Bio control:: Mass production::Parasitoids

Mass production of *Brachymeria* spp.

Introduction

Brachymeria are important parasitoids of coconut black headed caterpillar, *Opisina arenosella*. Out of the six important species of *Brachymeria, B. nosatoi*, *B.nephantidis B. lasus*, *B. excarinata*, *B. hime attevae* and *B. euploeae* recorded on*O.arenosella* recorded on *O. arensella, B. nosatoi* is the dominant species followed by *B. nephantidis*, *B. nephantidis* is widely distributed, but it is more effective in southern districts of Kerala where the parasitism reaches 25 per cent. *B. excarinata* is a dominant species in Mahua; Gujarat. Significant parasitism by *B. hime attevae* has been observed in Salem, Tamil Nadu. *B. nosatoi* is a solitary endoparasitoid, posses the essential attributes and great potential in suppression of *O. arenosella*. It adheres to rigid selection of masses and elaborate courtship, provides higher percentage of parasitism, breeds well in summer months and prolonged drought conditions and disperse uniformly in pest-infested coconut gardens. The pupae parasitized by*Brachymeria* show one or more black dots, which are the characteristic oviposition punctures made by the females.

Production procedure

- About 50 adults of *B. nosatoi* comprising both sexes are released in a clean, dry cylindrical jar of 17.5x6.75 cm. A 12 cm long and 6.25 cm wide cardboard piece is inserted to facilitate the parasitoids to move and rest.
- The mouth of the jar is secured with a piece of muslin cloth tightened with rubber bands. The jar is kept horizontally.
- The parasitoids are transferred to fresh clean jar every 4 to 5 days.
- For adult parasitoids, undiluted honey is provided daily in minute droplets on wax coated paper.

- The jar containing parasitoid is kept in diffused sunlight for 10-15 minutes daily for about 3-4 days after which only the host pupae are to be offered for parasitization.
- Exposure to sunlight stimulates mating.

- Pupae of *O. arenosella* reared in the laboratory are carefully removed with cocoons and silken galleries intact or leaf-bits containing pupae within cocoons and silken galleries and placed on a piece of card board, 12 x 6 cm in such a way that they are accessible to the parasitoid from all the three sides.
- The card board piece containing several pupae is inserted into the horizontally placed glass jar containing the mated parasitoids for parasitization.
- The parasitoids partially disorganize the pupal tissues standing on the galleries with their ovipositors by repeated thrusts and oviposit in the pupae.

- The pupae without cocoons and silken galleries are placed on the card board and covered with silken galleries as the parasitoid will not parasitize naked pupae.
- Depending on the activity of female parasitoids, the host pupae can be exposed for a period of 4-6 hours for parasitization.
- To avoid super parasitism the parasitized host pupae are to be removed immediately after oviposition by the parasitoids (holes chewed in the cocoons indicate oviposition).
- The card board piece containing parasitized pupae is transferred to a similar glass jar or the parasitized pupae alone to a conical flask and kept for emergence of the parasitoid.
- Normally the emergence of parasitoid commences 12 days after oviposition and continues up to 20 days in the laboratory at temperature and RH ranging between 22-30oC and 45-80% respectively. The parasitoids are aspirated into field release container.

© 2016 TNAU. All Rights Reserved.