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Aero-mycoflora of Amaravati Capital of Andhra Pradesh, India

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Abstract

Fungal spores were abundant in natural air, soil, water etc. The size of spores was less than 10 microns in diameter. So it will easily deposits in lower airways of peoples. Aero-mycoflora of Amaravati capital was estimated from rainy season 2012 to winter season 2016 using PDA plates exposing to air. The fungal species to be identified was collected from indoors and out door environment of ALC, Vijayawada city of Amaravati capital. In last five years, Amaravati capital peoples may be suffering from allergic ailments, asthma, atopic dermatitis etc. because abundant fungal spores. Total number of isolates from Amaravati was 706 in which 529 fungal species was isolated for four years and 177 in last year and from ALC was 501 in which 369 fungal species was isolated for four years and 132 in last year. 99% of fungal colonies were identified up to species level. The frequently isolated spores of fungi from amaravathi were *Aspergillus flavus*, *Chaetomium globosum*, *Cladosporium cladosporioides*, *Mucor racemosus*, *Rhizopus stolonifer* and from ALC was *A. fumigates*, *Drechslera* sp, *Fusarium solani*, *M. racemosus*. When compared to the outdoor aero-mycoflora of Amaravathi capital i e Vijayawada city and ALC campus, the ALC was less polluted because thick cover of plants which filter air. Aero-mycoflora of Vijayawada city studies revealed that fungal pathogens were causing respiratory problems like Asthma, Bronchitis, Cough, Cold, difficulty in breathing due to rapid urbanization.

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Introduction

Aerobiology was a scientific discipline which deals with the study of organisms or part of the organisms present in the air. The aerobiology of Amaravati capital was studied for last five years; so the Amaravati capital was in between Vijayawada and Guntur cities, on the upstream of Prakasam Barrage, on the river bed of Krishna with an area of 217.23 Sq Kms covering a current population of 97960 in 25 villages (As per Primary Census Abstract Tables Census 2011) (Alok Kumar 2015). The ecological and biodiversity study of Amaravati shows two ecosystems like aquatic and terrestrial. Forest ecosystems like Kondapalli and Tadepalli reserve forests comes under terrestrial and River ecosystem like Krishna river and Riparian ecosystem along the banks of Krishna river and Krishna left canal comes under aquatic (Alok Kumar 2015). It was centre point of Andhra Pradesh state, with 3 Mega Cities and 14 Smart Cities. The Kondapalli reserve forest covers an area of 62 Sq. Km from Eastern Ghats of Andhra Pradesh. The forest spreads in the Deccan plateau in between 16°37'N and 80°31'E-latitudes and 16°45'N and 80°26'E longitudes. Tadepalli reserve was 485 hectares area in Mangalagiri, Guntur, Andhra Pradesh, and east to Amaravati capital (Alok Kumar 2015). Vijayawada was situated on the banks of River Krishna with Latitude 16°03' 11"N and longitude 80° 03'91"E. The city was peculiar in geographical setting with tropical climate like hot summer and winter. It was surrounded by hills on all sides like Indrakiladri Hills range (Kanaka Durga temple) on the west, Mogalrajpuram hill range (holy mother Mary temple) on the east side. It was undergoing rapid developmental programs of urbanization. The drainage canals in city were affecting health of surrounding population in summer season (Surya kumarai *et al.*, 2014).

Allergenic fungi present in air were comes under *Ascomycotina*, Fungi imperfecti, and very few under *Basidiomycotina* (Kurup *et al.*, 2000). The genera's of airborne fungal spores such as *Alternaria*, *Aspergillus*, and *Cladosporium* were occurs throughout the world (Vijay *et al.*, 1999). The disease expression was affected by the degree of exposure.

