

IN VITRO SCREENING OF SOME MEDICINAL PLANT EXTRACTS AGAINST *PHYTOPHTHORA CAPSICI*, INCITANT OF FOOT ROT OF BLACK PEPPER (*PIPER NIGRUM* L.)

Antifungal property of the extracts of four species of medicinal plants, viz., *Azadirachta indica* A. Juss (leaf), *Basella alba* L. (leaf), *Ocimum sanctum* L. (leaf) and *Phyllanthus fraternus* Webst. (whole plant) was tested against *Phytophthora capsici* by poisoned food technique (Zentmyer, 1955). Aqueous extracts of the above plants were prepared at two, five and ten per cent concentration by boiling in water for 15 min. The partially sterilized extracts thus prepared were mixed in melted cooled potato dextrose agar medium and dispensed in petri plates. A fungal disc of 10 mm diameter was kept in the centre of each petri plate and incubated at 25 C for 72 h by adopting standard procedure and the results were recorded.

All the four plant extracts have by and large inhibited the test fungus (Table 1). Extract of *A. indica* was the most effective one. After 72 h of incubation, diameter of fungal growth in the control was 5.6 cm whereas in the treatments of *A. indica*, *O. sanctum*, *P. fraternus* and *B. alba* it was 3.97, 4.01, 4.69 and 5.47 cm respectively. The inhibitory effects were significant in all the cases except

in that of *B. alba*. Among three concentrations, five and ten per cents were found to be on par in the inhibitory property.

The antifungal property of medicinal plant extracts was amply documented by various workers. Khan and Rishikumar (1991) studied the antifungal activity of leaf extract of neem on seed mycoflora of wheat at different dilutions and found that marked reduction in seed mycoflora and enhanced seed germination. Tewari and Nayak (1991) reported that leaf extracts of four species of plants viz., *Piper betle*, *Ocimum sanctum*, *Nyctanthus tristis* and *Citrus lemon* are effective in controlling blast, brown spot and sheath blight pathogens of rice *in vivo* and *in vitro* experiments. Coumarines as potent biocides against *Phytophthora palmivora* and *Colletotrichum capsici* was reported by Johri *et al.* (1992).

From this study, it is clear that *A. indica*, *O. sanctum* and *P. fraternus* have significant inhibitory action against *P. capsici* and these plants can be used in the integrated disease management of foot rot of black pepper.

Table 1. Antifungal property of some medicinal plant extracts against *Phytophthora capsici*

Concentration, %	Diameter of fungal growth, cm				
	<i>Azadirachta indica</i>	<i>Ocimum sanctum</i>	<i>Phyllanthus fraternus</i>	<i>Basella alba</i>	Mean
2	4.25	4.67	4.92	5.42	4.81
5	4.17	3.25	4.87	5.58	4.47
10	3.50	4.12	4.30	5.40	4.33
Mean	3.97	4.01	4.69	5.47	-

CD(5%) for comparison of concentrations = 0.1872; CD(5%) for comparison of plant extracts = 0.2487 Diameter of fungal growth of control - 5.6 cm

Each value in the table is the average of three replications

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