

IN-VITRO SCREENING OF SELECTED FUNGICIDES AGAINST *Phellinus noxius* AND *Poria vincta*

Among the major root diseases of rubber (*Hevea brasiliensis*) brown root disease (*Phellinus noxius* (Corner) G.H.Cunn) occurs sporadically in India while *Poria* root disease (*Poria vincta* (Berk) Cooke) only occasionally (Rajalakshmy and Pillay, 1978). Organomercurial fungicides were recommended for the control of root diseases (Ramakrishnan and Pillay, 1962) and among these, methoxy ethyl mercury chloride (MEMC) is widely used in rubber plantations. However the use of organo mercurial fungicides is banned or discouraged in many countries due to high mammalian toxicity and environmental pollution (Schroeder, 1971; Brady, 1967). In view of this, laboratory screening of alternative fungicides which are cheaper, more effective and less harmful to man and environment was attempted and the results are reported in this paper.

Twelve fungicides and one antibiotic were screened against the root disease pathogens *Phellinus noxius* and *Poria vincta*. Each fungicide was tested by poisoned food technique using potato dextrose agar medium (Nene, 1971) at concentrations 50, 100, 200, 300, 400, 500 and 1000 ppm of active ingredient. In cases where complete inhibition occurred at 50 ppm itself, a lower concentration of 25 ppm was also tested. Each treatment was replicated four times. The plates were incubated at $25\pm 2^{\circ}\text{C}$ and colony diameter measured after 7 days. Percentage inhibition was worked out based on the growth of the pathogen on plain potato dextrose agar. Whenever complete

inhibition of the pathogen was noticed, the culture discs were transferred to fresh medium to confirm whether the dose of the particular fungicide is fungistatic or fungicidal.

The results are furnished in Tables 1 and 2. Complete inhibition of growth of both the pathogens was observed in the plates incorporated with propiconazole, triadimefon and MEMC at dosage levels starting from 25 ppm and with tridemorph from 100 ppm. Total inhibition of growth of *P. noxius* was also observed in the case of tetramethyl thiuram disulphide (TMTD) at 25 ppm. The fungicides which caused total growth inhibition were found to be fungitoxic except triadimefon and bitertanol.

Tridemorph (Calixin 10%) and quintozone (PCNB 20%) formulated in bitumen or grease base have been used as collar protectants, against red root disease and white root disease (Rubber Research Institute of Malaysia, 1974). Triadimefon was also found to be effective *in vitro* against *Ganoderma* sp. at 10 ppm level (Jollands, 1983).

The present study trial has shown that TMTD, propiconazole, triadimefon and tridemorph are effective in inhibiting *P. noxius* and *P. vincta* in the laboratory.

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