

Effect of Seed Dressing Chemicals on Seed Germination and Seedling Infection of Mungbean Against *Alternaria alternata*

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SUMMARY

An *in vitro* experiment was carried out to study the effect of different seed dresser *i.e.* Bavistin, Thiram, Ridomil, Captan, Mancozeb and Zineb. It was found that all the seed dressing chemicals reduced the seedling infection and increased the germination percentage. Among the chemicals Bavistin was found best to give the average maximum germination 94.72% and 0.00% seedling infection. Thiram was the next best seed dresser which gave 93.71% seed germination and 0.00% seedling infection.

Key words :

Seedling infection,
Seed germination,
Mungbean

Mungbean [*Vigna radiata* (L.) Wilczek], known as greengram or moong is considered to be native of India (Baldev, 1988). Mungbean is behind in case of yield because of so many factors. Among which the diseases are one of the important constraints in the quality production of the mungbean. Number of diseases attack mungbean like *Cercospora* leaf spot, powdery mildew, rust, anthracnose, stem canker, yellow mosaic and *Alternaria* leaf spot. Out of them *Alternaria* leaf spot caused by *Alternaria alternata* is a major problem in mungbean (Koul and Ghani, 1990). Hence, the present investigation has been taken to study the effect of popular seed dressers on seed germination and seedling infection of mungbean because of seed and soil-borne nature of the fungus (Singh and Suhag, 1983).

MATERIALS AND METHODS

The experiment was conducted in Laboratory of Department of Vegetable Science, C.S. Azad University of Agriculture & Technology, Kanpur to find out the best fungicidal seed treatment for *Alternaria alternata* causing leaf spot of mungbean. The treatments consisted, seed treatment with Bavistin (0.2%), Thiram (0.2%), Ridomil (0.2%), Captan (0.2%), Mancozeb (0.2%) and with Zineb (0.2%). To test the efficacy of different seed dressing fungitoxicants in controlling the Seed-borne infection due to *Alternaria*

alternata, the naturally infested seeds of highly susceptible variety, T-44 were tested with them by mixing their required quantities and shaking the seeds in plugged conical flasks for 15 minutes. Ten seeds were kept on blotter paper and each treatment was replicated four times. A separate set was also maintained as control where the mungbean seeds were not treated with any seed dressing fungi toxicant. Observations on the germination of seeds and on the appearance of fungal growth on and around seeds and seedlings were recorded after 8 days incubation at $28 \pm 1^{\circ}\text{C}$ at 10 days and 20 days after sowing. Percentage of seed germination and seed bearing infection were calculated on the basis of total number of seeds tested.

RESULTS AND DISCUSSION

The results obtained from the present investigation are presented in Table 1.

Germination:

The results presented in Table 1 show that in both the years (2004-05 and 2005-06) the germination percentage of seeds treated with different fungitoxicants was significantly superior to that of control. There was no significant difference in the germination of seeds among different fungitoxicants but Bavistin was most effective with average (94.72%) germination followed by Thiram

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Table 1: Effect of seed dressing fungitoxicants on seed germination and seedling infection

Sr. No.	Chemical	Germination (%)		Germination pooled (%)	Seedling infection (%)		Seedling infection pooled (%)
		2004-05	2005-06		2004-05	2005-06	
1.	Bavistin	94.30	95.15	94.72	0.00	0.00	0.00
2.	Thiram	94.21	93.21	93.71	0.00	0.00	0.00
3.	Ridomil	92.25	93.05	92.65	12.15	11.85	12.00
4.	Captan	90.85	92.16	91.50	16.10	16.50	16.30
5.	Mancozeb	90.50	90.85	90.67	24.25	23.36	23.80
6.	Zineb	90.20	90.25	90.22	26.15	26.10	26.12
7.	Control	75.21	76.15	75.68	30.40	29.85	30.12
	C.D. (P=0.05)	4.90	4.34	N.S.	1.74	1.37	N.S.

(93.71%), Ridomil (92.65%), Captan (91.50%), Mancozeb (90.67%) and Zineb with 90.22% germination.

Seedling infection :

The results presented in Table 1 reveal that seedling infection was significantly controlled by all the fungitoxicants in comparison to control. The best result was obtained with Bavistin (0.00%) and Thiram with (0.00%) seedling infection. The next best seed dresser was Ridomil (12.00%) followed by Captan (16.30%), Mancozeb (23.80%) and Zineb (26.12%) seedling infection. The finding of present investigation is similar to Singh and Suhag (1983).

CONCLUSION

On the basis of above results it may be concluded that seed treatment by Bavistin and Thiram checked the seedling infection and increased the germination percentage. So, seed treatment by Bavistin (0.2%) or by Thiram (0.2%) may be recommended for management of *Alternaria* leaf spot disease of mungbean.

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