Researchers develop technique to authenticate the origin of Western Australia's honey

June 14 2024

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Researchers from The University of Western Australia have developed a new technique to authenticate the origin of honey through its nectar

signature.

Dr. Khairul Islam, from UWA's Cooperative Research Centre for Honey Bee Products and Y-Trace, was lead author of the study published in *PeerJ Analytical Chemistry*.

"So much 'honey' on supermarket shelves is actually sugar syrup rather than the real thing, and we wanted to authenticate Western Australia's iconic honey," Dr. Islam said.

Jarrah honey, a rare product from jarrah forests in WA's South West, was the primary focus of the study that used a new method of chromatography, which separates the components in honey samples.

Researchers discovered that organic substances from the flower nectar carried through to the honey and were able to directly link the nectar foraged by the honeybee through a common chemical signature.

"We found six key substances that make a unique nectar signature in the honey, and this means any adulteration can be detected," Dr. Islam said.

Like Manuka honey, Jarrah honey is open to being misrepresented through mislabeling or adulteration. New Zealand found that more of its Manuka honey was being sold than it produced, and also implemented a chemical authentication system to protect the product.

"WA honeybees are one of the last populations in the world to be free of the mite Varroa and the use of chemicals in husbandry practices is banned, making the products of the highest purity, and unfortunately, rare," Dr. Islam said.

Jarrah honey has been found to have many health-giving properties, and positive identification of the nectar indicates high antibacterial activity,

low glycemic index and high antioxidant activity.

"Customers want the rich flavor, health-giving properties and knowledge that the honey is sourced from pristine forests by the world's healthiest bee populations," Dr. Islam said.

This new analytical test protects Jarrah honey, and Y-Trace, a spinout from the CRC for Honey Bee Products, is servicing the industry by offering the test.

More information: Md Khairul Islam et al, Authentication of Jarrah (Eucalyptus marginata) honey through its nectar signature and assessment of its typical physicochemical characteristics, *PeerJ Analytical Chemistry* (2024). DOI: 10.7717/peerj-achem.33

Provided by University of Western Australia