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Record of Upper Stem Rot of Oil Palm (*Elaeis guineensis* Jacq.) in Little Andamans

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Upper stem rot of oil palm is herein recorded from the oil palm plantations in Little Andamans, India. The symptomatology, possible etiological agents and ad hoc *control measures are discussed.*

The Andaman and Nicobar Islands' Forest and Plantation Development Corporation started oil palm cultivation in the forest lands during 1975. The planting materials were introduced from Nigeria, Malaysia, Papua New Guinea, Cote'd' Ivoire and Republic of Zaire. Presently, an area of 1 593 ha is under this crop. Oil palm diseases *viz.*, bunch failure, bud rot, Marasmius bunch rot and minor leaf spots have been reported in Little Andamans (Chander Rao, Kochu Babu & Nair 1990; Reddy, Nair & Majumdar, 1987; Kochu Babu, Nair & Ramachandran Nair, 1990).

The occurrence of an unknown disease in oil palm in Little Andamans was brought to our notice and the authors conducted a survey of the plantation during February, 1992. Rotting on the upper portions of stem was observed on 42 palms distributed in 12 foci in the 160 ha area raised in 1975–76 with seed materials introduced from NIFOR, Nigeria.

SYMPTOMS

The symptoms are gum exudation, bleeding and rotting of the stem. Gum exudation *(Figure 1)* and stem bleeding *(Figure 2)* occur at any point above 50 cm from the bole region. In the early stage of the disease, the stem bleeding lesion was found to converge inwards and gradually reduced in size *(Figure 3).* However, in advanced cases when the bark was removed at the lesion site so as to expose the underlying tissues, decay was found to have advanced deeper inside. In due course, rotting extends internally in an irregular pattern *(Figure 4).* The dark brown lesion also extended laterally girdling the stem *(Figure 5)* causing dry rot. Externally the presence of fibrous strands is noted. Once the rotting is advanced inside the stem the palm snaps at the site of rotting *(Figure 6)* due to lack of mechanical support. No symptoms are visible on the foliage even when about 75 per cent of the stem tissues show rotting.

ETIOLOGY

The presence of healthy tissues above and below the lesion indicates that the infection is not likely to be systemic and may be localised. No insect was found at the lesion site or rotten tissues. Upper stem rot caused by *Phellinus noxius* has been reported from Malaysia (Sharples & Jorgensen, 1930) and Indonesia (Turner, 1971) and several other countries (Turner, 1981). Though the symptoms of the disease are similar to those described for upper stem rot, the absence of resupinate fructifications of *Phellinus noxius* on frond butts and stem suggests that this fungus

Figure 1. Gum exudation on stem.

Figure 2. Bleeding patches.

may not be involved in the malady. Since the plantation is raised on deforested area decaying forest stumps harbouring Polypores fungi are available in plenty. Fructifications of *Phellinus, Ganoderma* or any other polypores fungi were not seen on palms in various stages of disease and dead stumps. However, as a precautionary measure, collection and destruction of fructifications of Polypores fungi from forest stumps are necessary. The gummy exudates revealed presence of spores of *Thielaviopsis* sp. The tissues from early stage lesions were plated on potato dextrose agar after surface sterilisation with 0.1 per cent mercuric chloride and *Thielaviopsis* sp. was isolated. Etiological role of this fungus needs confirmation by pathogenicity studies.

CONTROL

Since the disease is of spreading nature control measures need immediate attention. Identification of the disease in the early stage and removal of rotten tissues, swabbing with Calixin 0.1 per cent followed by application of hot coal tar is recommended. In advanced cases removal of the rotten tissues to the extent possible followed by spraying with Calixin 0.1 per cent in the interior portions and application of hot coal tar could save the palms. This should be followed by plugging the holes with a paste containing sand, cement and BHC to provide mechanical support to the palm and to prevent rodent, insect and wind damage. Palms which have snapped due to upper stem rot should be excavated and burnt to avoid further spread.

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Figure 3. Initial rotting beneath the bleeding patches.

Figure 4. Cross-section of stem showing irregular pattern of rotting.

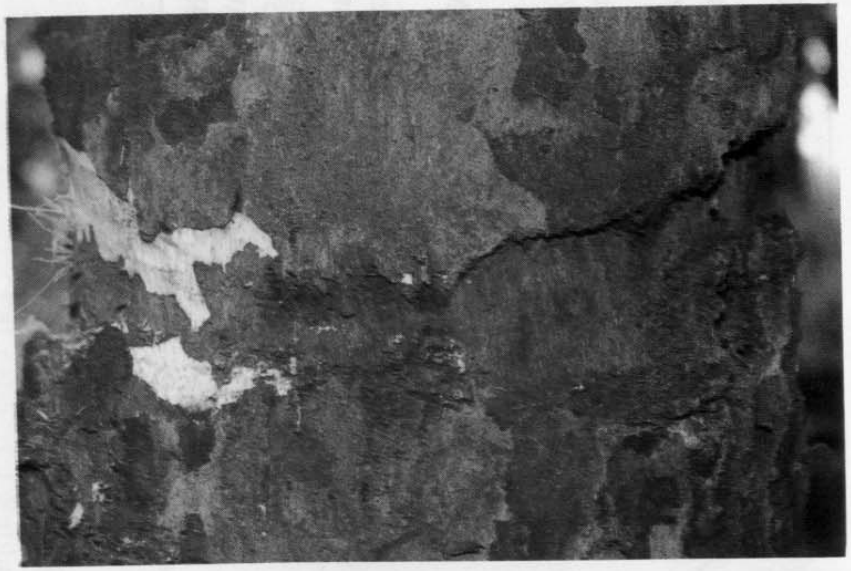

Figure 5. Extension of lesion girdling the stem.

Figure 6. Collapse of the palm at the upper portion of the stem.

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