



EXAMINATION OF SEED BORNE MYCOFLORA OF GROUNDNUT

KIRAN A. KHADE

Research Scholar, Shri JYT University, Rajasthan.

ABSTRACT

Groundnut is a valuable legume crop in India. Groundnut seeds contain 50% edible oil having rich content of proteins and vitamins, Nicotinic acid and other vitamins. The seed mycoflora of groundnut is determined by standard blotter paper and agar plate method. In this determination we examined 7 genera and 12 species of fungi which are *Alternaria citri*, *Alternaria terrestris*, *Aspergillus flavus*, *Aspergillus fumigatus*, *Aspergillus niger*, *Aspergillus ustus*, *Aspergillus oxysporum*, *Fusarium semitectum*, *Aspergillus niger*, *Fusarium oxysporum* and *Alternaria terrestris* were found predominant fungi and shows higher percentage of seed mycoflora. In this study we also examined that blotter paper method gives higher percent of fungi as compared to agar plate method.

Keywords: Seed Mycoflora, Blotter paper method, Agar plate method, Predominant fungi.

INTRODUCTION

India is the second largest producer of groundnut oil after China. It is grown as an annual crop on about 19 million hectares of land in tropical region and the warmer areas of temperate regions of the world. It grows as a food crop. It is a herbaceous plant having various varieties. Groundnut provides an interesting nutritional supply due to their high nutritive and energetic value. The oil content of groundnut differs in quantity, the relative proportion of fatty acids, geographical region, geographical location, season, and growing conditions. Groundnut seed contains 44 to 56 % oil and 22 to 30 % protein on a dry seed basis and is a rich source of minerals. Groundnut protein is increasingly becoming important as food and feed sources especially in developing country. Groundnut seeds are reported to contain 9.5 to 19.0% total carbohydrates as both soluble and insoluble carbohydrates. Also, groundnut contains 50% of edible oil and is rich in fat, protein, vitamin, Nicotinic acid and other vitamins. Seeds are generally associated with certain saprophytic or parasitic fungi which cause disease in favorable conditions. Peanut causing various fungal pathogens *Fusarium solani*. *Fusarium oxysporum* causes damping off of groundnut seedlings. *Aspergillus flavus* attacks germinating groundnut seed, *Aspergillus niger* caused disease of crown rot of peanut. Fungal pathogens present in almost any seed especially in storage conditions. In the storage condition, it is seen that the different mold fungi and their toxin production ability in stored grains which deteriorate the stored product. By this experiment we can demonstrate the composition of the mycoflora of groundnut seed.

MATERIAL AND METHOD

Detection of Seed Mycoflora : For the detection of seed mycoflora the groundnut seed samples were collected from Vidharbha region. The observations were taken from treated and untreated groundnut seed. For these observations we can use two methods: standard blotter paper and agar plate method. From the observation of treated and untreated seed we can determine the percent of seed-borne fungi.

Standard Blotter Paper Method: Generally standard blotter paper method is used in the management of seed health. In standard Blotter paper Method 100 seeds are taken after that the untreated seeds are treated with 0.01% HgCl₂ (Mercuric chloride) then seeds were placed on three layers of moisture blotter paper that plates were incubated at 25 ± 2°C in alternating

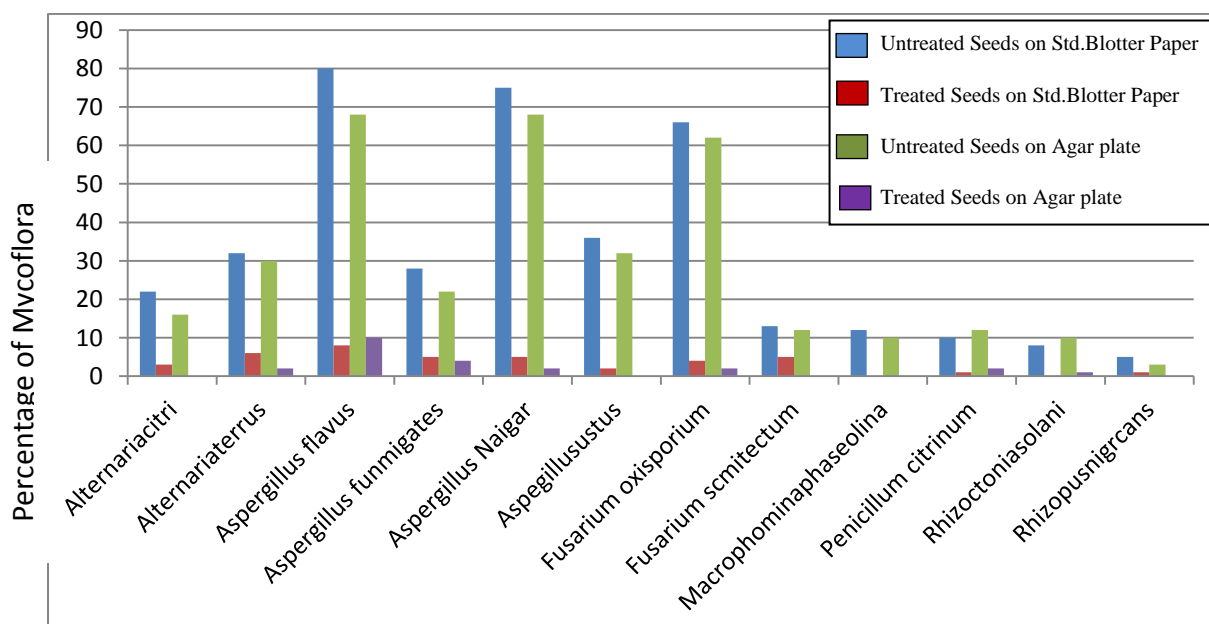
cycle of 12 hrs light and 12 hrs darkness for 7 days the formation of seed mycoflora are identical by slides of fungi with help of microscope.

