

STUDIES ON HOST RANGE AND PATHOGENICITY OF *ALTERNARIA SOLANI*

By

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Studies on host range and pathogenicity of *A. solani* showed that potato plants may be infected by an isolate of *A. solani* obtained from tomato, brinjal, wild brinjal and chilli. *A. solani* is not capable of infection on cabbage, cauliflower, lawn grass and mutha grass.

INTRODUCTION

The early blight of potato caused by *Alternaria solani* (Ellis and Martin) Jones and Grout, is economically important in the plains of Eastern India. Besides potato the same organism was also isolated from *Atropa belladonna*, *Capsicum annum*, *Cyphomandra betacea*, *Hyoscyamus albus*, *H. niger* and *Nicotiana glauca* by Subramanian (1955). Limited information has been published regarding the perennation of the disease. The present investigation was undertaken to find out the role of perennial host or off season host plants in perennation of the disease.

MATERIALS AND METHODS

The plants of potato (*Solanum tuberosum*), tomato (*Lycopersicon esculentum*), brinjal (*S. melongena*), chilli (*Capsicum frutescens*), cauliflower (*Brassica oleracea* L. var. *capitata*), tobacco (*Nicotiana tabacum*), lawn grass (*Cynodon dactylon*), mutha grass (*Cyperus rotundus*) and wild brinjal (*S. nigrum*) were

raised in the sterilized pots of 25 cm diameter. Pots were kept in the glasshouse to prevent air borne infection and were watered with sterile water. Fungal isolates used in the investigation were obtained by single spore isolations from the diseased material collected in the field. Cultures were generally maintained on PDA. Inoculum required for artificial infection was prepared in the same way as done by Douglas and Pavsek (1971). The conidial suspension for spraying was prepared in such a way that 1 ml of water contained 700-800 conidia. A drop of teepol (non-ionic detergent) was mixed with 100 ml of suspension for better dispersion of conidia. The inoculations were made on the pots kept inside glass house under condition of high humidity. *A. solani* was isolated from potato, tomato, brinjal, chilli and brinjal. Cross inoculation tests were done in all cases.

RESULTS AND DISCUSSION

The results of the experiment are presented in Table 1- The results indicated that isolates of *A. solani* obtained from potato, could easily infect tomato, brinjal, wild brinjal, chilli and tobacco. But cabbage, cauliflower, lawn grass and mutha grass were not found to be infected. Isolates from tomato could infect potato, brinjal, wild brinjal, chilli and tobacco easily. No infection were noted on cabbage, cauliflower, lawn grass and mutha grass. Similarly isolates from brinjal could infect easily, potato, tomato, wild brinjal and chilli. But no infection were noted on other hosts. Isolates from wild brinjal showed similar results as brinjal except that it did not infect chilli. Isolates from chilli could infect only potato. Infection was not noticed on other hosts.

It may be concluded that potato crop may be infected by any isolates of *A. solani* obtained from tomato, brinjal, wild brinjal and chilli.

Table 1. Data on inoculation tests of different isolates of *A. solani* on different host plants

Host plants inoculated	Repli— cation	Fungus isolated from				
		Potato	Tomato	Brinjal	Wild brinjal	Chilli
Potato (<i>Solanum tuberosum</i>)	1	+	+	+	+	+
	2	+	+	+	+	+
	3	+	+	+	+	+
Brinjal (<i>S. melongena</i>)	1	+	+	+	+	—
	2	+	+	+	+	—
	3	+	+	+	+	—
Wild brinjal (<i>S. nigrum</i>)	1	+	+	+	+	—
	2	+	+	+	+	—
	3	+	+	+	+	—
Tomato (<i>Lycopersicon esculentum</i>)	1	+	+	+	—	—
	2	+	+	+	+	—
	3	+	+	+	—	—
Chilli (<i>Capsicum frutescens</i>)	1	+	+	—	—	+
	2	+	+	—	—	+
	3	+	+	+	—	+
Cabbage (<i>Brassica oleracea</i> var. <i>capitata</i>)	1	—	—	—	—	—
	2	—	—	—	—	—
	3	—	—	—	—	—
Cauliflower (<i>B. oleracea</i> var. <i>botrytis</i>)	1	—	—	—	—	—
	2	—	—	—	—	—
	3	—	—	—	—	—
Tobacco (<i>Nicotiana tabacum</i>)	1	+	—	—	—	—
	2	+	—	—	—	—
	3	+	+	—	—	—
Lawn grass (<i>Cynodon dactylon</i>)	1	—	—	—	—	—
	2	—	—	—	—	—
	3	—	—	—	—	—
Mutha grass (<i>Cyperus rotundus</i>)	1	—	—	—	—	—
	2	—	—	—	—	—
	3	—	—	—	—	—

+ indicates infection ; — indicates no infection.

Subramanian, C. L. 1955. Fungicidal trials on the control of early blight of potatoes. *South Indian Hort.* 3 : 21-25.