



RESEARCH ARTICLE

Solarization and antagonistic organisms for management of rhizome rot of ginger in Karnataka

■ M. S. LOKESH^{1*}, S. V. PATIL², S.B GURUMURTHY², M.G. PALAKSHAPPA³ AND M. ANANDARAJ⁴

^{1*}AICRP on Spices, Horticulture Research Station, University of Horticultural Sciences, Bagalkot, SIRSI (UTTARA KANNADA) (KARNATAKA) INDIA

²College of Horticulture, University of Horticultural Sciences, Bagalkot, SIRSI (UTTARA KANNADA) (KARNATAKA) INDIA

³AICRP on Sesame and Niger, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA

⁴Indian Institute of Spices Research, CALICUT (KERALA) INDIA

ARTICLE INFO

Received : 10.03.2012

Revised : 20.04.2012

Accepted : 05.07.2012

Key Words :

Ginger,
Mancozeb,
Trichoderma harzianum,
Bacterial
consortium

ABSTRACT

Rhizome rot was less in solarized rhizomes as compared to non-solarized ones. Disease was less where the rhizomes were treated with bioagents in combination i.e., *T. harzianum*, bacterial consortium (for growth, nematode and *Pythium* suppression). However, individual bioagent treatments were also effective in reducing the rhizome rot both in solarized rhizomes and non solarized rhizomes in case of *T. harzianum* and bacterial consortium. Disease incidence was least with chemical check with mancozeb @ 0.25 per cent both in solarized and non-solarized rhizomes. Unprotected rhizomes both in solarized and non solarized recorded maximum disease. Germination of rhizomes were maximum both in solarized and non-solarized rhizomes where the rhizomes were treated with mancozeb (@ 0.25%). Rhizomes of both solarized and non-solarized treated with bioagents either *Trichoderma harzianum* alone or bacterial consortium or their combination showed better germination. solarized rhizomes showed more tiller than non-solarized ones. Rhizomes of both solarized and non-solarized treated individually with Mancozeb (0.25%) along with bed treatment recorded highest fresh and projected yield. *T. harzianum* and bacterial consortium along with bed treatment both in solarized and non-solarized rhizomes produced more fresh and projected yield than individual bioagent treatments. Performance of *T. harzianum* was superior over bacterial consortium in recording fresh and projected yield. Solarized rhizomes yields were more as compared to non-solarized rhizomes. Unprotected rhizomes (check) yields were least both in solarized rhizomes and non-solarized rhizomes.

How to view point the article : Lokesh, M.S., Patil, S.V., Gurumurthy, S.B, Palakshappa, M.G. and Anandaraj, M. (2012). Solarization and antagonistic organisms for management of rhizome rot of ginger in Karnataka. *Internat. J. Plant Protec.*, **5**(2) : 195-200.

*Corresponding author:
lokeshsirsi@rediffmail.com

INTRODUCTION

Ginger (*Zingiber officinale* Rose) an important medicinally spice is used for carminative and to get relived from cold, cough, throat infections and stomach ache induced indigestion. In the world, India accounts for one third of total production of ginger. It is used as raw or processed and has high export earning produce.

Parthasarathy *et al.* (2007) opined that prevalence of congenial climate for multiplication and spread of rhizome rot and bacterial wilt pathogens resulting in severe economic loss in heavy rainfall was the major concern.

Major biotic threat for cultivation of ginger in the region is rhizome rot (*Pythium aphididermatum* (Edison) Fitz. which results in huge loss (> 50% to 80%) by affecting quality and quality of produce (Joshi and Sharma, 1980 and Parthasarathy