



AEROBIOLOGICAL INVESTIGATION OF VEGETABLE AND FRUIT MARKET AND RELATED ALLERGIC DISEASES OF BEED, MAHARASHTRA.

Shafa khan¹, Sumia Fatema²

¹ Department of Botany Milliya College of Art , Science And Management Science Beed Maharashtra

² Department of Botany Dr. Rafiq Zakaria College for Women's ,Naukhanda Aurangabad Maharashtra

ABSTRACT:

Aerobiological investigation of Vegetable and Fruit Market at Beed city was conducted during June 2014 to May 2015 to identify fungal spores which are allergen in Air causing allergic diseases and deterioration to vegetable and fruits .The atmospheric Air of Market environment contains variety of fungal spores transported through air current are the main source of human allergic diseases .The fungal spores are toxic and responsible for causing serious health hazard diseases in human beings and create lot of environmental pollution in the entire city. Total 32 fungal spores were recorded, Aspergillus , Curvularia, Cladosporium , Fusarium ,and Alternaria were found present in almost all seasons through the year which are known to be the major Allergic and causes Sinusitis , Rhinitis's ,Asthma , Eczema , Dermatitis ,Mycoses, Urticaria. The Present investigation proved that Shopkeepers, Visitor and children's are exposed to fungal spores in market environment which are Allergic in nature and causes serious health hazards problems in them.

KEYWORDS: Aeromycoflora, Fungal spores, Allergic diseases.

INTRODUCTION:

Beed is one of the district of Marathwada region at Maharashtra state located in the center has more than two lacks population, 640 meter high from the sea level lies between 76.7 east latitude 74 North latitude total 10922 square kilometer area and has 11 town and 1100 villages. The average yearly

temperature of the city is in the range between 26 0_C to 28 0_C and the humidity ranges from 55 to 65 percent .This district has main Vegetable and Fruit Market in the heart of City. Majority of the vegetable and fruit seller comes throughout the district and the market place has more than 300 shops in the

market and the area is about 3.5 acre. Day by day the environmental pollution is increasing in this area. The atmosphere of market air contains variety of fungal spores which are very dangerous to human being and the concentration of fungal spore is different in different climatic condition and different seasons. The investigation of fungal spores is essential from the market atmosphere from clinical point of view because many fungal spores are responsible for causing serious health hazard diseases in human beings. As the atmosphere of market become full of Allergic spores due to Air pollution which leads to different Allergic diseases like Asthma , Sinusitis , Rhinitis , Bronchopulmonary , Aspergilosis , Eczema ,Dermatitis ,Mycoses , Utricaria etc Bhoigude (2002) Shahla khan , Kanungo V K ,Jadhav, S K (2014) Shahla khan , Kanungo V K ,Jadhav, S K (2014) . The main aim and object of the present investigation is to trap the fungal spores which are Allergic in nature and to prevent the peoples from the Allergic Diseases most of the diseases are caused by fungal spores Alternaria , Aspergillus , Cladosporium , as producing highest number of Allergies. Most of the peoples of this district visited to hospital for

Allergic problems .Non Hygienic condition, Market waste , Damp soil are the major source of fungal spores Allergens. In the light of above knowledge it is tried to study the Aermycoflora of vegetable and Fruit market and related Allergic diseases.

MATERIALS AND METHODS:

In present study, the vegetable and fruit market was selected for sampling Aermycoflora ,The study was carried out during June 2014 to May 2015.The culture plate expose method and Tilak Air Sampler methods was adopted for trapping the fungal spores. In culture plate expose method PDA (Potato Dextrose Agar) was used. The Poured Petri plates are expose to Air above 1.8 meter from ground level for 5 to 10 minutes .The study was carried out at the interval of 10 days of every month ,The exposed peltriplates were sealed and incubated for 3-5 days at 25-27 0C .After inoculation fungal colonies are counted ,isolated and identified with the help of literature (Genera of Fungi By Clements and Share) and the result were recorded .In the Second Method Tilak Air Sampler was used to trap the Fungal spores on celotape mounted with Glycerin gelly and the slides were mounted and observed under microscope .Information

from Doctors and Pharmacist are under observation are suffering from collected and 100 peoples including Allergic diseases. Shopkeepers , Children’s , visitors are

3. RESULT AND DISCUSSION:

Total 32 fungal genera were recorded as shown in Table I.