Repeated exposures to large concentrations of spores (1–5 µm in diameter) cause severe symptoms in respiratory track (Barui Chandra, and Chanda 2000). The occurrence of respiratory allergy due to fungi was 20 to 30% among atopic individuals and up to 6% in general population (Wuethrich, 1989). Identification of allergens, viable microbes, and other noxious agents present in any particular environment or induced by changes in meteorological conditions was important. Most of the researches told that fungi already settled on the rock surface and "autochthonous mycoflora" (Zwick, *et al.*, 1991). Fungal airspora were damaging food commodities, organic materials and stored products (Pyrrri and Kapsanaki-Gotsi 2007). The presence of fungal propagules, volatiles and mycotoxins in the air can cause a health hazard in all segments of the population (Kakde, *et al.*, 2001) This type of studies helps to monitor different agents in environment but also aid clinicians in advising and treating patients (Saiz-Jimenez 1995). Airborne fungi occur as single units, spores and occasionally as hyphal fragments, conidiophores, associated with inorganic particles as "bioaerosol" (Comtois 1990). Number and type of fungi vary with time of day, weather and seasonal fluctuation condition of the surrounding areas, climatic conditions and with the presence of a local source of spores (Pepeljnjak, and Šegvić Klarić 2003). In the present study the aeromycoflora of Amaravati capital was estimated to know the concentration of fungal isolates in polluted air.

Materials and methods

Sampling

Concentrations of airborne fungal spores were measured from Rainy season 2012 to winter season 2016 using PDA plats exposing to air in ALC and Vijayawada, Andhra Pradesh, India. The fungus was collected from indoors and out door environment of ALC and Vijayawada city of Amaravati capital and identified. The sites selected for the present study was ALC, Degree Library, MCA Lab, Seminar hall, Intermediate wing, Post-graduation section, Ramavarappadu ring road, Benz circle, NTR University, Kaleswararao market, Auto nagar in Vijayawada city of Amaravati capital (Plate I Fig. A),

Andhra Pradesh, India due to more numbers of population come across these places. The micro floral studies of this particular place have never been reported. So, information about the airborne sample in the specific places was largely lacking.

Isolation of fungi

Sampling of fungal spores was done with the help of gravity Petri plate method containing Potato Dextrose Agar (PDA) medium. The Petri dishes were taken to the selected site like ALC Library, Intermediate block, P. G. block, MCA Lab, Seminar hall, and Ramavarappadu ring road, Benz circle, NTR University, K.R. Market, Auto nagar for isolation of aeromycoflora. Petri dishes were exposed to the air for 10 min and brought to the laboratory. The Petri plates containing the samples were incubated for 3 to 7 days in BOD incubator. For each study site 3 plates were used and average number of fungal isolates was reported. The percentage frequency and percentage contribution of the total fungal flora were assessed (Jadhav and Tiwari 1994).

% frequency =

$$\frac{\text{No of observations in which a species appeared}}{\text{Total no of observations}} \times 100$$

% Contribution =

$$\frac{\text{Total No of colonies of species in all observations taken together}}{\text{Total no of colonies in all the species}} \times 100$$

Identification of fungal strains

The colonial features of the fungal colonies and the morphological features of the fungi were studied using compound microscope. The determination of morphological structures of fungi was carried out after being mounted in lacto-phenol and cotton-blue covered with cover slip. The fungal types were analyzed for each day. The species were identified on the basis of micro and macro morphology and reverse surface coloration of colonies grown on the PDA media. The fungi were identified up to species level (Cooke, 1963).

Result

Isolation of fungal pathogens in Air

During rainy season 2012 to winter season of 2016 survey was conducted to study the aeromycoflora of

Amaravati capital of Andhra Pradesh. Total number of isolates from Amaravati was 706 in which 529 fungal species was isolated for four years and 177 in last year and from ALC was 501 in which 369 fungal species was isolated for four years and 132 in last year (Table 1-4). From this 99% of fungal colonies were identified up to species level.

