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Evaluation of leaf extract of *Lantana camara* aginast seed mycoflora - biopesticides approach

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Abstract
The Seed treatment with pant extract of *Lantana camara* does not have any adverse effect on the germinated of seeds even after the treatment for 30 minutes. The seed were treated with aqneous extract, alcoholic extract, and ethyl acetate extract of *Lantana camara* leavers for 5 minutes, 15 minutes and 30 minutes. It is evident that the treatment of ethyl acetate extract for 30 minutes inhibited the growth of dominant fungi like *curvularia lunata A.flavus, A.niger* and *fusarium moniliforme.* So the ethylacetate extract of leaves of *Lantana camara* can be utilised for the biological control of seeds borne fungi of soybean. So the seed treatment of plant extract will not cause any problem of pollution and the chemical of plant extracts are easily degraded in the soil, So the plant extract of *Lantana camara* can be used as biopesticide.

Keywords: Seed-borne fungi, *Lantana camara*, Soybean

INTRODUCTION

Seeds of Soybean are associated with number of fungi including *A. flavus, A.niger, Fusarium moniliferme, Rhizoctonia bataticola, curvularia lunata* and *Rhizopus nigricans.*

Seed is a source of origin and beginning of everything [1] and about 90 tergent of all the food crops grown on earth are propagated by seed [2]. Seeds being the source of plant may play a vital role in the total biological yield per unit time and per unit plant surface.

Seeds have been shown to harbor number of fungi. Many of them are know to cause important diseases [3 and 4]. These fungi cause severe looses to seeds, seedlings & later stages of plant growth and finally affect quantity and quality of crops. Hence attempts were made to control of seed borne fungi by eco-freindly management.

MATERIALS AND METHODS

Selection of seeds

Cultivars of soybean seeds were collected from the oil seeds Research station, Latur, pulses research station, Badnapur.

Study of mycoflora

The surface mycoflora of the selected was studied by incubating the seeds for 4-6 days on glucose nitrate agar medium (GNA) [5].

Preparation of plant extracts

The leaves of the plant were cleaned and dried. The dried leaves were curshed into powder with the help of blender. 5% leaf extract in hot sterile distilled water was prepared.

Seed treatment

The different soybean seeds cultivars were treated with leaf extract of *Lantana camara* by soakihng seeds in it for 5 minutes, 15 minutes and 30 minutes.

Study of mycoflora of treated seeds

The seeds with plant extract for the above time infervals were incubated in glucose nitrate agar medium for 4-6 days. They were studied for the growth of fungal forms from the seed surface.

RESULTS

The most common fungi found to be growing on all untreated seeds were *Curvalaria lunata, Alternaria alternata, Drechslera sps, Fusarium moniliforme, Rhizopus nigricans, Rhizoctonia bataticola etc.* (Table 1and 2).

The observation with seeds treated with the plant reveal that short treatment of 5 or 10 minutes had almost no effect over the seed mycoflora. Many of the fungi grow when the seed were treated for short period.

The inhibition of fungal growth was observed when the seeds were soaked in the plant extract for 30 minutes. Not a single fungus grows after complete incubation period.

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Table 1. Mycoflora of soybean seed cultivars on untreated seeds

Sl.No.	Name of fungus	Soybean seed cultivars		
		Pooja	PK 472	Prasad
1.	Curvularia lunata	++	++	++
2.	Drechslera sps.	+	-	-
3.	Alternaria alternate	++	+	+
4.	Fusarium moniliforme	+	+	+
5.	Aspergillus flavus	++	++	++
6.	Aspergillus niger	+	+	+
7.	Cladosporum sps.	+	-	-
8.	Rhizopus stolonifer	+	+	+
9.	Rhizoctonia bataticola	+	-	-

+ = presence on 10% seeds, = presence on 20% seeds.
- = Absence on seeds.
- *Curvularia lunata*

Table 2. Effect of leaf extracts on seeds mycoflora

Sl. No	Cultivators	Soybean mycoflora on treated seeds		
		5 Min	15 Min	30 Min
1.	*Pooja*	Curvularia lunata Drechslera sps. Fusarium moniliforme *Rhizoctonia sp.Bataticola*	*Curvularia lunata* *Drechslera sp.*	- -
2.	*PK 472*	*Curvularia lunata* *Fusarium monoliforme*	*Curvularia lunata* *Alternaria alternata*	- -
3.	*Prasad*	*Curvularia lunata* *Fusarium monoliforme* *Alternaria alternata.*	*Curvularia lunata* *Fusarium monoliforme*	- -

DISCUSSION

The result indicated that the duration of seed treatment with plant extracts is effective in controlling the growth of all the surface borne seed mycoflora.

Application of plant extract for the control of seed borne diseases is a method devoid of any health hazard problem. Hill bunt of wheat was effectively controlled by seed treatment with plant extract of *Datura stramoinum*, Thuja spp. and Eucalyptus.

The anti-fungal effect of selected medicinal extract can be applied at a large scale to treat the seed before sowing then in the field.The extract being of plant origin will show least hazardous effect on e seeds as well as soil.

The seed treatment with plant extract does not have any adverse effect on the germination of seed even after the treatment for 30 minutes. So the seed treatment of plant extract will not cause any problem of pollution & the chemical of plant extract are easily degraded in the soil, so the plant extract of *Lantana camara* can be used as biopesticide.

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