

BEE POLLINATORS OF VEGETABLE CROPS OF THE FAMILY SOLANACEAE

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Cross-pollination is an important event for crops that show self-sterility. Cross-pollination ensures high yields and quality fruits of many vegetable crops. Capsicum, chilli, eggplant and tomato, are the most widely grown vegetable crops of the family Solanaceae and all of them need cross pollination for fruit/pod production. Although bees are known to visit these 4 crops, detailed information is not available except for one study done in India.

During a period of 3 years capsicum, chilli, eggplant and tomato were surveyed for bees that visit the flowers, in 10 vegetable growing areas located in 7 districts coming under 7 agro-ecological regions of Sri Lanka. Bees at a flower were closely observed for (a) pollen collection (b) touching of the stigma and (c) buzz pollination. Representative specimens of bees were collected using a sweep net over a period of 4-8 days at each site.

A total of 31 bee species belonging to 11 genera and 4 families were collected from the flowers of the 4 crops. Of the 10 study sites, capsicum was grown in 2 locations where the flowers were visited by 8 species of bees. Chilli was grown in 7 locations and 16 bee species visited chilli. Among them, *Apis cerana*, *Apis dorsata*, and *Trigona iridipennis* were the most common and abundant. Eggplant was grown in 9 locations and 21 bee species visited the flowers. However, *Amegilla* spp. and *Apis cerana* were the most common. *Amegilla* spp., *Lasioglossum* sp.3, *Nomia oxybeloides*, *Nomia* sp. 2 and *Xylocopa* spp. were observed to buzz-pollinate the flowers of eggplant. Tomato was grown in 4 of the 10 locations where *Xylocopa tenmuisca* was the most common bee among the 12 bee species to visit flowers.

All the bee species that visited capsicum, chilli and eggplant were observed to touch the stigma of flowers while in tomato flowers this behaviour was not easy to observe. Pollen of the respective crop flowers were present on the body of all the bee species that visited the crops. Closer examination of pollen carried by bees indicated that almost all the bees are generalists in that they carried mixed pollen from at least 2-3 plant species. The 2 species of bees of the family Megachilidae that visited chilli and capsicum were however specialists as each carried pollen of 1 crop only.

Except for honey bee and others of the Family Apidae, all other bees recorded are solitary and are known to nest either in the ground, in plant stems or wooden and mud structures. This study shows that it is important to encourage and conserve the solitary bees that pollinate these vegetable crops.

This study forms a part of a larger project on "Bee Pollinators of Agricultural Crops" funded by the NSF (RG/98/B/02).