Identification of fungal isolates in Air

A survey was conducted for five years to study the aeromycoflora of Amaravathi capital of Andhra Pradesh which includes Vijayawada city and top most college Andhra Loyola College, Vijayawada. The indoor and outdoor aeromycoflora have 19 different types of fungi. It includes *Alternaria alternate*, *A. solani*, *Aspergillus awamori*, *A. flavus*, *A. fumigates*, *A. niger*, *A. versicolor*, *Chaetomium globosum*, *C. cupreum*, *Cladosporium herbarum*, *C. cladosporioides*, *Curvularia lunata*, *Cercospora melongenae*, *Epicocum nigrum*, *Mucor racemosus*, *Pencilium notatum*, *P. Chrysogenum*, *Rhizopus stolonifer* and *R. microspores* (Plate I Fig. B to E)

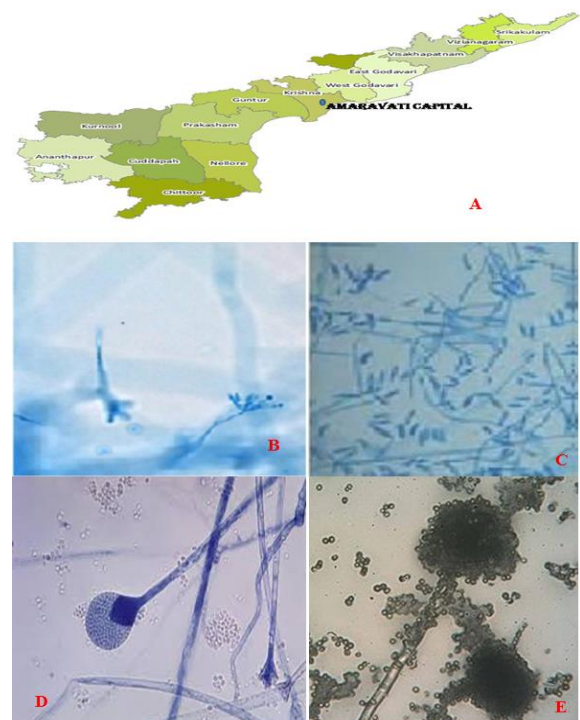


Plate I. Fig. A. Map of Andhra Pradesh showing study area. B. Fruiting body with spores of *Pencilium noataum*, C. Macro and micro conidia of *Fusarium roseae*, D. The ruptured sporangium of *Rhizopus stolonifer*, E. Black coloured fungal spores of *Aspergillus niger*.

Aeromycoflora in Amaravathi capital of Andhra Pradesh from 2012-2015

A total of 529 fungal isolates was isolated during 2012 to 2015 from Amaravathi capital of Andhra Pradesh, India (Table 1). Outdoor environment of Vijayawada city was selected to study the aero-mycoflora which acts as fungal pathogens causing respiratory problems. In Vijayawada the busy centres like Ramavarappadu ring road, NTR University centre, and Benz circle was used to study the fungal flora in air. From Ramavarappadu ring road 145 isolates, from NTR University centre 187 isolates and from Benz circle 197 isolates were isolated from air

(Table 1). A total of 19 fungal types were identified from which the maximum number of isolates obtained from Ramavarappadu was 12 which were identified as *A. nigar* and least number of isolates was 4 i.e. *C. herbarum*, *C. lunata*, *M. racemosus*. The maximum number of isolates obtained from NTR University centre was 16 which was identified as *R. stolanifer* and least number of isolates was 4 i.e. *C. cladosporioides*. The maximum number of isolates obtained from Benz circle was 16 which was identified as *A. versicolor* and least number of isolates was 4 i.e. *C. Herbarum*.

Table 1. Occurrence of Mycoflora in Vizayawada of Andhra Pradesh 2012-2015.

