

## STEM WEEVIL (*Diocalandra stigmaticollis* Gyll.) INCIDENCE IN ARECANUT UNDER ASSAM CONDITION

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Arecanut (*Areca catechu* L.) is an important palm species of India, being cultivated from time immemorial and occupying a prominent place in the social, cultural, religious and economic aspects of the people of Assam. It is one of the major plantation crops grown mainly in the states of Kerala, Karnataka, Maharashtra, Assam, Tripura, Meghalaya and some parts of West Bengal. About 90% of total arecanut production in India is mainly contributed by Karnataka, Kerala and Assam.

In recent years, arecanut palm has been reported to be affected by a number of insect and non-insect pests. Therefore, it is necessary to take effective eco-friendly management practices against the pests causing varying degrees of damage to the crop. Pest attack on inflorescences and fruits causes direct loss to yield, whereas damage to other parts such as leaves, roots and

stems has indirect effect on the performance of palms. Although, it has been observed that spindle bug, root grub and inflorescence caterpillars are the common pests of arecanut in Assam, recently the minor pest, stem weevil (*Diocalandra stigmaticollis* Gyll.) (Fam: Curculionidae; Ord: Coleoptera) has also been noticed to cause serious damage to the young palms. The occurrence of stem weevil was reported from Mettupalayam district of Tamil Nadu, certain areas of Karnataka and Kerala.

A study was conducted at CPCRI, Research Centre, Kahikuchi, Guwahati during 2004-05 to find out the extent of stem weevil infestation and season of occurrence in arecanut palms. The entire garden was regularly monitored for weevil infestation for both the years and the infestation percentage was calculated as follows :

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Percentage of infested palms =

$$\frac{\text{Number of palms affected}}{\text{Total number of palms}} \times 100$$

From the two year study, it was found that, both the grubs and the adult weevils cause damage to the young palms. The adult weevil is cylindrical and brown in colour, measuring about 6 mm long and 2 mm broad with a prominent snout. Creamy patches are present on both elytra of the weevil. The weevil gains entry through the tender leaf sheaths and lay eggs on the stem surface. It feeds on the soft tender internodal portion inside the leaf sheath. The damage caused to the palm can be seen on the successive internodes when the leaf drops off. The grubs are initially dull white with a brownish head and later turn to a creamy white. Fully grown grubs are 8-9 mm long and 2 mm wide. The feeding of the grub forms characteristic dents on the stem. The bore holes are also seen in the fresh leaf scars. The girth of the internodes gets reduced and the palm becomes weak. In severe infestation, the stem gets weakened and breaks off easily. The outer leaves become yellow and get detached prematurely and the general vigour of the plant is also affected. Gummy exudates are seen oozing out from the bore hole when the weevil

gets entry deep into the stem.

Sun-scorched or mechanically injured stem is more prone to infestation. The pupa is creamy white initially but turns yellow later on. Pupal period lasts for about 12-14 days.

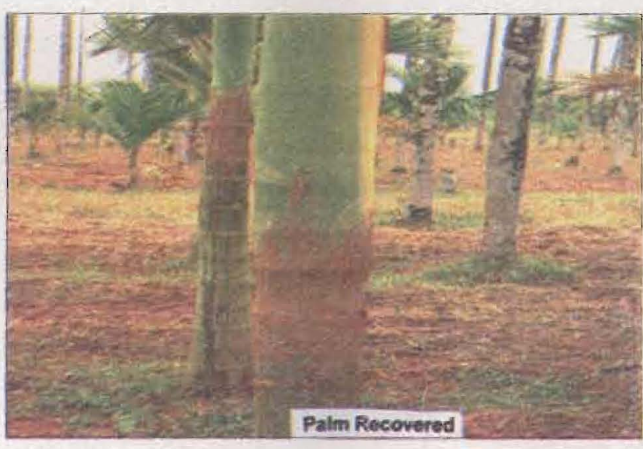
The stem weevil infestation was observed in a garden having different varieties like Mangala, Sumangala, Sreemangala, Mohitnagar and Kahikuchi Selection aged about 5 years. Each variety had 49 palms making a total of 245 palms. The entire garden was monitored regularly for weevil infestation. The stem weevil infestation on different arecanut varieties was observed in every month and found that the infestation was higher during July to October, whereas there is no infestation in the remaining period. During the year 2004, it was observed that the highest infestation (24.50%) was found in Mangala, followed by Sumangala (22.44%), Sreemangala (18.36%), Mohitnagar (6.12%) and the lowest 4.10% in Kahikuchi Selection.

The observation recorded in another block of Kahikuchi Selection aged above 5 years showed that out of 401 palms, 49 palms (12.22%) were found to be infested by the weevil. During the same

**Adult stem weevil**



**Different stages of infestation and control measures**



year, the survey was also carried out to find out the extent of infestation in a separate block of Kahikuchi selection of the age group of 2 years. However, there was no infestation of weevil attack in all the 1810 palms of Kahikuchi Selection.

In the subsequent year (2005), there was no sign of fresh infestation in all the palms of the varietal garden (Mangala, Sumangala, Sreemangala varieties, Mohitnagar and Kahikuchi selection) in comparison to the preceding year. In the monocrop of Kahikuchi Selection, no fresh infestation was noticed in all the 401 palms. This might be due to hardening of the trunk with increase in age of palms (6 years age).

During 2005, the survey carried out to find out the extent of infestation in the monocrop Kahikuchi Selection block of the age group of 3 years, showed that 205 numbers of palms out of 1810 were infested constituting about 11.33 per cent. The infestation was found to be severe during July to October.

Thus, two year observation on stem weevil infestation indicated that the incidence was more

during July to October and is severe in young palms of below 5 years age (pre-bearing palms and the infestation is not seen in palms of more than 5 years of age, irrespective of the varieties. So, it can be concluded that the stem weevil, is thus emerging as a serious pest affecting growth and development of young areca palms of age group of 3 to 5 years. Further investigations on population dynamics and eco-friendly management of the pest needs to be worked out.

#### **Management**

1. Proper sanitation : Removal of stumps of dead palms from the garden.
2. Proper cultural practices along with recommended package of practices should be followed.
3. Chemical control : The affected portion should be scraped with iron material and then pasted with Lindane @10g/kg of soil or Pestoneem @ 0.2% (mixed with 1 kg of soil.)
4. As a prophylactic measure, periodical spraying of Quinalphos 20 EC or Lindane 50 WP@0.05% is advocated.

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