



Incidence of banana pseudo stem weevil (*Odoiporus longicollis* Olivier) in foothills of western ghats and the predation of Asian weaver (*Oecophylla smaragdina* Fabricius)

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Received: Dec 11, 2022; Revised: Dec 22, 2022 Accepted: Dec 23, 2022

Banana (*Musa* sp. L.) (Family: Musaceae) is an important nutritious economic fruit crop cultivated in many tropical and sub-tropical countries. Insect pests is the main barrier in improving the banana production, more than 20 insect pests were recorded in Indian conditions (Wadhi and Batri, 1964). Of which, pseudostem weevil *Odoiporus longicollis* (Olivier)

(Coleoptera: Curculionidae) is one of the major pests causing severe economic loss by direct and indirect effects upto 90 percent, especially in the states Kerala, Karnataka and Tamil Nadu (Sripriya *et al.*, 2000; Padmanaban and Sathiamoorthy, 2001; Thippaiah *et al.*, 2010). Adult female weevils lay eggs directly into the pseudo stem, the emerge out grubs start feeding and



Figure 1. Pseudostem weevil infested trees with boreholes symptoms

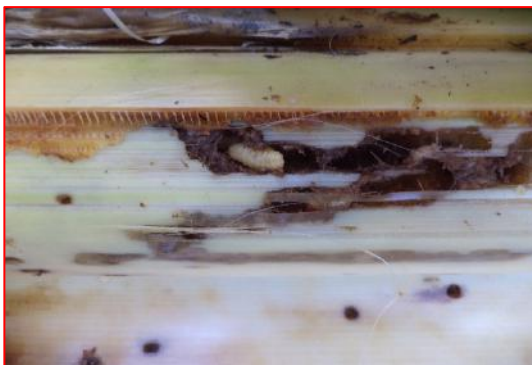


Figure 2. Larvae of Pseudostem weevil



Figure 3. Pupa and adults of Pseudostem weevil

Figure 4. Weaver ants attacking the adult weevil



tunnelling inside the pseudo stem results in decaying of the pre-matured pseudo stem. It leads to the lodging of the tree, reduced leaf and fruit size (Padmanaban *et al.*,2001; Anitha and Nair, 2004) and productivity. Normally systemic insecticides application near rhizomes have been followed throughout the country which leads to pesticide resistance in the weevil and contamination of both soil and ground water. . Use of biological and physical control measures against this weevil have

been recommended as eco-friendly pest management approach. In this, we have explored the possibility on harnessing the predator potential of ants in managing the weevil population. The Asian weaver ant (*Oecophylla smaragdina*) is one of the important predators having a wider host range including beetles, caterpillars, thrips fruitflies etc.

We studied the incidence of pseudo stem weevil in the banana field located in Pannaipatti village (Foot hill of Western

Ghats), Dindigul district of Tamil Nadu. The monthly survey was made on twenty numbers of randomly selected banana trees (Variety: Mondhan) to record the number of boreholes from March to November 2022. The larval density in five heavily infested trees was recorded during peak incidence by dissecting the trees adopting the methodology followed by Saravanaraman et al. (2019). The activity of adult beetles was recorded by observing the plant debris kept in the field.

The mean number of boreholes present in the banana trees was almost zero from March to May 2022 but infestation started in June (0.2 boreholes/ tree) and increased in the subsequent months July (0.90 boreholes/ tree), August (2.00 boreholes/ tree), September (3.5 boreholes/ tree), October (4.2 boreholes/ tree) and November (5.5 boreholes/ tree). The mean larval density recorded during the

November month was 7.8/ tree. The adult activity was also higher from September to November.

During this field survey, we observed the predatory behaviour of Weaver ants on adults of Pseudostem weevil. While recording the adult weevils activities in the banana tree debris the group of ants were forcefully captured them and taken to their nests in the banana trees. The activity of weaver ants is also higher from September to November when the adult pseudostem weevils activity was high. This is indicating that emergence of adult beetles attracts their predators (Weaver ants). We planned further research to assess potential of Weaver ants against Pseudostem weevil in laboratory and field conditions. Such inputs will be useful to develop the strategies to effectively use this Weaver ants as an another biological control method against banana pseudostem weevil.

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