

Toxic effect of *Fusarium equiseti*—an isolate from coconut root

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The production of toxic metabolites in culture filtrates of phytopathogenic fungi and their involvement in disease development were reported by several workers^{1,2,3}. Fusaric acid, a wilt toxin is known to be produced by many species of *Fusarium*⁴. *Fusarium equiseti* (Corda) Sacc caused internal and external damage in coconut resulting in deterioration of the root system as occurring in root (wilt) affected palms⁵.

The present study was carried out to assess the toxin production by *F. equiseti* and its effect in coconut leaf tissue, coconut sprouts and other test plants like Napier grass slips.

F. equiseti was maintained in potato-dextrose agar medium. The fungus was grown in Czapek's liquid medium in 500 ml Erlenmeyer flasks, pH adjusted to 6.8 to 7.0. Culture filtrates were collected after 30 days of incubation and centrifuged at 2,000 g for about 20 minutes. The clear supernatant was dialysed overnight against more than 10 volumes of distilled water. The dialysed filtrate was tested for its toxicity on coconut leaf bits and Napier grass slips in three replications with a control containing dialysed Czapek's medium and sterile water.

The culture filtrate caused wilting in Napier grass slips in 24 hours and yellowing and marginal necrosis after 72 hours. The coconut leafbits rotted at the distal end 4 days after the treatment and extended towards the base. The control leaf bits in both series remained unaltered.

The dialysed culture filtrate was fed through cut ends of roots of coconut palm according to the method adopted by Davis, et al.³ The roots were washed with sterile water and cut with a sharp blade. The cut ends of the roots were completely immersed in the filtrate kept in 100 ml conical flasks and thus forced to feed the filtrate. The mouth of the flask was plugged with sterile cotton wool. The treated sprouts developed necrotic lesions on the leaf blade, leaf margin and at the leaf tip after a period of 2 months. The sprouts which received the dialysed uninoculated medium seemed to be healthy and vigorous—an increase of 2 cm in girth at collar and 22 cm in height over the treated one was observed.

The above results indicated the presence of toxin in culture filtrate of *F. equiseti*. *F. equiseti* is reported to be toxin producing in soybean, red and white clover and pea plants⁴.

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¹Davis, T. A., A. P. Anandan and K. P. V. Menon. *Indian Cocon. J.* 7 : 49-60, (1953).

²Gaumann, E. *Indian Phytopath.* 46 : 342-357, (1957).

³Gaumann, E. *Indian Phytopath.* 48 : 670-686, (1958).

⁴Jauch, C., Flesler, H. *Rev. Pl. Patn.* 55 : No. 5248, (1976).

⁵Kalyanasundaram, R. and R. Charudattan. *J. Scient. Ind. Res.* 25 : 63-73, (1966).

⁶Kalyanasundaram, R. and R. Charudattan. *Bull. Nat. Inst.* No. 35 : 115-119, (1967).

⁷Lily, V. G. *Indian Phytopath.* 34 : 369-370, (1981).

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