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Insects and Meteorological Inventories in a Mango-Based Agroforestry System in Bangladesh

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Abstract : Insect species abundance and diversity associated with meteorological factors during January to June 2013 at a mango-based agroforestry research field in Bangladesh, and the effects of pests and pollinator species on mango are presented in this study. Among the collected and identified insects, nine species belong to 3 orders were found as pollinator, 11 species in 5 orders as pest, and 13 species in 6 orders as predator. The mango hopper, fruit fly and stone weevil appeared as major pest because of their high levels of abundance and infestation. The hoppers caused 100% inflorescence damage followed by fruit fly (51.7% fruit) and stone weevil (31.0% mature fruit). The major pests exerted significantly higher abundance compared to pollinator, predator and minor pests. Hemipteroid insects were most abundant (60%) followed by Diptera (21%), Hymenoptera (10%), Lepidoptera (5%), and Coleoptera (4%). Insect population increased with increasing trend of temperature and humidity, and revealed peak abundance during April-May. The flower visiting insects differed in their landing duration and showed preference to forage with time of a day. Their foraging activity was found to be peaked between 11.00 am to 01.00 pm. The activity of the pollinators led to higher level of fruit set. This study provides baseline information about the phenological patterns of insect abundance in an agroforestry research field which could be an indication to incorporate some aspects of pest management.

Keywords : agroforestry, abundance, abiotic factors, insects, mango
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