SEED BORNE FUNGI OF SOYABEAN

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ABSTRACT

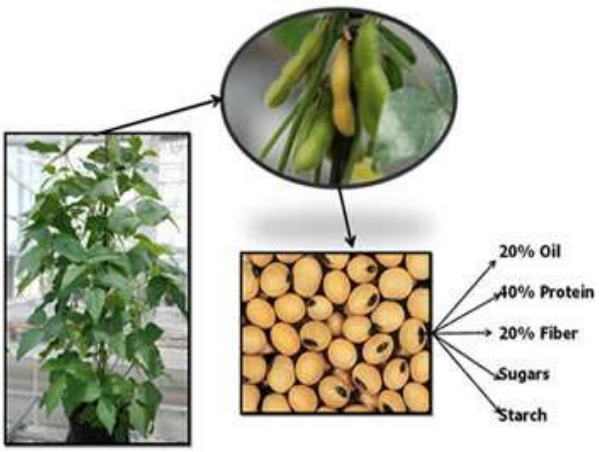
The present study gives the objectives of seed borne fungi of Soyabean. In this investigation about 100 Soyabean seeds are taken from the major growing area of soyabean in Vidharbha region of Maharashtra. The experiment was taken by two method which is agar plate method & blotter method. Form this investigation it is determine that the total percent of seed borne fungi of soyabean in Akola & Amravati district ranges from 32 to 48.12% and 24.10 to 46.2% by blotter method and 13.16 to 36.86% and 14.92 to 26.2% by agar plate method total nine fungal species were investigated & from which M.Phaseolina was found to be predominant and the occurance of cladosporium seen was least from the two method of seed borne fungi of soyabean for detection of seed mycoflora standard blotter method was found to be superior than Agar plate method.

Keywords: *Predominant, seed Mycoflora, Agar plate method, standard blotter method.*

INTRODUCTION

Soyabean (Glycin max) which is also known as miracle crop due to its high nutritional value. It belongs to leguminosae family having high rank. Soyabean originated in china and was introduce to India centuries ago through the Himalaya routes. It plays important role in augmenting both the production of edible oil and protein simultaneously under the circumstances in which the storage of these commodities are being experienced by people.

It contains about 40-45% protein, 23% editable oil, starch 20% it is also a good source of minerals and vitamins. It is rich source of amino acids the oil which is extracted from soyabean seed is a cholesterol free. Amongst all of the oil soyabean oil is largest component of world's oil. The world soyabean production is currently 218.9% million metric tons. From which India produce 9.2 million metric tons constituting about 4% of total world production out of this production less than 10% is directly used for human consumption.



The cultivation of soyabean was occurred sloppy soil with temperature 25^0 to 32^0 C the best fertilizers for soyabean crop was Human sewage sludge in this fertilizer it grows property.

Today the production of Soyabean was increasing but in some region it was seen that the productivity remains low because of lack quantity of seed the low yielding of crop is due to various diseases and pests occurring in the field, the disease free quality of soyabean is important to maintain productivity the infected seed is failure to germinate and plant cannot grow

property which affect on by blotter paper method and agar plate method.

Such information on seed borne fungi associated with Soyabean seed and its detection by different method are given in present paper.

MATERIAL & METHOD

Collection of Sample:

For this investigation one hundred Soyabean seeds were collected from Vidharbha region for determination of seed borne fungi. Then the collected seed samples were dried and stored in paper bags upto the temp of 28 $\pm$ 2^0C.

Isolation of seed mycoflora:

For the estimtion of seed mycoflora of soyabean two methods ware taken which is standard blotter method and agar plate method. In this method two hundred seed samples were tested. In this estimation fangal colonies were determined and total fungal colonies were calculated in percent by formula.

