AEROBIOLOGY OF SOYBEAN FIELD AT UDGIR, DIST. LATUR (M.S.)

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The present investigation deals with the study of air spora over Soybean (Glycine max Merril) field at Udgir. Dist. Latur (Maharashtra) from June to October for two Kharif seasons. Air monitoring was carried out using Tilak's continuous Air sampler. Altogether 57 fungal and other types were identified out of which 01 belongs to phycomycetes, 12 to Ascomycetes, 04 to Basidiomycetes, 34 to Deuteromycetes and 06 to other types. The Deuteromycetes dominated all other groups and its mean contribution was 76.36% to the total airspora followed by Ascomycetes 14.53%, other types 11.98%, Basidiomycetes 3.06% and Phycomycetes 0.7%. In the airspora Cladosporium sp. was found to the dominant type. It was followed by Alternaria sp., hyphal fragments, Curvularia sp., Cercospora sp., Nigrospora sp., Torula sp. , and Helminthosporium sp. This investigation is useful to understand pathogenic and nonpathogenic fungal spores and disease forecasting system for treatment of Soybean diseases.

INTRODUCTION -Air is the source of microorganisms. The study of aerobiology is important in plant pathology and also in disease forecasting of plant diseases. Soybean is one of the important crop of the world and is rich in protein, carbohydrate, oils, Majour and minor elements and vitamins. Several factors are responsible for to reduce the yield of this crop among which fungal disease are found to be destructive as it reduces the quality and quantity of the crop.

MATERIALS AND METHODS-Air sampling was carried out by using continuous Tilak air sampler. The air sampler kept in Soybean (Glycine max) field at Nideban village, Taluka Udgir, Dist. Latur (M.S.). The cello tape was fixed over the rotating drum of the Tilak air sampler. After operating for one week cellotape was cut into 8 divisions of equal size and mounted in glycerin jelly on a glass slide. The identification of the fungal types was done using literature. The slides were scanned under research microscope.

RESULTS AND DISCUSSION-In the present investigation 57 types have been reported of which 51 were fungal spores and remaining were other biological components like fungal hyphae, insect parts etc. The work was carried out in two Kharif seasons from June to October.

In the first season total 1288049 spores and in the second season 1789257 spores are counted. Maximum percentage contribution of some spore types in first and second season is given in the table along with mean percentage contribution. The spores belonging to Deuteromycetes contributed highest percentage 70.36% followed by Ascomycetes 14.53% other types 11.98%, Basidiomycetes 3.06% and phycomycetes 0.07%. The dominant spore types are Cladosporium sp. (33.75%), Alternaria sp. (8.87%). Similar results are also recorded by Dahiya P. and Gupta R. in Rohtak city (Haryana) and Arora A. and Jain V.K. in Bikaner (Rajasthan), Curvularia sp. (7.21%), Aspergilli sp.(6.24%), fungal hyphae (6.07%), Torula sp. (5.52%), Didymosphaeria (4.14%), Sordaria sp. (3.39%) whereas the other spore types Ramularia sp., Chactomium sp., smut spore, Helminthosporium sp., Curvularia sp. shown comparatively higher. The pathogenic spore types like Alternaria sp., Cercospora sp., Curvularia sp., Helminthosporium sp. were observed in high concentration during investigation. This is useful for to advise the farmer about incidence of disease which is going to occur and also in protecting the crops from infection and diseases. The concentration of spore types in both the seasons were more or less same but in few cases it was quite different. Such fluctuations in the incidence of air borne fungal spores were also reported by Jyoti Nayar from Hyderabad and R.R. Reddy from Vikarabad (A.P.). (See Table-1)

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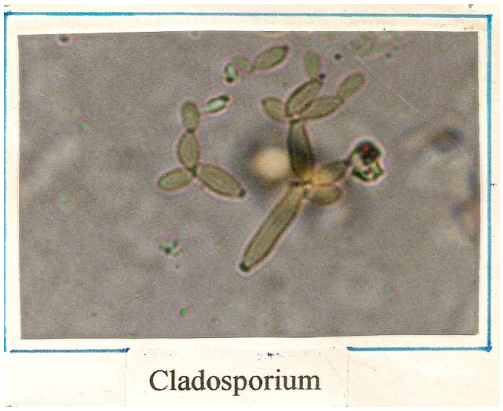
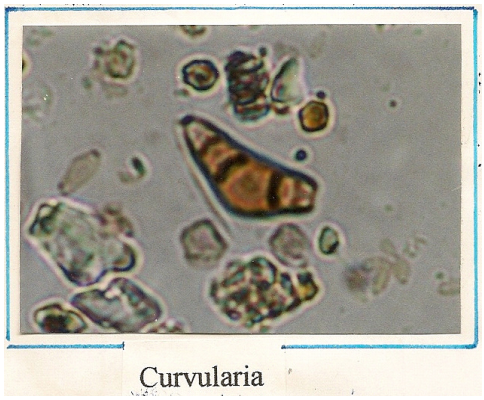
TABLE-1
Maximum percentage contribution of some spore types in I and II Kharif season and mean percentage contribution.

Spore	Percentage contribution to the total airspora		Mean percentage contribution
	I season	II season	
Cladosporium sp.	14.64	52.86	33.75
Alternaria sp.	11.65	06.10	08.87
Curvularia sp.	06.47	07.96	07.21
Aspergilli sp.	11.83	00.65	06.24
Torula sp.	06.80	04.25	05.52
Didymosphaeria sp.	06.15	02.14	04.14
Sordaria sp.	04.59	02.19	03.39


Cladosporium


Curvularia


Torula

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