

Fungicidal Control of *Cercospora* Leaf Spot of Urd Bean, [*Vigna mungo* (L.) Hepper.]

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Thirteen fungicides were studied to control *Cercospora* leaf spot of urd bean. All were able to control the disease. However, the best control was obtained with Bavistin followed by Bordeaux mixture, Dithane Z-78, Brassicol and Dithane M-45 with disease indices below 20% while other fungicides controlled the disease with disease indices 20% and above.

The *Cercospora* leaf spot of urd bean (*Vigna mungo* L.) Hepper., mainly caused by *Cercospora canescens* is one of the important diseases invading this crop. The disease is of regular occurrence during 'Kharif' season in Uttar Pradesh. The disease causes drying and defoliation of affected plants resulting in severe yield losses. The fungus is known to attack green gram (*Vigna radiata* (L.) wilczek) also.

Though chemical control of this disease on green gram has been reported by several workers (Kanniyan *et al* 1974; Mahmood *et al* 1976; Rewal and Bedi, 1976; Singh and Singh 1976; Singh *et al* 1976 and Saikaia and Barman, 1978), there is paucity of information, on the chemical control of this disease in urd bean. Therefore, an attempt was made to find out a suitable and effective chemical control for the disease in urd bean.

MATERIAL AND METHODS

Field experiments with urd variety 'Krishna' susceptible to *Cercospora* leaf spot were carried out during 'Kharif' 1978 and 1979 in a simple randomized block design replicated three times in a plot size 3m × 3m, with 14 treatments. Fungicides employed were, Dithane Z-78, Dithane M-45, Calixin, Difolatan, Morestan, Bavistin, Blitox, Bordeauxmixture, Captan, Cuman, Karathane, Demosan and Brassicol. The first application of the fungicides was done with the commencement of initial disease symptoms and subsequently two more sprays were carried out at an interval of 15 days. After 20 days of the last spray, 200 leaves, were picked randomly, from each plot. Thus, three samples of leaves, for each treatment, covering the top, middle and lower portion of the plants were examined for the intensity of the disease, using the criterion described below.

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Disease grade % leaf area infected

0	Nil.
1	0.1 to 5
2	5.1 to 10
3	10.1 to 25
4	22.1 to 50
5	above 50

percentage disease index was calculated by the following formula.

$$PDI = \frac{\text{Total disease ratings} \times 100}{\text{number of leaves examined} \times 5}$$

The data regarding percentage disease index (average of 1978 and 1979) in respect of each treatment is presented in Table.

RESULTS AND DISCUSSION

Data in Table revealed that all the fungicides gave significant reduction of disease index. However, the best control was obtained with Bavistin, followed by Bordeaux mixture, Dithane Z-78, Brassicol and Dithane M-45 with percentage disease indices, 11.43, 12.63, 13.43, 14.93 and 16.26 respectively. The efficacy of Bavistin in controlling *Cercospora* leaf spot disease in urd bean as observed in the present studies is supported by the findings of Mahmood *et al* (1976).

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TABLE Effect of fungicides on the incidence of *Cercospora* leaf spot of urd bean.

Treatment	Dose %	Mean disease Index
Dithane Z-78	0.2	13.43
Dithane M-45	0.2	16.26
Calixin	0.1	25.26
Difolatan	0.25	22.16
Morestan	0.1	33.83
Bavistin	0.1	11.43
Blitox	0.3	20.10
Bordeaux mixture	0.8	12.63
Captan	0.2	33.60
Cuman	0.25	38.33
Karathane	0.1	28.60
Demosan	0.2	36.16
Brassicol	0.2	14.93
Control		56.70

C. D. at 1% = 4.83.