

Ascospore Concentration Over Onion Field

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ABSTRACT

*The investigation of air borne fungi was carried out by using continuous Tilak air sampler over Onion (*Allium cepa* L. Family-Liliaceae) field during rabbi season 1st November 2014 to 27th January 2015. In this investigation the maximum concentration of ascospores 22.09%/m³ of air were recorded in the month of December and minimum in the month of November 13.18%/m³ of air. It becomes very clear that there is a close relation between cold and humid environmental condition and release of ascospore.*

INTRODUCTION

Numerous airmicroflora are present in the air. These are fungal spores. Pollen grains, insect parts etc. Onion (*Allium cepa* L.) is the main vegetable crop in India and it is cultivated in Maharashtra with other vegetables. During entire period of survey the biocomponents present in air over onion fields correlate with meteorological parameters. Onion suffers from a large number of fungal diseases causing heavy loss to the economy of farmer onion has medicinal properties. It is good for eyes and act as heart stimulant.

MATERIALS AND METHODS

The air sampling was carried out for a rabi seasons from 1st November 2014 to 27th January 2015 by operating Tilak air

sampler¹. The sampler was kept at a height of 4 feet in a onion field and running on an electric power.

The air sampling was carried out from the date of sowing of seeds and continued till a few days after harvesting of the Onion crops. The observations on the growth of the Onion were done time to time and the infected plant parts were collected at regular intervals to correlate the incidence of disease with the atmospheric spore content.

The cellotape was fixed over rotating drum of air sampler. After operating for one week cellotape was cut into 8 divisions of equal size and mounted in glycerine jelly on a glass slide. The slides were scanned under microscope. The identification of fungal spore type was done with the help of literature²⁻³.

RESULT AND DISCUSSION

In this investigation of Onion field in all 56 types were recorded of which 50 were fungal spore types and remaining 06 constituted other biological forms, which included hyphal ragments, insect parts, pollens, protozoansysts and unclassified group.

During present investigation the spore types belonging to Deuteromycetes having their highest mean percentage contribution 70.75% to the total air spora followed by Ascomycetes 18.93%, other types 7.23%, Basidiomycetes 2.7% and Phycomycetes 0.39% over Onion field. Out of 56 air borne components 01 belonged to phycomycetes, 12 belonged to Ascomycetes, 03 to Basidiomycetes, 34 to Deuteromycetes and 06 other types.

The Ascomycetes group contributed 12 spore types and ranked second in the order of dominance. The presence of many Ascospore types in the air spora revealed the abundance of parasitic and saprophytic forms in and around the field. The maximum number of ascospores were recorded during the season in the month of December 22.04%/m³ of air and minimum in the month of November 13.18%/m³ of air. Some of the ascospore type like Bitrimonospora, Chaetomium,

Didymosphaeria, Sporormia and Sordaria appeared in the air very commonly at high humid conditions and similar observations were made by Ingold⁴(1965) and concluded that little rainfall leads to abundant release of ascospore.

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