INTERNATIONAL JOURNAL OF PLANT PROTECTION
VOLUME 11 | ISSUE 1 | APRIL, 2018 | 102-108

● e ISSN-0976-6855 | Visit us : *www.researchjournal.co.in*

IJPP

RESEARCH PAPER

DOI : 10.15740/HAS/IJPP/11.1/102-108

In vitro evaluation of fungicides, bio-control agents and plant extracts against early blight of tomato caused by *Alternaria solani* (Ellis and Martin) Jones and Grout

■ Vaibhav Pratap Singh*, R. U. Khan **and** Devesh Pathak

Department of Plant Protection, Faculty of Agricultural Sciences, Aligarh Muslim University, **Aligarh (U.P.) India**

ARITCLE INFO

Received : 12.01.2018
Revised : 17.03.2018
Accepted : 26.03.2018

KEY WORDS :
Fungicides, Bio-control agents, Plant extracts against, Early blight of tomato, *Alternaria solani*

ABSTRACT

The present experiment was conducted to test the efficacy of fungicides, bio-control agents and plant extracts *in vitro* against *Alternaria solani* causing early blight of tomato. Seven fungicides *viz.*, four systemic (Propiconazole, Azoxystrobin, Thiophanate methyl and Carbendazim) and three non-systemic (Mancozeb, Captan and Zineb) at four concentrations *i.e.* 50, 100, 150 and 200 ppm and seven plant extracts *viz.*, *Datura strumarium* (Jimson weed), *Allium sativum* (Garlic), *Azadirachta indica* (*Neem*), *Zingiber officinale* (Ginger), *Ocimum sanctum* (*Tulsi*), *Calotropis gigantea* (Aak) and *Eucalyptus chamadulonsis* (Eucalyptus) also at four concentrations *i.e.* 5, 10, 15 and 20 per cent were evaluated through poison food technique. Seven bio-control agents *viz.*, *Trichoderma harzianum, T. viride, T. koningii, T. hamatum, T. atroviride, Aspergillus niger* and *A. flavus* were also evaluated in this study through dual culture technique. Among the systemic fungicides, Propiconazole was proved to be highly effective and recorded cent per cent inhibition at their all concentrations while among the non-systemic, Mancozeb was proved to be effective at their all concentrations but recorded 100 per cent inhibition only at their higher concentration *i.e.* 400 ppm. Among different plant extracts used, *Azadirachta indica* (*Neem*) was significantly inhibit the mycelial growth of pathogen at all concentrations followed by *Datura strumarium* (Jimson weed) and *Calotropis gigantea* (Aak). Of all bio-control agents, highest inhibition of radial growth of test fungus was recorded in *Trichoderma harzianum* (80.37%) followed by *T. viride* (71.48%) and *T. koningii* (77.41 %). However, *T. hamatum* (27.41%) was least effective in this study.

How to view point the article : Singh, Vaibhav Pratap, Khan, R.U. and Pathak, Devesh (2018). *In vitro* evaluation of fungicides, bio-control agents and plant extracts against early blight of tomato caused by *Alternaria solani* (Ellis and Martin) Jones and Grout. *Internat. J. Plant Protec.*, **11**(1) : 102-108, **DOI : 10.15740/HAS/IJPP/11.1/102-108**.

***Corresponding author:**
vaibhavpratapsingh10392@gmail.com