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FUNGAL CATHES BY USING PETRIPLATE EXPOSURE METHOD ON GROUNDNUT FIELD FROM AUSA REGION OF LATUR DISTRICT

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Abstract:

Groundnut is an important food legume of developing and developed countries. In India, Maharashtra state is one of the major groundnut growing states. A study of Aeromycoflora of Ausa region containing Groundnut field was carried out by petridish method using Potato dextrose agar medium. The period of investigation was carried out from ***June 2017 to Oct 2017****. The totals of 16 fungal forms were isolated during the period of investigation. The dominant species were Cladosporium, Fusarium, Penicillium, Rhizopus, Alternaria Aspergillus, and Bipoloris. Cercospora, Nigrospora, Smuts pore, Fusarium, Curvularia and Basidiospore. Cercospora was the most abundant fungi and contributed 10.54% while Cladosporium contributed* ***8.31*** *% to total Aeromycoflora*

Keywords: Petriplate, PDA, Groundnut.

Introduction

In the present investigation the petriplate exposure method were used to correlate the result obtained with methodology and result obtained by Tilak air sampler. The fungal catches obtained by using Tilak sampler shows similar result with petriplate exposure method.

Groundnut crop however continuously influences from various diseases out of which fungal diseases are dominant these are Root rot, Bunchy top, Tikka disease or leaf spot in this connection. Groundnut crop was subjected to airborne fungal diseases, Pande (1976), Bhalke (1981), and Patil (1985). Aerobiology takes into consideration, the studies of all biologically significant materials that are transported in the atmosphere. Fungal study of is of great significant due to its role in the field of human allergy and plant diseases, Agarwal M.K. (1969). The present investigation deals with the airspora over Groundnut field at Ausa region. Ausa is a taluka place in Latur district is situated at **17.89'23^0"N and 74.04'80^0"E** latitude. Average rainfall is 700to 800 mm, relative humidity varies from 30 to 80% and temperature ranges from 24^0 C to 39^0 C this is usually during monsoon month from June 2017 to October 2017. The occurrence of a wide variety of microorganisms in the atmosphere have a direct correlation between surface colonizers and atmospheric spores as the spores from atmosphere settle down on the surface of the plants which play an important role in the leaf infection (or infection on aerial parts) and in the development of disease syndrome. In the present investigation the fungal catches were recorded by using petriplate method from the Groundnut field from Ausa region of Latur District.

MATERIALS METHOD

Sampling Site

Aeromycoflora of Ausa region was studied by Petri dish method. Five Petri dishes each containing Potato dextrose agar medium for fungi were exposed for 30 minutes at 3 feet height in the from the sampling site at 9:00 A.M for r 15 days regular interval during the months of **June 2017 to Oct 2017**. The Petri dishes containing Potato dextrose agar medium were incubated at 30 ^{0} C were incubated for seven days. The no of fungal colonies appeared were counted for calculation of percentage contribution.

Determination of percent frequency of isolated airborne mycoflora and statistical analysis: The percentage contributions of Total no of individual colonies were recorded by following formula.

$$\text{Percentage of abundance} = \frac{\text{No. of colonies of individual species in all the plates studied}}{\text{Total no. of colonies of all the species}} \times 100$$

RESULTS AND DISCUSSION

The petriplate technique was employed in the present investigation for the isolation of mycoflora from Latur District. Petri plate technique used, to correlate the result obtained by using Tilak air sample. During the course of investigation it was observed that the some fungal spores such as *Aspergillus, Penicillium, Alternaria Cladosporium* and *Cercospora* were dominant in petriplate method as well as by using Tilak air sampler.(Oren and Baker 1970). Such similar report has been made by Paramasiveam and Gnanarethinam (1986) on atmospheric Fungal Flora. During investigation it was found that species of *Aspergillus, Penicillium, Alternaria Cladosporium* and *Cercospora* accounted for nearly 80% of the total load. Among the identified fungi spp. *Cercospora* was the most dominating fungi (Table) showed that a total **of** 68 **colonies** of *Cercospora* spp. were isolated and total no of 645 colonies found during June 2018 to Oct to 2017 from the Ausa region of Latur District from Morning to Evening.

The percent frequency of fungus among the identified fungus is maintained in decreasing order is, *Cercospora* (**10.54 %)** was one of the most dominating genus in all over the study period the second fungus was *Alternaria,* (**8.51%)** *Cladosporium* (**8.31%)** followed by *Nigrospora*, (**8.83%)** *Aspergillus* (**7.31%)** and *Penicillium*.(**6.97%)** In the rainy monsoon (June-September), *Cercospora Aspergillus*, *Fusarium, Penicillium*, maximum concentration. Maximum number of *Aspergillus* colonies recorded in the month of September might be due to suitable temperature, relative humidity. Present results showed that Deuteromycetes fungi viz. Alternaria Cercospora Cladosporium Penicillium Aspergillus were predominant among the fungi isolated. Such similar reports have been made by Dawar & Ghaffar (1991) on sunflower seed, Rasheed *et al*.,(2004) on groundnut seed. *A. flavus* and *A. niger* were the predominant storage fungi of groundnut seeds (Mukherjee *et al*., 1992) and soybean seed (Tariq *et al*., 2005).

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Monthly incidence and percent frequency of air borne fungal genera in PDA medium in different months during June 2017 to Oct 2017

Fungal genera	Jun	Jul	Aug	Sep	Oct	Total colonies	(%) Frequency
Alternaria	8	22	11	07	7	**55**	**8.51**
Arthrinium	3	11	06	03	10	33	5.11
cercospora	11	07	10	28	11	**68**	**10.54**
Biopolaris	5	1	04	04	5	17	2.66
Cladosporium	4	3	28	10	9	**54**	**8.31**
Chaetomium	3	3	11	04	3	25	3.81
Puccinia	4	3	07	07	5	23	3.60
Colletotrichum	1	5	09	11	2	30	4.60
Curvularia	3	2	11	09	8	37	5.79
Epicocum	7	6	7	00	11	30	4.70
Nigrospora	5	12	4	25	4	57	**8.83**
Mucor	18	2	5	04	7	23	3.50
Fusarium	5	6	4	07	3	27	4.61
Penicillium	6	4	4	27	7	**45**	**6.97**
Aspergillus	**28**	2	6	06	05	47	**7.31**
Rhizopus	3	11	11	04	9	**37**	5.79
Sterile mycelium	7	4	6	05	9	29	4.49
Total colonies	121	104	144	161	115	637	
Grand Total	121	104	144	161	115	645	100.00

CONCLUSION

A total number of counted fungal colonies were 645 and 29 colonies were sterile mycelia in monthly sampling of air borne mycoflora of Latur district for regular 15 days interval during June 2017 to Oct 2017.The fungal colonies developed in PDA media were isolated from Ausa region at monthly intervals. Among the identified fungi, *Cercospora* was one of the most dominating fungus among in all the over the study period. The second fungus was *Alternaria*, followed by, *Cladosporium, Nigrospora*, *Penicillium Curvularia*, *Fusarium*,, *Colletotrichum, Rhizopus*, *Cheatomium*. In the rainy monsoon (June-September), *Aspergillus, Cheatomium, Fusarium, Penicillium*, showed its

peak. During the Six months investigation maximum fungal colonies were found in August and September as all the climatic factors were favorable for the fungal growth, their dispersal and survival.

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