Accepted Manuscript

Stingless bee honey: quality parameters, bioactive compounds, health-promotion properties and modification detection strategies

Suelen Ávila, Márcia Regina Beux, Rosemary Hoffmann Ribani, Rui Carlos Zambiazi

PII: S0924-2244(18)30199-7

DOI: 10.1016/j.tifs.2018.09.002

Reference: TIFS 2308

To appear in: Trends in Food Science & Technology

Received Date: 25 March 2018

Revised Date: 29 August 2018

Accepted Date: 2 September 2018

Please cite this article as: Ávila, S., Beux, M.R., Ribani, R.H., Zambiazi, R.C., Stingless bee honey: quality parameters, bioactive compounds, health-promotion properties and modification detection strategies, *Trends in Food Science & Technology* (2018), doi: 10.1016/j.tifs.2018.09.002.

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ABSTRACT:

Background: Honey is a natural product produced and marketed worldwide by stingless bees and *Apis* bees. Both these types of honey contain unique and distinct compounds of variable nutritional and biological importance. Stingless bee honey is popular for its distinct sweetness, mixed with an acidic taste, and fluid texture; it has higher added value than *Apis mellifera* honey. Due to the relatively low output of stingless bee honey compared to *Apis* mellifera honey, comprehensive data regarding the former is limited. This complex, natural product requires official, international methodologies and standards to be established to serve as a reference for quality control, to prevent adulteration, and to aid marketing purposes.

Scope and approach: The article summarises the existing literature regarding the physicochemical parameters, chemical composition, bioactive constituents, biological properties, and modification detection strategies of honey originated from 478 honey samples from 66 different stingless bee species produced worldwide.

Key findings and conclusions: Stingless bee honey is one of the most complex natural foodstuffs. This type of honey quantitatively possesses a higher moisture content, greater acidity, a slightly lower level of total carbohydrates, and higher levels of antioxidant and biological activities than *Apis mellifera* honey. This review emphasises that stingless bee honey represents an important innovation for the food, pharmaceutical and cosmetic industries, due to its positive health effects and market potential.

Keywords: *Meliponinae*; chemical composition; nutritional value; medicinal use; antibacterial; antioxidant.

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