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STUDY OF AEROMYCOFLORA OF SAFFLOWER FROM PARBHANI DISTRICT IN MAHARASHTRA

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ABSTRACT: The present paper deals with the study of aeromycological study over safflower crop variety PBNS-40 from the vicinity of Parbhani field. The safflower, as an important oil seed crop contains 40 per cent edible oil, which has high percentage of polysaturated fatty acids like linolenic acid which helps in reducing cholesterol level. The plant is affected by several diseases including seed borne and soil borne pathogen. Therefore, an attempt has been made to study the aeromycoflora with the help of: Tilak Air sampler and Sterilized Petriplates techniques containing Rose Bengal medium and PDA, are exposed in safflower field. During the investigations about 15 types of fungal spores viz. *Alternaria*, *Curvularia*, *Cladosporium*, *Biospora*, *Basidiospores* and *Helminthosporium* were found to be dominant along with the pollen grains of grasses and parthenium etc. as airborne biocomponents, which helps in diseases forecasting.

KEYWORDS: Tilak Air Sampler, Aeromycoflora, Air borne components.

I. INTRODUCTION:

Carthamus tinctorius L. commonly known as 'safflower' or kardi an important oil seed rabi crop belonging to family Asteraceae of dicotyledonous plants. It contains 40 per cent edible oil which has high per cent of essential polyunsaturated fatty acids and linolenic acid which helps in reducing cholesterol level. The plant is affected by various diseases like viruses, bacteria, fungi and nematodes as well as soil borne and seed borne pathogens causing heavy losses to the crop yield (Shastry and Jayaraman, 1993).

The investigation by previous researches showed that some fungi like *A.candidus*, *A.niger*, *A. versicolor*, *Cladosporium*, *Cladosproioides*, *C.herbarum*, *Penicillum*, *brevicompactum* and *P.chrysogenum* can increase the allergic reaction. The symptoms of these fungal components include sinus, eye irritation, headache, tiredness, sore throat, weakness and asthma (Khan.H.A.2012).

The present investigation was carried to find out the co-relation between the occurrence of Air-spora components and diseases incidence. The aerobiological investigation was carried out with the help of "Tilak Air sampler" (Tilak and Kulkarni 1970) and "Petri plates culture" method to collect the data of airspora. Based on qualitative and quantitative analysis, seasonal periodicity, nearby vegetations, and other crops and inter cropping system, in the vicinity of field is reliable for diseases forecasting. (Tilak and Pandey 1989) and (Jayarajan 1989).

II. MATERIAL AND METHODS:

Investigation was carried out with the help of 'Tilak Air sampler' fixed in the center of safflower crop field for a week, when the safflower crop field shows the maximum fungal infections in the month of January to collect aeromycological data scanning of slides was done with the help of research microscope.

In addition to this sterilized “Petri plates technique” was carried out (in the month of January) containing rose-bengal, PDA. Petri plates were exposed in the same period at sampling site. Plates were incubated at room temperature for 4-7 days and fungal colonies were studied. The slides were prepared and identification of spores was done with the help of Barnett (1972). The record was placed in the form of a table, consisting of individual spore percentage to the total air-spores (Tilak,1982).

III. RESULT AND DISCUSSION:

A total of fifteen (15) spore types were recorded. It was observed that among the fungal spores *Cladosporium* (18.62%), *Alternaria* (15.20%), *Curvularia* (11.2%), *Helminthosporium* (4.6%), *Basidiospores* (2.96%), *periconia*(6.8%) were found to the total airspora as dominant mycoflora (Table 1). In addition to this percent contribution of air borne pollen grains from grasses and parthenium were also recorded as predominant biocomponents. Apart from this dust particles and unclassified types were trapped. In the Petri plates colonies of *Rhizopus*, *Aspergillus*, *Alternaria*, *Fusarium*, *Curvularia* were commonly occurred. These spores are pathogenic to safflower causes diseases and are responsible for considerable losses in yield of safflower crop. It was observed during humid conditions more spores were released. The similar results were obtained by Ahire (2008), Pardeshi (2008), Arsule et al. (2012) and Allapure. R.B. (2016).

Table.1- Percentage contribution of different spore types to total airspora of Safflower from Parbhani.(M.S).

Sr.No	Types of biocomponents	Total %
1	<i>Alternaria</i>	15.20
2	<i>Basidiospora</i>	2.96
3	<i>cladosporium</i>	18.62
4	<i>Curvularia</i>	11.20
5	<i>Helminthosporium</i>	4.6
6	<i>Periconia</i>	6.8
7	<i>Smut spores</i>	2.4
8	<i>Aspergillus</i>	2.1
9	<i>Nigrospora</i>	1.9
10	<i>Biospora</i>	1.6
11	<i>Unclassified type</i>	0.7
12	<i>Cercospora</i>	0.4
13	<i>Rhizopus</i>	0.2
14	<i>Pollen grain of grasses</i>	25.41
15	<i>Parthenium pollen grain</i>	15.24

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