

Adding value to Australian Manuka honey production

The CRC for Honey Bee Products and Hive & Wellness Australia investigated the value and quality of manuka honey produced at Australian apiary sites. The CRC has developed interactive tools for beekeepers and processors to help guide the production of high-quality Manuka honey.

Manuka honey is prized for its medicinal properties, including its antimicrobial and wound healing abilities. In Australia, Manuka honey is primarily produced from *Leptospermum* plants within the Myrtle family. Australia is fortunate to have more than 80 species of *Leptospermum*.

Many *Leptospermum* species contain the compound dihydroxyacetone (DHA) in their nectar. DHA facilitates bioactive honey production. When transferred into the honeycomb and allowed to ripen, DHA converts to methylglyoxal (MGO), which has antimicrobial properties.

The value and quality of Manuka honey is determined by the amount of MGO and hydroxymethylfurfural (HMF) present. HMF is a toxic compound whose concentrations increase during food processing and ageing.

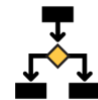


CRC HBP
FOR HONEY BEE PRODUCTS

Hive+Wellness
AUSTRALIA



medicinal properties



decision support



quality product



CRC researchers collect *Leptospermum* plant samples for antimicrobial testing





Many Australian beekeeping operations are small, family-owned enterprises. Being new to Manuka honey production, they may not know the Manuka honey production potential of their apiary sites.

To better understand which Australian apiary sites produce Manuka honey, the CRC for Honey Bee Products and Hive & Wellness Australia analysed over 2,700 honey samples for 500 beekeepers, focusing on the levels of DHA, MGO and HMF. Where source data were provided, researchers mapped the honey samples to weather regions.

Researchers found that honey samples originating from north-east New South Wales and south-east Queensland produced the most active Manuka honey.

However, every state and territory, except for the Northern Territory, was found to produce honey with some level of antimicrobial activity (MGO levels of 84 parts per million) and antiseptic properties (non-peroxide-activity (NPA) of 5+).

Researchers found that as the project progressed, there was a steady increase in the amount of Manuka honey activity measured. This trend is thought to reflect the growing understanding of beekeepers about how to successfully produce quality Manuka honey.

To further support the growth of Australian Manuka honey production, the CRC developed an information sheet outlining the most effective honey handling practices for maximising the value of Manuka honey.

An interactive 'Activity Estimator' supports the information sheet, allowing beekeepers and processors to track and predict the maturation rate of DHA to MGO under storage temperatures of 22 °C, 37 °C and 65 °C. The Activity Estimator enables the levels of DHA, HMF and MGO in honey to be tracked over time and changes to these levels to be predicted up to a year ahead.

The CRC also developed a Manuka blending guide to help beekeepers and processors blend their honey to a final desired MGO level. This guide will help to ensure the highest Manuka honey quality and value is attained.



Dr Peter Brooks (left) demonstrating the analyse of DHA, MGO and HMF levels in honey samples

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