



Consortia Research Platform on Borers in Network Mode

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CONSORTIA RESEARCH PLATFORM ON BORERS IN NETWORK MODE



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was studied after 24 h. Mango leaves were not preferred but, the adults gnaw and chew the twig. Jack fruit leaves and twigs were preferred. Fig leaves were preferred more than jack fruit leaves. Citrus leaves were not preferred and no feeding marks were found on the citrus leaf.

This study will help in formulation of artificial diet for rearing *Batocera* larvae and adult as the most preferred leaves or twigs when added would plausibly enhance feeding.

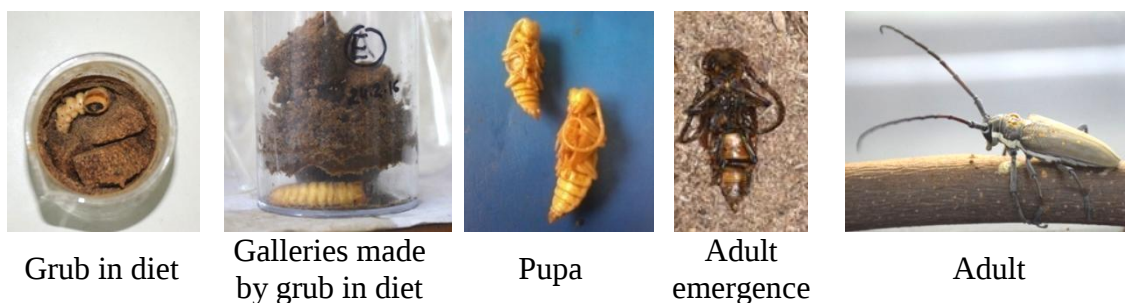
Effect of cultivar, spacing and rootstock on *Batocera* infestation

Stem borer infestation was positively correlated ($r = 0.68$) with tree age while stem girth had no significant impact ($r = 0.25$). The lowest point of the occurrence of borer on the main trunk was at 15 cm and the highest was at 72.5 cm. Maximum number of bored holes was recorded at the first branching junction. Cultivars 'Alphonso', 'Totapuri', 'Banganpalli', 'Langra' and 'Raspuri' were assessed for borer infestation during the survey. More than 65% of the oviposition girdle was found in root stock. Among the root stock, Vellaikulamban was preferred to Oluru. Three different planting density viz., 10x10m, 7.5x7.5m and 3x3m of Alphonso mango variety was assessed for incidence of borer. Among four varieties, 'Alphonso' had the highest infestation (20-25%) followed by 'Langra' (15-20%) while 'Banganapalli' and 'Totapuri' were least affected with < 5% infestation. Trees of 'Alphonso' planted at a closer spacing (3 x 3 m) suffered significantly higher damage (42.5%) than those planted at wider spacing.

Rearing of *B. rufomaculata* on artificial diet (CISH, Lucknow)

The mango stem borer grubs were collected from the infested plant and were carefully brushed to remove adhered contaminants. Uniform sized grubs were used for the artificial rearing. Artificial diet was prepared by mixing the following ingredients Bengal Gram (70g), Host Powder (50 g), Sucrose (50g), Agar Powder (15g), Yeast extract (10g), Multivitamin drops (4 ml), Ascorbic Acid (4g), Para benzene (2g), Formalin (2 ml, Sorbic Acid (1 g), Cholesterin(1g), Casein protein(2g), Aureomycin (1g) in a glass jar and after that distilled water added into the diet was heated to get the ideal consistency. The rearing of the stem borer from the grubs to adult stage was done successfully using artificial diet. The

exponential increase was observed in the body weight and length of the grub in artificial diet at fortnightly interval. The field collected grubs were pupated 64 days after released it into the artificial diet. The pupa was healthy with an average length of 4.7 cm and weight was 5.9 g. The time taken for pupation obviously longer due to cold weather persisted during winter at Lucknow conditions. Adults were observed emerging 10 days after pupation. Per cent pupation of stem borer reared in artificial diet was 83.3. Adult emergence was 33.3 per cent. Adults were robust and active with average body length and width was 4.5 and 1.5 cm respectively. The average antennal length was 5.3cm and mean weight of adult was 1.45g.



Different stages of mango stem borer, *B. rufomaculata* in artificial diet

Sexual dimorphism in *Batocera rufomaculata* (IIHR, Bengaluru)

In order to decipher the adult sexual dimorphism in *Batocera rufomaculata* adult beetles were collected from available insect collection in the entomology division. Fourteen morphological characters were analysed and three indices were calculated. Although the external differences between the male and female *Batocera rufomaculata* are slight, sexes can be easily distinguished by the following characters.

The first segment after the pedicle, i.e., the first flagellomer segment of male longer than that of female with more furrow and ridges like projections. The 13th abdominal segment (Last segment) of female has a small dipression/slit Perpendicular to the abdominal suture between the 12th and 13th abdominal segment. (Looks like a small T shape). Body length to antenna length ratio of male and female are different (Male – 1:1.38, Female- 1:1.06), this character is more easily diagnosed externally.