S.No	Name of Fungi	Ramavarappadu Ring Road		NTR University		Benz Circle		Total	
		A	B	A	B	A	B	A	B
1	<i>Alternaria alternata</i>	6	4.1	9	4.8	12	6.1	27	5.1
2	<i>Alternaria solani</i>	8	5.5	12	6.4	10	5.1	30	5.6
3	<i>Aspergillus awamori</i>	7	4.8	9	4.8	14	7.1	30	5.6
4	<i>A. flavus</i>	6	4.1	10	5.3	8	4.1	24	4.5
5	<i>A. fumigatus</i>	8	5.5	12	6.4	10	5.1	30	5.6
6	<i>A. nigar</i>	12	8.2	14	7.5	10	5.1	36	6.8
7	<i>Aspergillus versicolor</i>	10	6.9	14	7.5	16	8.1	40	7.5
8	<i>Chaetomium globosum</i>	8	5.5	10	5.3	12	6.1	30	5.6
9	<i>Chaetomium cupreum</i>	7	4.8	9	4.8	12	6.1	28	5.3
10	<i>Cladosporium herbarum</i>	4	2.7	6	3.2	4	2.0	14	2.6
11	<i>Cladosporium cladosporioides</i>	6	4.1	4	2.2	5	2.5	15	2.8
12	<i>Curvularia lunata</i>	4	2.7	6	3.2	8	4.1	18	3.4
13	<i>Cercospora melongenae</i>	7	4.8	5	2.6	6	3.0	18	3.4
14	<i>Epicocum nigrum</i>	10	6.9	8	4.3	12	6.1	30	5.6
15	<i>Mucor racemosus</i>	4	2.7	5	2.6	8	4.1	17	3.2
16	<i>Pencillium notatum</i>	10	6.9	14	7.5	14	7.1	38	7.2
17	<i>Pencillium chrysogenum</i>	10	6.9	10	5.3	12	6.1	32	6.0
18	<i>Rhizopus stolanifer</i>	8	5.5	16	8.5	12	6.1	36	6.8
19	<i>Rhizopus microsporus</i>	10	6.9	14	7.5	12	6.1	36	6.8

A=% of frequency, B=% of contribution

Aeromycoflora in Amaravathi capital of Andhra Pradesh from 2015-2016

A total of 177 fungal isolates was isolated during rainy season 2015 to winter 2016 from the Amaravati capital (Table 2). Aeromycoflora of Vijayawada city was studied, which act as fungal pathogens causing respiratory problems like Asthma, Bronchitis, Cough, Cold, difficulty in breathing. In Vijayawada the busy centres like Ramavarappadu ring road, NTR University centre, Kaleswara Rao Market, Auto nagar and Benz circle was used to study fungal spores from air. From Ramavarappadu ring road 38 isolates, from NTR University centre 35 isolates, from Kaleswara Rao Market 38 isolates, from Auto nagar 36 isolates,

and from Benz circle 30 isolates were isolated from air (Table 2). A total of 15 fungal types were identified from which the maximum number of isolates obtained from Ramavarappadu was 6 which was identified as *Alternaria alternata*, *Curvularia lunata* and least number of isolates was 1 i.e. *A. fumigates*. The maximum number of isolates obtained from NTR University centre was 5 which was identified as *R. stolanifer* and least number of isolates was 1 i.e. *Fusarium roseae*. The maximum number of isolates obtained from K. R. Market was 6 which were identified as *R. stolanifer* and least number of isolates was 4 i.e. *A. flavus*. The maximum number of isolates obtained from Auto nagar was 6 which was identified

as *F. roseae* and least number of isolates was 2 i.e. *M. racemosus*, *Aspergillus* sp. The maximum number of isolates obtained from Benz circle was 6 which was identified as *Aspergillus* sp and least number of isolates was 1 i.e. *F. solani*.

Aeromycoflora in Andhra Loyola College of Andhra Pradesh 2012-2015

A total of 369 fungal isolates was isolated during rainy season of 2012 to winter season of 2015 from ALC, Vijayawada, which is one of the top most college of Amaravati capital of Andhra Pradesh, India (Table 3). Outdoor environment of ALC, Vijayawada was selected to study the aero-mycoflora which acts as fungal pathogens causing respiratory problems like difficulty in breathing, Bronchitis, Asthma.

