

Antibacterial activity of Western Australian honey

CRC for Honey Bee Products researchers measured the antibacterial activity and chemical characteristics of Western Australian honey, testing over 450 honey samples from more than 40 unique floral sources.

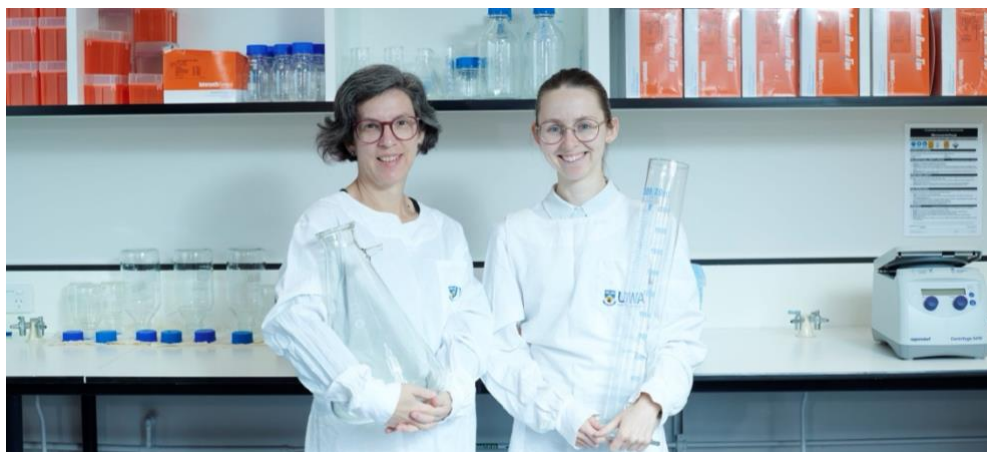
Honey with the highest levels of antibacterial activity came from Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla*), Swan River Blackbutt (*Eucalyptus patens*), Red Bell (*Calothamnus*), Karri (*Eucalyptus diversicolor*) and Coastal Blackbutt (*Eucalyptus todtiana*).

There is moderate antibacterial activity in honey from *Leptospermum* species, Wandoo (*Eucalyptus wandoo*), Powderbark (*Eucalyptus astringens*), Melaleuca species and Parrot bush (*Banksia sessilis*).

There is low antibacterial activity in most honey from Peppermint (*Agonis flexuosa*), Yate (*Eucalyptus occidentalis*), Moort (*Eucalyptus platypus*) and *Banksia menziesii*, and in mallee, spring and wildflower honey.

Honey samples came from three biogeographical regions of Western Australia: coastal, inland (including Esperance) and the south-west forest region.

A research paper will describe the characteristics of honey from each of these unique regions.



CRC researchers Dr Kate Hammer and Kathryn Green test honey samples in the UWA laboratory
Image credit: Ian Anderick



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medicinal
properties



chemical
analysis



bee-friendly



Researchers examined the efficacy of a selection of honey against bacteria responsible for the skin infection impetigo ('school sores'), finding that some honey types may be a treatment option for mild infections. There would need to be follow-up clinical studies to test this idea. Honey in high concentrations can also inhibit or kill yeasts.

CRC researchers tested the antibacterial activity of honey when combined with standard antiseptics and essential oils.

Honey and chlorhexidine antiseptic showed antagonism, reducing the overall antibacterial activity. This finding suggests that honey should not be mixed with chlorhexidine in pharmaceutical products.

The efficacy of the antibacterial methylglyoxal (MGO) in commercial manuka honey was also measured.

High MGO concentrations showed strong activity against some bacteria. For other bacteria, there was a weak, or no, relationship between MGO concentration and antibacterial activity.

This result indicates that bacteria differ in their response to manuka honey and MGO. It highlights the importance of testing more than one bacterial species when determining susceptibility.

Overall, this research has led to numerous discoveries and insights in support of finding the melliferous flora that produces bioactive honey from Western Australia native species.



Melliferous flora from some Western Australian native species produce bioactive honey

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