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STUDIES ON COMPOSITION AND COMPONENTS OF AIRSPORA BELONGING TO ASCOMYCETS OVER GREEN GRAM FIELD DURING KHARIF SEASON AT KADA. TAL-ASHTI DIST BEED (MAHARASHTRA)

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ABSTRACT

A Volumetric continuous Tilak Air Sampler was employed for exploring fungal air spora over a green gram field for one kharif season i. e. season from 5th June to 28th August 2007. During the present studies composition & component of the airspora belonging to ascomycets over the green gram field was studied. For this studies of spore catches were prepared, mounted and spore scanning was carried out regularly. Fourteen types of fungal spores belonging to the ascomycets were trapped on the cellophane tape fixed on the drum of the sampler. Apart from these various dust particles were also seen in abundance.

Key Words : Airspora, Ascomycetes, Air Sampler, Green gram field.

INTRODUCTION

Aerobiology is an interdisciplinary science which deals with the study of biological component like pollen grains, fragments of fungal spores, hyphal fragments, bacteria, viruses, algae, lichens, plant seed & other propagules, protozoae, minute insects & insect parts etc. in the atmosphere Abiotic particulates & gases affecting living organisms have been recently included in the concept of aerobiology. The aerobiological studies are mainly concern with interrelationship between the biological component in the atmosphere, source of biological component, their release in the atmosphere, their deposition & impact on health of plants & animals including human beings. Airborne infections & the resulting

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diseases threaten the lives & productivity of plants. Airborne diseases still pose a challenge to mankind.

The role of fungi in causing diseases to crop plants, man, domestic animal, in bringing deterioration of food grains in storage, valuable monuments has been subject of great interest for long time. Standing vegetation has a great influence of airspora of any place and it changes with changes in whether. Aerobiological survey conducted in various part of India revealed richness of air spora . Green Gram (Phaseolus aurens, Rorb.) is one of the most important pulses crop in Marathwada region. Pulses are being grown India since ancient time. It is belived that Green Gram is native of India & central Asia. Green Gram is Protein rich staple food. It contains about 2.5 % proteins. As considering survey of this crop that since last few years Green Gram is suffer with different type of pathogenic diseases like fungi, bacteria, viruses.

However detail studies on air spora over the green gram field in respect to the seasonal conditions are mearger Considering these facts studies on airspora belonging to ascomycets over the green gram field is carried out.

RESULTS AND DISCUSSION

Analysis of spore catches from the result presented in table I revealed that fourteen types of fungal spores belonging to the ascomycets were trapped on the cellophane tape fixed on the drum of the sampler.

Enumeration of the identified spores of fungi belonging to the ascomycets over the green gram field for one kharip season.

1) Ascotricha Berk : spores are one celled, circular in face view, olive brown to black during the studies average contribution was recorded as 1.29% to the total airsspora over

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the green gram field. The Maximum Monthly Mean Concentration 266/m^3 of air & Minimum 266/m^3 of air respectively.

Narsimha (1996) reported 0.03% of these spores over paddy field of siddipet. Mali(2002) also respond these spores on jawar field at Kada.

2) Chaetomium Kunz exFr.

Spores are dark one celled, tapering at both ends. During the present studies the average spore contribution was recorded as 1.39% to the total air spora. The Maximum Monthly Mean Concentration (1246/m^3)was recorded in the month of July 2007 & Minimum (364/m^3) in Aug 2007.

Gaikwad (1974) reported 0.04% spores from Ahmedpur. Mane (1978) reported 0.15% spores from Vaijapur, Jogdand (1987) reported the spores over the Jawar field at Aurangabad. Mali(2002), Gopan(2004) and Pathare(2005) recorded these spores at Beed & Kada. To trace the Source, the fungus was collected on decaying dead branches of different plant around the crop fields during kharip season.

3) Claviceps tul spores elongated filiform with many transverse septa, slightly curved, hyaline spores occurred frequently. Their contribution to the total air spora was recorded 0.39%. The Maximum Monthly Mean Concentration (378/m^3) was recorded in the month of Aug 2007 & Minimum (238/m^3) in July 2007. Pande (1976) reported 0.11% spores to the total air spora of Nanded. Pawar (1997) recorded of these spores over Bajara field at Aurangabad.

4) Didymospheria Fuck :

Spores two celled with single transverse septum, brown elliptic air spora or cylindrical spores occurred continuously. Their contribution to the total air spora was recorded 1.83%. Spores were collected from sampling sites. Saporophytic form on stem of cajanus . The maximum monthly mean concentration (1260/m^3) was recorded in the month of Aug 2007 & Minimum (518/m^3) in June 2007. The occurance of this spores type could be correlated with prevailing weather parameters like rainfall & humid

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conditions. Pande (1976) reported 2.41% from Nanded, Mane (1978) reported 0.94% from Vaijapur. Reddy (1987) reported 0.85% from Aurangabad, Tuljapurkar (2000) & Garje (2000) at Aurangabad.

