

## AN EMERGING PEST IN ARECANUT : PENTATOMID BUG, *Halyomorpha picus*

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'Arecanut' or 'betel nut' (*Areca catechu* L.) is one of the important commercial plantation crops attributing high economic return in terms of export. India is the largest producer and consumer of arecanut in the world. It is growing in parts of Karnataka, Kerala, Assam, Meghalaya, West Bengal, Mizoram, Tamil Nadu, Tripura, Maharashtra, Goa, Andhra Pradesh, and Andaman and Nicobar Islands. It is known for multifaceted uses *viz.* chewing, important component of the religious, social and cultural celebrations in India. Also it is used in ayurvedic and veterinary medicines (Bavappa *et al.*, 1982).

The palm is prone to attack by a large group of insects (Saneera and Thube, 2016). So far, about 102 insects and non insect pests have been reported from arecanut (Nair and Daniel, 1982). In the recent past, premature falling of nuts in arecanut gardens is increased unusually and became a serious problem in arecanut. Shedding of immature nuts in arecanut is reported due to various reasons like, nutrients

deficiencies, fruit rot disease infection, pentatomid bug infestation, environmental factors etc. Since, last few years scientists of ICAR-Central Plantation Crops Research Institute, Regional Station, Vittal has recorded remarkable increase in the pentatomid bug infestation in arecanut. Severe incidence of this pest resulted into heavy dropping of tender nuts in arecanut palm irrespective of age. This pest commence its infestation on arecanut palms from other host plants by early March and continues up to early August (Figure 1). The peak infestation is noticed during June to August months. Some of the vegetables such as, cowpea, okra, red chilli, bitter gourd, ash gourd, shoe flower plant and coccinia are reported as alternate host of pentatomid bug (Daniel, 2010). Among these hosts, cow pea is the main alternate host, which is grown by most of the farmers in the vicinity of areca garden, from which the pentatomid bug switches to the areca palm and colonize on the bunches and tender nuts.

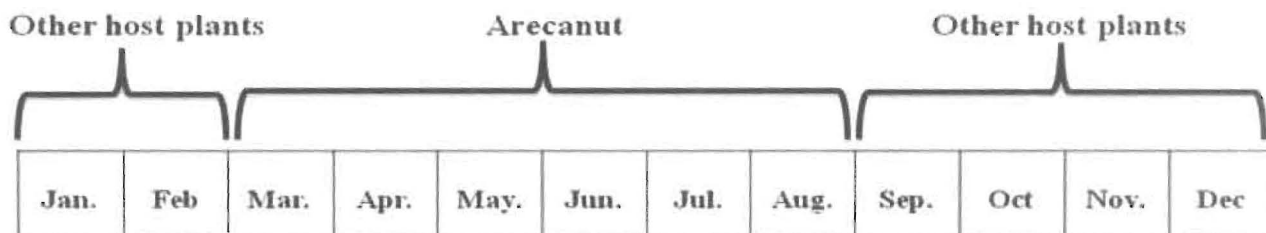
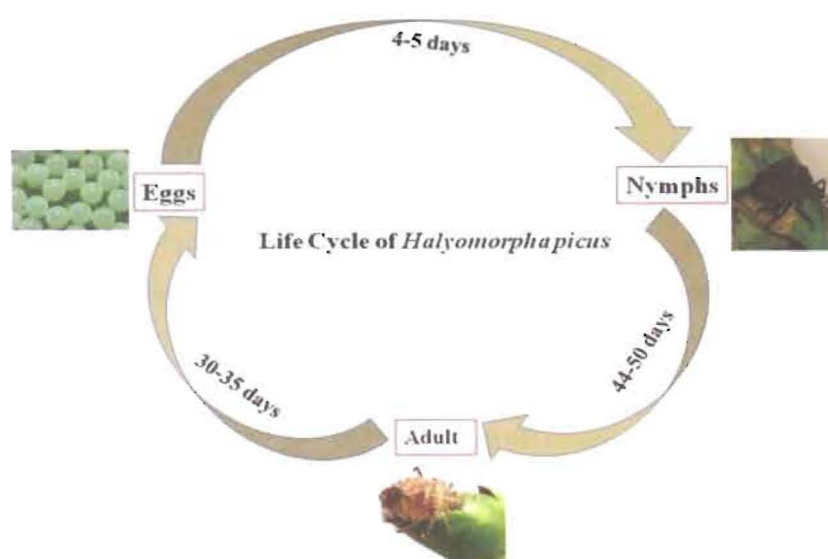


Fig. 1. Host sequence of pentatomid bug on arecanut and other host plants

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Hence, life cycle, symptoms of infestation and management strategy of *Halyomorpha picus* has been discussed here for creating awareness among the arecanut growers.

**Life cycle:** Pentatomid bug consists of incomplete metamorphosis. Hence, its life cycle comprises of three stages *i.e.*, egg, nymph and adult. Life cycle with duration of each stage is represented below in pictorial form.



1. Premature nut falling during the monsoon (Usually infestation starts from May and prolongs up to post monsoon season)
2. Presence of the pin prick marks on the perianth
3. Presence of the pin prick marks on the fallen nuts
4. Dark discoloration of the internal content/ kernels

**Symptoms:**

Adults and nymphs consists of long sucking mouth part (Proboscis). Through this proboscis, insect sucks the cell sap from rachis of inflorescence and tender nuts, particularly from the portion closer to perianth. Incidence of the pentatomid bug can be identified based on the pin prick marks on the perianth and nut surface. Continuous sucking of the sap from perianth region, results in the reduction of turgor pressure that leads to premature nut falling in arecanut. Specific damaging symptoms of the pentatomid bug in arecanut are mentioned below;

**Management:**

Monitoring is considered as the backbone of any Integrated Pest Management (IPM) programme. Keeping in view of the deleterious effect of the chemical pesticides on environment, insecticide should be the last resort in any IPM programme. Pentatomid bug can be managed successfully by using following strategies;

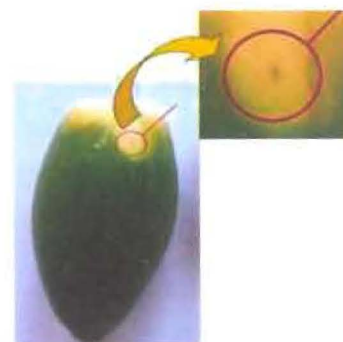
1. Adoption of clean cultivation practices like collection and destruction of the various stages of this insect seen on alternate hosts *viz.*, cowpea, bhendi, bitter gourd, chillies etc, before adults shift to areca palms.



Tender nut dropping



Pin prick mark on perianth



Pin prick mark on tender nut



Feeding mark reached inside nut



Discoloration of kernel



Nymph (Black) and adult (Brown) of *H. picus*

Fig.2. Various symptoms of *H. picus* infestation in arecanut

2. Once occurrence of the pest confirms with lower population build up, neem oil 2.5 % can be sprayed to the infested and surrounded palms.
3. If population and nut fall is more, spraying of Clothianidin 50WDG @ 0.3 g/litre of water or Thiamethoxam 25 WG @ 0.4g/litre of water can be done to the infested and surrounded palms. The spray fluid should thoroughly cover the inflorescence and developing nuts, as these are the main site of breeding for this pest.

#### References

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