.

Pollen

Rosemary flowers have the classic 'two-lipped' shape of flowers in the mint family with upper and lower 'lips' formed by fused petals. The flowers have long curved and arching stamens rising upright against the upper lip (Figure 1). The anthers with their white pollen are relatively small so the amount of pollen in just two stamens per flower is not huge, but the protein level is good (21% in our sample).

Nectar

The nectar is hidden at the base of the flower, where the floral tube formed by the two 'lips' is relatively short at the base but wide open at the entrance (Figure 2). This arrangement allows honey bees easy access to nectar because they can reach the base

Figure 1. Rosemary flowers showing the upper and lower lips of the flower made from fused petals.





Figure 2. The flower has hidden nectar but honey bees can reach it by inserting their 'tongue' into the central cavity of the flower where the nectar is produced.

of the floral tube. The nectary is a four-lobed disc surrounding the base of the ovary. The flower is a perfect fit for both honey bees and bumble bees because the lower 'lip' provides a good landing platform for the bees to hang onto while sipping nectar.

Planting advice

Rosemary is a very versatile plant to use for bee forage. Most commonly it is seen as part of an herb or vegetable garden, but it can be used in a wide variety of situations. Prostrate forms can be used as ground cover in gardens or cascading over garden walls, and also amongst bee forage tree or shrub plantings.

Both the upright and prostrate forms of the plant can be used inside larger tree guards in

conjunction with specimen trees on farms, and the upright form makes an excellent hedge in the garden (Figure 3) or as part of apiary shelter.

Rosemary also has the advantage of being able to be cut back, so you can maintain fresh and vigorous growth.

The Trees for Bees 'star performers' series of fact sheets is designed to show the 'best of the best' in bee plants. Each selected plant has been investigated in the field by the team and used extensively in Trees for Bees Demonstration Farms.

They rank as star performers because they maximise nutrition by having any combination of one or more of these six great features:

1. the plant flowers at a time of pollen or nectar dearth (e.g., spring, autumn and even winter)
2. the plant flowers profusely with high density and large quantity of flowers per plant
3. each flower delivers large quantities of pollen or nectar; such plants may have few flowers
4. the flowers deliver high-quality pollen nutrition (e.g., crude protein content)
5. the flowers give bees easy access to pollen and nectar for bee foraging efficiency
6. the flowers are highly attractive and preferred by bees.



Figure 3. Upright rosemary hedge in the garden at the National Eastwoodhill Arboretum in Gisborne. Photos: Jean-Noël Galliot © Trees for Bees NZ.