

MORE THROUGH PEST AND DISEASE CONTROL

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Cashew production potential is considerably reduced in this country due to diseases and pests. However, the disease problem is marginal compared to that of the pests.

Cashew has been reported to be infested by about 60 species of insects and infected by a few fungi. However, only very few of these pests and diseases are of economic importance. Damage-wise, the stem and root borer, tea mosquito and leaf miner are considered to be major pests of cashew. Among diseases attacking cashew, die-back, damping off seedlings and anthracnose have been found to be most destructive.

PESTS - STOP THEIR VISITS

Stem and root borer (*Plocaederus ferrugineus* L.): The stem borer of cashew is a serious pest capable of killing the tree. Its attack could be identified by the presence of small holes in the collar region, gummosis, extrusion of frass through holes. The adult of the pest is a medium sized reddish brown beetle. It lays eggs in the crevices of loose bark in the trunk. Later the emerging larvae tunnel the trunk and root irregularly feeding on the sapwood. The affected trees show different degrees of foliar yellowing. Gradual death of the tree follows.

Two other species of longicorn beetles, *P. obesus* Gahan and *Batocera rufomaculata* De G. were also found attacking cashew tree to a lesser extent.

If the attack is detected in the early stage, the trees could be saved by swabbing with BHC 0.1 per cent after the removal of affected tissues along with the larvae. It is

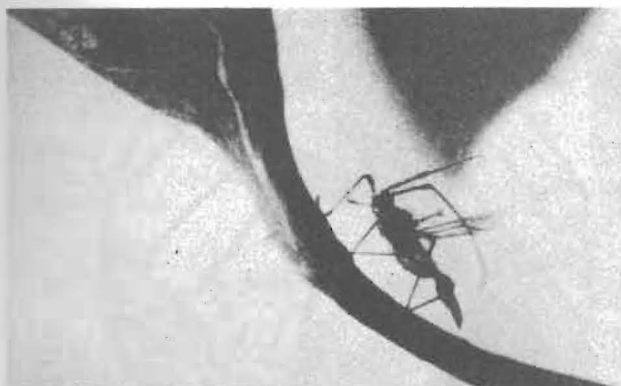
very difficult to save the trees in the middle and advanced stages of infestation. Adopting phytosanitary measures like removal and destroying the dead trees from the plantation will reduce the build up of pest population.

MOST DESTRUCTIVE

The tea mosquito (*Helopeltis antonii* Sign.) causes maximum crop loss in comparison with any other pests. The nymphs and adults of this bug suck sap from the tender shoots, leaves, floral branches and even nuts and apples. The tissues around the point of attack exude a resinous gummy substance and later turn brown to black, probably due to the action of some phytotoxin secreted by the insects. As a result the affected shoots and other tender parts dry up. The loss caused by this insect has been estimated between 15 and 30 per cent.

Though some times back it was believed that the inflorescence blight is caused by tea mosquito in association with the fungi, *Gloeosporium mangiferae* P., and a combination of insecticide and fungicide recommended to control the disease, recent investigation at the Central Plantation Crops Research Institute conclusively proved that tea mosquito infestation alone is responsible for the inflorescence blight.

Trials carried out at CPCRI, Kasaragod with Endosulfan 0.05 per cent applied as high volume spray or 0.1 per cent as low volume spray thrice from the time of the emergence of new flushes to the fruit set, was effective in controlling the pest. Quinalphos and Formothion are equally effective in controlling tea mosquito. Three



Tea-mosquito - this tiny pest can bite into cashew profits

rounds of low volume aerial spray of Endosulfan is expected to cost Rs.228.18 per hectare. But this will be well compensated by the increased production.

The attack of *Acrocercops syngramma* M., the leaf miner is usually observed either during the post monsoon flushes or immediately after the harvest. The caterpillars mine through the tender leaves and later on the epidermal layer of the leaves shows as blistered patches. In severely infested cases, damage of leaves upto 26 per cent has been reported by Abraham (1958). The silvery grey moth lays eggs in tender leaves and the pale white caterpillars make their way out of the mined areas and fall to the ground for pupation. The leaf miner could be effectively controlled by spraying Phosphamidon or Fenitrothion 0.05 per cent at the time of emergence of new flushes.

Lamida monoculalis and *Orthaga exvinacea* are two species of leaf and shoot webbing caterpillars found on cashew. Out of these, the former species is assuming serious proportions in some cashew plantations in Tamil Nadu and Orissa. The pest could be identified by the presence of webs on terminal portion of the tender shoots and blossom and drying of webbed shoots. Spraying 0.2 per cent BHC or 0.5 per cent Fenitrothion or Endosulfan immediately after the monsoon has been recommended for controlling these pests.

DISEASES-KEEP THEM AT BAY

Barring inflorescence blight which has now been identified as a symptom caused

by tea mosquito, the major disease of cashew is die-back or pink disease caused by *Corticium salmonicolour*. The infected branches show white or pinkish growth on the bark initially and gradual death of the shoots from the top downwards occur as the fungus penetrates into the deeper tissues. A film of silky thread of the fungus is seen on branches towards the end of monsoon period. The mycelium is at first silvery white, but in the latest stage changes to a general pink coinciding with spore formation, hence the name pink disease.

The disease could be easily controlled by pruning the affected branches and destroying them. The cut surface is to be protected by applying Bordeaux paste. The general prophylactic measure includes spraying of Bordeaux mixture twice, first in May-June and the second in October.

The damping off disease of seedlings is caused by *Fusarium* sp., *Pythium* sp., *Phytophthora palmivora* and *Cylindrocladium scoparium*. The fungi attacks either the collar region or the root zone of tender seedlings causing severe loss of nursery seedlings. The disease incidence is severe in nursery where drainage conditions are poor.

The prophylactic measures include provision of adequate drainage conditions in nursery and drenching the beds/alkathene bags with Ceresan wet 0.1 per cent or Bordeaux mixture one per cent.

The anthracnose disease was reported to be in epidemic form from Trichy in 1965. The disease is also reported to cause severe economic loss to crop in Brazil. Tender leaves, twigs, inflorescences, nuts and apples are affected by the disease. Earlier symptom is reddish brown, shiny, water soaked lesions which coalesce resulting in death of affected shoots. Spraying the foliage with 1 per cent Bordeaux mixture or 0.2 per cent Dithane-M 45 reduces the damage.

It is desirable to adopt a package of plant protection measures to cover different pests at a particular time since it will not be practicable to adopt control measures against individual pests. The same is true of diseases too.