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Studies on composition and components of aerospora of ascomycetes over capsicum annum l. In open field cultivation during kharif season

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Abstract
An extramural survey of aerospora of *Ascomycetes* was conducted over the Capsicum field *(Capsicum annum L.*) at Nashik District on open field cultivation during kharif season of June to October. The data of airborne microbial components was collected with the help of continuous Tilak Air Sampler (Tilak and Kulkarni, 1970). In order to access, the disease incidence to the crop by Ascospore types. Over a period of survey, there were 17 spore types recorded from this group. Their high concentration was found in air under weather conditions in favour to sporogenesis and release into atmosphere. The abundance of many Ascospores types in the aerospora revealed the presence of copious Ascomycotina members in parasitic and sporphytic forms in and around the fields. *Bombardia, Cucurbitaria, Didymosphaeria, Hypoxylon, Hysterium, Lophiostoma, Melanospora, Oidiopsis, Parodiella, Pleospora, Sordaria and Sporormia* was the common Ascospores types noted throughout the period of investigation.

Keywords: aerospora, *Capsicum annum*, ascomycetes

Introduction
Aerobiology is a branch of Biology, which deals with the study of various aspects like transmission, dispersion, deposition of airborne bioparticles. Capsicum annuum L. belong to the family Solanaceae is the inseperable component of spice. Considering commercial value in mind, Capsicum is cultivated as economically valuable crop in India. Capsicum plant is easily affected by many fungal diseases. The large number of Asomycotina members actively released their spores in air for further transport. Usually, in fungi the liberation of spores is necessarily depends on turbidity of the cells. The precipitation affectes release of aerospora. This effect may be immediate or delayed. The spores of Ascomycotina occurred in the environment when the conditions are favorable for their Formations and release. The Ascomycotina spores occurred in environment under favourable conditions supporting their formation and release. Most of the time Ascospores occurred during rainy season and their concentration was found fluctuating in accordance with amount of rainfall and varying vegetation. The present paper deals with the studies on composition and components of aerospora of ascomycetes over capsicum annum L. in open field cultivation.

Materials and Methods
The continuous sampling in the Capsicum open field (extramural) during kharif season of June to October was done using Tilak air sampler. The working of the Tilak air sampler is according to the principal of suction and impaction. One can collect continuous volumetric data i.e. number of spores/m3 of air with the help of these equipment. During present investigations air sampling over was done with the help of Tilak air sampler. The sampler was mounted at the centre of Capsicum field, one meter above the ground level. Slide preparation, scanning and detailed calculations were obtained by using same method described earlier (Tilak and Kulkarni, 1970) Apart from Tilak air sampler the data of air catches was also collected by petriplate sampling. The petriplate sampling was carried out for confirmation of funal genera trapped by Tilak air sampler wherever needed.

Results and Discussion
The Ascomycotina spores occurred in environment under favourable conditions supporting their formation and release. Most of the time Ascospores occurred during rainy season and their concentration was found fluctuating in accordance with amount of rainfall and varing vegetation. There were 17 spore types (Table 1) found during kharif season from Ascomycotina contributed 6.04% of total aerospora. The abundance of many Ascospores types in the aerospora revealed the presence of copious Ascomycotina members in parasitic and sporphytic forms in and around the fields. *Bombardia, Cucurbitaria, Didymosphaeria, Hypoxylon, Hysterium, Lophiostoma, Melanospora, Oidiopsis, Parodiella, Pleospora, Sordaria* and *Sporormia* was the common Ascospores types noted throughout the period of investigation.
Ingold (1965) reported effect of dewfall on occurrence of release of Ascospores. Similarly, the close relation between release of Ascospores and rainfall has been proved. The number of Ascospores increases during wet period while it decreases during dry period. During kharif season of present investigation ascomycotina members shows Bombardia exhibited 0.14%, Chaetomium shows 0.22%, Claviceps contributed 0.28%, Cucurbitaria contributed 0.31%, Hypoxylon contributed 0.14%, Lophiostoma contributed 0.21%, Oidiopsis contributed 3.07%, Pleospora contributed 0.15%, Sordaria contributed 0.35% and Sporormia contributed 0.33%. The spore types such as Chetomium, Hysterium, Massarina and Sporormia were observed even during the dry period. The present findings clearly revealed the importance and impact of rainfall, temperature and

relative humidity on the spore release of some Ascomycotin members. The Similar results have also been reported before by Ingold (1965), Patil (1983), Patil (1985), Jayswal (1993), Naik (1995), Pawar (1998) and Merideth (1962 and 1963). These reports stated remarkable influence of temperature and rainfall on the development of reproductive structure and also acts as determining factors in long term periodic fluctuation like annual cycle of airborne catches. In the present studies Ascomycotina represented by Chaetomium, Didymosphaeria, Hypoxylon and Sordaria. The highest concentration of Ascospore was found positively influenced by high relative humidity and low temperature to build its concentration in the air.

Table 1: Seasonwise concentration of Ascomycetes spore types from the total airspora of kharif season of June to October.

Sr. No	Name	Seasonal concentration per M3 of air
1	Bombardia Fr.	1904
2	Chaetomium Kunz. Ex. Fr.	3066
3	Claviceps Tul.	3892
4	Cucurbitaria Gray.ex Grev.	4242
5	Didymosphaeria Fuck.	602
6	Hypoxylon Bull.Ex.Fr.	1904
7	Hysteriμm.Tode Ex.Fr.	840
8	Leptosphaeria cesandde	2618
9	Lophiostoma Ces de Not.	2842
10	Massarina Sacc.	2226
11	Melanospora Corda.	1778
12	Meliola Fr.	1876
13	Oidiopsis Sawada.	42406
14	Parodiella. (Speg) Theiss and syd.	1960
15	Pleospora. Rabh.	2072
16	Sordaria.Ces and de. Not	4802
17	Sporormia Ces and de. Not	4508

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