In ALC Vijayawada, study areas like Degree library, Inter block, P.G block was used to isolate fungal flora from air. The total number of isolates from indoor environment of degree library (125), from inter block (124), pg block (120) were isolated (Table 3). 17 fungal types were identified from which the maximum number of isolates obtained from Degree library was 13 which were identified as *A. flavus* and least number of isolates was 4 i.e. *Chaetomium globosum* *M. racemosus*. The maximum number of isolates obtained from Inter block was 12 which was identified as *A. solani*, *A. nigar* and least number of isolates was 3 i.e. *R. microsporus*. The maximum number of isolates obtained from PG Block was 13 which was identified as *A. awamori* and least number of isolates was 3 i.e. *C. cladosporioides*.

Table 2. Occurrence of Mycoflora in Vizayawada of Andhra Pradesh 2015-2016.

S.No	Fungi	Ramavarappadu ring road		NTR University		Kaleswara Rao Market		Autonagar		Benz Circle		Total	
		A	B	A	B	A	B	A	B	A	B	A	B
1	<i>Alternaria alternata</i>	6	15.7	3	8.5	4	10.5	--	--	2	6.6	15	8.5
2	<i>Aspergillus awamori</i>	5	13.2	--	--	2	5.2	3	8.3	4	13.3	14	7.9
3	<i>Aspergillus flavus</i>	3	7.8	3	8.5	1	2.6	4	11.1	--	--	11	6.2
4	<i>Aspergillus fumigates</i>	1	2.6	2	5.7	--	--	4	11.1	2	6.6	9	5.0
5	<i>Aspergillus</i> sp	1	2.6	4	11.4	3	7.8	2	5.5	6	20.0	16	9.0
6	<i>Chaetomium globosum</i>	2	5.2	4	11.4	2	5.2	--	--	4	13.3	12	6.7
7	<i>Cladosporium cladosporioides</i>	4	10.4	2	5.7	--	--	5	13.9	--	--	11	6.2
8	<i>Curvularia lunata</i>	6	15.7	--	--	4	10.5	3	8.3	2	6.6	15	8.5
9	<i>Drechslera</i>	--	--	2	5.7	--	--	4	11.1	3	10.0	9	5.0
10	<i>Fusarium roseae</i>	--	--	1	2.8	4	10.5	6	16.7	--	--	11	6.2
11	<i>Fusarium solani</i>	2	5.2	3	8.5	4	10.5	--	--	1	6.6	11	6.2
12	<i>Mucor racemosus</i>	4	10.4	3	8.5	4	10.5	2	5.5	--	--	13	7.3
13	<i>Mucor microsporus</i>	2	5.2	--	--	2	5.2	--	--	3	10.0	7	3.9
14	<i>Rhizopus stolonifer</i>	2	5.2	5	11.4	6	15.6	3	8.3	--	--	15	8.5
15	<i>Rhizopus oryzae</i>	--	--	4	11.4	2	5.2	--	--	2	6.6	8	4.5

- = no isolate, A=% of frequency, B=% of contribution.

Table 3. Occurrence of Mycoflora in Andhra Loyola College of Andhra Pradesh 2012-2015.

S.No	Name of Fungi	Degree Library		Inter Block		P.G Block		Total	
		A	B	A	B	A	B	A	B
1	<i>Alternaria alternata</i>	7	5.6	9	7.2	5	4.2	21	5.7
2	<i>Alternaria solani</i>	10	8.0	12	9.6	6	5.0	28	7.6
3	<i>Aspergillus awamori</i>	11	8.8	9	7.2	13	10.8	33	8.9
4	<i>A. flavus</i>	13	10.4	10	8.6	12	10	35	9.5
5	<i>A. fumigatus</i>	8	6.4	6	4.8	4	3.3	18	4.9
6	<i>A. nigar</i>	10	8.0	12	9.6	8	6.6	30	8.1
7	<i>Aspergillus versicolor</i>	12	9.6	9	7.2	10	8.3	31	8.4
8	<i>Chaetomium globosum</i>	4	3.2	6	4.8	8	6.6	18	4.9
11	<i>Cladosporium cladosporioides</i>	7	5.6	4	3.2	3	2.5	14	3.8
12	<i>Epicocum nigrum</i>	8	6.4	10	8.6	11	9.2	30	8.1
13	<i>Mucor racemosus</i>	4	3.2	8	6.4	6	5.0	18	4.9
14	<i>Pencillium notatum</i>	12	9.6	8	6.4	10	8.3	30	8.1
15	<i>Pencillium chrysogenum</i>	6	4.8	8	6.4	10	8.3	25	6.7
16	<i>Rhizopus stolonifer</i>	8	6.4	10	8.6	8	6.6	26	7.0
17	<i>Rhizopus microsporus</i>	5	4.0	3	2.4	6	5.0	15	3.8

