SHORT COMMUNICATION

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Efficacy of different fungicides against *Ascochyta pisi* causing Ascochyta blight of pea under laboratory conditions

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Pea occupies an important position amongst the vegetable crops of India and is one of the few crops that can be successfully grown during the winter season in India. However, Ascochyta blight caused by *Ascochyta pisi* Lib. is responsible for substantial yield losses in pea to the tune of 30-75 per cent under favourable conditions for disease development (Roger and Tivoli, 1996). The disease is polycyclic and can develop rapidly during periods of wet weather and moderate temperatures. Since the pathogen survives mainly through seeds (Kaiser, 1972). In the present investigation, the efficacy of the fungicides against the pathogen *Ascochyta pisi* under laboratory conditions was studies.

Isolation made from diseased leaf samples on 2% PDA medium yielded *Ascochyta pisi* during Rabi 2005-06. Efficacy of fungicides against *Ascochyta pisi* fungus was done by poison food technique under laboratory conditions at Department of Plant Pathology, Faculty of Agriculture and Regional Research Station (SKUAST-K), Wadura, Sopore. Three replications were maintained with three doses for each treatment. Mycelial disc of 5 mm dia. from 7 days old fungal culture of *Ascochyta pisi* was placed in the centre of each Petri plate containing 2% PDA medium incorporated with different fungicides. The medium without fungicide served as control. These petriplates were incubated at 25 °C for 7 days. The diameter of test fungus was measured. The per-cent inhibition of mycelial growth was calculated using the formula given by Vincent (1947).

$$PDI = \frac{\text{Growth in control} - \text{Growth in treatment}}{\text{Growth in control}} \times 100$$

The data in Table 1 revealed that all the fungicides significantly inhibited mycelial growth of the fungus *Ascochyta pisi* under laboratory conditions. Benomyl was found most effective fungicide against *Ascochyta pisi*. It inhibited 100% mycelial growth of this fungus at all three doses viz, 400, 500 and 600 ppm followed by carbendazim which also gave 100% mycelial growth inhibition at only two doses viz, 500 and 600 ppm but 95.54% mycelial growth inhibition at 400 ppm. Next best fungicides were diniconazole, hexaconazole and thiram which also effective against the pathogen. Least effective fungicide was ziram which gave 21.66% fungal growth inhibition at 1000 ppm.

Bashir and Ilyas (1983) reported that benomyl, daconil and topsin –M were found most effective under laboratory conditions in inhibiting mycelial growth and spore germination of *Ascochyta rabiei* causing Ascochyta blight of chickpea. Khan and Khan (2006) also found that benomyl showed 100% inhibition in radial mycelial growth of *Macrophomina phaseolina* causing Macrophomina leaf spot of mung bean. Srivastava and Mishra (2008) observed that 100% inhibition in mycelial growth of *Colletotrichum truncatum* (leaf blight of urd bean) by carbendazim, benlate and hexaconazole.

References

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Table 1. Inhibitory effect of fungicides on the mycelial growth of *Ascochyta pisi* under laboratory Conditions

Treatment	Concentration (ppm)	Mean of mycelial growth (mm)	% Inhibition over control
Benomyl	600	0.0 (1.00)*	100.0
	500	0.0 (1.00)	100.0
	400	0.0 (1.00)	100.0
Carbendazim	600	0.0 (1.00)	100.0
	500	0.0 (1.00)	100.0
	400	3.5 (2.12)	95.54
Diniconazole	400	0.0 (1.00)	100.0
	300	0.0 (1.00)	100.0
	200	4.5 (2.34)	94.27
Hexaconazole	400	0.0 (1.00)	100.0
	300	0.0 (1.00)	100.0
	200	5.2 (2.49)	93.38
Thiram	3000	0.0 (1.00)	100.0
	2000	0.0 (1.00)	100.0
	1000	8..5 (3.08)	89.17
Captan	4000	0.0 (1.00)	100.0
	3000	0.0 (1.00)	100.0
	2000	7.5 (2.92)	90.45
Dodine	700	21.5 (4.74)	72.61
	600	26.0 (5.19)	66.88
	500	34.5 (5.96)	56.05
Copper oxychloride	3000	20.5 (4.64)	73.89
	2000	29.0 (5.48)	63.06
	1000	39.5 (6.36)	49.68
Mancozeb	4000	23.0 (4.90)	70.70
	3000	34.5 (5.96)	56.05
	2000	47.5 (6.96)	39.49
Zineb	3000	23.5 (4.95)	70.06
	2000	35.5 (6.04)	54.78
	1000	48.0 (6.98)	38.85
Ziram	3000	28.5 (5.34)	63.49
	2000	47.0 (6.93)	40.13
	1000	61.5 (7.91)	21.66
Control	-	78.5 (8.92)	-
CD		(0.85)	

* Figures in parenthesis are square root transformed values.