

Stingless bee-collected pollen bee bread: chemical, health benefits and microbiological properties

ABSTRACT

Stingless bee-collected pollen (bee bread) is a mixture of bee pollen, bee salivary enzymes, and regurgitated honey, fermented by indigenous microbes during storage in the cerumen pot. Current literature data for bee bread is overshadowed by bee pollen, particularly of honeybee *Apis*. In regions such as South America, Australia, and Southeast Asia, information on stingless bee bee bread is mainly sought to promote the meliponiculture industry for socioeconomic development. This review aims to highlight the physicochemical properties and health benefits of bee bread from the stingless bee. In addition, it describes the current progress on identification of beneficial microbes associated with bee bread and its relation to the bee gut. This review provides the basis for promoting research on stingless bee bee bread, its nutrients, and microbes for application in the food and pharmaceutical industries.

Keyword: Stingless bee; Bee bread; Fermented pollen; Phenolic compounds; Microbes