

## Chapter v.

# SUMMARY

## S U M M A R Y

The present investigation is concerned with the study of airspora inside the library building of Willingdon College, Sangli. For collecting the airspora Tilak Rotorod Air Sampler was used. The sampling was done twice in a week for a period of one year i.e. October 1992 to September 1993. The airspora was collected in the morning at 10.00 am as well as in the evening i.e. 4.00 pm. Also the airspora was studied by exposing culture plate containing Potato Dextrose Agar medium.

For studying the correlation between weather conditions and airspores inside the library building, the monthly temperature, rainfall and relative humidity were also recorded. As airborne pollen and spores are responsible for many allergic diseases. Some persons working in the library for nearly last 20 years and other, visiting the library almost regularly were interviewed for studying any allergic effects of the airborne spores and pollen inside library.

During the period of investigation the total number of biopollutants trapped was 12122 /m<sup>3</sup> of air. Among them fungal spores were in majority contributing

84.755% to the total airspora while the other components including fungal hyphae, algal fragments, epidermal hairs, insect scales, insect mite and plant fibres contributing 15.277% to the total biopollutants.

The fungal spores were identified by using reference slides, books, culture plates etc. They were assigned to respective groups and genera. Among total 84.755% airmycospora, Ascomycetes contributed 3.836 percent, Basidiomycetes 7.919 percent, Deuteromycetes 73.75 percent while Phycomycetes were altogether absent. Thus the airspora inside the library building was dominated by fungal spores among which Deuteromycetes form the dominant group followed by Basidiomycetes and Ascomycetes.

In general the peak period of fungal spore concentration was october to January and afterwards they decrease in number till July when they again increase in their number till September. Thus by the end of monsoon the spore population was maximum (42.52%). During autumns they decrease in number i.e. 31.68% and in summer they are in lowest concentration i.e. 26.65%. Thus the concentration of spores is related with increase in the rainfall and hence humidity inside library. The spore concentration inside

library shows corresponding increase. Thus it was observed that the rainfall and hence relative humidity inside library show direct relationship with increase in spore concentration.

The biopollutants inside the library show dominance of genera Chaetomium, Tilletia, Alternaria, Aspergillus, Curvularia, Epicoccum, Fusarium, Helminthosporium and Memnoliella. The genera Didymosporium, rust and smut spores, Nigrospora, Trichothesium, Ceratoptherium, Melanospora, Sporedeomium, Torula, Apirhynocostrus form the subdominant group. All other biopollutants are rare and inconsistently occurring.

The biopollutants other than fungal spores contribute 15.27% to the total airspora. They include epidermal hair, hyphal fragments, insect scales, insect mite, plant fibre. Among them insect parts and hyphal fragments are more common throughout the year. The other types are rarely and inconsistently occurring.

The aerial survey by culture plate technique shows presence of Alternaria, Fusarium, Cladosporium, Mucor, Penicillium and, Aspergillus, Fusarium and Mucor colonies were in abundance while Alternaria, Cladosporium, Torula were less abundant.

The studies shows that the percentage of common cellulose destroying fungi in the air inside library was 11.12 percent.

The investigation made from the allergic point of view show that 50 percent of the persons show allergic reaction probably due to fungal spores. They suffer from temporary skin irritation or respiratory asthma when the spore concentration inside library was highest.

The studies indicate the presence of cellulose destroying fungi and some allergic to human beings inside library. The librarians have to be fully conversant with these knotty problems so that they can take proper care of the books and hence the persons visiting the libraries.