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RESEARCH ARTICLE

ANTIFUNGAL ACTIVITY OF ENDOPHYTE *ASPERGILLUS FLAVUS* ISOLATED FROM *ACACIA NILOTICA*

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ABSTRACT

Endophytes are known for their antifungal activity. *Aspergillusflavus* is a dominant endophyte isolated from stem and leaves of *Acacia nilotica*. .*Aspergillusflavus* screened for their antifungal activity against some plant pathogenic fungi. Antifungal activity was checked by using Dual culture method on PDA medium. The zone of inhibition was calculate. The maximum inhibition was recorded against *Rhizoctoniasolani* followed by *Fusariumsolani, Aspergillusniger* and minimum inhibition was recorded against and *Pythiummyriotylum.*

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INTRODUCTION

Endophytes are microorganisms lives in the internal tissues of plants without causing any harm to the host. The endophytic fungus produce several compounds serve as immense value in agriculture, medicine and industry (S.S Meenambiga and K.Rajagopal2016). the seendophytes are play an important role in physiology and ecology of host plants (Rajeshwari *et al.,* 2016). Endophyticorganisms protect their host from infection and adverse condition by secreting bioactive secondary compounds (S.S. Meenambiga and K. Rajagopal 2018). endophytes also as a source of secondary metabolite that has been used in drug discovery (Darah 2018). The *Aspergillusflavus* was isolated from stem and leaves of *Acacia nilotica*. These plant traditionally used as oral problems. The endophytic fungus *Aspergillusflavus*was active against plant pathogenic fungi. This study was conducted to analyse the antifungal potential of endophytic fungi.

MATERIALS AND METHODS

Collection of plant material: The plant samples of *Acacia nilotica* were collected from Aurangabad regions. Fresh and healthy leaves and stems of host plant were cut with a sterile blade.

Sterilization and isolation: Samples were washed under running tap water for 30 min,then sterilized by 0.1% Hgcl2 for 2 min followed 70% ethanol for 2 min and rinsed in sterile Distilled water.the segments were placed onto petri plate containing PDA (Potato Dextrose Agar) medium and incubated at 27+_1 for 3-5 days.

Identification: The fungal isolates were identified according to their microscopic characters and morphology by using standard manuals(Barnett 1972).

Extraction: Endopyhtes were inoculated onto flask containing 300ml PDB (potato Dextrose Broth) for 20 days at 30^0_C. the broth culture was filtered to separate the filtrate and residue.the residue were extracted with ethanol solvent .after evaporation the residue was dissolved in DMSO in bottles for further activity.

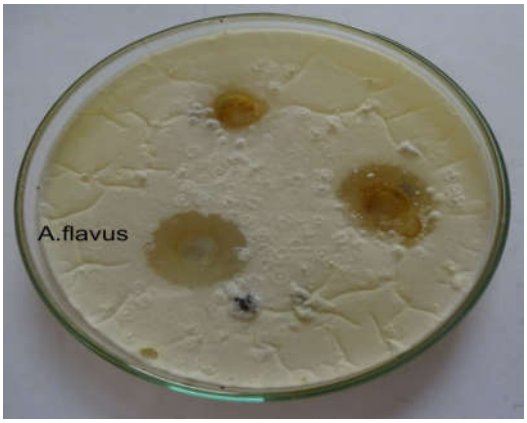
Antifungal activity: The antifungal activity of endophytic fungus *Aspergillusflavus* against plant pathogenic fungi like *Aspergillusniger, Fusariumsolani, Pythiummyriotylum, Rizoctoniasolani* was tested by agar well diffusion method.maximum and minimum inhibition zone was recorded.

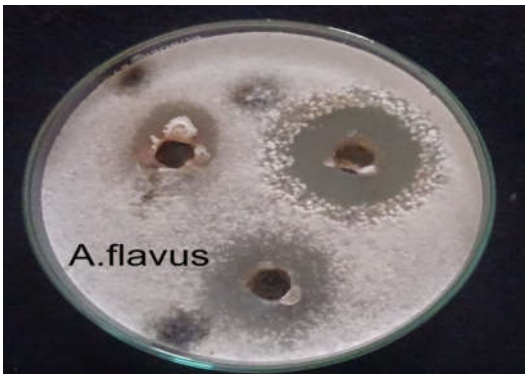
RESULT AND DISCUSSION

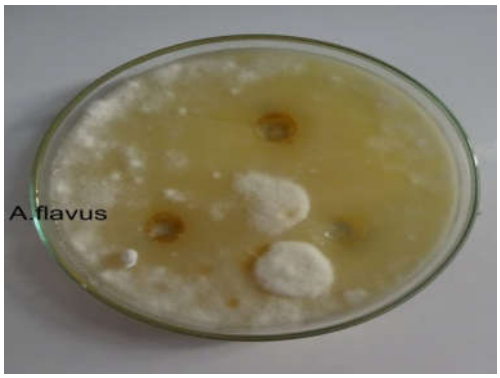
In this study, fresh leaves and stems of *Acacia nilotica* were collected and isolatesendophytic fungi. endophytic fungi were identified by using manuals(Barnett1972). *Aspergillusflavus*

Table 1. Antifungal activity of *Aspergillusflavus.*

SR No.	Name of pathogens	Inhibition zone (mm)
1	*Rhizoctoniasolani*	41.5+_0.57
2	*Fusariumsolani*	32+_0.81
3	*Aspergillusniger*	19.25+_0.5
4	*Pythiummyriotylum*	18.25+_0.5







was selected for the antifungal activity against plant pathogenic fungi. *Aspergillusflavus* showed hightest activity against *Rizoctoniasolani* which was 41.5+_0.57mm followed by *Fusariumsolani* 32+_0.81mm, *Aspergillusniger* 19.25+_0.5 mm, *Pythiummyriotylum* 18.25+-0.5mm (table no.1). *Aspergillusflavus* was the dominant species of *Acacia nilotica* have good activity against oral pathogens (S.SMeenembiga and Rajagopal 2016). As a endophyte *Aspergillusflavus*isolated from *Moringaoleifera*showed the maximum activity was observe against *Staphylococcusaureus*and *Bacillus* (Rajeshwari *et al.,* 2016). According to the earlier research these endophyte is not recorded. As per recent study *Aspergillusflavus* was firstly reported to the highest activity of plant pathogenic fungi i.e*Rhizctoniasolani, Fusariumsolani, Aspergillusniger* and *Pythiummyriotylum*. Endophytic fungi produce several biologically active metabolite to theprotect their host life.

Conclusion

Endophytes are the source of bioactive compounds. *Aspergillusflavus* have best antifungal properties it is the best opportunity to investigate of these fungi. and it can prefer against plant pathogens.

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