

SHORT SCIENTIFIC NOTES

Nature and Extent of Damage by *Helopeltis Antonii* S., the Tea Mosquito on Cashew*

Helopeltis antonii S. (Hemiptera: Miridae) is the most serious pest of cashew in India. Adult and nymph bugs suck sap from tender shoots, panicles, apples, and nuts, and thereby cause shoot/panicle blight and premature fruit drop. Immature bugs feed on tender leaves which then become necrotic. Earlier workers recorded 25% damage to new shoots and 15% damage to tender nuts (Abraham, 1958, 1959), and upto 30% inflorescence blight (Annual Progress Report, Central Cashew Research Station, Ullal, 1966). The three pests, tea mosquito, flower thrips, and fruit borers attack fruits and cause 12.3% fruit drop during mustard stage, 16.4% drop during peanut stage, and 1.1% drop in the later stages (Pillai and Abraham, 1974; Pillai, Dubey, and Singh, 1976). The total loss in yield from inflorescence attack has been estimated as exceeding 30% (Pillai, et al., 1976). The results of observations on the nature and extent of damage done by *Helopeltis antonii* on cashew carried out during 1975-76 are reported in this note.

Bugs were caged using white cylindrical muslin cloth bags on shoots of young trees and their feeding was observed at 24 hr intervals. Five twigs, each bearing 20-25 shooting branches per twig, were marked out on 40 three year-old cashew trees. They were observed at weekly intervals for one year for number of damaged shoots, panicles, and fruits. Bugs were released at the rate of 2 bugs/fruit, on 80 fruits each at early, middle, and advanced stages of growth and their feeding was observed.

Feeding. The bugs insert the proboscis into plant tissues and suck the sap. Injury extends upto the vascular region. A final instar nymph causes 114 lesions (range 78-235), a female 97 lesions (range 16-238), and a male 25 lesions (range 11-59) during 24 hr. Water-soaked lesions appear at feeding sites 10-15 min after feeding. These lesions become prominent within 3-6 hr. These water-soaked lesions turn pinkish brown in 24 hr and scabby and black in 2-3 days (also, Nambiar, Sarma, and Pillai, 1973). The initial lesions are about 2.0 mm long and 1.3 mm wide on leaves and 9.2 mm long and 1.9 mm wide on stems. Lesions on fruits appear as brownish or black circular spots of 2.6-3.7 mm diameter.

Shoot and panicle damage. On an average, 14.0% (range 5.2-32.8%) shoots were attacked, 3.0% of stems, 1.0% of leaves, and 10.0% of stems+leaves. When both stems and shoots are damaged, they usually dry up.

The panicle damage may be partial (secondary rachis alone attacked) or full (main rachis or main rachis+secondary rachis attacked). On an average, 48.5% of the panicles were found attacked (range 15.3-85.7%) with 24.2% panicles (range 6.1-54.5%) showing partial attack and 24.3% (range nil to 67.9%) full attack. Fully attacked panicles usually dry up.

Fruit damage. This was estimated to be 32.0% (range 31.5-32.7%). Usually one month old nuts and apples of all stages (except when ripe) are attacked. As a result of injury, immature nuts drop off. If older

*Contribution No. 141, Central Plantation Crops Research Institute, Regional Station, Vittal 574 243.

ones are attacked, they survive the injury and attain maturity. When nuts are attacked, kernels are usually unaffected except when the attack is in very early stages.

Pests damage young cashew trees throughout the year as they produce flushes almost

continuously. Older trees do not show any pest or damage during June to September since they are usually without flushes then (also, Pillai et al., 1976). Similar observations have been made for *Helopeltis anacardii* on cashew in Tanganyika also (Swaine, 1959).

Central Plantation Crops Research
Institute, Regional Station,
Vittal 574 243,
Karnataka State, India.

B. SATHIAMMA

REFERENCES

1. ABRAHAM, E. V. 1958. Pests of cashew (*Anacardium occidentale*) in south India. *Indian J. Agric. Sci.* 28: 531-544.
2. ABRAHAM, E. V. 1959. Killer insects of cashew. *Indian Farming* 9(3): 14-16.
3. ANNUAL PROGRESS REPORT. 1966. Central Cashew Research Station, Ullal, 1965-1966. 48 pp.
4. NAMBIAR, K.K.N., SARMA, Y. R., AND PILLAI, G. B. 1973. Inflorescence blight of cashew (*Anacardium occidentale* L.) *J. Plant. Crops* 1: 44-46.
5. PILLAI, G. B., AND ABRAHAM, V. A. 1974. pp. 138-139 in *CPCRI Annual Report for 1973*. Kasaragod, India.
6. PILLAI, G. B., DUBEY, O.P., AND SINGH, V. 1976. Pests of cashew and their control in India—a review of current status. *J. Plant. Crops* 4: 37-50.
7. SWAINE, G. 1959. A preliminary note on *Helopeltis* spp. damaging cashew in Tanganyika Territory. *Bull. Ent. Res.* 50: 171-181.

A Study of Variation in Tender Nut Characters in Eight Coconut Varieties

About 4% of the total production of coconuts in India is utilised as tender nut (Muliar and Mathew, 1976). Tender coconuts are being sold in increasingly large quantities in urban areas as a refreshing and satisfying beverage. In West Bengal, as much as 70% of the production of nuts is used as tender nuts (Directorate of Agriculture, West Bengal, 1976).

At present, no particular care is taken about the choice of palms for collecting tender nuts, though variations are known to be present for both quality and quantity of water. For instance, varieties with high kernel or copra out-turn may well be spared from use for tender coconuts, while those

with poor copra out-turn, and having sweet water may only be used for this purpose.

Eight varieties of palms available in our Station were analysed for tender nut characters. For this, ten nuts of six months age (two nuts × five palms) were analysed from each variety. The kernel out-turn was evaluated using ripe nuts (Table I).

In the present study the non-reducing sugar content varied considerably in the varieties (from 0.04 to 1.68%), but the variation for total sugar content was only nominal. The volume of tender nut water showed almost four fold variation. A desired volume of water combined with high sugar content was observed in the varieties Semi-tall Red