

Short Communication

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Interaction Between Saprophytic and Pathogenic Fungi

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Fungi possess a great potential in biological control and their antagonistic activity has been reported by several workers [1-3]. However not much attention has been given in the direction of biological control of early blight of potato caused by *Alternaria solani* and leaf and pod blight of broad bean caused by *Cladosporium cladosporioides*. In view of this an attempt has been made to study the effect of some saprophytic fungi on the growth of these two pathogens.

The test fungi along with seven saprophytic fungi (Table. 1) were grown together in different combination on Potato

viridae (Table 1). Highest inhibition zone of *A. solani* and *C. cladosporioides* was observed when grown with *A. terreus*.

Aspergillus flavus and *A. niger* exhibited mutual intermingling growth with *Alternaria solani* and *Aureobasidium pullulans* with *Cladosporium cladosporioides*. Therefore, these are least inhibitory. Highest inhibition zone was observed with *A. terreus* for both the pathogens. The maximum inhibition in growth of these two test fungi was observed when grown with *Aspergillus terreus* and *Trichoderma viridae*. This may be in part due to production of some antifungal substances or may be due to spatial problem. *A. terreus* has been reported to produce antibiotics such as geodin, terricin and terric acid [6]. These antibiotics might be providing inhibitions in the growth of the pathogenic fungi.

It is likely that these fungi could be explored for the control of the diseases. However, more studies are required before concluding it.

TABLE 1. EFFECT OF CERTAIN SAPROPHYTIC FUNGI ON THE GROWTH OF *ALTERNARIA SOLANI* AND *CLADOSPORIUM CLADOSPORIOIDES*.

Fungi	Interaction score		Inhibition of radial growth (%)		Width of inhibition zone (m.m.)	
	<i>A. solani</i>	<i>C. cladosporioides</i>	<i>A. solani</i>	<i>C. cladosporioides</i>	<i>A. solani</i>	<i>C. cladosporioides</i>
<i>Aspergillus flavus</i>	4	4	40.10	46.01	0.0	1.2
<i>Aspergillus niger</i>	4	1	38.18	31.00	0.0	1.5
<i>Aspergillus terreus</i>	5	4	50.30	53.00	3.6	3.8
<i>Aureobasidium pullulans</i>	2	2	25.12	30.13	0.0	0.0
<i>Epicoccum perpureescens</i>	4	3	44.00	40.21	1.0	1.3
<i>Penicillium citrinum</i>	4	4	47.13	48.60	1.5	1.3
<i>Trichoderma viridae</i>	3	3	53.00	52.00	0.0	0.0
L.S.D. at 5%	-	-	3.29	4.16	1.05	1.0

Dextrose Agar (PDA). The petridishes containing (PDA) were inoculated with the two fungi on two ends of a diameter of the petridishes. The growth of the fungi was measured and inhibition zone was determined. The inhibition of radial growth was calculated as follows.

$100 \times (r_1 - r_2)/r_1$, where r_1 denotes the radial growth of the pathogenic fungus on the unopposed side and r_2 denotes radius of pathogenic fungus on the side opposed by the test fungus [4]. The interaction score was done [5] by categorising five separate modes of interacting colony growth (scores 1-5). There were five replicates of each treatment and the data were subjected to statistical analysis.

Inhibitory zones of *Alternaria solani* and *Cladosporium cladosporioides* were observed when grown with *Aspergillus flavus*, *A. niger*, *A. terreus*, *Aureobasidium pullulans*, *Epicoccum perpureescens*, *Penicillium citrinum* and *Trichoderma*

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