



# Considerations when designing *Leptospermum* honey production areas

---

**Katja Hogendoorn**

The University of Adelaide, School of  
Agriculture, Food and Wine

*Co-authors: Nicholas Timbs, Kate Delaporte*

*Funding: CRC for Honey Bee Products, Spring Gully*

## Speaker Bio

Dr Katja Hogendoorn is a bee and crop pollination researcher at The University of Adelaide. Her main interest is in the health of bees - honey bees as well as native bees. Her research focuses on creating and maintaining healthy environments for bees, both in the crop and in the surrounding landscape.

## Presentation

We explore some of the important considerations for optimal design of hive sites for the production bioactive honey from *Leptospermum*, including the location of the plantation, species choice, irrigation, fencing and concerns regarding hive health.

Plantations in areas that contain few or no additional nectar sources during *Leptospermum* flowering will achieve monofloral, bioactive nectar of the highest possible quality, as there is no mixing with other nectar sources, and no preferential recruitment of bees towards more attractive nectar sources. Examples of areas that should provide the highest quality nectar are exclusion zones in horticultural crops, or sites surrounded by wheat production areas.

Species choice should be informed by both local conditions and the climate envelope of individual *Leptospermum* species. Exploring the climate and soil envelope for seven bioactive species, we find that levels of aridity are a major identifier for suitable areas. During establishment, irrigation is likely to be needed at least in Southern Australia. However, as our preliminary data show, ongoing irrigation may enhance flower visitation. In addition to irrigation, fencing is an expensive but worthwhile investment in most southern Australian regions, at least during establishment.

Placement of hives in *Leptospermum* plantations may affect hive health in two ways. Firstly, bioactive honey may not be healthy for honey bees. We investigated whether workers fed on a diet of high, medium and inactive honey differed in their longevity, and found no indication that bioactive honey is unhealthy for honey bee workers. Secondly, it is important to understand that bees need pollen and nectar, but that *Leptospermum* is not a suitable pollen source for honey bees. Hence, to improve the health of *Leptospermum* plantations for bees, while producing monofloral honey, one could consider planting species that (a) flower simultaneously with the *Leptospermum*, and (b) provide pollen only. We have collated a list of suitable species, which includes both crop and native plants.

Taken together, our suggestions for the the design of bioactive honey farming sites will maximise the quality and quantity of the bioactive honey while minimising both the impacts on hive health and on native biodiversity.