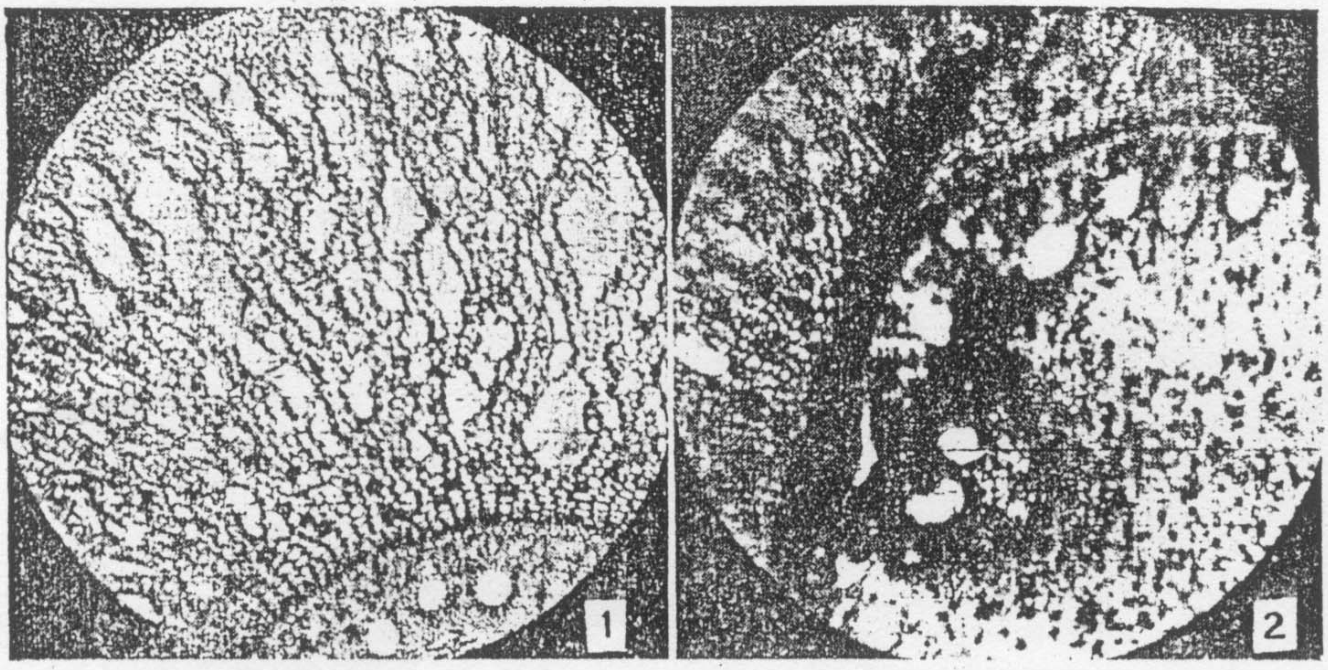
A NOTE ON THE ANATOMICAL DERANGEMENT IN THE ROOT TISSUE OF ROOT (WILT) DISEASED COCONUT PALM

VISIBLE root decay has been associated as a symptom of root (wilt) disease of coconut palm, the etiology of which has been the subject of investigations in the recent past. A virus or similar pathogen has been described as a primary causal factor, while soil factors, fungal infection of roots, etc., have been described as secondary factors.[1,2] Wilt being the predominant symptom of this disease, visible root decay found associated with the disease is noteworthy. The present note deals with a study of the internal structure of roots of diseased palms, which did not show any sign of root decay externally.

Root portions cut from the tips of actively growing roots of 10 apparently healthy and 10 diseased palms growing in diseased soil as well as roots of healthy palms were studied. Root-tips showing signs of decay externally were excluded. Thin longitudinal and transverse sections obtained from the above root tissues were studied under the microscope after proper staining wherever necessary. Data on the microscopic examination of over 200 root portions were recorded.

Internal browning of vascular elements extending into the cortex and sometimes accompanied by disintegration of vascular elements also were observed in 60% of the roots of diseased palms examined (Fig. 2), while mild internal browning of tissues was observed in 33% of the roots of apparently healthy palms



growing in diseased soil. Development of tyloses was also noted in the vessels of majority of roots of diseased palms examined. None of the above derangements were observed in the root tissue of healthy palms examined (Fig. 1). It is interesting to note that derangements in the vascular tissue of roots were observed only in the case of palms, whether apparently healthy or diseased, growing in the diseased soil.

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Central Coconut Res. Station, P. INDIRA.
Kayangulam, Kerala (India), A. RAMADASAN.
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1. Menon, K. P. V., *Proc. of the First Meeting of FAO Technical Working Party on Coconut Production, Protection and Processing*. FAO, Bangkok, Thailand, 1963, p. 58.
2. Lal, S. B., *Proc. of the Second Meeting of FAO Technical Working Party on Coconut Production, Protection and Processing*. FAO, Bangkok, Thailand, 1966, p. 273.