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To Study the Leaf Extract of Some Medicinal Wild Plants on Growth of *Macrophomina Phaseolina* (Tassigoid) Causing Root Rot Disease of *Sapgandha*

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ABSTRACT:

The leaf extracts of five plant species evaluated against *Macrophomina phaseolina* in vitro. For this, we selected five plant species viz. Neem (*Azadirachta indica)*, Karanj (*Pogonia glabra L.*), Adulsa (*Adathoda vasica L.*) and Tulasi (*Ocimum sanctum*) and are tested at 10% concentration. Among these plant extracts Neem extract of 10% concentration was produced maximum inhibition of growth of *Macrophomina phaseolina* followed by extract of Karanj (*Pogonia glabra L.*), Adulsa (*Adathoda vasica L.*) and Tulasi (*Ocimum sactum*). The sclerotial formation was also not seen in Neem and Karanj leaf extracts Less and medium no of sclerotia are seen in Adulsa and tulasi leaf extracts compared to control.

INTRODUCTION:

Root rot of *Rauwolfia serpentina* caused by *Macrophomina phaseolina* (Tassi) Goid is serious disease. It was found in serious problem in its successful cultivation. Considering this problem, experiment was carried out to find out the suitable control measures for the disease. for this we five leaf extracts were tested in *vitro* to know their inhibitory effect on the growth of *Macrophomina phaseolina* (Tassi) Goid. The leaf extracts of selected botanicals posses the great potentialities being used as fungicides without any adverse effect on environment for the management of root rot disease. Many researchers have reported the effect of plant extracts of various plant species to inhibit the growth of Macrophomina phaseolina in vitro. (D.H.Tandel, A.N.Sabalpara, and J.R. pandya, (2010), Dubey and Dwivedi (1991). Therefore plant leaf extracts are considered as good alternative for the management of plant disease.

MATERIAL AND METHODS:

The effect of plant leaf extracts of different plant species were tested in vitro by a poisoned food technique to know their inhibitory effect on the growth of *Macrophomina phaseolina*. Fresh healthy leaves were taken, washed thoroughly with fresh water and lastly rinsed with sterile distilled water. Fifty gram of leaf of each plant leaf were weighted and cut in to small pieces, grind with the help of grinder make in to powder. Add 50 ml of methanol. Thus, obtained extracts were filtered with double layered muslin cloth in a 150 ml conical flask and tidally plugged with cotton. The filtrate sterilized by autoclave with 15lbs pressure for 20 minutes. The autoclaved extracts were separately poured in sterile petriplates. Then autoclaved and cooled PDA poured in extract

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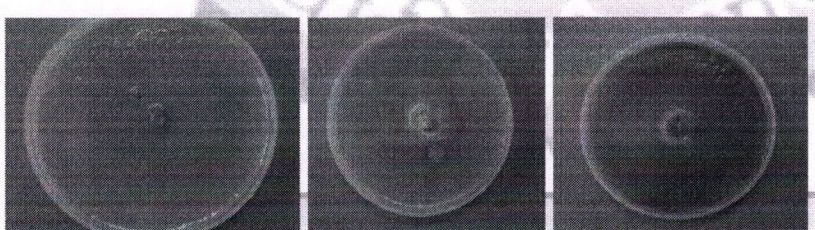
containing petriplates. The 5mm disc of actively growing 7 days old pure culture of Macrophomina phaseolina was placed at the centre. These plates were incubated at room temperature. Repetitions were made for each treatment for three times. Without leaf extracts medium containing plates treated as control. The observations were made on every day. The colony diameters were recorded and statistically analyzed and percent growth was also worked out. The scleritia formation was recorded.

RESULTS AND DISCUSSION:

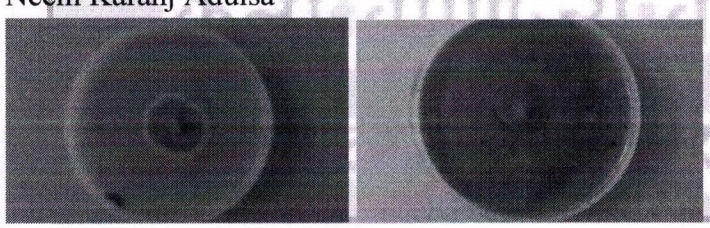
The results presented in Table no 1 reveled that all the plant leaf extracts inhibited the growth of fungal pathogen as compared to control. The extract of Neem (*Azadircta indica*) proved significantly maximum growth inhibition of *Macrophomina phaseolina* fallowed by the extract of Karanj, Adulsa and Tulasi. There was no sclerotia formation takes place in Neem and, Karanj. Less no of sclerotia formation takes place in Adulsa and medium in Tulasi. Neem reported were suggested great alternative of hazardous fungicides which requires detail investigation for their active principal and filled efficacy.

Table 1.Effect of different plant leaf extracts on the growth of *Macrophomina phaseolina in vitro*

Sr No	Name of plant		Average colony diameter of pathogen(mm)	Growth inhibition (%)	Sclerotial formation
	Local name	Botanical name			
1	Neem	*Azadiracta indica* L.	54.33	98.63	No
2	Karanj	*Pongamia glabra* L.	62.00	87.11	No
3	Adulsa	*Adathoda vasica* L	63.00	65.25	Less (10=20)
4	Tulasi	*Oscimum sanctum* L.	69.67	22.29	Medium(21-30)
5	Control	-----	90.00	---	More than 30



Neem Karanj Adulsa



Tulasi Control

Plate1. Effect of plant extracts on radial growth of *Macrophomina phaseolina* (Sterilized)

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