

STUDY OF HOST SPECIFICITY AND MIGRATION IN MEALYBUGS AT PAITHAN FROM AURANGABAD DISTRICT, INDIA (M. S.)

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Abstract

Host specificity and anatomical and morphological adaptations are essential for understanding the variability of life strategies and the evolution of parasitic species. There is a wide list of parasites that are connected with a host via their life cycle. The present communication deals with the host plant range of mealybug and its migration studies from Aurangabad district of Maharashtra, India. Due to its wide host range and adaptability to survive in all environmental conditions its invasiveness is increasing day by day. The results of this study revealed that total 08 plant species were observed as hosts which belong to 08 families. Among these host plants, 04 plant species belong to the Malvaceae family. The plants like cotton, Dumkane, Jaswand, Lady finger, Money plant, Rose plant, Calotropus and Abulton were studied.

Keywords- Mealy bugs, migration, Malvaceae, environment.



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INTRODUCTION -

Mealybug is a polyphagous sucking insect pest observed on field crops, vegetables, ornamentals, fruit and horticultural crops, weeds (Arif et al 2009). It is observed in 35 localities among the globe (Ben dov et al 2004). It was first reported on cotton cultivation fields in Texas, USA (Fuch et al 1991). It is a hemimetabolous insect whose life cycle consists of egg, nymph and adult. Due to its wide host range and adaptability to survive in all environmental conditions its invasiveness is increasing day by day. Non-infected plants can be infected from infected plants as juvenile mealybugs can crawl from an infected plant to another plant. Small 'crawlers' are readily transported by wind, rain, birds, ants, clothing and vehicle and may settle in cracks and crevices, usually on new plants. The female mealybug is not active and unable to fly. In fact, humans are great friends helping in the transport of mealybugs. As the infested plant back the colonies of mealybugs migrate from shoot tips to twigs, branches and finally down the trunk.

MATERIALS AND METHOD -

Study area & sampling of host plants: The field survey carried out in Paithan from Aurangabad district. This survey conducted in cultivation area like. Cotton fields, field borders, road side, water channel & some local gardens and near our house surrounding. Close monitoring on migration of mealybug throughout the month of Oct-November. Photographs of infested plants were taken. Sample of mealy bug preserved in 70% alcohol & plants parts collected and carried to laboratory for plant identification.

OBSERVATIONS-



Photograph of Cotton, Abutilon, Calotropus, Dumkane, Jaswand, Lady Finger, Money plant

Non-infected plants can be infected from infected plants as juvenile mealybugs can crawl from an infested plant to another plant. Small 'crawlers' are readily transported by wind, rain, birds, ants, clothing and vehicle and may settle in cracks and crevices, usually on new plants. The wax, which sticks to each egg, also facilitates passive transport by equipment, animals or people. The female mealybug is not active and unable to fly. In fact, humans are great friends helping in transport of mealybugs. As the infested plant back the colonies of mealybugs migrate from shoot tips to twigs, branches and finally down the trunk. Long distance movement is most probable through carrying infested planting material and fresh

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fruit and vegetables across the country or even from one end of a farm to the other. Ants, attracted by the honeydew, have been seen carrying mealybugs from plant to plant. Several species of mealybugs can be pests of greenhouse, nursery, and landscape plants. The most common of these are the citrus mealybug and longtailed mealybug though other species including Madeira mealybug, mescalthus mealybug, and various root mealybugs also occur. In general mealybugs cause similar damage symptoms and are managed in similar ways. Female mealybugs are soft oval insects without wings

RESULT AND DISCUSSION –

The migration of host range capacity similar to Ben DOV (2009), Vanilala (2010). It shows specific diversity of host. Mealybug females feed on plant sap, normally in roots or other crevices, and in a few cases the bottoms of stored fruit. They attach themselves to the plant and secrete a powdery wax layer (hence the name "mealy" bug) used for protection while they suck the plant juices. In Asia, mango mealybug is considered a major menace for the mango crop. The males on the other hand are short-lived as they do not feed at all as adults and only live to fertilize the females. Male citrus mealy bugs fly to the females and resemble fluffy gnats.

Some species of mealybug lay their eggs in the same waxy layer used for protection in quantities of 50–100; other species are born directly from the female. The most serious pests are mealybugs that feed on citrus; other species damage sugarcane, grapes, pineapple (Jahn et al. 2003), coffee trees, cassava, ferns, cacti, gardenias, papaya, mulberry, sunflower and orchids. Mealybugs only tend to be serious pests in the presence of ants because the ants protect them from predators and parasites.

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