

In Vitro Antifungal Activity of Acetone and Chloroform Extract of *Eucalyptus Globulus* Labill

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Abstract:- The present paper deals with invitro study of anti-fungal activity in *Eucalyptus globules labill* in acetone and chloroform extract. The extraction was made by Soxhlet's apparatus. The anti fungal properties were determined by poison food technique method using test fungi such as *Curvularia lunata*, *Drechslera avenaceum*, *Fusarium oxysporium*, *Aspergillus niger* and *Trichoderma viridi*. These test fungi were found to be sensitive to extract as compared to control. A least zone were recorded against *Fusarium oxysporium* both acetone and chloroform extract. Proves to be possess good fungicidal properties followed by against *Trichoderma viridi* and *Curvularia lunata*.

Keyword:- *Curvularia Lunata*, *Drechslera Avenaceum*, *Fusarium Oxysporium*, *Aspergillus Sniger*, *Trichoderma Viridi*, Soxhlets Apparatus.

I. INTRODUCTION

Eucalyptus globules Labill a tall perennial tree cultivated in Mediterranean and sub tropical region of world. This tree is also called blue gum tree as well as fuel tree in India in 1843. Luxuriously growing in Nilgiris to an altitude of 5000-8400 feet and cultivated throughout in India. This tree is used for the treatment of fever, diabetes, flu, rheumatism, inflammatory and infection diseases of kidney and bladder. Externally it is used for the treatment of wounds, bleeding gums, stomatitis, gonorrhea, acne, neuralgia etc. Pulp is purgative, fresh juice is cooling, diuretic and laxative. Paste of root bark is applied externally to chest in Pneumonia while its powder is good remedy for toothache.

The plant possess a large amount of phytochemicals such as ellagic acid, rhamnopusosides, Triterpinoids, Steroidal lactones of With anolides and its series like epoxy-Sa-hydroxy-1-oxo-2,24 dienolideetc along with syrigaldehyde, fatty acids, ketones, triglycerides, vanillin, esters, tocopherols, galactosyl compounds etc. as plant possess abundant phytochemicals, hence an attempt was made study its anti fungal property in acetone and chloroform extracts.

II. MATERIAL AND METHODS

The fresh stem bark were collected from in front of Department of Agrochemicals and Pest Management, Shivaji University, Kolhapur in winter season. The collected bark was washed with tap water initially, later by 2-3 times by distilled water. Later bark material were cut into small pieces and sun dried for 2-3 days. Soon after this material were powdered in domestic grinder. This dried sample were

used for experimental study. About 10 gm of bark were subjected to extraction. The extraction was carried out by Soxhlets apparatus. Acetone and chloroform were used as solvents. Test fungi such as *Curvularia lunata*, *Drechslera avenaceum*, *Fusarium oxysporium*, *Aspergillus niger* and *Trichoderma viridi* were procured from Agriculture college, Kolhapur and Microbiology Department, Shivaji University, Kolhapur. These test fungi were maintained in PDA and inoculums prepared with saline condition. The anti fungal activity was carried out by poison food technique, prescribed by Ravi Kumar Patil, et al, (2007) [1]. These petriplates were incubated at 48 hours and average inhibition zone was calculated in cms.in triplicate and compared with control petriplate (solvent – Acetone and Chloroform).

III. RESULT AND DISCUSSIONS

The results were depicted in Table 1. among the five test fungi screened for antifungal activity in *Eucalyptus globules* Labill bark, *Fusarium oxysporium* fungus sensitive and inactive to both Acetone and Chloroform extracts (Table 1) by poison food technique. There is less zone of inhibition between Acetone and in Chloroform extracts.

Acetone solvent shows 0.85 cm of inhibition, while in chloroform extract 0.71 cm against *Fusarium oxysporium* followed by *Aspergillus niger* with minimum inhibition of 1.5 cm in acetone extract and 3.7 in chloroform as compared to control. This indicates that *Eucalyptus globules labill* bark may contain several phytochemical acts an anti-fungal agent. A similar finding were reported by Nagaraja (2011) [2] in *Zanthoxylumrhetsa* Nagaraja (2010) [3] in *Orobanchaeegyptiaca* Shimpi *et al.*, (2005) [4] in *Aristolochia sp.*, leaves. The acetone extract of *Eucalyptus globules labill* also reacts a moderately fungicidal property against *Trichoderma viridi* and *Drechslera avenecum*, as it shows a inhibition zone of 1.5cm and 2.7 cm in acetone and chloroform extracts. Simultaneously 2.1cm and 3.3cm inhibition against *Drechslera avenecumin* acetone and chloroform extracts (Table.1). A similar findings were documented by Nagaraja (2008) [5] in *Barringtonia acutangula*. The result obtained during present study may share with their findings.

It is found higher angiosperm plant extract acts as a renewable source of anti bio tics against pathogenic fungi and bacteria (Fridouse*et al.* 1996) [6]. Hence phytochemical extracted from different solvents may act a good bio pesticide. Khallil (2001) [7] as in *Neriumorinder*. Therefore present study may help to prepare different formulations for management of plant diseases as a Eco-friendly bio pesticides.

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Sr. No.	Test Fungi	Zone of inhibition (Cms)			
		Acetone		Chloroform	
		Control	Cm in diameter	Control	Cm in diameter
1	<i>Curvularia lunata</i>	1.6	2.4	1.7	2.1
2	<i>Drechslera avenaccum</i>	2.0	2.1	1.9	3.3
3	<i>Fusarium oxysporium</i>	1.4	0.85	1.6	0.71
4	<i>Aspergillus nigr</i>	2.1	1.5	1.4	3.7
5	<i>Trichoderma viridi</i>	5.4	1.5	5.7	2.7

Table 1:- Acetone and Chloroform extract of *Eucalyptus* bark against test fungi.

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