Research Note :

Management of *Macrophomina phaseolina* through non-systemic fungicides

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SUMMARY

To study the efficacy of different fungicides under *in vitro* conditions the poisoned food technique was employed. Eight non-systemic fungicides were tested at 500, 1000, 2000 and 3000 ppm concentrations. The most effective fungicide was found to be the copper oxychloride where cent per cent inhibition of growth was recorded at 500 ppm concentration with toxicity index of 400. Next in order of superiority were boric acid and sodium metabisuphide which also inhibited cent per cent growth of the test fungus but at 2000 ppm concentration.

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The poisoned food technique has been employed for different non-systemic fungicides under *in vitro* conditions by various scientists and reviewed here their conclusion. Mathukia (1982) reported that 92 to 100 per cent inhibibition was observed in ceresan, captan, brassicol and benlate at 500, 750 and 1000 ppm. Vitavax, busan, thiram, cuman and thiophanate methyl (topsin) also inhibited the growth but only at 1000 ppm concentration. Prashanthi *et al*. (2000) stated that chlorothalonil was the most effective at 3000 ppm, where 82.45 % inhibition of mycelial growth was recorded. Hence, the present study was aimed for studying the efficacy of non-systemic fungicides for management of dry root rot (groundnut isolate) under *in vitro*.

To study the efficacy of different fungicides under *in vitro* conditions, the poisoned food technique was employed. Eight non-systemic fungicides were tested at 500, 1000, 2000 and 3000 ppm concentrations. Measured quantities of these fungicides were incorporated in Potato dextrose agar medium separately in flasks and then shaken well to given uniform dispersal of the fungicides. The medium containing different fungicidal concentrations were then poured into Petri plates under aseptic conditions. After cooling and solidifying the medium in Petri plates it was inoculated with 4mm disc of actively growing culture of *M. phaseolina* (groundnut isolate) under aseptic conditions and then incubated at 30 ±1°C temperature for 8 days. Observations on colony diameter was recorded in each of the fungicidal concentrations and the per cent inhibition of growth of *M. phaseolina* in each treatment was calculated by using the equation formula of Vincent (1927).

Perusal of data in Table 1 clearly indicates that all the fungicides were capable of inhibiting the growth of the fungus at various concentrations. The most effective fungicide was found to be the copper oxychloride where cent per cent inhibition of growth was recorded at 500 ppm concentration with toxicity index of 400. Next in superiority were boric acid and sodium metabisuphide which also inhibited cent per cent growth of the test fungus but at 2000 ppm concentration. Although the treatment of mancozeb and thiram were also found effective and provided cent per cent inhibition at highest *i.e.* 3000 ppm concentration. Dinocap and chlorothalonil were found mediocre in their performance for inhibiting the growth of test fungus, where average inhibition of growth