

## Protection of pathogenic seed borne fungi of groundnut by using leaf extract of *Azadirachta indica* A. Juss.

R.M. KADAM, S.D. DHAVLE, R.B. ALLAPURE AND V.S. NAGPURNE

Accepted : September, 2008

See end of the article for authors' affiliations

Correspondence to:

**R.M.KADAM**

Department of Botany,  
Mahatma Gandhi  
Mahavidyalaya,  
Ahmedpur, LATUR (M.S.)  
INDIA

### ABSTRACT

Seed of Groundnut are associated with number of fungi including *A. flavus*, *A. niger*, *Fusarium moniliforme*, *Rhizoctonia bataticola*, *Curvularia lunata* and *Rhizopus nigricans*. The seed were treated with aqueous extract, alcoholic extract and ethyl acetate extract of *Azadirachta indica* A. Juss leaves 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 ethyl acetate extract of leaves of *Azadirachta indica* A. Juss. can be utilized for the biological control of seed borne fungi of Groundnut.

**Key words :** Groundnut seeds, seed mycoflora, *Azadirachta indica* A. Juss.

Seed is a source of origin and beginning of anything (Webster, 1962), and about 90 per cent of all the food crops grown on earth are propagated by seed (Neergaard, 1977); 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 harbour a number of Fungi. Many of them are known to cause important diseases (Suryanarayana and Bhombe, 1961; Siddiqui, 1974). These fungi cause severe losses to seeds, seedlings and later stages of plant growth and finally affect quantity and quality of crops.

### MATERIALS AND METHODS

#### Selection of seeds :

Cultivars of groundnut seeds were collected from the Oil seed Research Station, Latur.

#### Study of mycoflora:

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

#### Preparation of plant extracts:

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

#### Seed treatment:

The different groundnut seed cultivars were treated with leaf extract of *Azadirachta indica* A. Juss. by

soaking 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 intervals 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 AND DISCUSSION

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

The observation with seeds treated with the plant

**Table 1 : Mycoflora of groundnut cultivars on untreated seeds**

Sr. No.	Name of Fungus	Groundnut Cultivars		
		SB-XI	L-33	JL-24
1.	<i>Curvularia lunata</i>	++	++	++
2.	<i>Drechslera</i> sp.	+	-	-
3.	<i>Alternaria alternata</i>	++	+	+
4.	<i>Fusarium moniliforme</i>	+	+	+
5.	<i>Aspergillus flavus</i>	++	++	++
6.	<i>Aspergillus niger</i>	+	+	+
7.	<i>Cladosporium</i> sp.	+	-	-
8.	<i>Rhizopus nigricans</i>	+	+	+
9.	<i>Rhizoctonia bataticola</i>	+	-	-

Symbols used in Table No. 1

+ = Presence on 10% Seeds

++ = Presence of 20% Seeds

- = Absence on Seeds