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PHYTOTOXIC METABOLITE FROM *ALTERNARIA MACROSPORA*

THE leaf spot disease of cotton (*Gossypium hirsutum*) caused by *Alternaria macrospora* is a widespread and destructive disease that has affected many areas in Southern India¹. Alternariosis is characterized by irregular necrotic lesions on leaves. The syndrome can be reproduced by artificial inoculation and also by the culture filtrate on leaves. Phytotoxic metabolites produced by this organism *in vitro* from 7-10 day old cultures grown on Richards' medium when tested using the method of Ueno *et al.*² (1975) showed toxicity to susceptible cotton leaves (MCU 5). The brown, necrotic lesions appeared after 16 h of treatment enlarging within 24 h resulting in veinal necrosis. Affected cell walls of the subsidiary cell turned brown. The rapidity of appearance of the phytotoxic symptoms was greater when the organism was grown in potato sucrose broth for 15 days than in Richards' medium. Culture filtrates were extracted with ether and further processed into acid, neutral and alkaline fractions as suggested by Kohmoto *et al.*³ (1976). Each fraction was partially purified by preparative TLC using benzene: acetone (2:1) as the solvent system. As many as 15 zones were partitioned under UV and tested for phytotoxicity. Between

the zones, there was an UV absorbing one present in all the three fractions which was found to be most toxic. This partially purified substance has an R_f value of 0.74 to 0.76. The silica gel containing the sample was then scraped off the glass plate and placed in a small circle on the upper side of the fresh detached leaf (MCU 5) on moist filter paper in a Petri dish. The silica gel on the leaf was wetted with distilled water and incubated in a moist chamber at 27° C. The leaf was examined for the induction of veinal necrosis after 16-24 hours (Ueno *et al.*², 1975). Droplets of water with plain silica gel served as the control. Also, leaves of *Cyamopsis tetragonaloba* and *Phaseolus vulgaris* produced the same syndrome. This fraction gave positive reaction (characteristic blue colour) with Folin's reagent when followed by exposure to ammonia vapour, suggesting that this might be a phenolic acid. Further studies on the chemical nature as well as its action on the permeability of epidermal cells are underway.

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AWARD OF RESEARCH DEGREES

Tamil Nadu Agricultural University, Coimbatore, has awarded the Ph.D. degree to Messrs. S. Subrahmanyam, M. Nagarajan, T. S. Manickam, B. Sethupathi Ramalingam, K. M. Ramanathan.

Utkal University, Bhubaneswar, has awarded the Ph.D. degree in Chemistry to Shri Panchanan Patra.

Karnatak University, Dharwar, has awarded the Ph.D. degree in Geology to Shri K. T. Damodaran.

Karnatak University, Dharwar, has awarded the Ph.D. degree in Mathematics to Shri Rajasekharan Mohansingh.

Kakatiya University, Warangal, has awarded the Ph.D. Degree in Chemical Engineering to Shri T. Sripathi.

University of Cochin, has awarded the Ph.D. degree in Science to Smt. B. Santhakumari.