SUMMARY AND CONCLUSIONS

The study of aerospora at Karad city and an adjoining area was carried out from 1st October 2006 to 30th September 2007, with the help of Rotorod air sampler. During the period of investigation, the total number of biopollutants trapped was 363900 spores/m^3. Apart from dust particles, in all 58 pollutants including 53 fungal spores and remaining 5 was algal fragments, hyphal fragments, insect parts and unidentified group of fungal spores trapped through out the air.

Present investigation carried out from four different sites including one semiclosed and three indoor places from different parts of Karad city and an adjoining area. The vegetable market is a semiclosed site while, dairy, hospital and library are the indoor sites. Samples were taken for three months period from each site.

Taking total number in to consideration, the spores of the smuts stand first with high concentration of 15.464% to the total aerospora. Followed by these *Nigrospora* 12.155%, *Cladosporium* 10.335%, *Alternaria* 7.201%, Uredospores 5.899%, *Sclerospora Oospores* 4.734%, *Curvularia* 3.650% and others.

The Deuteromycotina group recorded high percentage (52.572%) to the total aerospora while, the group Ascomycotina recorded low percentage (1.477%) to the total aerospora. In the present investigation, the group Deuteromycotina consist 36 genera. Among them, *Nigrospora* recorded in higher percent (15.142%) to the total fungal aerospora, *Cladosporium* (12.874%), *Alternaria* (8.970%), *Curvularia* (4.547%), *Helminthosporium* (4.230%) and others are recorded respectively.

The group of Ascomycotina consists 12 genera, out of these, *Teichospora* 0.412%, *Leptosphaeria* 0.287%, *Chaetomium* 0.270% are recorded dominant Ascospores to the total fungal aerospora.

Among the Basidiomycotina group the spores of rust and smut were trapped during this investigation and smut spores stand first position with 9.263% to the total fungal aerospora while, Uredospores recorded 3.216%.

Zygomycotina represented 2 genera in this investigation i.e. *Cunnighamella* and *Sclerospora Oospores*. Among them *Sclerospora Oospores* reported 5.898% to the total fungal aerospora while, *Cunnighamella* recorded 0.31% to the total fungal aerospora.

In this investigation *Cunnighamella, Bitrimonospora, Cucurbitaria, Melanospora, Passereniella, Pleomassaria, Teichospora, Aspergillus, Cephaliophora, Chaetomella,*

Chlamydomyces, Corynespora, Cordana, Dictyoarthrinium, Fusariella, Haplosporella, Lacellinopsis, Memnoniella, Pestalotia, Phaeotrichoconis, Trichoconis, Spicaria and Sporidesmium are the first time recorded in the environment of Karad city.

Aerospora from four sites:-

1. Vegetable market: - Fifty two biopollutants were recorded including 47 fungal types during the period of 1st October 2006 to 31st December 2006. Smut spores and Nigrospora were dominant genera followed by Uredospores, *Alternaria, Cladosporium, Sclerospora Oospores* and *Curvularia.* The fungal aerospora of vegetable market is very rich as compared to other three sites (Dairy, Hospital and Library).

2. Dairy: - From 1st January 2007 to 30th March 2007 sampling was carried out. In this investigation 45 biopollutants were recorded including 40 fungal types. *Cladosporium* and *Nigrospora* were dominant genera followed by, *Alternaria, Epicoccum, Sclerospora Oospores*, Smut spores, *Curvularia, Pithomyces* and Uredospores.

3. Hospital: - Present investigation was carried out during the period of 1st April 2007 to 31st June 2007. 38 biopollutants were recorded including 33 fungal types. *Cladosporium* and *Nigrospora* were dominant genera followed by, smut spores, *Sclerospora Oospores, Alternaria, Epicoccum, Pithomyces, Curvularia* and Uredospores.

4. Library: - Present investigation was carried out during the period of 1st July 2007 to 30th September 2007. 46 biopollutants were recorded including 41 fungal types. *Nigrospora* and *Cladosporium* were dominant genera followed by, smut spores, Uredospores, *Alternaria, Sclerospora Oospores, Pithomyces, Helminthosporium, Epicoccum* and *Curvularia.*

Other group including algal fragments, fungal hyphae, insect parts, pollen grains and unidentified fungal spores contributed 19.722% to the total aerospora.

In present investigation, spores population in the air was low during the rainy season while higher in dry season. The temperature and humidity has a profound effect on the growth and the development of the spores, due to which their concentration increases or decreases during wet or dry seasons.

The aerospora of Karad city and an adjoining area are very rich in fungal spores, out of these *Alternaria, Cladosporium, Aspergillus, Curvularia, Chaetomium, Helminthosporium, Epicoccum, Meliola*, Smut spores, *Phoma* and *Nigrospora* known as

allergenic fungi, which are allergic to human beings and cause variety of adverse health effects, including infecting diseases like legionneellosis, allergic and irritant responses, respiratory problems and hypersensitivity reactions. The objective of this investigation is the estimation and assessment of allergenic spore load in the atmosphere of the four sites, as well as fungal aerospora of this region. In present investigation percentage of aeroallergens present in the all four sites are vegetable market 56.4593%, dairy 63.8872%, hospital 58.7546%, library 49.6381%, respectively and the average percentage of aeroallergens present in the Karad city and an adjoining area was 55.789%. This information is useful to doctors for right type of treatment to the patient.

The fungal aerospora at this region gives information of the fungal pathogens, its release, dissemination and seasonal variation. This information is useful to the farmers and plant growers to reduce the crop diseases and its losses. The present investigation is useful for controlling post harvesting diseases of vegetables and fruits in vegetable market.

In conclusion, the result of the investigation clearly indicates that the air is not free from aero pollutants during any season of the year at Karad city and an adjoining area. Each site contains rich and varied aerospora.