Research Paper :

Effect of certain factors favouring the mycelial growth and conidial germination of *Colletotrichum gloeosporioides* (Penz.) Penz. and Sacc

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SUMMARY

Anthracnose caused by *Colletotrichum gloeosporioides* (Penz.) Penz. and Sacc. is one of the most damaging diseases causing losses in pre and post harvest conditions in mango. Studies were conducted to find out the favourable temperature, relative humidity and light period for the growth and conidial germination of *C. gloeosporioides* under *in vitro* condition. The study indicated that the temperature of 25^{0}C was found to be good for the mycelial growth (89.6mm) and conidial germination (69%). At 100% relative humidity, the mycelial growth (90mm) and conidial germination (87%) were higher. In this context, different light periods were tested, continuous light favoured the both mycelial growth and conidial germination

Key words : *Colletotrichum gloeosporioides*, Temperature, Relative humidity, Light period

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The mango (*Mangifera indica* L.) is native to India and Southeast Asia. It is grown throughout the tropics and sub-tropics of the world. India is the world's largest producer of mango (FAO, 1999). Even though it has the largest area, the productivity is very low due to various biotic and abiotic stresses. Of them, anthracnose incited by *Colletotrichum gloeosporioides* (Penz.) Penz. and Sacc. is a destructive pathogen that cause yield loss upto 60% or more during heavy rainy season (Arauz, 2000). Post harvest diseases can reduce fruit quality and causes severe losses, sometimes because they yield completely unmarketable fruit, and in many cases because blemished fruit does not meet the cosmetic standards for first quality fruit in the major import markets (Cappellini *et al.,* 1998). To know the outbreaks of the disease, the favourable environmental condition prevalent in a particular region should be known. Hence, the present work was conducted for temperature, light periods and relative humidity requirement for its growth.

MATERIALS AND METHODS

Isolation of the pathogen:

The pathogen was isolated from infected fruits of mango which were collected from orchard of Annamalai University, Annamalainagar. The isolation was done as per the method described by Sundravadana *et al.* (2007). After obtaining pure culture, the identification was done based on the conidial character and acervuli production. Then it was confirmed as *C. gloeosporioides.*

Factors favoring the pathogen :

Temperature :

A quantity of fifteen ml of the sterilized Potato dextrose agar medium was poured into 90 mm sterile Petri plates. The plates were inoculated with 9 mm mycelial disc of the pathogen obtained from 7 days old culture grown on PDA and incubated in BOD at different temperature *viz.,* 15, 20, 25, 30 and 35^{0}C for 7 days in a BOD incubator. The linear growth of the pathogen was measured in mm at the end of incubation period. The mycelial growth was recorded on 7 days after inoculation. Each treatment was replicate thrice.

The cavity slides containing 0.1 ml of conidial suspension (10^6 conidia/ml) were placed in Petri plates containing moist filter papers at the bottom. The Petri plates were incubated at different temperature as mentioned above. The conidial germination was recorded after 24 h of incubation. Three replications were maintained and in each replication, 100 conidia were observed for germination (Prabakar *et al.,* 2003).

Relative humidity :

The pathogen was inoculated in Petri plates containing PDA medium as described earlier.