

Effect of bioagents on *Colletotrichum gloeosporioides* causing anthracnose of jasmine

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ABSTRACT

Studies conducted on the effect of *Trichoderma viride* and *T. harzianum* on *C. gloeosporioides* causing anthracnose of jasmine indicated that the mycelial growth and sporulation of the pathogen was significantly inhibited by *T. harzianum* followed by *T. viride*.

Key words : Bio agent, *Colletotrichum gloeosporioides*, Anthracnose, Jasmine.

Jasmine is an economically important flowering crop, which is severely affected by anthracnose caused by *Colletotrichum gloeosporioides* Penz. The growth of the pathogen is inhibited controlled by using fungal bioagents like *T. viride* and *T. harzianum* *in vitro* conditions.

MATERIALS AND METHODS

The study on the effectiveness of fungal bioagents viz., *T. viride* and *T. harzianum* against *Colletotrichum gloeosporioides* *in vitro* was carried out in Petri plates. For this experiment, these bioagents were separately grown on PDA in Petri plate. The fungal discs of 5 mm diameter were placed in such a way that both the bioagents could get equal opportunity for their growth. The

placement details are given (Table 1).

The experiment was conducted with five treatments replicated four times. Treatment No. 5 served as control. Observations were recorded for colony diameter and sporulation after incubating plates at temperature (27 ± 1°C) when Petri plate in control was fully covered with mycelial growth.

RESULTS AND DISCUSSION

The antagonistic effect of fungal bio-agents viz., *T. viride* and *T. harzianum* singly on growth and sporulation of *C. gloeosporioides* was recorded and the data obtained are presented in Table 2.

It was revealed from Table 2 that *T. viride* and *T. harzianum* significantly inhibition the mycelial growth of

Table 1: Placement of bioagents and fungus

Tv	T ₁	Tv	Cg	T ₂	Cg	T ₄	T ₃	T ₄	Cg	T ₄	Cg	Cg	T ₅	Cg
	Cg			Tv			Cg			T ₄			Cg	
	Tv			Cg			Th			Cg			Cg	

where,

Tv = *Trichoderma viride*

Th = *T. harzianum*

Cg = *Colletotrichum gloeosporioides*

Table 2: Efficacy of bioagents against *C. gloeosporioides*

Tr. No.	Mean colony dia. (cm)	Per cent inhibition	Sporulation
T ₁	1.33	83.22	-
T ₂	1.13	87.40	+
T ₃	1.53	82.96	+
T ₄	0.73	91.85	+
T ₅	9.00	--	++++

S.E. ± = 0.16

C.D. (P=0.05) = 0.49

Sporulation:- Nil, + Poor, ++ Moderate, +++ Good,++++ Excellent

C. gloeosporioides when compared to check. Maximum inhibited of the test fungus (91.85) was recorded when *T. harzianum* was used in T₄ placed at the centre followed by T₂ and T₁.

The observations regarding sporulation in these treatments indicated poor sporulation in T₂, T₃ and T₄. While no sporulation was observed in T₁. Excellent sporulation was observed in control *i.e.* T₅.

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