



RESEARCH NOTE

In vitro evaluation of bioagents against anthracose of chilli caused by *Colletotrichum capsici* (Syd.) Butler and Bisby

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ABSTRACT

The efficacy of bioagents were evaluated for their antagonistic effect against *Colletotrichum capsici* for radial growth inhibition on the Potato dextrose agar medium using dual culture technique under *in vitro* condition. Maximum inhibition of mycelial growth was noticed in *T. harzianum* (71.80%) and was found significantly superior to *T. viridae* (69.58%). Least inhibition of mycelial growth was observed in *B. subtilis* (41.02%).

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Chilli (*Capsicum annum L.*) is an annual herbaceous spice/vegetable/cash crop grown in both tropical and sub-tropical regions and belongs to family Solanaceae. The anthracnose or ripe fruit rot caused by *Colletotrichum capsici* (Syd.) Butler and Bisby is a wide spread problem limiting the profitable cultivation and seed production throughout the major chilli growing regions of India. The disease was reported for the first time in India by Sydow in 1913 from Coimbatore of Madras Presidency. The disease has been observed to occur in three phases *viz.*, seedling blight or damping off stage, prevalent in the nursery, leaf spotting and die back stage which is initiated at different stages of growth and fruit rot stage in which the ripe fruits are infected. The last phase causes extensive damage to the fruits since the lesions on the fruits considerably reduce the market value of the produce. Thind and Jhooty (1985) reported that losses due to anthracnose of chilli varied between 66-84 per cent.

The efficacy of bioagents were tested against *C. capsici* for radial growth inhibition on the Potato dextrose agar medium using dual culture technique under *in vitro* condition. Cultures of antagonistic microorganisms were obtained from Department of Plant Pathology and Institute of Agri. Bio.

Technology (IABT), University of Agricultural Sciences, Dharwad.

Bioagents used against *C. capsici* were as follows:

- *Trichoderma harzianum* Rifai
- *Trichoderma viride* Pers.
- *Trichoderma virens* Miller
- *Bacillus subtilis* Cohn
- *Pseudomonas fluorescens* Migula

Dual culture test

Bioagents were evaluated for their efficacy through dual culture technique. The bio agents and the test fungus were inoculated side by side on a single Petridish containing solidified PDA medium. Five replications were maintained for each treatment with one control by maintaining only pathogen separately. They were incubated for 14 days. The diameter of the colony of both bioagents and the pathogen was measured in two directions and average was recorded. Per cent inhibition of growth of the test fungus was calculated by using the formula of Vincent (1947).

The antagonistic microorganisms *viz.*, *Bacillus subtilis* Cohn. *Pseudomonas fluorescens* Migula, *Trichoderma*