INCIDENCE OF AIRSPORA OVER SOYBEAN FIELD IN MAHARASHTRA STATE IN INDIA

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Abstract- In the atmosphere number of microscopic biocomponents are present called as 'Air Spora'. The study of air spora is known as Aerobiology. In the present investigation the aeromycological survey was carried out over Soybean (*Glycin max*Merill) field for two kharif seasons. First season- 15th June 2013 to 10th October 2013 Second Season – 10th June 2014 to 5th October 2014. Air monitoring was carriedout using Tilak Continuous Air Sampler. Altoghether 57 Fungal types were identified out of which 01 belongs to Phycomycetes, 12 to Ascomycetes,04 to Basidiomycetes, 34 to Deuteromycetes and 06 to other types. In the air spora*Cladosporium*Sp was found to the dominant type. It was followd by *Alternaria*sp. *Curvularia* sp. *Cercospora*sp*Nigrospora*Sp,*Tarula*sp and *Helminthosporium*sp. This investigation is useful to understand pathogenic and non pathogenic fungal spores and disease forecasting system for treatment of Soybean and other crop diseases.

I. INTRODUCTION

Fungal spores in the atmosphere are considered to be one of the most potent biopollutants. Which are pathogenic to several crops having direct impact on our food security. Soybean (*Glycin max*Merill) is important crop of the world and it is extensively cultivated in Maharashtra state in India. Soybean is rich in protein, Carbohydrates, Oils, major and minor elements and vitamins.Several factors are responsible for reducing the yield of this crop among which fungal diseases are destructive and reduce the quality and quantity of the crop. The main aim of the present study was to assess the concentration of air borne fungal spores over a Soybean field in relation to meteorological Parameters with on object to prepare an efficient forecasting system for most important fungal diseases.

II. MATERIALS AND METHODS

Volumetric aeromycological survey was carried out by using continuous Tilak air Sampler[1](Plate A)for a two consecutive kharif seasons at weekly intervals over a Soybean field at Latur (Maharashtra)

The fungal spores were identified on the basis of literature, relevant books[2-5], morphological characters and also by comparing with reference permanent spore slides. The meteorological factors during the investigation period was noted from the nearest meteorological station .The concentration of spore types were different in different growth phases of Soybean crop

III. RESULT AND DISCUSSION

During investigation in the first season 1288049 spores and in the second season 1789257 spores are counted. The spores belonging to Deuteromycetes of both the season contributed highest percentage 70.36% followed byAscomycetes 14.53%, Basidiomycetes 3.06%,phycomycetes 0.07% and other types 11.98%. The dominant spore types are *Cladosporium*sp (33.75%) and similar results are also recorded from other parts of India [5-12],*Alternaria*sp (8.87%), *Curvularia*sp (7.21%) *Aspergilli*sp(6.24%),*Torula*sp (5.52%), *Didymosphaeria* (4.14%)*Sordaria*sp (3.39%) where as the other spore types *Ramularia*sp, *Chaetomium*sp, smut spore, *Helminthosporium*sp(Plate A& B) shown comparatively higher. All the air borne fungal species of Deuteromycetes group causes leaf spot diseases on Soybean and many different crop plants around the field. This study is most important in disease forecasting system of many crop plants for the avoidance and treatment of diseases.

REFERANCES

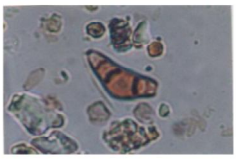
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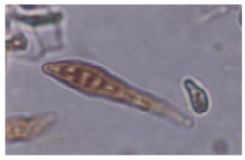
Plate A



Tilak Air Sampler



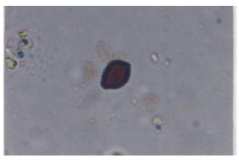
Curvularia



Alternaria

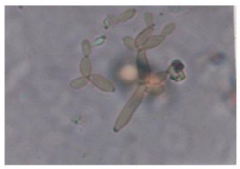


Cercospora

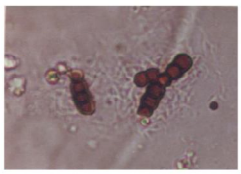


Sordaria

Plate B



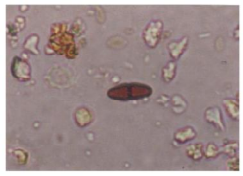
Cladosporium



Torula



Helminthosporium



Didymosphaeria

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