5) Hypoxylon Bull. Ex. Fr.

Spores elliptic fusiform to bean shaped, dark brown in colour. Their contribution to the total air spora was recorded as 0.72% Spores saprophytic on bark of Acacia. The maximum monthly mean concentration (532/m^3) was recorded in the month of Aug 2007 & minimum (154/m^3) in June 2007.

Mane (1978) reported 0.72% spores to the total air spora at Vaijapur & recorded high concentration during high humidity & pointed out it " night spora" pattern. Bhalke(1981), Babu (1983) reported 1.72% & 0.45% over Jawar & Banana field at Aurangabad.

6) Hysterium Tode. Ex Fr

Spores three septate, elliptic, cylindrical, uniformly brown. Their concentration to the total airspora was recorde as 0.42%. The maximum monthly mean concentration (392/m^3) was recorded in the month of Aug 2007 & minimum (112/m^3) in June 2007.

Tilak & Srinivasulu (1967) reported Hysterium spores from the air spora of Aurangabad for the first time. Mali(2002) & Pathare(2005) reported these spores at Kada.

7) Leptosphaeria Ces. And de Not

Spores lightly coloured, two to multiseptate prolonged dry condition typically showed the absence of the spore in the air. Their contribution to the total airspora was recorded as 0.52%. The maximum monthly mean concentration (504/m^3) was recorded in the month of Aug 2007 & minimum (70/m^3) in June 2007. Tuljapurkar (2000), reported these spores over sunflower field at Aurangabad.

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8) Melanspora Corda

Spores one celled, oval discoid, often in equilateral with prominent germ pores at both ends, brown to blackish green.

Their contribution to the total airspora was recorded as 0.95%. The maximum monthly mean concentration (1064/m^3) was recorded in the month of July 2007 & Minimum (154/m^3) in June 2007.

Wankhed (1983) Meghraj(1989) recorded incidence of these spores over to their field of Auranagabad.

9) Parodiella (Speg.) Thesis & Syd.

Spores two celled, elliptic, distinctly striated . Their contribution to the total airspora was recorded as 0.20%. The maximum monthly mean concentration (308/m^3) was recorded in the month of Aug 2007 & minimum (14/m^3) in June 2007.

Venugopalchari (1986) recorded 0.22% to the airspora over cotton field at Nanded.

10) Pleospora Rash

Spores along fustorm or ovoid, yellowish brown or golden brown, with several cross & one or usually 2 longitudinal Septa. Their Contribution to the total airspora was recorded as 0.54%. The maximum monthly mean concentration (448/m^3) was recorded in the month of Aug 2007 & minimum (84/m^3) in June 2007.

Dye & Vernon (1952) reported these spores from New Zealand. Richard (1956) from England, Paddy & Kapica (1956) from Canada. The occurance of these spores in air was favoured by high humid conditions. Ahuja (1991) recorded these spores at Aurangabad. Garje (2000) recorded 0.49% incidence of these spores to the total airspora over bajara field at Aurangabad.

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11) Sordaria Ces and and deNot

Spores one celled, subglobose with small papilla at the lower end. Spores occurred frequently. Their contribution to the total airspora was recorded as 0.18%. The maximum monthly mean concentration (196/m^3) was recorded in the month of July 2007 & minimum (84/m^3) in Aug 2007. Mane (1978) noted 1.81% spores from Vaijapur Tilak Bhalke (1981) recorded 1.15% spores over Jawar fields.

12) Sporormia de Not : Spores dark brown uniseriale, dull coloured, three septate. Spores occurred frequently. Their contribution to the total airspora was recorded 0.26 %. The maximum monthly mean concentration (196/m^3) was recorded in the month of July 2007 & minimum (84/m^3) in Aug 2007. Tilak & Kulkarni (1972) reported 1.3% spores to the total airspora at Aurangabad. Babu(1983) pointed to count it peak at 10.00 hours.

13) Techospora Fuck

Spores oblong - fusiform, yellowish brown upto 7 transverse Septa & one - two longitudinal Septa. Spores occurred frequently. Their Contribution to the total airspora was recored as 0.37% . The maximum monthly mean concentration (280/m^3) was recorded in the month of July & Aug 2007 & minimum (28/m^3) in June 2007. Babu(1983), Patil (1983), Wankhade (1983) over Jowar fields at Aurangabad.

14) Valsaria Ces and De Not

Spores two celled, broadly elliptical brown in colour Spore occurred frequently. Their Contribution to the total airspora was recored as 0.45% . The maximum monthly mean concentration (448/m^3) was recorded in the month of July & Aug 2007 & minimum (112/m^3) in June 2007. Aher (1993) recorded 0.14% to the total airspora at Aurangabad Mali(2002) recorded 0.37% to the total airspora at Kada.

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