

Effect of some fungicide on growth (in mm) of *Curvularia lunata*, *Fusarium equiseti*, *Phoma vulgaris* and *Botryodiplodia theobromae*

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Abstract

Large number of crops, vegetables, fruits, are cultivated throughout the world. Due to different climatic conditions many difficulties and problems widely differing intervene the development in agriculture. Amongst these difficulties and problems the control of plant diseases is an important one. Fungi respond to various fungicides in their ability to grow and reproduce. However this aspect of fungal metabolism has been relatively less attended to. In the present investigation effects of different fungicides was studied on *Curvularia lunata*, *Fusarium equiseti*, *Phoma vulgaris* and *Botryodiplodia theobromae*.

Keywords: *Curvularia*, *Fusarium*, *Phoma*, *Botryodiplodia* effect of fungicides.

INTRODUCTION

Cereals, pulses, vegetables, and fruits are the essential requirement of our diet. Among these some vegetables and fruits plays an important role in our normal health. The daily minimum consumption should be about 280gm per head. The disease factor alone is deterrent^{1,4}. More attention needs to be given by plant pathologists to the studies on diseases of vegetables crops in the field, at harvest, in transit, in storage and in market places as a basis for developing suitable control measures.^{2,5} Some fungicides play an important role for controlling the Deuteromycetean fungi.^{7,8,9}

MATERIAL AND METHODS

Collection of Material and Isolation of Fungi

Extensive survey of diseases caused to the fruits and vegetables in Amravati region was carried out and samples were taken from different localities of this district.⁶ For sampling purpose specifications of localities were made on the basis of ecological and geographical variations found in Amravati District.

The diseased fruits and vegetables were collected separately in polythene bags and symptoms on different hosts were recorded. Completely rotten fruits and vegetables were avoided for isolations as they contained mostly secondary infections. Slides were prepared by scrapping the fruiting bodies, produced in infected region. Isolation was made by cutting small fragments of diseased spot along with healthy region. The diseased tissues were surface sterilized with 90% alcohol and transferred aseptically to Asthana and Hawkers medium 'A' (5g glucose, 3.5g KNO₃, 1.75g KH₂PO₄, 0.75g MgSO₄ . 7H₂O and 15g agar agar). The slants were completely sterilized to avoid the secondary and bacterial infection. Inoculations were carried out in sterilized inoculation chamber at the

temperature of 27°C (\pm 2°C). After 2 or 3 days of inoculation the mycelium coming out of the diseased tissue was picked up and transferred to another fresh slant. Morphological and cultural characters of the organisms were carefully recorded. Identification^{6,10,11} of isolates was made from stock cultures present in mycological laboratory of Brijlal Biyani Science College, which was previously identified from Common Wealth Mycological Institute Kew Surrey, England. Five fungicides viz, Copper Oxchloride (50%), Bengard (50%), Dhanustin (50%), Baviston, Sulphur (80%) were screened for their efficacy against *Curvularia lunata*, *Fusarium equiseti*, *Phoma vulgaris*, *Botryodiplodia theobromae*. Aqueous solution of different fungicides were prepared and diluted to desired concentrations.

For this process 15ml of the sterilized Asthana and Hawker's Medium 'A' and fungicides were poured into the sterile petri-dishes aseptically and they were inoculated with test fungi. Petriplates were incubated in inverted position for 7 days. After 7 days the diameter of the fungal colony was recorded and percentage was calculated.

OBSERVATION AND RESULT

Result in table-1 showed that in Copper Oxchloride, *Fusarium equiseti* showed poor growth while *Curvularia lunata* showed good to moderate growth. In Sulphur they showed poor to moderate growth while in Dhanustin the inhibition was seen in *Fusarium equiseti* and moderate to poor growth was seen in *Curvularia lunata*. In Baviston inhibition was shown by both the species. Bengard exhibited complete inhibition in *Fusarium equiseti* while in *Curvularia lunata* moderate growth was reported.

Phoma vulgaris, *Botryodiplodia theobromae* showed moderate to poor growth on Copper Oxchloride. Sulphur was good to moderate fungicide of majority of members. Dhanustin represent moderate growth of *Phoma vulgaris* and inhibition was seen in *Botryodiplodia theobromae*. In Baviston moderate to poor growth was observed while Bengard showed poor growth of *Phoma vulgaris* and inhibition was observed in *Botryodiplodia theobromae*.

In general, Baviston was most effective for *Curvularia lunata*. Bengard 50%, Dhanustin 50%, and Baviston were more effective for *Fusarium equiseti*. In *Botryodiplodia theobromae*, Bengard 50%, Dhanustin 50% were more effective.

Received: Feb 01, 2012; Revised: Feb 26, 2012; Accepted: March 22, 2012.

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Table 1. Effect of some fungicide on growth (in m.m.) of *Curvularia lunata*, *Fusarium equiseti*, *Phoma vulgaris* and *Botryodiplodia theobromae* (after 7 days)

Sl. No.	Fungicide	Concentration (Mg/ml)	<i>C.lunata</i>		<i>F. equiseti</i>		<i>P. vulgaris</i>		<i>B. theobromae</i>	
			Diameter of colony (mm)	Percentage of inhibition	Diameter of colony (mm)	Percentage of inhibition	Diameter of colony (mm)	Percentage of inhibition	Diameter of colony (mm)	Percentage of inhibition
1	Control	—	24.80	—	20.20	—	31.20	—	45.65	—
2	Copper oxychloride(50%)	2	20.60	16.93	2.40	88.10	16.20	48.07	12.10	73.49
		20	18.20	26.61	1.92	90.10	8.10	74.03	6.20	86.41
		200	—	—	—	—	—	—	0.67	98.53
		1000	—	—	—	—	—	—	—	—
3	Bengard(50%)	2	15.80	36.29	—	—	09.20	70.50	—	—
		20	12.20	50.80	—	—	05.30	83.01	—	—
		200	—	—	—	—	0.60	98.07	—	—
		1000	—	—	—	—	—	—	—	—
4	Dhanustin(50%)	2	16.20	34.67	—	—	13.10	58.01	—	—
		20	11.10	55.24	—	—	11.20	64.10	—	—
		200	0.60	97.58	—	—	—	—	—	—
		1000	—	—	—	—	—	—	—	—
5	Baviston	2	—	—	—	—	19.20	38.46	14.50	68.23
		20	—	—	—	—	06.10	80.44	06.20	86.41
		200	—	—	—	—	3.20	89.74	01.80	96.05
		1000	—	—	—	—	—	—	—	—
6	Sulphur(80%)	2	19.10	22.98	13.28	34.25	26.10	16.34	29.50	35.37
		20	3.76	84.83	2.60	87.12	17.20	44.87	15.20	66.70
		200	0.75	96.97	—	—	10.20	67.30	10.10	77.87
		1000	—	—	—	—	—	—	—	—

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