

Meliponiculture: A backbone for poor people

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Introduction

In the world, many people live in a poverty condition. Poverty is the main evil in human society. According to the Global Multidimensional Poverty Index, 2020 nearly 84.3% of poor people live in Africa and South Asian countries and 67 % of the poor people in middle income countries. Due to covid-19 on an average poverty levels will be set back by 3 to 10 years. One of the eco-friendly sustainable livelihoods for poverty eradication is meliponiculture (stinglessbee beekeeping).

Stingless bees are also known as Dammer bees and Mosquito bees (Fig. 1). Stingless bee honey is considered as a sacred and medicinal from ancient times. Feral colonies generally seen in the tree trunks, compound walls, old buildings etc. Average yield of honey : 500 - 600 g / colony.

Cerumen is the basic material used for nest construction. Nest mainly contains a brood area and food storage area. Brood area contains a developing larvae and in food storage area honey and pollen are stored.

Scientific classification

Kingdom: Animalia

Phylum : Arthropoda

Class : Insecta

Order : Hymenoptera

Family : Apidae

Subfamily: Meliponinae

Trib : Meliponini ,Trigonini. (Wille, 1979)



Fig. 1 Stingless bee

In India most important species are *Tetragonula (Trigona) travancorica* (in south India), *Tetragonula ruficornis* (in northern plains) and *Tetragonula calophyllae* (Shanas and Faseeh, 2019). In American continent important species are *Melipona beechi*, *Melipona fasciata*,

Scaptotrigona mexicana etc. In Africa *Meliponula bocandei* and ground nesting stingless bees (Black type and Red type). In Australia, *Trigona carbonaria*, *T.hockingsi*, are important

Meliponiculture provides a continuous income through its hive products and also increases the productivity of crops through pollination.

Stingless bee honey is an excellent immunity booster especially for covid-19 and also used for many diseases (Mustapa *et al.*, 2020). Propolis is antibacterial, anti-inflammatory and with many health-promoting properties (Choudhari *et al.*, 2012). Pollen is rich in proteins. Beewax is especially used for skin health (Kumar *et al.*, 2012).

Stingless bee products increase the brand value of normal products. Any product like biscuits, for example if fortified with stingless bee honey gets a brand value.

So its products fetch a higher price in the market compared to *Apis* genera products. Colony management and domestication are easy compared to *Apis* spp. Stingless bees easily get domesticated in naturally available materials like bamboo poles, coconut shells, earthen pots etc.and stingless bees have no sting (non-functional).

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