

EFFICACY OF FUNGICIDES TESTED *IN VIVO* BY SOIL DRENCHING AGAINST *MACROPHOMINA PHASEOLINA*

SAVITA PAREEK and B.L. JAIN*

Department of Botany, Banasthali Vidyapith, Banasthali 304 022 (Rajasthan), India.

*Department of Botany, University of Rajasthan, Jaipur 302 004, India.

Bavistin, Jkstein and Topsin M-70 were tested singly as soil drencher at different concentrations against *Macrophomina phaseolina*. These were quite effective as control measures and Jkstein was the best.

Keywords: Control; Drencher; Fungicides; Soil.

In case of Charcoal rot disease of maize there is hardly any report worth mentioning where control through soil drenching has been attempted. However, a large number of reports for controlling the disease induced by *Rhizoctonia bataticola* and *Macrophomina phaseolina* on other crops or plants are available¹⁻⁵. Therefore, these studies were planned with a view to test the efficacy of most effective fungicides (tested *in vitro*) as soil drencher against Charcoal rot of maize induced by *Macrophomina phaseolina*.

Three systemic fungicides i.e. Bavistin, Jkstein, and Topsin-M-70 were tested at the concentration of 0.1% and 0.2% each. The experiment was conducted

in pots (12" in diameter) with six replications.

When the plants were 60 days old, pots were drenched with fungicide suspensions. Weighed amount of fungicides was dissolved in a measured amount of water and than poured in each pot (500ml/pot). Next day plants were inoculated with toothpicks. No fungicide was added in check. After 30 days of inoculations plants were rated for disease occurrence.

Soil drenching with systemic fungicides viz. Bavistin, Jkstein, and Topsin-M-70 were proved highly effective at different concentrations (0.1 and 0.2% each). All the fungicides tested were significant over check in controlling the disease (Table 1). Maximum

Table 1. Efficacy of different fungicides as soil drencher against *Macrophomina phaseolina*.

Treatments	Concentration	Average disease rating
Bavistin	0.1%	4.30
Bavistin	0.2%	4.26
Jkstein	0.1%	4.13
Jkstein	0.2%	3.66
Topsin M-70	0.1%	3.80
Topsin M-70	0.2%	3.76
Check		6.13

(inoculated without fungicides)

SEM 0.20

C.D. at 5% 0.58

C.V. 11.56%

G.M. 4.30

disease rating (6.13) was observed in check and minimum with Jkstein (3.66) at 0.1% level. Rest of the treatments were at par.

When the most effective fungicides i.e. Bavistin and Topsin M-70 were used as soil drenchers in which infected maize plants were grown, their effectiveness was again proved. The disease incidence was heavily reduced and the plants showed almost normal growth.

The past workers have dealt with different strains of *Macrophomina phaseolina* obtained from different crops but no work has been done on the maize

isolate of the pathogen or on the infected crop. Hence, our results can not be directly compared with that of the past workers. Although a general similarity of the results is there^{1-3,6}.

References

1. Mukerjee N and Basak MN 1972, *Indian J. Agric. Sci.* 42 407
2. Vir DS, Gangopadhyaya and A Gaur 1972, *Pesticides* 6 25
3. Goel SK and Mehrotra RS 1981, *Ann. Roy. Bot. Gard. Peradeniya*. 13 213
4. Singh K, Agnihotri VP, Srivastava SN and Mishra SR 1973, *Indian J of Agric. Sci.* 43 361
5. Chauhan 1988, *Indian J. Mycol and Pl. Pathol.* 18 25
6. Agarwal NK 1983, Ph. D. Thesis, Univ. of Rajasthan, Jaipur.