Total fungal colonies (%) = (No of Seeds colonized in each plate by particular species / Total no of seeds in each plate) x 100

RESULT AND DISCUSSION:

In the investigation of standard blotter method of seed mycoflora of soyabean nine fungal species were detected in both. Akola & Amravati region of vidharbha that fungal species are macrophomina phaseolina, collectotrichum domatium, Aspergillus flavus, Aspergillus niger, Rhizopus sp, curvularia Sp. Alternaria cladosporium and fusarium which is belongs to eight genera. The total percent incidence of seed mycoflora in Akola and Amravati district are ranged from 32 to 48.12% and 24.10 to 46.2% it is also seen that out of total Nine fungal species the occurance of M. Phaseolina was found to be highest.

The percent of fungal species of various region of Akola and Amravati region is given in following table.

Standard Blotter Method

District	Sr.No.	Region	M phaseolina	Colletotrichum	Fusarium	Alternaria	Curvalaria	Rhizopus	A flavous	A niger	Cladosporium	TFC (%)
Akola	1	Medhasi	19.6	3.4	1.9	1.6	2.9	4.1	2.6	2.5	1.4	41.4
	2	Murtijapur	16.1	309	2.4	3.6	4	2.4	3.2	1.4	2.3	38.61
	3	Barshi	25.8	4.4	3.5	2.4	3.6	3.5	1.0	1.6	0.8	45.5
	4	Balapur	14.5	1.9	2.6	1.6	1.0	3.4	1.5	1.3	2.4	30.0
Amravati	1	Dharni	8.4	3.9	3.4	2.1	3.5	--	1.6	--	1.1	22.8
	2	Tiwsa	13.3	3.6	2.4	2.4	3.2	4.2	2.5	4.1	0.5	36.1
	3	Nandgaon	8.9	4.6	3.3	4.5	2.6	4.1	2.4	2.5	2.6	35.3
	4	Anjangaon	16.6	5.9	5.4	4.1	2.6	2.4	3.4	3.5	1.4	44.8

2) Agar Plate Method :

The total percent of seed mycoflora in Akola and Amravati region show significant difference. The fungal flora of soyabean in Agar plate method was similar as in blotter method. The total percent of seed mycoflora in Akola and Amravati ranged from 13.6% to 36.89% and 14.92% to 26.2% the result estimate that percent occurance of seed borne fungi were found less as compared to other method the present study also indicated the predominant nature of M. Phaseolina in soyabean seed.

Agar Plate Method

District	Sr.No.	Region	M phaseolina	Colletotrichum	Fusarium	Alternaria	Curvalaria	Rhizopus	A flavous	A niger	Cladosporium	TFC (%)
Akola	1	Medhasi	6.2	2.1	4.2	2.9	4.2	2.1	1.5	1.1	2.0	26.3
	2	Murtijapur	4.5	1.6	2.4	2.5	2.7	1.1	1.6	--	1.5	16.4
	3	Barshi	12.4	2.6	6.6	1.4	5.1	3.2	1.4	2.2	2.6	37.8
	4	Balapur	3.5	1.2	2.9	--	4.4	1.2	0.6	--	1.1	14.1
Amravati	1	Dharni	5.6	1.3	3.4	1.1	1.3	1.5	--	0.5	1.1	15.3
	2	Tiwsa	8.6	1.4	5.4	1.4	1.1	1.0	1.1	1.4	1.0	22.3
	3	Nandgaon	7.9	1.1	4.2	1.5	1.1	0.6	1.2	1.4	0.4	18.6
	4	Anjangaon	10.4	1.6	6.2	1.4	1.1	1.2	1.3	0.6	0.5	22.8

CONCLUSION

The result from present investigation shows that among the forur method of detection of seed mycoflora standard blotter method was found to be superior and maximum total fungal colonies (40.8% and 35.6^) followed by Agar plate method (26.3% and 20.6%) It is also seen that there was variation in mycoflora from one place to another out of two method standard blotter method is to be superior than Agar plate method. The total fungal colonies was more in standard blother method. Out of nine fungal species M. Phaseolina was found predominant.

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