Study on parasitoid wasps and bioecology of the clearwing moth, Paranthrene diaphana (Lepidoptera: Sesiidae) on Babylon weeping willow trees in Tehran region

Mehrnoosh Minaei Moghadam1; Alireza Askarianzadeh2*; Habib Abbasipour2

1. Department of Entomology, College of Agriculture, Science and Research branch of Tehran, Islamic Azad University, Tehran, Iran
2. Department of Plant Protection, Faculty of Agriculture, Shahed University, Tehran, Iran, Askarianzadeh@shahed.ac.ir

The clearwing moth, Paranthrene diaphana Dalla Torre & Strand (Lepidoptera: Sesiidae) has a wide distribution in Tehran on Babylon weeping willow trees in urban spaces. In this research, biology of pest in the laboratory condition and adult emergence time were studied in two consecutive years in the southern area of Tehran. Also, its parasitoid wasp was collected in the rearing containers and on babylon weeping willow and poplar trees. The biology study at 27±1°C, 60±5% relative humidity and 16 hours of light and 8 hours of darkness photoperiod showed that the mean embryonic duration of eggs was 12.80±1.79 days and the larval period lasts up to one year in normal conditions. The mean of pupal developmental period was 17.20±3.90 days and the mean of adult longevity was calculated 7.00±1.22 days. Females oviposited as egg masses and mean of each egg mass was 3.26±4.06 and up to 18 eggs per mass was recorded. The mean of total eggs per female was recorded as 154.22±59.37. Two species of parasitoid wasp belong to Ichneumonidae and one species of Braconidae family were found in the rearing containers and on babylon weeping willow and poplar trees. On the basis of the insect pupa shell observed at the branches and trunks of willow trees, adult moth emergence begins in the south of Tehran since mid-May and continues until late August, but the emergence peak was occurred in mid-June. Majority of emergence occurred in June. Also the insect was not attracted to light trap and sticky silver trap.

Keywords: Babylon weeping willow, Paranthrene diaphana, wood borer, bioecology, parasitoid wasps