

Evaluation of Different Fungicides for the Control of *Cercospora* Leaf Spot of Groundnut

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ABSTRACT

An experiment was conducted to control the *Cercospora* leaf spot of groundnut during the year 1975-76 and 1976-77. Total four treatments besides a control were tested during both the years. The yield data were also recorded. An increase in yield of pods and so also higher ICBR was recorded by the use of systemic fungicide Bavistin 0.025% to control *Cercospora* leaf spot of groundnut.

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INTRODUCTION

The *Cercospora* leaf spot of groundnut (*Arachis hypogaea* L.) commonly known under one name, "tikka" disease in India is caused simultaneously by *Cercospora arachidicola* Hori and *C. personata* (Berk and Curt.) EII. and Eve. It is the most destructive foliage disease of groundnut and causes heavy losses to this crop during humid climate in Saurashtra. In view of the importance of this disease in groundnut growing areas of Saurashtra, a field trial was laid out at Main Oilseeds Research Station, Junagadh for two years to test the efficacy of different fungicides and the results are presented in this paper.

MATERIAL AND METHODS

An experiment with groundnut variety bunch GAUG-1, which is susceptible to tikka leaf spot was laid out during *kharif* 1975 and 1976 at Main

Oilseeds Research Station, Junagadh. The trial was laid out in a randomized block design with four replications. The plot size was 3.6 m x 5.0 m with a spacing of 45 cm between the rows and 10 cm between the plants in a row. A basal dose of 12.5, 25 and 0 kg of N, P and K respectively per hectare was applied before sowing. The fungicides viz. Benlate (methyl-1 (butyl carbamoyl)-2 benzimidazole carbamate), Cercobin (1, 2-bis (3-ethoxycarbonyl-1, 2-thiouredo) benzene thiophanate), Miltox (37% copper oxychloride + 12% zineb), and Bavistin (2-(methoxy-carbamoyl)-benzimidazol) were applied at the rate of 0.05, 0.05, 0.2 and 0.025% respectively by the hand sprayer for both the years. The first application of the fungicides was started one month after sowing the crop and subsequent sprayings were carried out at an interval of 21 days, comprising of 3 sprayings in all. For

both the years the disease incidence was rated from ten randomly selected plants each from the middle two rows, on the basis of intensity scale (Nath and Kulkarni, 1967). The same was analysed statistically after carrying out angular transformation. The yields of pods in kg were recorded from the middle four rows. The ICBR was also worked out. The results thus obtained are presented in Table 1.

RESULTS AND DISCUSSION

It is apparent from the Table 1 that all the fungicides were significantly superior over the control for checking the disease intensity in both the years. However, Bavistin 0.025% and Benlate 0.05% were found to be significantly better in reducing the disease intensity as compared to rest of the fungicides tried. Mercer (1976) also found increase in yield in of pods in Malawi by the use of Bavistin

TABLE 1

Fungicidal control of tikka leaf spot of groundnut.

Fungicide	Concentration in %	Cost of fungicides in Rs/ha/ 3 sprays	Disease intensity in %			Yield of pods in kg/ha			Net ICBR
			1975-76	1976-77	Pooled	1975-76	1976-77	Pooled	
Bavistin	0.025	446-00	5.75(13.76)*	15.00(22.48)*	(18.12)	2569	1086	1828**	1:1.43
Benlate	0.050	990-00	9.00(17.28)	22.25(27.97)	(22.62)	2500	917	1709	-1:0.15
Cercobin	0.050	***	17.75(24.29)	33.00(35.04)	(29.66)	2374	928	1651	***
Miltos	0.200	435.00	28.00(31.89)	35.25(38.39)	(34.14)	2333	861	1600	1:0.44
Control			68.25(55.77)	49.75(44.85)	(50.31)	1972	600	1286	
	S.Em.+		(2.22)	(1.47)	(4.56)	67	37	38	
	C.D.5%		(6.86)	(4.54)	(17.90)	207	114	111	
	C.V.%		15.57	8.84	12.19	5.73	8.38	6.71	

* Figures in parenthesis are angular transformations of values.

** Price of groundnut considered @ Rs. 2/ kg.

*** Price of fungicide is not available.

to control *Cercospora* leaf spot of groundnut. The effect of this fungicide was at par with the effect of Benlate 0.05% during the year 1975-76. The similar trend has also been observed when pooled analysis of the data was done. Benlate is also observed as an effective fungicide by various workers (Aulakh and Sunar, 1973; Cummins and Smith, 1973; Miller *et al.*, 1971; Parui and Bandyopadhyay, 1976 and Porter, 1970).

From the yield point of view, all the treatments were found significantly superior over the control during both the years. The yield obtained with Bavistin

0.025% spray in 1976-77 was significantly higher than those obtained with application of other fungicides and the same trend was also observed when the data were pooled. The highest net ICBR was recorded when the treatment of Bavistin 0.025% was given to the crop.

Thus considering the effectiveness in controlling the infection and yield obtained with net ICBR from the treated plots by various fungicides Bavistin 0.025% can be recommended for the control of *Cercospora* leaf spot disease of groundnut.

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