A=% of frequency, B=% of contribution.

Aeromycoflora in Andhra Loyola College of Andhra Pradesh 2015-2016

A total of 132 fungal isolates was isolated during rainy season of 2015 to winter season of 2016 from ALC, Vijayawada, which was one of the top most college of Amaravati capital of Andhra Pradesh, India (Table 4). Outdoor environment of ALC, Vijayawada was selected to study the aero-mycoflora which acts as fungal pathogens causing respiratory problems. In ALC, Vijayawada, study areas like Degree library, MCA Lab, Seminar hall, Inter block, P.G block was used to isolate fungal flora in air. The total number of isolates from indoor environment of degree library (33), MCA lab was (26) Seminar hall (21) inter block (22) pg block (30) were isolated (Table 4). A total of 15 fungal types were identified from which the

maximum number of isolates obtained from Degree library was 6 which was identified as *Alternaria alternate*, *Curvularia lunata* and least number was one isolates of *A. fumigatus*. The maximum number of isolates obtained from MCA lab was 5 which was identified as *C. globosum* and least number was one isolates of *Fusarium roseae*. The maximum number of isolates obtained from Seminar hall is 5 which was identified as *Curvularia lunata* and least number was one isolates of *A. flavus*. The maximum number of isolates obtained from Inter block was 6 which was identified as *C. cladosporoides* and least number was one isolates of *M. racemosus*. The maximum number of isolates obtained from PG Block was 6 which was identified as *Aspergillus* sp and least number was one isolates of *R. Oryzae*.

Table 4. Occurrence of Mycoflora in Andhra Loyola College of Andhra Pradesh 2015-2016.

S.No	Fungi	Degree Library		MCA Lab		Seminar hall		Inter block		P.G block		Total	
		A	B	A	B	A	B	A	B	A	B	A	B
1	<i>Alternaria alternata</i>	6	18.2	--	--	4	19.0	--	--	2	6.7	12	9.0
2	<i>Aspergillus awamori</i>	5	15.2	--	--	2	9.5	--	--	4	13.3	11	8.3
3	<i>Aspergillus flavus</i>	3	9.1	4	15.3	1	4.7	4	18.2	--	--	12	9.0
4	<i>Aspergillus fumigates</i>	1	3.0	2	7.6	--	--	2	9.1	2	6.7	7	5.3
5	<i>Aspergillus sp</i>	--	--	--	--	--	--	2	9.1	6	19.1	8	6.0
6	<i>Chaetomium globosum</i>	--	--	5	15.3	2	9.5	--	--	4	13.3	10	7.3
7	<i>Cladosporium cladosporoides</i>	4	12.0	2	7.6	--	--	6	22.7	--	--	11	8.3
8	<i>Curvularia lunata</i>	6	18.2	--	--	5	19.0	--	--	2	6.7	12	9.0
9	<i>Drechslera</i>	--	--	2	7.6	--	--	4	18.2	3	13.3	9	6.8
10	<i>Fusarium roseae</i>	--	--	1	3.8	--	--	--	--	--	--	1	0.7
11	<i>Fusarium solani</i>	2	6.0	--	--	4	19.0	--	--	2	6.7	8	6.0
12	<i>Mucor racemosus</i>	4	12.0	3	11.4	--	--	1	4.1	--	--	9	6.8
13	<i>Mucor microsporus</i>	--	--	--	--	2	9.5	--	--	3	13.3	5	3.7
14	<i>Rhizopus stolonifer</i>	2	6.0	4	15.3	--	--	3	4.6	--	--	9	6.8
15	<i>Rhizopusoryzae</i>	--	--	4	15.3	2	9.5	--	--	1	6.7	8	6.0

--= no isolate, A=% of frequency, B=% of contribution.

