

SURVEY OF MEALYBUG, *PHENACOCCLUS SOLENOPSIS* (TINSLEY) AND EFFECT OF BIO-ECOLOGICAL FACTORS ON ITS POPULATION IN DIFFERENT ECOLOGICAL ZONES OF SINDH

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ABSTRACT

The study on the effects of biological factors on the population of mealybug was conducted in different locations of Khairpur (Mir's), Naushahro Feroze, Sanghar, Matiari, Hyderabad, Mirpurkhas, and Tando Allahyar districts throughout season at fortnightly intervals. Results indicated a new mealybug specie *Phenacoccus solenopsis* Tinsely was identified from the British Natural History Museum through help of CABI (South Asia) which appeared on cotton two months after sowing and remained till harvest of the crop in all Farms. The pest infestation was more severe during 2007 compared with 2008 which may be due to increased parasitization of pest by a hymenopteran parasitoid, *Aenasius bambawalei* Hapat first time recorded in Pakistan during August, 2008 and population development and activity of predators. There was a significant reduction in overall pest population during 2008 compared with 2007 which may be due to a significant overall increase in predator activity in cotton fields throughout study area in 2008. The highest and the lowest pest population 106.21±15.29 and 55.21±18.71 of mealybugs per twig per plant was recorded during 2007 at Mirpurkhas and Tando Allahyar, respectively. However, during 2008, the highest and the lowest population 58.30±12.42 and 18.34±5.32 of mealybugs per twig per plant was recorded from Naushehro Feroze and Tando Allahyar, respectively. The predators population recorded during 2007 was highest at Mirpurkhas 1.73±0.37 per plant and the lowest 0.19±0.08 predators per plant observed from Tando Allahyar. The higher predators activity was recorded during 2008 compared to 2007. The highest predators population was 11.96±2.83 per plant observed at Nashahro Feroze and the lowest 2.29±0.79 per plant found at Tando Allahyar. The predators such as *Coccinella spp.*, *Chrysoperla sp.*, *Geocoris sp.*, *Orius sp.* Spiders were found active feeding on mealybug population at all different varieties and farms during both seasons.

Keywords: *Aenasius bambawalei*, cotton, *Phenacoccus solenopsis*, pest infestation, predators