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Pathogenicity of *Cylindrocarpon lucidum* Booth on Coconut Palm

Root decay, associated with root (wilt) disease of coconut palm, is reported to be due to fungal infection (Butler, 1906; Menon and Nair, 1949). Recent studies indicated that *Fusarium equiseti* (Corda) Sacc. and *Cylindrocarpon effusum* Bugn. are also pathogenic to coconut root system (Lily, 1979). This note describes the results of pathogenicity trials conducted on coconut seedlings with *C. lucidum* Booth, a fungus isolated from coconut roots (Sosamma and Koshy, 1978).

Freshly emerging roots of three year old coconut seedlings planted in sterile soil were washed with sterile water and introduced into the culture tubes as per the method adopted by Menon and Nair (1951). The roots were inoculated with culture of *C. lucidum* grown in potato-dextrose-agar medium. Roots of seedlings receiving sterile medium alone served as control.

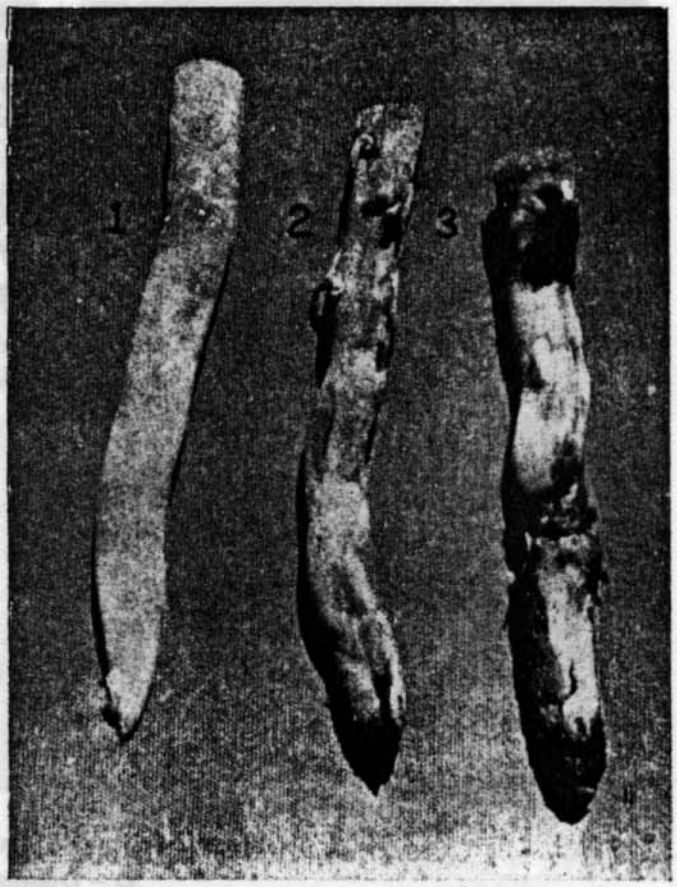

Fig. 1. **1. Healthy coconut root (Control)**
2. 3. Infected coconut root (Inoculated)

Examination of the inoculated roots revealed that the tips of all the 40 roots inoculated, decayed completely after two weeks. The roots of check seedlings remained perfectly healthy (Fig. 1). *C. lucidum* was reisolated from the infected roots. Damage on the root system due to fungal infection was studied by applying *C. lucidum* infected root bits (300 gm/seedling) to the root zone of coconut seedlings raised in sterilized soil, at quarterly intervals for a period of one year. For this *C. lucidum* was multiplied in sterilized root bits. Twenty replications were maintained for the treatment. After one year of treatment, the root system of three each of the inoculated and control plants were

exposed for assessing the damage due to fungal infection.