Discussion

A survey of airborne allergenic fungal spores at Vijayawada was studied by. Atluri, and Appanna (1990) in which day to day air sampling was performed using a vertical cylinder spore trap at Vijayawada during 1977-1978 year. A total of 97% of the fungal spores were identified and assigned to 36 spore types (Atluri, and Appanna 1990). In the present paper the simple technique like plate exposed to air for few minutes was used. From the total fungi isolated, 99% of the fungal spore types was identified in which 19 fungal isolates was reported from Amaravathi capital, Andhra Pradesh.

Thirteen of the spore types, each with a share of >1% of the total spore flora, were regarded as the main constituents. These included *Aspergilli* 33.57%, *Cladosporium* 20.81%, *Periconia* 13.20%, *Nigrospora* 6.04%, *urediniospores* 3.86%, *Alternaria* 3.69%, *Curvularia* 2.30%, *Drechslera* 1.53%, *Oidium* 1.46%, ascospores 1.39%, *Cercospora* (long) 1.22%, *Trichoconis* 1.09% and *Cercospora* (short) 1.03% (Atluri, and Appanna 1990). In the present paper aeromycoflora of Amaravati capital like Vijayawada city was studied in which *Alternaria alternate* 5.1% *A. solani* 5.6% *Aspergillus awamori* 5.6% *A. flavus* 4.5% *A. fumigates* 5.6% *A. niger* 6.8% *A. versicolor* 7.5%

Chaetomium globosum 5.6% *C. cupreum* 5.3% *Cladosporium herbarum* 2.6% *C. cladosporioides* 2.8% *Curvularia lunata* 3.4% *Cercospora melongenae* 3.4% *Epicocum nigrum* 5.6% *Mucor racemosus* and 3.2% *Penicillium notatum* 7.2% *P. chrysogenum* 6.0% *Rhizopus stolanifer* 6.8% *R. Microspores* 6.8% was reported from the outdoors Amaravati capital for four years.

A definite seasonality existed in the incidence of individual spore types. On average February (12.98%), November (11.73%) and September (11.65%) recorded higher incidences of spores (Atluri, and Appanna 1990). In the present paper also seasonal variations of aeromycoflora shows more amount of fungal spores in August and November months. The air pollution in the city is increasing because of rapid industrialization and increase in the density of transport vehicles plying in the city as well as the three important national highways passing through the city (Surya kumara *et al.*, 2014). In the present paper concentration of fungal pathogens of Vijayawada was increasing because increase in air pollution due to fast growing urbanization. For the first time Aero-mycoflora of National Highways was studied in India by Nagadesi and Jayraj (2016). In present study aeromycoflora was studied from selected locations in Vijayawada and ALC campus. When compared to ALC campus the Vijayawada city showing more fungal pathogens.

Conclusions

Aeromycoflora of Amaravati capital of Andhra Pradesh was reported for the first time. Peoples in Amaravati capital of Andhra Pradesh may be suffering from allergic ailments like asthma, atopic dermatitis etc because of abundant fungal spores were deposits in lower airways like lungs. A total number of isolates from Vijayawada city of Amaravati was 706 and from ALC atmosphere was 501. The frequently occurred fungal spores from Amaravathi were *A. flavus*, *C. globosum* *C. cladosporioides* *M. racemosus* *R. stolanifer*. The frequency of fungal spores from ALC atmosphere was more for *A. fumigates*, *Drechslera sp.*, *F. solani*, *M. racemosus*. The Andhra Loyola college campus was less polluted when compared to Vijayawada city, Andhra Pradesh,

India because of thick covers of plants. In recent times aeromycoflora of Vijayawada increasing enormously because increase in air pollution.

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