Table I: Occurrence of fungal spores

Sr. No.	Name of Fungal Spores	Rainy Season June2014-Sep 2014	Winter Season Oct 2014-Jan 2015	Summer Season Feb2015-May2015
1	Aspergillus	+	+	+
2	Alternaria	+	+	+
3	Cladosporium	+	+	+
4	Fusarium	+	+	+
5	Mucor	+	+	+
6	Penicilium	+	+	+
7	Curvularia	+	+	+
8	Rhizopus	+	+	+
9	Lacania	-	-	-
10	Heterosporium	+	-	+
11	Leptosphaeria	-	-	+
12	Sporormia	+	-	-
13	Periconia	+	-	-
14	Emerciellia	+	+	-
15	Massaria	+	+	-
16	Passeriniella	+	+	+
17	Sordia	+	+	+
18	Hypoxylon	-	-	-
19	Spegazinnia	-	-	-
20	Beltraniella	-	-	-
21	Tetrapola	+	+	-
22	Pseudotorula	+	-	-
23	Cercospora	+	+	+
24	Phaeoichocoonis	-	-	-
25	Heterosporium	+	+	+
26	Haplosporella	+	-	+
27	Pithomeces	+	-	+
28	Caryospora	-	-	-
29	Cunninghamella	+	+	+
30	Pleospora	+	-	+
31	Harknesia	+	-	-
32	Xylaria	+	+	-
	Total	25	17	18

(+) indicates presence of Species and (-) indicates absence of Species

Aspergillus, Alternaria, members of Deutromycotina, while the Penicillium, Cladosporium, Fusarium and other groups fungi were few in number. Rhizopus were found dominant in all the Seasonal and Climatic Variation in seasons. A majority of fungi were Aeromycoflora is observed. Rainy

Season recorded maximum 25 genera of fungal spores, winter season recorded 17 genera of fungal spores while the Summer seasons recorded 18 fungal spores. Among these important genera *Aspergillus* , *Alternaria* , *Cladosporium* , *Fusarium* , *Rhizopus* and *Penicillium* known to be Allergic in nature and causes number of Allergic diseases in human being like Asthma , Sinusitis , Rhinitis , Bronchopulmonary , Aspergilosis , Eczema ,Dermatitis ,Mycoses , Utricularia etc .In Rainy season maximum number of fungal spores are recorded from market due to damp soil and moist condition . The fungal spores also destroyed fruit and vegetable in market. Survey of doctors and Medical shops showed that monthly sale of Allergic medicine is increased and the Allergic patient are increased day by day. In rainy and Winter seasons the Allergic patient are more as compared to Summer season. Particularly Children's and Shopkeepers are more affected with Allergic Fungal spores from the other visitor peoples similar results were found by earlier worker Hassan MR et al (2002), Dhontis R et al (2012) ,Prasad R et al (2012) ,Kumari S et al (2011) , Bhoigude (2002) and Sahala khan et al (2014).

CONCLUSION:

Present study conducted through personal meeting and questionnaires with patient it showed that 80 % Peoples including Children's are suffered from respiratory Allergic disorder during Summer while it as also observed that most of the peoples are affected with asthma , , Eczema ,Dermatitis ,Mycoses , Utricularia and Aspergilosis in Rainy and winter season. Non hygienic condition of market place is responsible for that Allergic diseases.

Effective disposal of market waste ,regular cleaning of market including shops and dusting of fungicides may reduced Allergic fungal spores in market places, Monitoring of fungal spores can be helpful in prevention of Allergic diseases . Studies proves that higher concentration of fungal spores leads to increase in Allergic diseases. Wearing of nose mask while in market may reduced Allergic infection in market. Definitely this type of research works helps in understanding the fungal spores Allergic diseases and also useful in curing and management of these diseases.

REFERENCES:

1.F.Khan (1991) Aerobiological studies on market diseases of fruit and

- vegetable in relation to aerial fung in respiratory allergy Med Myco 50:
a market at Bhopla Abst Nat Conf . 281-290 (Pub Med)
2. Ahire , Y.R. and Sangale, M.K. 6.Bhoigude (2002) Incidence of
(2010). Survey of Aereomycoflora Biocomponents in the house of
present in Vegetable market. Elixir. Asthmatic patient sheep and Goat
Appl. Botany. 52. 11381-11383. farm Ph D Thesis SRTMU Nanded
Maharashtra.
- 3.I.H. Javeed et al (1994) Incidence 7. Shahla khan , Kanungo V K
of Fungal Flora on Some Vegetable ,Jadhav, S K (2014) Study of
market at Hyderabad Abst 5 th Inter Aeromycoflora and related Allergic
nat con on Aerobiology Banglore pp diseases of Raipur, Chatisgarh Int J
65. Life Sci R 3: pp 36-42.
- 4 Hussan M R et al (2002) Self 8. Dhonti S Sivasai KSR Lakhshmi
reported asthma symptoms in VV et al (2011) Prevalence of
childrens and Adults of Inhalant Allergens in Nasobronchial
Bangaladeshfinding of NMational Allergy in Hyderabad region India Int
Asthma prevalence's study Int Sci Res J 3: 192-199.
- 5.Sharma R, Gour S N Singh V P 9. Kumari S ,Gond DK ,Samuel ,
Singh Ab (2012) Association between Abbasi PA (2011) Comparative
indoor fungi in Delhi homes and study of Aeromycoflora in different
sensitization in childrens with localaties of Gorakhpur UP Ind J Sci
Res 2 pp 51-5.