

Atmospheric concentration of *Alternaria* spores over sunflower field

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An aeromycological survey over sunflower field was undertaken at Kada Tal-Ashti, Dist-Beed from 5th July 2003 to 30th September 2003. Sampling was carried out by using continuous volumetric Tilaka Air sampler. The incidence of the spore of *Alternaria* in the air was regular through out the season. The maximum monthly concentration (28434/m³ of air) was recorded in the month of September 2003 the highest daily mean concentration (3500/m³ of air) was recorded on 9th September 2003. Meteorological parameters such as rainfall, relative humidity, wind velocity and temperature showed significant effect on liberation of spores of *Alternaria* in the air spora composition qualitatively and quantitatively.

Sunflower (*Helianthus annuus* L.) is one of the most important oil seed crops being grown all over the World. The present investigation of air monitoring over the Sunflower crop was carried out to find the spore concentration of airborne, saprophytic and parasitic fungi and their correlation with disease incidence and the effect of meteorological parameters. The present paper provides a critical account of impact of weather condition on concentration of airborne *Alternaria* spores over sunflower field.

Tilak continuous volumetric spore trap was employed during the present studies (Tilak and Kulkarni, 1970) to collect airborne biocomponents over sunflower field for a *Kharif* season at Kada, Tal-Ashti, Dist-Beed, from 5th July to 30th September 2003. Frequent visits to the field were arranged throughout the period of investigation. The meteorological data was recorded during the period of investigation.

During the period of present investigation, spores of *Alternaria* contributed 13.75 % width total concentration of 70364/m³ of air.

Spores of *Alternaria* occurred continuously throughout the period of investigation. Their daily

maximum mean concentration (3500/m³ of air) was recorded on 9th September 2003 when there was a record of 25.5°C mean temperature, 75% relative humidity, no rainfall and 4.4 km/hr. wind velocity. Probably these environmental parameters were found to be congenial to boost up the concentration on that day (Fig. 2). similar observation were also recorded by Sheehy and Hugelot (1967), Shastri (1996), Pawar and Ahuja (1998) and Aher *et al.* (2002).

Maximum monthly mean concentration (28434/m³ of air) was recorded in September and minimum (16582/m³ of air) in July 2003. (Fig. 1), when monthly mean temperature was 25.55°C mean relative humidity 77.13%, rainfall 77.5 mm and wind velocity 2.8 km/hr in the month of September. Mane (1978) at Vaijapur, while performing aerobiological survey obtained similar results.

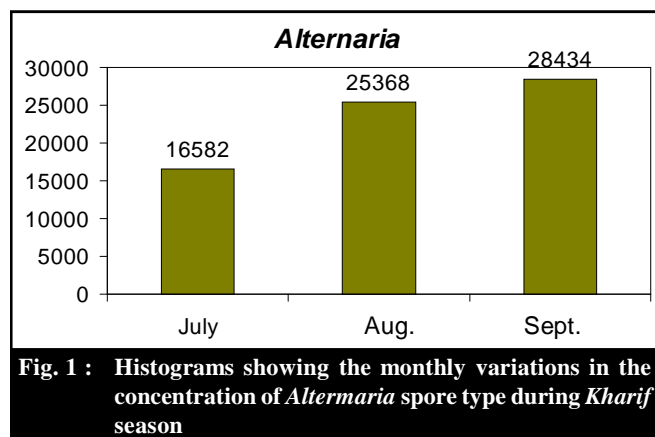


Fig. 1 : Histograms showing the monthly variations in the concentration of *Alternaria* spore type during Kharif season

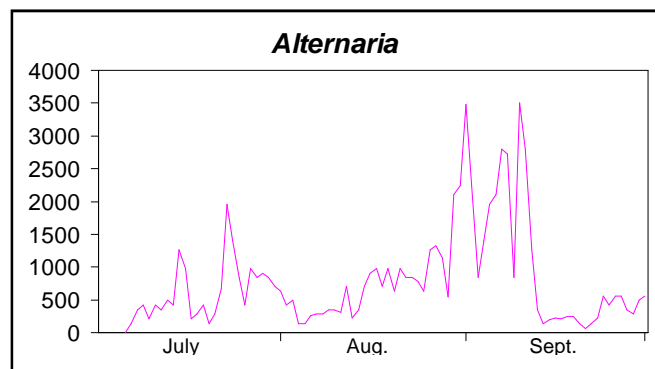


Fig. 2 : Line graph showing variations in the daily mean concentration of *Alternaria* spore type during Kharif season

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During the period of present investigation the spores of *Alternaria* were almost continuously found in the atmosphere over the sunflower field. However, no disease

incidence due to *Alternaria* spores to Sunflower crop was recorded.

REFERENCES

- Aher, S.K., Thite, S.V. and Pande, B.N. (2002). Fungal airspora of a groundnut field. *Eco. Env. & Cons.*, **8** : 283-288.
- Mane, D.A. (1978). Studies in airspora over some fields. Ph.D. Thesis Marathwada University, Aurangabad.
- Pawar, S.R. and Ahuja, S.R. (1988). Prevalence of *Alternaria* spores in the atmosphere over groundnut fields. *Dr. B.A.M.U. J.Sci.*, **28** : 95-100.
- Shastri, S.D. (1996). An aerobiological survey of fungal spores in two different seasons over maize fields. Dr. B.A.M. University. *J. Sci.*, **27** : 85-90.
- Sheehy, J. and Hugel, J.E. (1967). Diurnal periodicity in *Helminthosporium* and *Alternaria* Phytopathology, **57** : 830.
- Tilak, S.T. and Kulkarni, R.L. (1970). A new air sampler *Experientia*, **26** : 443-444.
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