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## Effective management of cercospora leaf spot disease of brinjal by fungicides in Ayodhya U.P.

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#### Abstract

The experiment was conducted under field conditions for two consecutive years i.e., 2017 and 2018 with eight fungicides. Distinctly higher to marginal increase in yield was obtained due to spraying. The treatments by Bavistin (0.1%), Dithane M-45 (0.2%) and Blitox-50 (0.5%) were found most effective showing an increased yield of 23.4, 21.1 and 17.2 q/ha respectively. In the present investigation, Bavistin was most effective and recommended to farmers cultivating the brinjal Variety Pusakranti.

**Keywords:** Cercospora leaf spot, *Solanum melongena*, management

#### Introduction

Brinjal (*Solanum melongena* L.) is an important vegetable crop grown in all the three climatic conditions of the year in Faizabad, India. It is of very high economic and nutritious value to the consumers. The difficulty with cultivation of this crop is that it offers very high incidence of cercospora leaf spot disease as most of the brinjal varieties are susceptible to the causal pathogen. Information regarding the management of this disease is meager. Therefore, the studies were undertaken to manage it through fungicides in Faizabad U.P.

The experiment was conducted under field conditions, for two consecutive years i.e. 2017 and 2018 with eight fungicides to find out their effect for the same and for evaluation of the economically acceptable fungicides to the farmers for enhanced cultivation.

#### Material and Methods

The trial was conducted at Vegetable Research Farm near Mani Parvat, Ayodhya in Faizabad. Brinjal var. Pusakranti was sown and experiment was laid out in a randomized block design (RBD) with three replications during above mentioned years.

Eight fungicides viz; Dithane M-45 (Manganese ethylene bisditheocarbamate), Dithane Z-78 (Zinc ethylene bisditheocarbamate) Bavistin (2- methoxy carbamyl benzimidazole carbamate), NF-44 (Thiophanate methyl WP topsin M.), Blitox-50 (50% copper oxy-chloride), Calixin (75% N-tridecyl 1-2-6 dimethyl morpholine), Sulfex (Wettable sulphur), Captaf N- trichlor methyl thio-4- cyclohexane- 1, 2- dicarboxymide) in their scheduled doses in 3 replications with var. Pusakranti. Control plots were kept untreated. Three sprayings were given at an interval of 15 days starting from the first appearance of the disease using 1000: 1 spray solution/hect. By Knap Sack sprayer.

For recording disease severity, 30 leaflets were selected randomly and percent disease intensity (PDI) was calculated by the formula given by Mc Kinney (1923) [2].

$$PDI = \frac{\text{Total sums of numerical rating} \times 100}{\text{No. of leaves examined} \times \text{minimum scale}}$$

The percent disease intensity was transformed into angle = Sin' percentage intensity and then analysed.

#### Results and Discussion

Spraying was started as soon as the symptoms started appearing. Results of two years trial (pooled) on the severity of the disease and yield is given in Table 1. Analysis of pre-spraying disease severities revealed that there was no considerable difference in disease levels recorded

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separately in all the plots.

All the fungicides included in the trial had a significant effect in reducing the incidence and Severity of the disease. It was observed during trials that the prevailing weather factors also contribute the effect of fungicidal spraying as also reported by Islam and pan, 1993, Yadav 1993 <sup>[1]</sup>.

Pooled data for the three spraying is indicated in Table 1.

**Table 1:** Effect of Different Fungicides in Cercospora leaf spot of Brinjal

Treatment	Conc. %	PDI	Yield q/hac	Increase in Yield q/hac
Dithane M-45	0.2	2.16	61.4	21.1
Dithane Z-78	0.2	10.27	52.0	11.7
Bavistin	0.1	1.95	63.7	23.4
NF-44	0.1	12.21	50.1	9.8
Blitox	0.5	6.37	57.5	17.2
Calixin	0.2	20.01	45.0	4.7
Sulfex	0.05	15.63	48.3	8.0
Captaf	0.2	19.78	46.8	6.5
Control		32.4	40.3	
CD at 5%		1.9	4.6	

As clear from above pooled data that out of all the fungicides tested, Bavistin, Dithane M-45 and Blitox were found superior showing lowest PDI of 1.95, 2.16 and 6.37 as against 32.4 in control in reducing the disease. Dithane Z-78, NF-44, sulfex and calixin were the next set of fungicides having PDI of 10.27, 12.21, 15.63 and 20.01 in relation to effectiveness. Data reveals that the disease in the treatment plots as a whole after each spray showed that the disease was reduced up to a desired level after the third spray. Working with Cercospora leaf spot of brinjal, Ullasa and Sohi (1987) <sup>[5]</sup> found that NF-44 controlled the disease satisfactorily. In the present investigation, Bavistin was found most effective of all fungicides used.

All the fungicides increased the yield significantly over control plots. Bavistin, Dithane M-45, Blitox, Dithane Z-78, NF-44, Calixin and Sulfex were significantly superior but Captaf had very little difference than control. However, the results don't follow the findings of Benllock, who reported that the fungicides giving good control of disease adversely affected production of fruits.

On the basis of effectiveness of fungicidal treatment, Bavistin and Dithane M-45 were found most economically viable fungicides at farmer's level in controlling the Cercospora leaf spot of brinjal and increasing the yield. In this way Bavistin and Dithane M-45 are recommended to farmers cultivating the above variety of brinjal.

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