Chilli is an important vegetable and spice crop of the world, whose production and productivity are affected by many fungal diseases. Among the major diseases affecting the cultivation of chilli, wilt is a very serious soil born disease. Ten isolates of Trichoderma selected from different state of India from chilli ecosystem to see the antagonistic effect against the test of Fusarium oxysporum F. sp. capsici of chilli. All the isolates were screened against Fusarium oxysporum F. sp. capsici for their efficacy through dual culture technique. Isolated T1, T4, T5 and T7 isolate inhibited maximum mycelial growth of Fusarium oxysporum F.sp. capsici.

Key words: Trichoderma, Fusarium, chilli

Materials and Methods
This part of experiment was conducted in the Laboratory, Department of Botany, D.G.P.G College, Kanpur.

Isolation and Identification of the pathogen:
The infected chilli root samples were collected from chilli field. The plant sample were washed with running tap water, the roots upper parts cut into small pieces and the sterilized with 0.01% mercuric chloride solution for one minute and to wash in sterilized water for three times and dried of sterilized filter paper. The root pieces were transferred on prepares PDA plate, incubated for 5 days at 25°C. As soon as the growth of causal fungus was obtained, it was transferred to PDA slants.

Collection and isolation of bio agent:
The soil samples were collected from the rhizosphere soil of chilli crop. Using serial dilution method, each soil sample was already prepared sterilized distilled water and 500µml diluted sample was transferred to a prepared RBA Petri plates under aseptic conditions. The plates were incubated at 25 ± 2°C for one week. As soon as the different colony growth appeared on the Petri plate were purified in Potato Dextrose Agar Medium.

Antagonistic effect of Trichoderma Isolates:
The Trichoderma isolates were screened against wilt fungi Such as Fusarium oxysporum F.sp.capsici by dual culture plate technique on PDA Medium. The pathogen and Trichoderma spp. were grown on Potato dextrose agar for 7 days at 25 ± 2°C. A disc of 5 mm diameter was made from 7 days old culture of Fusarium oxysporum F.sp.capsici and placed at one
point leaving 1 cm distance from the periphery of one side of Petri plate and on the opposite site, disc (5 mm diameter) of *Trichoderma* were placed separately and were incubated at room temperature for 7 days and observed at a time to time. Percent inhibition of mycelial growth of targeted fungal pathogens over control was calculated by following equation (Sahi and Khalid, 2007):

\[
\% \text{ inhibition} = \frac{C - T \times 100}{C}
\]

C= Colony diameter in the control.

T= Colony diameter in treated

**RESULTS AND DISCUSSION**

The consequence of dual culture technique shows that *Trichoderma* isolates reduced the growth of the pathogen. *Trichoderma* isolates inhibited mycelia growth of pathogen which was well stabilized in plate. In dual culture plates T1, T4, T5 and T7 are the *Trichoderma* isolates who maximum decreased the growth of colonized *Fusarium oxysporum* F.sp *capsici*. Inhibition percent of growth by different *Trichoderma* isolates ranged between 41.9- 62.46 percent (Fig.1).

In the present investigation, the *Trichoderma* isolates was showed different degree of inhibition against wilt pathogen of chilli crop. Dual culture study *Trichoderma* isolates showed more inhibitory effect against *Fusarium oxysporum* F.sp *capsici* mycilieal growth. These bioagent *Trichoderma* can be used for environmental friendly and more effective management of wilt disease of chilli.

The main purpose of the present explore is to check the antagonistic efficacy of *Trichoderma* isolates against wilt diseases. Twelve *Trichoderma* were collected from ten district of U.P from chilli ecosystem and were characterized for their antagonistic activity against *Fusarium oxysporum* F.sp *capsici* and *Colletotrichum capsici* of chilli by Mishra et al., (2017). The test revealed that all *Trichoderma* isolates showed antagonistic activity against the both pathogens.

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**REFERENCES**


