

## Effect of Different Fungicidal Application on the Nodulation of Three Groundnut Varieties

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### ABSTRACT

The spraying of fungicides *viz.*, Benlate, Brestan, Ceresan, Dithane Z-78 and sulphur, on three varieties of groundnut did not cause any deleterious effect on nodulation; However, more percentage of pink nodules was recorded in all the three varieties when compared to control. The fungicide Brestan had a maximum stimulatory effect in increasing the percentage of pink nodules in all the three varieties.

### INTRODUCTION

Groundnut being an important oil seed crop, different fungicides *viz.*, Benlate, Brestan, Ceresan, Dithane Z-78 and Sulphur were tried for the control of Tikka leaf spot disease caused by *Cercospora personata* (Berk. and Curt.) Ell. and Ev. and *Cercospora arachidicola* Hori. The influence of these fungicides on nodulation of three varieties of groundnut under field condition was studied and the results reported in this paper.

### MATERIALS AND METHODS

Six treatments (inclusive of untreated control) with three replications each were tried in the field. The varieties of groundnut used were TMV-2, TMV-7 and TMV-10. A standard plot size of 1.5 m x 1.2 m was employed and seeds were sown with 30 x 15 cm spacing. Three sprayings of the selected fungicides were given from 40th day up to

80th day at 20 day interval. Five days after spray, the plot was irrigated. On 65th and 85th day the plants were pulled out with roots and nodules intact. The adhering soil particles were washed with water and white and pink coloured nodules were counted. The percentage of pink nodule to the total number of nodules was worked out. The size of the nodules was also recorded.

### RESULTS AND DISCUSSION

The results (Table) indicated that the fungicides were in general, not injurious to nodulation. Generally, the percentage of pink nodules was more on 85th day than on 65th day in all the three varieties and also in all the treatments including the control. Among the five fungicides tested, Brestan was found to be the best in increasing the percentage of pink nodules in all the three varieties. The stimulatory effect was more in case of

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TABLE. Effect of different fungicidal sprays on nodulation of three groundnut varieties

Treatment	TMV-2				TMV-7				TMV-10			
	65th day		85th day		65th day		85th day		65th day		85th day	
	A	B	A	B	A	B	A	B	A	B	A	B
Benlate	53	2.1	62	2.82	61	1.92	72	2.92	58	2.81	63	3.71
Brestan	60	1.93	63	2.31	71	2.00	77	2.32	60	2.93	62	3.82
Ceresan	52	1.92	59	2.81	61	1.83	63	2.00	53	2.90	53	2.80
Dithane Z-78	60	1.42	61	2.13	63	1.39	64	2.31	58	2.90	60	2.80
Sulphur	59	2.00	60	2.13	73	2.00	73	2.10	55	3.12	61	3.13
Control	40	1.41	48	2.00	50	1.38	53	2.00	49	2.72	52	2.83

A - % of pink nodules; B - Average size (mm).

TMV-7 recording 77 per cent of pink nodules followed by TMV-2 with 63 per cent and TMV-10 with 62 per cent. The least effect was observed in cere-san treated plants recording only 59, 63 and 53 per cent of pink nodules in TMV-2, TMV-7 and TMV-10, respectively. However, it was better than the control plants.

The size of the nodules was bigger in fungicide-sprayed plants than in the non-sprayed plants. The average size of the nodules was bigger in TMV-2 and TMV-7 than in TMV-10, when compared to control on 85th day. The non-injurious nature of fungicides on nodulation has also been reported by earlier workers (Erdman, 1943; Iqbal, 1974; Ramani, 1974). Present findings are in conformity with that of Iqbal

(1974) who observed that Brestan spray exerted a stimulatory effect on nodulation of TMV-2 groundnut recording more of pink coloured nodules and also big sized nodules than in the control.

#### REFERENCES

- ERDMAN, L. W. 1943. New developments in legume inoculation. *Proc. Soil Sci. Soc. Amer.* 8: 213-16.
- IQBAL, M. 1974. *Influence of Brestan spray on groundnut plants affected by Cercospora personata in relation to rhizosphere microflora, enzymes and biochemical constituents.* Unpub. M. Sc. (Ag.) Thesis, Annamalai Univ., Annamalainagar.
- RAMANI, C. E. 1974. *Studies on the effect of certain fungicides, insecticides and herbicides and boron and molybdenum on the symbiotic fixation of Rhizobium sp. in groundnut.* Unpub. M. Sc. (Ag.) Thesis, Annamalai Univ., Annamalainagar.