Agar Plate Method : This method is also used for the management of seed health 10 seeds are placed in each petridish each pre sterilized petriplate are mixed with 15ml of autoclaved potato dextrose Agar (PDA) 10 seeds of each petridish which are treated and untreated are placed at equal distance after that this petriplates were incubated at $25 \pm 2^{\circ} \text{C}$.

RESULT AND DISCUSSION:

The Result shows in table 1 and figure 1

Sr.No.	Name of Fungi	Percent incidence of Mycoflora			
		Std. Blotter Paper Method Agar Plate Method			
		Untreated Seeds	Treated Seeds	Untreated Seeds	Treated Seeds
1	Alternariacitri	22	03	16	00
2	Alternariaterrus	32	06	30	02
3	Aspergillus flavus	80	08	68	10
4	Aspergillus funmigates	28	05	22	04
5	Aspergillus Naigar	75	05	68	02
6	Aspegillusustus	36	02	32	00
7	Fusarium oxisporium	66	04	62	02
8	Fusarium scमितectum	13	05	12	00
9	Macrophominaphaseolina	12	00	10	00
10	Penicillum citrinum	10	01	12	02
11	Rhizoctoniasolani	08	00	10	01
12	Rhizopusnigrcans	05	01	03	00



Seed management is necessary for healthy seed healthy seed gives healthy srop healthy seed play main important role for healthy crop healthy seed increaees the crop production but many seed borne fungi decrease the germination ability and it also reduces productivity of the plant there are 7 genera and 12 species of fungi which are determined in experiment are niz, Alternariacitri, Alternariaterrus, Aspergillus flavus, Aspergillusustus, Fusariumoxysporium, Fusariumsemiectum, Macrophoninaphaseolina, Penicilliumcitrinum, Rhizoctoniasolani and Rhizopusnigricans the seed sample were found to be infected by Aspergillus flovus, Asperigillus niger, Funsarium oxysporium and alternatiaterce seeds and treated with 0.01% HgCl₂.

Microbial contaminations were eliminated by chlorine disinfestations. The following table shows the percentage of seed mycoflora in standard blotter paper method and agar plate method.

Sr.No.	Name of Fungi	Paper blotter Method	Agar Plate Method
1	Aspergillusflavus	80%	69%
2	Aspergillus niger	73%	71%
3	Fusarium oxysporium	67%	61%
4	Asperigillusustus	36%	29%
5	Alternariaterrus	31%	28%
6	Alternaria fumigates	29%	23%
7	Alternariacitri	21%	19%
8	Iusariumsemitectum	14%	11%
9	Penicillium citrinum	13%	10%

In both Method Rhizocotoniasolani and Rhizopusnigricons show less percent from this study it is shown that blotter paper method shows better result than Agar plate method. It is also observe that a new method is used for analysis of seed health. That new method is called filter paper method. It is practical method which is used for rountine analyses of seed.

This study snows that the seed sample taken from vidharbha region show highest percentage of seed mycoflora Asperigillius flavus, Aspergillusniger, Fusarium oxysporium and Alternariateraus were Predominany fungi of groundnut. The surface Sterilization of seed decreases the incidence of mycoflora therefore it is, needed for reducing the fungal growth in groundnut seed by increasing the storage condition.

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