

Research Paper

DIVERSITY OF FUNGAL SPORES IN PADDY FIELDS (*Oryza sativa* L.)

V.S.Chavan

Department of Botany, Anandibai Pradhan Science College,
Nagothane, Roha -Raigad -402106.(M.S.)

Abstract

: Aeromycological study over Paddy field was carried out at Nagothane, Raigad District of Maharashtra in Konkan region. During this study 42 different fungal spores, fungal fragments and pollen grains was recorded. For this study Volumetric Tilak Air sampler was used. This experiment was carried out for complete two Kharif and Rabbi seasons.

Key Words: Paddy, Diversity, Fungal Spores

INTRODUCTION:

Aeromycological study was carried out for two Kharif and Rubbi season (Ist Rabbi season 11th January, 2003 to 30th April, 2003. Ist Kharif season 1st June, 2003 to 24th September, 2003. IInd Rabbi Season 21st December, 2003 to 26th April, 2004, IInd Kharif season 1st June 2004 to 30th September, 2004.) to study the diversity of fungal spores which cause diseases to this crop which leads to the decrease food production. It is importance cereal crop in India. More than 90% produce and consume in Asian Countries. "Paddy is Life" due to importance in global food.(Anonymous-2005)

MATERIALS AND METHODS:

This study was carried out in paddy fields with the help of Volumetric Tilak Air sampler. This instrument was installed in field at constant height of 1.5 meter above the ground level.(Tilak and Kulkarni-1970) During this study infected plant material was collected brought into laboratory, inoculated on PDA plate and microscopic observation was made and correlated with fungal spores(TilakS.T)and also meteorological factors.

RESULT AND DISCUSSION:

During this investigation 42 fungal spores were recorded. These spores are grouped according to their classes- Deuteromycotina includes 26, Basidiomycotina- 03, Ascomycotina includes- 12, along this fungal fragments and pollen grain also recorded.(SeshavaramV-1965, Sreeramulu-1970 Dhaware S.A-1976) Some of the spores cause many diseases to paddy crop like - Pyricularia, Curvularia, Cercospora, Fusarium, Helminthosporium, Phoma, Nigrospora species causes "Grain discoloration" Alternaria causes "Stack Burn" diseases.(S.H.Ou) Some of the fungal spores are allergent causing allergy like Cladosporium, Fusarium, and Alternaria (Agarwal M.K, K.Sing, D.N.Shivpuri-1974, RajurkarS.K.-2008)

Table:1 Diversity of Fungal Spores in Paddy Fields (*Oryza sativa* L.)

Sr.No.	Spore Types	% of spore I & II Kharif Season			% of spore I & II Rabbi Season		
		I	II	% Mean	I	II	% Mean
DEUTEROMYCOTINA							
1	<i>Alternaria</i> Nees.	2.37	2.62	2.49	2.85	1.37	2.11
2	<i>Beltrania</i> Penzig.	2.40	2.72	2.56	2.57	2.18	2.37
3	<i>Biospora</i> Corda.	2.54	2.89	2.71	2.42	2.01	2.21
4	<i>Cephalophora</i> Thaxt.	2.63	2.25	2.44	2.66	2.99	2.82
5	<i>Cercospora</i> Fr.	2.63	2.64	2.63	2.82	2.25	2.53
6	<i>Cladosporium</i> Link.	2.58	2.38	2.48	2.69	3.01	2.85
7	<i>Corynespora</i> Guessow	2.51	2.62	2.57	2.62	3.20	2.91
8	<i>Curvularia</i> Boed.	2.53	2.51	2.44	2.86	2.43	2.64
9	<i>Diplodia</i> Fr.	2.53	2.35	2.44	2.72	2.38	2.55
10	<i>Epicoecum</i> Link.	2.80	2.55	2.51	2.52	2.56	2.54
11	<i>Exosporium</i> Link.	2.67	2.98	2.82	2.51	2.60	2.55
12	<i>Fusariella</i> Sacc.	2.58	2.03	2.30	2.58	2.63	2.62
13	<i>Fusarium</i> Link.	2.63	2.07	2.35	2.78	2.69	2.73
14	<i>Helminthosporium</i> Link.	2.54	2.67	2.60	2.82	2.59	2.70
15	<i>Heterosporium</i> Klotzsch	2.63	2.51	2.57	2.67	2.60	2.63
16	<i>Memnoniella</i> Hohn.	2.43	2.38	2.40	2.54	2.22	2.38
17	<i>Monilia</i> Pers.	2.49	2.43	2.46	2.56	3.27	2.91
18	<i>Nigrospora</i> Zimm.	2.43	2.39	2.41	2.65	2.01	2.33
19	<i>Periconia</i> Tode ex. Schw.	2.68	2.64	2.66	2.57	2.36	2.46
20	<i>Pestalotia</i> do Not.	2.51	2.32	2.26	2.69	2.81	2.75
21	<i>Phaeotrichoconis</i> Subram.	2.61	2.18	2.39	2.61	2.39	2.50
22	<i>Phoma</i> Desm.	2.46	2.09	2.27	2.73	1.97	2.35
23	<i>Pithomyces</i> Berk.	2.60	2.49	2.54	2.56	2.93	2.74
24	<i>Pyricularia</i> Sacc.	2.55	2.70	2.62	2.62	2.15	2.38
25	<i>Spicaria</i> Auct.	2.72	2.47	2.59	2.51	3.15	2.83
26	<i>Torula</i> Link.	2.62	2.56	2.59	2.48	1.65	2.06
BASIDIOMYCOTINA							
27	Smut	2.56	3.27	2.91	2.77	3.28	3.02
28	Teleutospore	2.59	3.16	2.87	2.25	3.97	3.11
29	Uredospore	2.56	3.04	2.80	2.63	3.44	3.03
ASCOMYCOTINA							
30	<i>Calospora</i> Nitschke	2.33	2.69	2.51	2.02	2.31	2.16
31	<i>Chaetomium</i> Kunz ex Fr.	2.44	2.69	2.56	2.25	2.27	2.26
32	<i>Hysterium</i> Tode ex Fr.	2.51	2.58	2.54	2.36	2.10	2.23
33	<i>Lacaniidion</i> Endl.	2.44	2.32	2.38	2.07	1.97	2.33
34	<i>Leptosphaeria</i> Ces & de Not.	1.65	1.43	1.54	2.13	2.51	2.32
35	<i>Massarina</i> Sacc.	2.40	2.16	2.28	2.03	3.08	2.69
36	<i>Meliola</i> Fr.	2.38	2.55	2.46	2.31	1.91	2.11
37	<i>Monascus</i> Van Teigh	2.44	2.52	2.48	2.07	2.38	2.22
38	<i>Othia</i> Nke.	2.45	2.47	2.46	2.15	2.17	2.16
39	<i>Pleospora</i> Rabh.	1.99	2.28	2.13	2.08	1.71	1.89
40	<i>Pleomassarina</i> Speg.	2.23	2.44	2.33	2.17	1.09	1.63
41	<i>Xylaria</i>	0.00	0.00	0.00	0.75	0.00	0.35
OTHER TYPES							
42	Fungal Fragment	0.07	0.12	0.09	0.18	0.00	0.09
43	Pollen grains	0.06	0.11	0.07	0.11	0.16	0.13

CONCLUSION: This study would be helpful an efficient diseases forecasting system and preventing paddy crop from different fungal diseases and also helpful to the increase the production.

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