Criteria for defining Australian Manuka Honey

Authors:
Dr Peter Brooks, Dr Craig Davis, Dr Shona Blair and Dr Nural Cokcetin
Scientific Advisory Committee to the Australian Manuka Honey Association.

1 What is Australian Manuka honey?

Australian Manuka honey is produced naturally by bees, from the nectar of plants of the *Leptospermum* genus. Australia has the largest diversity of *Leptospermum* plants in the world, with over 80 native species growing throughout the country in a variety of habitats from coastal dunes to high mountain peaks.

2 Purpose of the document

This document provides a set of robust science-based criteria to identify, define and authenticate Australian Manuka honey.

3 Background

Manuka honey is one of the most famous honeys in the world because of its medicinal properties. Numerous scientific studies have shown that this honey has potent antimicrobial activity. The special properties of Manuka honey were first found in New Zealand in the 1980s (Molan & Russell, 1988) and since then we have discovered many sources of active Manuka honey in Australia stemming from the *Leptospermum* species (Cokcetin, Pappalardo *et al*., 2016).

A naturally-occurring chemical compound called methylglyoxal (MGO) is responsible for much of the special activity of Manuka honey. This MGO comes from another chemical called dihydroxyacetone (DHA), which occurs naturally in the nectar of flowers of some *Leptospermum* plants.

The purpose of developing robust scientific criteria for identifying and defining Australian Manuka honey is to use a standardised approach to prove product authenticity, provide confidence for consumers, and distinguish Australian Manuka honey from other honey types to help mitigate against fraud.

4 Authenticating Australian Manuka honey

Australian Manuka honey can be pure monofloral Manuka (having ≥ 50% of the nectar derived from one floral source (Moar, 1985)), or a multifloral Manuka blend that also contains nectars collected by the bees from other floral sources. The level of various naturally occurring compounds in the honey will determine its level of activity.

4. 1 Pure, active Australian Manuka honey

All honey defined and labelled as Australian Manuka and carrying the Australian Manuka Honey Association (AMHA) Mark of Authenticity, must be produced in Australia, and be tested by an independent approved laboratory to ensure that it meets the following criteria when packed:

To bear the 'Authorised' mark, products must be tested to contain at least:

≥ 30 mg/kg (or ppm) methylglyoxal (MGO)

≥ 60 mg/kg (or ppm) dihydroxyacetone (DHA)

To bear the 'Authentic' mark, products must be tested to contain at least:

≥ 85 mg/kg (or ppm) methylglyoxal (MGO)

≥ 170 mg/kg (or ppm) dihydroxyacetone (DHA)

5 Australian Manuka honey labelling guidelines

Authenticated Australian Manuka honey carrying the AMHA Mark of Authenticity must include the following in a prominent position on the product label:

- Sourced from Australian *Leptospermum* honey, and
- MGO content.
  This can be included as the exact value in mg/kg or ppm, or as a whole number followed by a '+' symbol, which signifies the minimum MGO level in the batch in mg/kg (or ppm).
  For example, a sample with 123 mg/kg MGO can be labelled as: MGO 123, or MGO 100+.

6 References

Cokcetin, N, Pappalardo, M, Campbell, L, Brooks, P, Carter, D, Blair, S & Harry, E (2016). The Antibacterial Activity of Australian Leptospermum Honey Correlates with Methylglyoxal Levels. PLoS One, vol. 11, no. 12, p. e0167780.

Forst J and Forst G (accessed March 20, 2018). Leptospermum, Atlas of Living Australia

http://bie.ala.org.au/species/http://id.biodiversity.org.au/node/apni/8499083

Moar, N (1985). Pollen analysis of New Zealand honey. New Zealand Journal of Agricultural Research, 28:1, 39-70.

Molan, P & Russell, K (1988). Non-peroxide antibacterial activity in some New Zealand honeys. *J. Apic. Res.***27**: 62–67.

Please refer any queries you have in relation to the above to info@manukaaustralia.org.au.