Extensive rotting of root tips and lateral roots were recorded in the inoculated seedlings. On an average, 50% of the roots were decayed in inoculated seedlings as against 5% in the control seedlings. *C. lucidum* was reisolated from roots of inoculated seedlings, but the roots of control seedlings did not yield the fungus. The inoculated seedlings showed retarded growth and increased rotting of roots, compared to the check seedlings (Fig. 2; Table I), indicating that *C. lucidum* is pathogenic to the

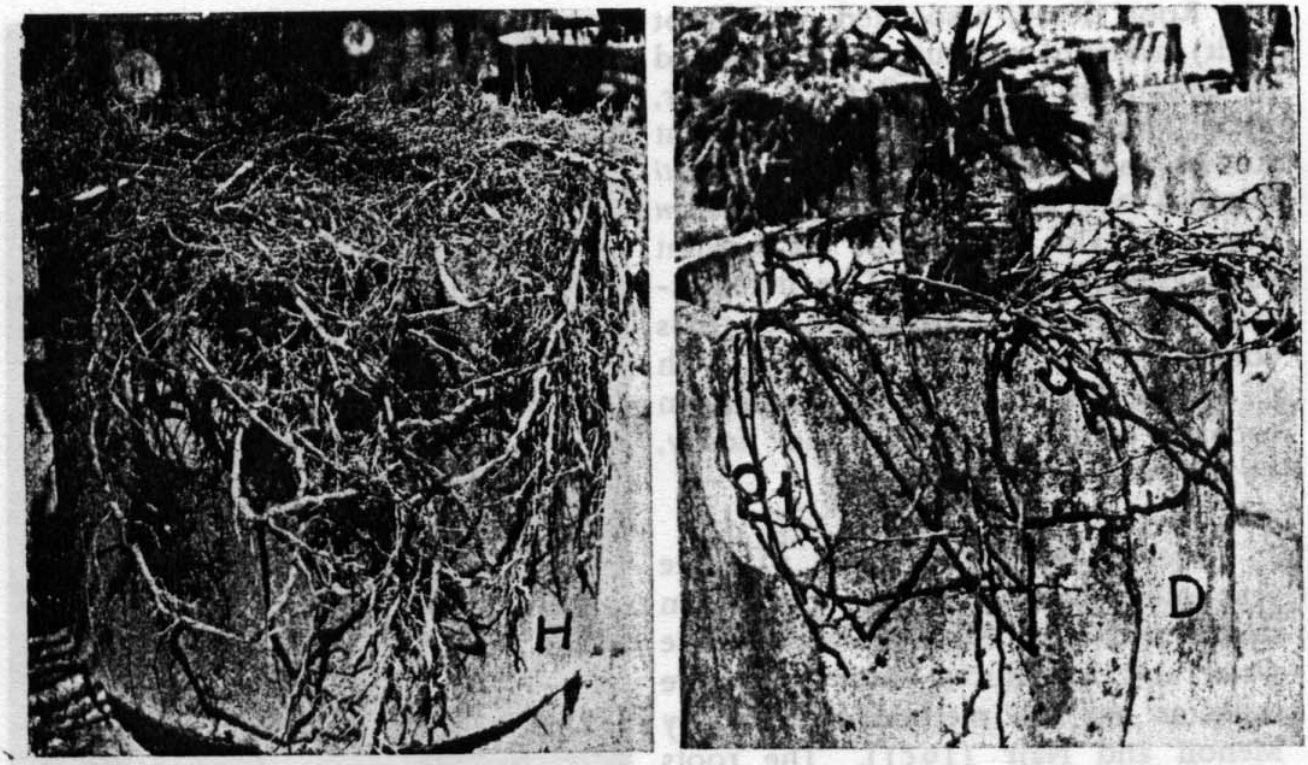

Fig. 2. H – Healthy root system (Control)
D – Diseased root system (Inoculated)

Table I. *Growth characters of the experimental seedlings*

	Treatments							
	Cylindrocarpon lucidum Replications				Control plants Replications			
	1	2	3	Average	1	2	3	Average
Total roots	27	43	39	–	64	50	39	–
Rotted roots	8	29	11	–	6	4	0	–
Percentage of rotting	26	63	63	50	9	8	0	5
Maximum length of roots (cm)	114	152	148	138	210	190	188	198
Girth at collar (cm)	29	28	23	26	40	36	30	35
Total leaves	3	3	4	3	6	6	6	6
Height of the seedling (cm)	120	150	148	139	270	212	203	228

coconut root system. The importance of *Cylindrocarpon* spp. as root pathogen has been reported in other crops also (Ylimake, 1967; Subramaniam and Govindarajan, 1968).

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