

## ***Cuphea hyssopifolia* (Lythraceae): Floral Morphology and Associated Insects**

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Flowers of most plant species are visited by a diverse array of floral visitors. Specific insect-plant interactions are often considered as mutualistic, highly coevolved relationships. Floral biology studies usually test the assumption that floral traits have some adaptive value to reproductive success. *Cuphea hyssopifolia* (Family Lythraceae), commonly called the Mexican heather, is native to America and is grown as a hedge plant. This perennial shrub produces flowers throughout the year. Preliminary observations revealed that its tiny flowers are visited throughout the day by a large number of insects belonging to many different orders. The present study was conducted to determine the floral morphology and associated insect diversity in *C. hyssopifolia* grown in three selected sites: Department of Zoology, University of Peradeniya; Royal Botanic Gardens, Peradeniya (wet zone); and a home garden in Narammala, Kurunegala (intermediate zone).

Floral biology was studied by investigating floral morphology, flower abundance, stigma receptivity, characteristics of pollen grains, anther dehiscence and time of nectar availability over a period of six months. Random collections of insects were made from July –December 2010 from plants in the sites at the home garden and Department of Zoology for two consecutive days in each week. Insects were hand collected and by sweep netting. Taxonomic keys and reference specimen collections were used for identification. Time of floral visits of insects, their abundance, richness and diversity were recorded between 07.00 a.m. to 5.30 p.m. at 30 minutes intervals.

Flowers of *C. hyssopifolia* have six purple colour petals forming a long corolla tube with a diameter of 2.13 mm and a length of 4.96 mm. Life span of a flower range from 17-20 days. The stigma was receptive from 8.00 to 11.00 a.m.; anthers dehisced between 8.00 - 8.30 a.m. and pollen was available until 5.00 p.m. Nectar was available from 8.30 to 9.30 a.m. A total of 47 species of insects belonged to the orders Hymenoptera, Lepidoptera, Coleoptera, Diptera and Hemiptera were collected from flowers of *C. hyssopifolia*. Among them Hymenoptera (15) and Lepidoptera (11) were the most dominant groups. Site in the Department of Zoology harboured 37 species of insects while the sites in the Botanic Gardens and home garden harboured 29 and 25 species, respectively. The study of flower characteristics of *C. hyssopifolia* revealed that they are associated with entomophilous syndrome that facilitates the visits of many different types of insects to gather its resources and thereby facilitating pollination of its tiny flowers. Hymenopterans and Lepidopterans benefited by the presence of longer proboscis to reach the deep seated nectaries at the base of the long corolla tube in the tiny flowers of *C. hyssopifolia*. Pollen and nectar were the main resources provided by *C. hyssopifolia* flowers for its visiting insects. Site in the Department of Zoology had the highest species diversity, richness and abundance of insects visiting flowers of *C. hyssopifolia*. This may be largely due to the high abundance of flowers and the larger size of the flower patch. The temporal variation in activity of flower visiting arthropods gave two peaks, around 9.30 a.m. and 3.30 p.m. This may be largely due to the optimum environmental conditions and food resources such as nectar, pollen and floral tissues provided for the flower visiting insects during the study period.