

Research Article

Management of Ginger Rhizome Rot in Shiwalik Region of North-western Himalayas

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Abstract

Rhizome rot of ginger caused by a fungal complex (*Pythium*, *Fusarium* and *Rhizoctonia*) is an economically important disease. To manage rhizome rot disease of ginger (*Zingiber officinale*), physical, chemical and biological treatments were evaluated under field conditions for three successive years from 2021-2023 at Research farm of Regional Research Station (Punjab Agricultural University), Ballawal Saunkhri, Punjab. Seed rhizomes were treated with hot water (51 C for 10 min), solution of fungicides namely Indofil M-45 (mancozeb 75% WP), Ridomil Gold (64% w/w mancozeb + 4% w/w metalaxyl-M), Bavistin (carbendazim 50% WP), Captan 50 (captan 50% WP), Seedex 2DS (tebuconazole 2% DS), a biocontrol agent *Trichoderma harzianum*, and untreated control. Among the eight treatments evaluated, rhizome treatment with Ridomil Gold @ 0.2% showed greatest efficacy (50.0%, 47.2% & 46.8%) with maximum per cent disease control (PDC) and highest rhizome yield (26.0, 25.3 and 25.1 t ha⁻¹) however, Mancozeb @ 0.3% was at par with Ridomil. Rhizome treatment with *T. harzianum* exhibited minimum disease control (27.9%, 19.4% and 9.3%) and lowest rhizome yield (11.5, 12.3 and 11.6 t ha⁻¹) proved to be least effective. A strong negative correlations (-0.84 to -0.94, -0.86 to -0.97 and -0.84 to -0.98) of rhizome rot incidence with other plant growth parameters was found during 2021, 2022 and 2023, respectively.

Key words: Fungicide, *Pythium aphanidermatum*, *Trichoderma*, *Zingiber officinale*

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