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## “STUDIES ON AEROMICROFLORA OVER GROUNDNUT FIELDS AT NANDGAON TULJAPUR TAL. OSMANABAD DIST.MS”

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### ABSTRACT :

**T**he present paper deals with the results of aeromycological investigation carried out on the groundnut (*Arachis hypogea* L) crop field was selected for the aerobiological study for two years. The systematic aerobiological survey was conducted by using volumetric Tilak air sampler for a period of two rainy crop seasons and two summer crop seasons. In the present investigation 66 airborne fungi were isolated and identified of the 76 spore types, 38 spore types belong to Deuteromycetes, 16 to ascomycetes, 4 to Basidiomycetes 3 to phycmycetes and 5 to other types. The percentage contribution of each spore type to the tota air spora of two seasons is calculated.



**KEYWORDS :** Aerobiology, Airpora *Arachishypogea*, Tilak air sampler.

### 1. INTRODUCTION

Groundnut (*Arachis hypogea* L) belongs to Family fabaceae is an important oil seed cash crop in tropical and subtropical countries of the world. India is Major country in groundnut production 4.19 Million hector of land under groundnut production in India. Gujarat, Rajasthan, Maharashtra are major groundnut producing states in India.

### 2. MATERIAL AND METHODS:

In the present investigation air monitoring survey was carried out by using volumetric Tilak air sampler (Tilak and kulkarni, 1970). Tilak air sampler was installed for operation in a two acre field of groundnut at a height of 2 (two) feet above the ground level for air monitoring for four consecutive seasons. Nandgaon is a village in Tuljapur Taluka in Osmanabad District of Maharashtra state, India It belongs to Marathwada region. It belongs to Aurangabad Division. it is located 23 km. toward south from district head quarters Osmanabad 417 km. form state capital Mumbai.

### 3. RESULTS:

In the present investigation 66 total types of airborne components were trapped. Out of these, 3 belonged to phycmycetes, 16 to Ascomycetes, 4 to Basidiomycetes, 38 to Deuteromycetes and 4 to other types. So far as contribution of the fungal spores, group is concerned, the group Deuteromycetes (80.35) stood first in order of dominance followed by the other types (8.56%) Basidiomycetes (6.75%), Ascomycetes (3.485%), and phycmycetes (0.765%) the other types group significantly contributed to the total air spora with the airborne components like hyphal filaments, insect parts, pollen grains, protozoan cysts, parthenium pollen

and unclassified group of spores.

During this investigation along with parasitic fungi, saprophytic fungi, hyphal fragments, insect parts, pollen grains, protozoan cysts were also recorded. All these types were kept as individual groups initiate further categorization into other types. Phycomycetes showed lowest concentration in both rainy summer seasons.

The variation in the concentration of different components of airspora was studied in relation to the meteorological parameters.

**Table -I:-** It indicates that Deuteromycetes group is predominant in both summer seasons followed by the other types, Basidiomycetes, Ascomycetes & phycomycetes.

**Table -II:-** Total airspora of rainy season in 2015-16 shows that Deuteromycetes group contribute highest percentage followed by the other types, Basidiomycetes, Ascomycetes and phycomycetes.

**Table -III:-** Comparisons between summer and rainy season of 2015-16 shows that the Basidiomycetes, Deuteromycetes and other type group is predominant in summer as compared to rainy season.

**Table -I :-** Total airspora and percentage contribution of each spore group during the period of investigation (First summer season from, 1st Feb 2015 to 31st May 2015 and second summer season from, 1st Feb 2016 to 31st May 2016)

Spore Group	Total spora		Percentage %		Average%
	Season I	Season II	Season I	Season II	
Ascomycetes	109625	53694	2.80	2.76	2.78
Basidiomycetes	254116	137566	6.49	7.07	6.78
Deuteromycete	3246093	1516860	82.96	77.92	80.44
Phycomycetes	29846	14886	0.76	0.76	0.76
Other types	273119	223720	6.99	11.49	9.24
Total	3912799	1946726	100.00	100.00	100.00

**Table II:-** Total airspora and percentage contribution of each spore group during the period of investigation (First rainy season from, 1st July 2015 to 30th Nov 2015 and second rainy season from, 1st June 2016 to 30th Sept 2016)

Spore group	Total spora		percentage		Average%
	Season I	Season II	Season I	Season II	
Ascomycetes	135878	196924	3.46	4.93	4.19
Basidiomycetes	257132	135614	6.54	6.90	6.72
Deuteromycetes	3200210	1557211	81.27	79.24	80.26
Phycomycetes	31344	14961	0.79	0.76	0.77
Other types	312894	160637	7.94	8.17	8.06
total	3937458	1965347	100.00	100.00	100.00

**Table -III :-** Total airspora and percentage contribution of each spore group during the period of investigation i.e. Two summer seasons- (First- 1-2-2015 to 31-05-2015 and second- 1-2-2016 to 31-5-2016) and Two rainy seasons (First- 1-7-2015 to 30-11-2015 and second – 1-6-2016 to 30-9-2016).

Spore Group	Total Spora		Percentage		Average %
	Summer season	Rainy season	Summer season	Rainy season	
Ascomycetes	646575	232802	2.78	4.19	3.485
Basidiomycetes	391682	392746	6.78	6.72	6.75
Deuteromycetes	4762953	4757421	80.44	80.26	80.35
Phycomycetes	44732	46305	0.76	0.77	0.765
Other types	285491	473531	9.24	8.06	8.56
Total	6131432	5902805	100.00	100.00	100.00

### CONCLUSIONS :-

India is a second largest producer of groundnut in the world. The present paper would be helpful in formulating an efficient disease forecasting system and preventing the groundnut crops from some airborne pathogenic disease like rust and tikka disease. These investigation will be helpful to plant pathologist and farmers of this region in solving the problem of disease of epidemics of groundnuts and increase the yields.

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