

POLLINATION BEHAVIOUR OF *Trigona irridipennis* IN PROTECTED AGRICULTURE

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Trigona irridipennis, Stingless bee known as 'kanamee' is found in all parts of Sri Lanka. This study was conducted to find clues for training and programming the stingless bees to perform their foraging activities within an enclosed environment. The experiment was conducted at Anuradhapura and at Peradeniya using colonies in natural habitat and hived colonies. Foragers of the stingless bees in a colony were trained to visit artificial feeders containing sugar syrup in their native habitat under natural conditions. The visual cues were tested by using artificial feeders associated with yellow, dark blue, light blue, white, purple, orange, green, red and black colours, and the bees learned to associate the visual cues. Bees preferred the light blue colour followed white and yellow. Sugar syrup scented with Rosewater and honey did not have a significant difference from plain syrup. The experiments were repeated in a polytunnels constructed at Faculty farm, Bandarapuliyankulama and Agriculture Faculty premises in Peradeniya and exactly similar observations were made. Maximum foraging distance of *Trigona irridipennis* was estimated by training bees to sugar syrup dish placed on a movable stand. This food source was moved away from nest by 2 m at a time till visitation ceased. Estimated distance was about 200 m radius. Observations made on diurnal rhythm of foragers revealed that they were active during whole day from 6.00 am to 6.00 pm depending on the weather conditions. The peak activity period range from 9.30 am-12.30 pm. These behavioural patterns are well appropriate for the potential use of stingless bee *Trigona irridipennis* to pollinate flowers in protected agricultural structures.

Key words: Stingless bee, Foraging behaviour, Protected agriculture, Pollination