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## **Study of Air-Borne Bio Components Over Bajra Field**

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**Abstract -** Air borne fungi are the most common organisms in nature .The concentration of airborne spores over Bajra crop during Kharif season from 1<sup>st</sup> July 2013 to 30<sup>th</sup> September 2013 was examined with the help of Tilak volumetric air sampler in Ambajogai, Dist: Beed

The spore analysis and identification was based on morphological characters, visual identifications. The meteorological parameters were recorded throughout the period of investigation. The work was carried out to find out the important airborne pathogens, their distribution and seasonal variations.

**Keywords:** Airspora, Tilak air sampler, seasonal variations.

### **I. INTRODUCTION**

Airspora contain fungal spores, pollen grains, protozoan cyst. Fungal spores are more problematic for plants and human health. (Kramer et.all 1960 Barnett, H.L., 1960) The investigation contains aerobiological study over Bajra field (*Pennisetum typhoides* Staff. And Hubb.)

Total 71 fungal spore types have been identified up to generic level; other type included hyphal fragments, pollengrains, protozoan cyst, insect parts etc.

### **II. MATERIAL AND METHODS**

Tilak air Sampler (Tilak and Kulkarni 1970) was used for air monitoring for bajra kharif crop during 1<sup>st</sup> July 2013 to 30<sup>th</sup> September 2013 at Ambajogai.

The air sampler was installed in the Bajra fields with the orifice kept at a constant height at 1.5 meter above ground level (1991, 1998) slides were prepared and scanned during the season as per criteria suggested by Tilak and Shrinivasulu (1967).

### III. RESULT AND DISCUSSION

During Kharif season 71 airborne fungal spores were recorded and 5 other components which contain plant parts, pollen grains, protozoan cysts, etc. observed.

Fungal spores which were observed are belongs to 1 from Myxomycotina, 4 from Zygomycotina, 20 from Ascomycotina, 4 from Basidiomycotina, 42 from Deuteromycotina as given in table 2. The airborne spores were observed in kharif season from Bajra field are *Cladosporium* (21.29%), *Alternaria* (6.77%), Rust spores (5.75%), *Curvularia* (5.10%), *Aspergillus* (4.05%), *Nigrospora* (3.89%) *Heterosporium* (3.29%), *Pseudotorula* (3.21%) *Periconia* (3.08%) etc. are shown in table no.1

### IV. CONCLUSION

Total airspora was observed in kharif season was 518070/m<sup>3</sup> of air concentration of total spores. The maximum observation was in September followed by August and July respectively. The atmosphere was rainy and humid in this season; hence caches are recorded on that basis.

TABLE1. RELATIVE CONTRIBUTION OF AIRBORNE COMPONENTS TRAPPED BY TILAK AIR SAMPLER OVER BAJRA FIELD.

Sr. No	Spore Type	Spore/cubic meter of air	% of individual aerospora
A	Myxomycotina 1) <i>Stemonitis</i>	1988	0.39
B	Zygomycotina 1) <i>Albugo</i> 2) <i>Cunninghamella</i> 3) <i>Rhizopus</i> 4) <i>Sclerospora</i>	5236 2856 7350 770	1.01 0.55 1.42 0.15
C	Ascomycotina 1) <i>Amphisphaerella</i> 2) <i>Chaetomium</i> 3) <i>Claviceps</i> 4) <i>Didymospharia</i> 5) <i>Hypoxyton</i> 6) <i>Hysterium</i> 7) <i>Leptosphaeri</i> 8) <i>Lophiostoma</i> 9) <i>Massarina</i> 10) <i>Melanospora</i> 11) <i>Perodiella</i> 12) <i>Passerienella</i> 13) <i>Pleospora</i> 14) <i>Pringshemia</i> 15) <i>Rosiellina</i> 16) <i>Sordaria</i> 17) <i>Sporomia</i> 18) <i>Teichospora</i> 19) <i>Vulsaria</i>	756 3696 1904 11452 3906 2688 12964 1442 840 4368 378 2716 4620 1540 1302 672 1036 1330 1596	0.15 0.71 0.37 2.21 0.75 0.52 2.50 0.28 0.16 0.84 0.07 0.52 0.89 0.30 1.42 0.13 0.20 0.26 0.32

	20) Xylaria	1512	0.29
D	Basidiomycotina		
	1) Basidiospores	12040	2.32
	2) Ganoderma	728	0.14
	3) Rust Spores	26558	5.13
	4) Smut Spores	4396	0.85
E	Deuteromycotina		
	1) <i>Alternaria</i>	20230	3.90
	2) <i>Aspergillus</i>	7350	1.42
	3) <i>Beltrania</i>	560	0.11
	4) <i>Beltraniella</i>	476	0.09
	5) <i>Bispora</i>	2716	0.52
	6) <i>Cephalophora</i>	1484	0.29
	7) <i>Ceratophorum</i>	1050	0.20
	8) <i>Cercospora</i>	9282	1.78
	9) <i>Chaetomella</i>	2394	0.47
	10) <i>Cladosporium</i>	114016	22.01
	11) <i>Corynespora</i>	462	0.09
	12) <i>Curvularia</i>	30982	5.98
	13) <i>Dictyarthrium</i>	476	0.08
	14) <i>Diplodia</i>	798	0.15
	15) <i>Dreschslera</i>	7910	1.53
	16) <i>Epicoecum</i>	6272	1.21
	17) <i>Fusariella</i>	2744	0.53
	18) <i>Fusarium</i>	2296	0.44
	19) <i>Haplosporella</i>	2716	0.52
	20) <i>Harknessia</i>	2128	0.41
	21) <i>Helminthosporium</i>	19180	3.70
	22) <i>Heterosporium</i>	14252	2.75
	23) <i>Humicola</i>	420	0.08
	24) <i>Lacellinopsis</i>	728	0.14
	25) <i>Melanoconium</i>	1274	0.25
	26) <i>Memnoniella</i>	2702	0.52
	27) <i>Nigrospora</i>	22320	4.29
	28) <i>Periconia</i>	17416	3.36
	29) <i>Pistolotia</i>	448	0.09
	30) <i>Pithomyces</i>	4830	0.92
	31) <i>Pseudotorula</i>	19978	3.86
	32) <i>Pyricularia</i>	2142	0.41
	33) <i>Sirodesmium</i>	434	0.08
	34) <i>Spegazzinia</i>	546	0.11
	35) <i>Sporidesmium</i>	168	0.03
	36) <i>Stemphylium</i>	1330	0.25
	37) <i>Stigmina</i>	1008	0.19
	38) <i>Sclerotium</i>	252	0.04
	39) <i>Tetracoccusporium</i>	56	0.01
	40) <i>Tetraploa</i>	16030	3.09
	41) <i>Torulla</i>	3164	0.61
	42) <i>Zygosporium</i>	70	0.01
E	Other		
	1) Hyphal fragments	20874	4.03
	2) Insect part	4354	0.85

3) Plant parts	6552	1.27
4) Pollen grains	11466	2.22
5) Protozoan cysts	7112	1.37

**TABLE 2: NUMBER OF SPORES FOUND IN EACH GROUP**

Sr.No	Spore Group	Spore Type	Spores/m <sup>3</sup>	% Concentration
1	Myxomycetina	1	1988	0.39
2	Zygomycotina	4	16212	3.13
3	Ascomycotina	20	60718	11.71
4	Basidiomycotina	4	43722	8.43
5	Deuteromycotina	42	345072	66.60
6	Other components	5	50358	9.74

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