BUSINESS

Field day offers insights into mānuka plantations

Barry Foster

The secret to success in growing a mānuka plantation lies in treating it as a horticultural crop with the focus on 'farming nectar', rather than as a forestry crop. That was the message from beekeeper Bill Savage to a group of 50 people at his mānuka plantation field day held in late May.

The event was held at Bill's 1200-hectare mānuka plantation in Waimata, Gisborne District, where he shared his experiences around the complexities of growing a high-value mānuka plantation. His presentation drew on some 30 years' experience as a commercial beekeeper, combined with formal business training and a science-based approach to planning and implementation.

SITE-SPECIFIC GENETIC SELECTION

Bill told the crowd that one of the key points in establishing a successful crop was to look at it from the perspective of "farming nectar". To ensure you are getting the best nectar from the mānuka flowers, you need the correct combination of heat, light and moisture that consistently fits within the annual flowering window for that specific site. In short, you need to select genetic material that is site specific.

In Bill's case, seeds were eco-sourced from existing mānuka plants growing at the site that had produced good quantities of nectar. These were then tested in a laboratory and selected to contain high levels of dihydroxyacetone (DHA). DHA is a precursor to methylglyoxal (MG), which is the natural compound in mānuka honey that gives it the unique antimicrobial properties sought after by markets. Research from the late Dr Peter Molan and his colleagues at the University of Waikato have shown mānuka honey with MG levels above 500 mg/kg to be valuable in human health, particularly topical wound healing. The aim in establishing mānuka plantations is to grow plants that consistently produce mānuka honey tested to this level.

Views of Bill Savage's mānuka plantation. Photos: Barry Foster.

Bill and his team collected mānuka nectar from the site over successive seasons to find plants that consistently produced high levels of DHA in their nectar to use as breeding stock. This involved collecting flowers, extracting the nectar and having that nectar analysed in a laboratory. The end result was a selection of six to eight local genotypes per year from which seeds were obtained and grown at a nursery. This selection process is repeated annually, creating a diverse, high-producing gene pool.

Genetic selection based around eco-sourcing has resulted in a 60% gain in the levels of DHA in nectar produced from the site, with DHA levels now averaging 11,000 mg/kg in nectar.

SITE SELECTION AND PLANTING CONSIDERATIONS

It is important to select a site with the right combination of climate and soils that have a history of consistently providing the right moisture and heat conditions for good nectar production. If you choose a site near the coast subject to summer drought, the nectar-producing window will be short, whereas a site at too high an altitude will not get sufficient heat to produce the required levels of nectar. An additional risk is that bees will be distracted and visit other plants in

preference to the mānuka flowers.

Sites with a good history of mānuka honey production are best. Bill purchased his site after 30 years of placing beehives there and gaining sound local knowledge.

The whole block was planted up over successive winters and site preparation and layout was important. Spot spraying 600 mm spaces in long grass several months prior to planting provided sufficient space for the young mānuka plants to grow, while at the same time not opening up too much space for weeds to take over. Planting in rows with three-by-three metre spacings allows for sufficient light to grow a plant with flowers over and around its form. The rounded plant form produces many more flowers than any other form, while genetic selection lifts the average levels of DHA in nectar to produce a consistently higher-value honey than previously produced at that site.

Bill emphasised the critical importance of controlling feral browsing animals such as goats and deer, as they can rapidly browse out planted blocks before mānuka plants are mature enough to not to be adversely affected by them. Another issue is managing the regrowth of other native plants; particularly kānuka, which given the right conditions would quickly overtake mānuka.

Vertical row planting allows for natural mānuka regrowth between the rows. After 10 years of production, the planted rows will be taken out, allowing the regrowth to become the new crop. By removing these rows, any kānuka is effectively suppressed before it can seed and add to the existing seed bank in the soil. Mānuka is a light-demanding, pioneer colonising species that naturally will be overtaken in succession by larger plants such as kānuka. Management of a plantation needs to implement a continued cycling of new-growth mānuka from reseeding, and in some cases replanting.

Bill has spent close to $4 million in land purchase and plantation establishment costs for the 1200-hectare block, with a final 250 hectares yet to plant. Recent poor weather means the block has not yet produced good crops of mānuka, but Bill is confident that they have established a resource that, given a good season, will produce nett returns of around $600,000 to $700,000 (after deducting annual land management costs of $200,000 and hive management costs.