

RESEARCH ARTICLE

Comparative evaluation of different fungicides against anthracnose of chilli caused by *Colletotrichum capsici*

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ABSTRACT

Chilli (*Capsicum annum* L.) is one of the most important vegetables among Solanaceae group like potato, tomato etc. Most of the promising chilli cultivars are under a great threat for profitable cultivation due to several abiotic and biotic factors. The major losses of chilli are caused by fungi, in which anthracnose due to *Colletotrichum capsici* is more important. For the management of anthracnose of chilli, an experiment was conducted for three years with twelve treatments and three replications. Treatment of three foliar sprays of Propiconazole @ (0.1%) at 10 days interval from initiation of the disease gave average minimum disease intensity (11.57%) and maximum ripe fruit yield (31.90g/ha) with maximum C:B ratio (1:3.18).

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INTRODUCTION

The domesticated chilli (*Capsicum annum* L.) is one of the most important vegetables among Solanaceae group like potato, tomato etc. India is the largest exporter of dry chilli. In India area, production and productivity of chilli were 792.10 million ha. 1223.40 million tonnes and 1.5 MT/ha, respectively (NHB 2011). In India, chilli is grown in almost all States of the country and the major chilli growing states in terms of total production are Andhra Pradesh (49%), Karnataka (15%), Orissa (8%), Maharashtra (6%), West Bengal (5%), Rajasthan (4%) and Tamil Nadu (3%) (Kochi, 2005). Most of the promising chilli cultivars are under a great threat for profitable cultivation due to the attack of several abiotic and biotic factors viz., fungi, bacteria, viruses, nematodes etc. and abiotic factors like nutritional deficiency, toxicity, water stress, temperature etc. Among them, anthracnose of chilli caused by *Colletotrichum capsici* is the most devastating and causes considerable losses in India. The management of the disease can be done through cultural, chemical, biological and use of resistant varieties. But chemicals management is the most effective and widely recommended method of disease management.

MATERIALS AND METHODS

The experiment was conducted at Vegetable Research Farm, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur during three consecutive years i. e. 2009-10 to 2011-12. The experiment was laid out in Randomized Block Design (RBD) with three replications. The soil of experimental plot was sandy loam in nature, well drained with low C:N ratio. The plot size was 2m x 2m. Recommended agronomical practices were followed to raise the healthy crop and normal 30 days old seedlings of chilli variety "Kalyanpur Chaman" were used. Foliar spray of chemicals and bio-agents started at onset of the disease and repeated three times at 10 days intervals. The twelve treatments each of 3 sprays of were taken as: (T₁) Thiophanate methyl @ 0.1%, (T₂) Flusilazole @ 0.1%, (T₃) Copper hydroxide @ 0.2%, (T₄) Azoxystrobin @ 0.03% (T₅), Mancozeb @ 0.2%, (T₆), Propiconazole @ 0.1% (T₇) Difeneconazole @ 0.05%, (T₈) Penconazole @ 0.1% (T₉), Tebuconazole @ 0.1%, (T₁₀) *Pseudomonas fluorescens* @ 2%, (T₁₁) *Trichoderma viride* @ 2.0% and (T₁₂) control were used for management of disease. DI was calculated at every 10 days after each spray using the following formula :

$$\text{Disease incidence \%} = \frac{\text{Total number of diseased plant / plot}}{\text{Total plant population / plot}} \times 100$$