Internat. J. Plant Sci. Vol.2 No.1 January 2007 : 39-43

Pathogenicity and management of anthracnose and alternaria leaf spot of chilli

B. THIPPESWAMY, M. KRISHNAPPA*, C.N. CHAKRAVARTHY, A.M. SATHISHA, JYOTHI S.U. AND K. VASANTHA KUMAR

Department of P.G. Studies and Research in Applied Botany, Bioscience Complex, Jnana Sahyadri, Kuvempu University, Shankaraghatta, SHIMOGA (KARNATAKA) INDIA

(Accepted :September, 2006)

SUMMARY

Chilli is used as vegetable, spice and commercial crop. A total of 230 seed samples were collected from different agro-climatic regions of Karnataka during 2001-2003 and analyzed for mycoflora. This crop is susceptible for anthracnose (*Colletotrichum capsici*) and leaf spot (*Alternaria solani*). These diseases are seed borne and reduce the yield loss up to 30-60 %. The pathogenicity test of these two associated fungi and their chemical management were carried out. Fungicides were used in different concentrations (0.5, 1.0, 1.5 and 2.0%) and recorded micoflora. The systemic fungicides *viz.*, Bavistin and Vitavax, non-systemic fungicides *viz.*, Indofil M-45, Captan and Zineb were applied for control. Among all the fungicides tested in SBM method, Indofil M-45 was the superior for the inhibition of seed borne pathogens and to increase the seed germination at 2% concentration.

Key words : Chilli, *Colletotrichum capsici*, *Alternaria solani*, Pathogenicity, Fungicides.

Chilli (*Capsicum annuum* L.) belongs to the family Solanaceae. It is an important vegetable, spice as well as a commercial crop in India. Chillies are used as green, ripe or ripe dried. It contains good nutritions and 'Capsaicin', which is an alkaloid and is being used in medicines. In Karnataka, the crop is cultivated in 34, 856 hectares with an annual production of 3, 54, 290 tones (Anono, 2001). This crop is susceptible for many diseases, *viz*., fungal, bacterial, viral and nematodal diseases. Among all the diseases, fungal diseases cause anthracnose (*Colletotrichum capsici*) and leaf spot (*Alternaria solani*), which are seed borne and reduce the seed germination and yield loss upto 30-60%. The seed borne fungal pathogens not only affect the market value of fruits but, also adversely affect the nutritive value (Bhale *et al.*, 2001). Present investigations carried to find out the aggressiveness of the pathogens and management of anthracnose and the leaf spot by different fungicides.

MATERIALS AND METHODS

Field survey was carried out in Karnataka during 2001-2003. A total of 230 seed samples of chilli were collected from farmers, retail shops and seeds extracted from the fruits. The collected seed samples were dried in sunlight to bring down the safe storage seed moisture and were stored in cloth bags at room temperature for further use.

All the seeds were subjected to Standard Blotter Method (SBM). Five samples showing higher incidence of seed borne fungi in SBM method were selected for controling the seed borne fungi by using different fungicides (Table 2a).

Pathogenicity test

The pathogenicity test was carried out in the Department in experimental plot during 2001-2003. *Pusa jwala* variety of chilli seed samples were disinfected by 2% sodium hypochlorite solution (NaOCl) for 2-3 minutes and in the distilled water before sowing the seeds. The experimental plot were prepared by 10x10 metre (row and column). One hundred seeds were selected in four replicates. Seeds were sown directly in the month of May-2001. Proper agronomical practices were followed for raising the plants.

Artificial inoculation to plants

Healthy seedlings of chilli were raised in the Department experimental field. Eight days old pure culture of *C. capsici* and *A. solani* inoculum was prepared from PDA slants. Before spraying, the leaves were washed with sterile distilled water and 10^4 conidial suspension was sprayed to one month seedlings (30 days), before flowering (60 days) and after flowering (90 days). The plants were maintained in four replicates, 25 in each row. The suspension was applied with the help of sprayer on abaxial and adaxial surface of leaves (Bhale *et al.*, 1999). The distilled water sprayed plants served as a

* Author for corrospondence.