https://doi.org/10.29321/MAJ.10.A02890

Madras agric. J. 67 (10) : 666 – 668, Oct., 1980

Control of Powdery Mildew of Greengram (*Vigna radiata* (L.) Wilczek)

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The study revealed that all the fungicides except Elosal and Sulphen were found significantly superior in controlling the disease and gave higher yields as compared to control. Thiovit was the best followed by Bavistin, sulphur dust and Karathane. However, the highest yield was recorded with Bavistin followed by Thiovit, sulphur dust and Karathane. The percentage disease index and the yields were found to have linear relationship with the fungicides.

Powdery mildew incited by *Erysiphe polygoni* D.C. is one of the serious diseases occurring on greengram in India. It appears late in the season almost every year in varying intensities and causes forced maturity of the infected plants resulting in severe yield losses. In addition to greengram, the fungus parasitized several leguminous and other crops. There is little information available on the control of powdery mildew in green gram by fungicides. In the present studies, the effect of some fungicides against powdery mildew in greengram was investigated.

MATERIAL AND METHODS

An experiment with greengram variety T-44, susceptible to powdery mildew, was carried out during *kharif* 1978 and 1979 in a simple randomized block design, replicated four times in a plot size 3 x 3m, with 7 treatments. Fungicides employed were Bavistin,

TABLE Effect of fungicides on the incidence of powdery mildew and yield of greengram.

Treatments	Dose (%)	Percentage disease index	Yield in (g/plot)
Thiovit	0.25	14.27	347
Bavistin	0.5	23.10	369
Sulphur dust	20 kg/ha	25.00	340
Karathane	0.05	28.00	337
Elosal	0.25	33.70	289
Sulphen	0.25	36.25	276
Control	0.00	39.40	288
CD at 5%		7.84	15.21
CD at 1%		10.74	20.83

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Karathane, Sulphur dust, Elosal, Thiovit and Sulphen.

The first application of the fungicides was done with the commencement of initial disease symptoms in nature and subsequently two more sprayings were given at an interval of 15 days. After 15 days of the last spray, all the plants in each treatment were observed for disease incidence using the following criteria.

Disease rating	Disease reaction
0	Free
1	Disease in traces.
2	Fine coating of powdery mildew growth on upper leaves.
3	Nearly 50 per cent leaves of the plant infected, upper part being severely infected.
4	Whole piant covered withpowdery coating, stem also infected.
5	All leaves, stems and floral parts coated with powdery mass of the fungus.

The percentage disease index was worked out for each treatment using the formula,

$$PDI = \frac{\text{Total ratings of plants} \times 100}{\text{Total number of plants} \times \text{maximum ratings.}}$$

The average percentage disease index in respect of each treatment and the yield data are presented in Table.

RESULTS AND DISCUSSION :

All fungicides except Elosal and Sulphen were found significantly superior in controlling the disease and increased the yield. Thiovit was the best among all. However, the highest yield was recorded with Bavistin followed by Thiovit. Bavistin probably possesses some yield stimulatory effect in addition to its capacity to control the disease. There are indications that chemicals such as fungicides insecticides, etc. have some yield stimulatory effect on the crop (Gurha *et al.*, 1979). The r_1 (between fungicides and the diseace index). r_2 (between fungicides and the yield) and r_3 (between disease index and the yield) values were 0.9821, 0.9652 and -0.8470, respectively. These values were highly significant. The percentage disease index and the yields were found to have linear relationship with the fungicides.

Represanting the fungicide treatments as X, percentage disease index as Y_1 and yield as Y_2 the regression

equations fitted were $Y_1 = 12.75 + 3.92\,X$ and $Y_2 = 257.70 + 15.86\,X$. The b values for percentage disease index and yield on fungicide treatments were 3.92 and 15.86, respectively. Both the b values were highly significant. These findings indicate that with a suitable control measure against powdery mildew, optimum yields in greengram can be obtained.

The authors are grateful to Dr. Laxman Singh, Project Director (Pulses Regional Station, I.A.R.I., Kanpur for providing facilities.

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