Research Paper :

Effect of relative humidity on conidial germination of *Colletotrichum capsici* and *Leveillula taurica* and disease development in chilli

D.G. HINGOLE, B.P. KURUNDKAR AND G.R. MUNDE

International Journal of Plant Protection, Vol. 4 No. 1 (April, 2011) : 61-63

See end of the article for authors' affiliations

Correspondence to :
D.G. HINGOLE
Department of Plant Pathology, College of Agriculture, Badanpur, JALANA (M.S.) INDIA

SUMMARY

Laboratory experiments were conducted to study the effect of relative humidity levels on conidial germination of *Colletotrichum capsici* and *Leveillula taurica* and disease development in chilli (var. Parbhani Tejas). Results indicated that conidia of *C. capsici* and *L. taurica* could not germinate at 10% RH up to 48 hours of incubation. Maximum conidial germination of both these species took place at 100% RH followed by 75, 50 and 25%RH. Symptoms of *C capsici* on leaves were not observed at 10% RH and on fruits at 10 and 25% RH up to a fortnight. Incubation period was minimum at 100% RH and steadily increased as humidity levels decreased. Powdery mildew symptoms on leaves up to a fortnight were not observed at 10, 25 and 100% RH. These developed within a week's period at 50 and 75% RH.

Hingole, D.G., Kurundkar, B.P. and Munde, G.R. (2011). Effect of relative humidity on conidial germination of *Colletotrichum capsici* and *Leveillula taurica* and disease development in chilli. *Internat. J. Pl. Protec.*, **4**(1): 63-63.

Key words : conidial germination, *Colletotrichum capsici, Leveillula taurica,* Incubation period

***Received :* October, 2010**
***Accepted :* December, 2010**

Anthracnose (*Colletotrichuium cpasici*) and powdery mildew (*Leveillula taurica)* are major diseases of chilli in the country (Eswarmurthy *et al.,* 1996; Mathur *et al.*, 1972; Pawar *et al.,* 1985). Losses to the tune of 53.70 per cent due to anthracnose (Jindal *et al.,* 1994) and up to 47.75 per cent due to powdery mildew (Gohokar and Peshney, 1981) have been reported. However, very less work has been done on effect of environmental parameters on various steps in disease cycle.

Also available reports are varying probably because of variation in isolates of these pathogens. In the light of this situation, present study was planned to study the effect of relative humidity on spore germination of *Colletotrichum capsici* and *Leveillula taurica* on disease development *in vitro.*

MATERIALS AND METHODS

Conidial germination of *Colletotrichum capsici* and *Leveillula taurica* was studied at 10, 25, 50, 75 and 100 % humidity levels by slide germination technique as suggested by Singh and Lodha (1985) and (Chung and Lee (1986). For this standard cavity glass slides were used. In each cavity slide, 0.1 ml. of sterilized water was dropped. These were uniformly dusted with freshly harvested conidia of *C. capsici* and *L. taurica*. Each set of cavity slide was replicated thrice. The slides thus prepared were transferred to desiccators in which humidity levels were maintained by using different specific gravities of sulphuric acid (Stevens, 1916). The desiccators were kept on laboratory benches and temperature during this period was 27.9^{0}C as maximum and 12.7^{0}C as minimum. Observations regarding conidial germination were recorded at 24 and 48 hours of incubation by using light microscope. Approximately 300 conidia / cavity were examined.

Pathogenic effect of *C. capsici* and *L. taurica* was studied *in vitro* at relative humidity levels of 10, 25, 50, 75 and 100%. For this, apparently healthy leaves and fruits of chilli (var. Parbhani Tejas) were collected from field. These were surface sterilized for two minutes in 0.1% mercuric chloride solution and were subsequently rinsed in three changes of sterilized water under aseptic condition. Spores of *C. capsici* and *L. taurica*