

EFFECT OF RHIZOME TREATMENT WITH FUNGICIDES FOR ECONOMIC CONTROL OF ROT

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Seed rhizomes of ginger (*Zingiber officinale* Rosc.) play important role in harbouring rhizome rot pathogens as well as dissemination of these from one field to another (Butler, 1918; Sharma *et al.*, 1980). Several pathogens have been reported as casual agents from various parts of the country (Sharma and Jain, 1977). However, *Pythium aphanidermatum* have been reported to be main cause of the disease in Rajasthan (Sharma *et al.*, 1980; Mathur *et al.*, 1984). Earlier attempts have been made to control the disease by seed and soil applications which may be costlier for farmers (Kothari, 1966; Sharma *et al.*, 1980; Mathur *et al.*, 1984). Therefore, looking to the severity of disease a field experiment was undertaken for consecutive 3 years to control the disease by seed (rhizome) treatments with fungicides and results are described herein.

Rhizomes were inoculated by spraying inoculum and then were kept for 24 hrs. in moist chamber. There after, the inoculated rhizomes were dipped half an hour in fungicidal suspension separately. These rhizomes were dried under shade before sowing

in microplots (3' x 2'). The soil of the microplots was also inoculated with inoculum suspension before sowing. Germination and rotting percentage as well as yield were recorded and presented in Table 1. Six nonsystemic fungicides viz. Dithane Z-78, Captan, Dithane M-45, Ziride, Panoctin, Difolatan and 4 systemic fungicides i.e. Carbendazim, Benlate, Metalaxyl and Triadimefon were used in this study. Every treatment was replicated four times.

Out of these chemicals tested, minimum rotting was recorded in Metalaxyl and Difolatan which was followed by Dithane M-45, Ziride and Panoctin. Similarly maximum germination was found in Difolatan, Ziride and Metalaxyl. But the maximum yield was obtained in Dithane M-45 followed by Dithane Z-78, Captan and Ziride; these were at par. Other treatments also increased the yield but were not significant.

Hence it can be concluded that seed treatments with fungicides such as Dithane M-45, Difolatan, Ziride and Captan as well as Metalaxyl not only reduced the infection also increased

Table 1. Effect of rhizome treatment with fungicides on germination, rotting and yield of ginger.

Fungicide	Germination (%)	Rotting (%)	Increase in Yield (%)
Dithane Z-78	68	35	160
Captan	79	34	168
Carbendazim	60	38	120
Benlate	78	21	24
Dithane M-45	78	14	232
Ziride	86	17	121
Panocin	51	19	—
Difolatan	92	5	116
Metaloxyl	81	5	58
Triadimefon	49	31	—
Control	61	25	—

the germination as well as yield, can be recommended for control of the disease which will not cost much. Although Panocin reduced the rotting but simultaneously reduced the germination also and did not increase the yield. Earlier workers also found dithiocarbomates best for control of the disease (Sharma *et al.*, 1980).

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