

# Managing basal stem rot disease of coconut

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**B**ASAL stem rot is a serious, lethal disease affecting coconut as well as oilpalm and arecanut. In India, the disease has been reported from Tamil Nadu (called Thanjavur wilt), Karnataka (Anabe Roga), Andhra Pradesh (*Ganoderma* wilt) and Kerala. Even though palms of all ages can contract the disease, palms growing under stress, along waterways are more susceptible. *Ganoderma lucidum* and *G. applanatum* have been related to basal stem rot in India. The visual symptoms of the disease are similar to those of severe drought. The outer leaves wither and droop, usually remaining for a long time suspended vertically downwards to form skirt of dead leaves around the trunk. Sometimes the leaves break somewhere along the midrib usually close to their bases. The crown becomes reduced and the stem shows the typical tapering due to unfavourable conditions.

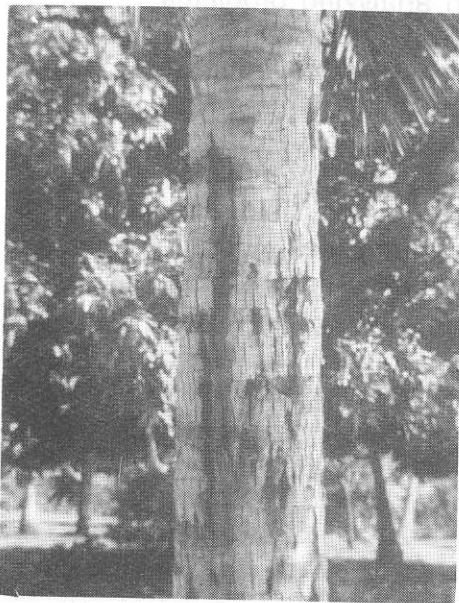
The fungal pathogen is a root

**Basal stem rot is a destructive disease of coconut prevalent in various coconut-growing countries of the world. *Ganoderma lucidum* and *G. applanatum* are the causative agents of the disease. Almost all parts of coconut palm are affected by the fungus. Affected palms usually take 6 months to 2 years to die. Disease management has been discussed in this article.**

parasite and a soil dweller inhabiting dead as well as living plant material in the soil. The fungus gains entry into the host plant through wounds and affects the roots first,

as a result of which roots become friable and disintegrate. At the base of the stem, bleeding patches with reddish brown discoloration appear as parallel vertical streaks at several places, accompanied by exudation of a brown viscous gummy substance. These patches coalesce forming a discoloured band around the trunk which can extend up to about 1 m from ground level. Sometimes characteristic dry rot of internal tissue is produced at the base of the stem. In some palms the bark from the base of the palm may peel off. In some cases death of the palm is accelerated by infestation of scolytid beetle (*Xyleborus perforans*) and weevil (*Diocalandra stigmaticollis*) at the bleeding patches from which powdery mass is thrown out. The flowers are also affected to the extent that the tree becomes barren. The spread of the disease takes place mainly through soil. Disease progression is rapid in sandy and light soils.

Bleeding patches on stem of coconut palm



Vertical streaks with brown discoloration at the base of stem. Bracket of fungal pathogen is also seen



Reduced crown with dead leaves in final stage of disease



### Management

The disease can be managed effectively by:

Removal of dead palms and palms in advanced stages of disease and destruction of their boles and root bits

Isolation of diseased palms from healthy ones by digging isolation trenches of 1 m deep and 30 cm wide at a distance of 1 m from bole

Regular basin irrigation during summer months or moisture con-

- Avoiding flood irrigation and cultural practices like ploughing infected gardens.
- Addition of 50 kg farmyard manure (FYM) or green leaves or 200 kg tank silt/palm/year.
- Application of 5 kg neem cake/palm/year
- Soil drenching with 40 litres of 1% Bordeaux mixture thrice a year for 1 year along with root feeding of 2 g of Aureofungin-sol + 1 g of copper sulphate in

100 ml of water thrice a year at quarterly intervals or Calixin 2 ml in 100 ml of water

- Raising *Ganoderma* resistant crops like banana as an inter-crop
- Application of 500 g of suitable strain of *Trichoderma harzianum* multiplied in 50 kg FYM.
- If *Xyleborus* attack is found in the stem, root feeding with 5 ml of Monocrotophos may be given.
- Avoiding transportation of seedlings from infected area to healthy area.

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