Root wilt disease-a serious disaster to coconut crop

—*Gopinathan Pillai**

COCONUT PRODUCTION has been slowly loosing its high status in coastal parts of the country due to the serious inroads made by an extensive disease called the "root wilt". The disease is not lethal but as the name itself is suggestive of its complexity, it is a debilitating one with gradual decline in yield. Thus in the long run, it reduces the availability of raw-material for coir industry on which many people depend for their livelihood. No other disease of coconut in India deteriorates the crop as the root wilt does.

Symptoms of the disease

The characteristic visual symptom of root wilt disease is flaccidity or abnormal bending of leaflets. This is followed by general chlorosis and marginal necrosis of leaflets. Shedding of immature nuts and buttons is another salient feature of the disease. The root system of the infected palms is also badly damaged, over 60% of the roots get decayed and the production of fresh roots is hindered. As the disease advances, the size of the leaves and leaflets get reduced, the crown gets stunted and a gradual decline in production sets in (Fig. I). The kernal of the nuts from the affected trees is generally poor in quality. The affected trees are rarely killed. Secondary infection by a fungus *Bipolaris halodes* (leaf-rot), however, paves the way for rapid deterioration of the palm. Seedling below the age of three years, usually, do not show any sign of infection. Palms in the pre-bearing stage are most susceptible. The status of zinc is low in diseased soils.

Investigations carried out so far suggest the association of a sap transmissible virus like pathogen which is also reported to be soil borne. A bacterium–*Pseudomonas* Sp.

Fig. I A root-wilt affectived palm further deteriorated by leaf-spot.

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pod borers, spray the crop with Sevin 50 @2 kg/ha in 1000 litres of water. Aphids and leaf minor may be controlled by spraying the crop either with Dimecron 100 @ 250 ml/ha or Metasystox @ 625 ml/ha in 1000 litres of water.

Q. Please let me know about the number of cuttings and yield potential of oats ?

—K. C. Pawar, Pune, Maharashtra

A. In case the crop is left for seed after the third cut, about 50 tonnes of green fodder and 2.5 quintals of seed yield per hectare may be obtained. First cutting should be taken when the plant is 60 cm tall and subsequent cuttings at dough stage. If the first cutting is delayed the regrowth will be poor and total yield will be reduced. Three cuttings may be taken from January to March and then the plants may be allowed to set seeds. In case the crop has been raised for seed, the crop should be left after first cutting which should be taken 50–60 days after sowing.

Q. I have planted berseem for the first time. Will you please be kind enough to let me know about the irrigation requirements of the crop.

—N. K. Basu, Burdwan, W.B.

A. The first irrigation should be provided immediately after the seedlings emerge. Subsequent 2–3 irrigations should be given at weekly interval. Thereafter, upto the end of February, irrigation interval should be increased to 20 days and again decreased to 10 days from March to May. Normally, the crop should be irrigated after each cuting. At each irrigation not more then 5 cm of water should be allowed.

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with the disease is suspected to be involved in the disease. A soil fungus *Rhizactonia solani* has been frequently found associated with the rotting of roots. Three parasitic forms of nematodes-*Xiphinima* sp., and *Logidorus* sp. and *Radopholus similis* were also observed to be associated with the disease. The role of each one of these in the disease incidence is yet to the established.

Methods of control

Coconut root wilt disease being an intricate problem wherein several factors are involved, the following measures are suggested to reduce the loss in yield.

—Remove and destroy the root wilt affected uneconomic palms including the boles after spraying the crown with 0.01% Dichlorvas or Carbaryl to annihilate the suspected vector-*Stephanitis typicus*.

—Replant the disease tolerant hybrid coconut seedlings like Dwarf × Tall and Tall × Dwarf. Dwarf × Tall has high yielding ability even if it contacts the disease. This increases the margin of profit of the cultivator considerably.

—Rejuvenate the plantation by adoption of timely cultural operations and judicious fertilizer application in conformity with soil requirement and by mixed farming.

—Spray 1% Bordeaux mixture to control secondary infection by *Bipolaris halodes* thrice in a year, preferably in January, April-May & September-October.