



## Seasonal Variation of Aeromycoflora of Apex Poultry Farm Bilaspur C.g. India

### KEYWORDS

Aeromycoflora, Fungal species, meteorological parameters

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**ABSTRACT** *The objective of this study was to isolate the aeromycoflora of poultry farm area. By using gravity settle plate method isolation of indoor aeromycoflora from Apex poultry farm was done from July 2011 to June 2012. During this study total 72 fungal species (639 fungal colonies) belonging to 36 fungal genera were isolated. A seasonal variation in the diversity of fungal species was easily seen in the study area. Maximum 33 fungal species isolated in the month of January. Minimum 16 fungal species observed in the month of April. It was observed the concentration of the fungal spores in the air varies from season to season probably due to variation in meteorological parameters.*

### INTRODUCTION

Interest in air borne microbes quickened in the 20<sup>th</sup> century when air machine made it possible to explore the lower layer of the atmosphere. Atmospheric pollution is one of the major problems of our age. This pollution has now reached an advance level those possessing a potential threat to the health and well being of the population. Rajan and Sivadas (1973) exposed Sabouraud plates in chick brooder house 1-2 feet above floor level. Nichita et al., (2010) evaluated the presence of fungi in two distinct types of broiler houses. Microorganisms are the primary sources of indoor air contamination. The quality of the indoor environment, infectious levels is not easily defined or controlled and can cause various diseases. Therefore, study of poultry farm environments was done.

Bilaspur is a city in the Indian state of Chhattisgarh, situated 111 km north of state capital, Raipur. It is the second-largest city (after Raipur) in the state. The climate is divided into three seasons viz Rainy season (July to October), winter season (November to February) and summer season (March to June).

### METHODOLOGY

For this study, Apex poultry farm was selected for isolation of indoor aeromycoflora (Photoplate 1). For the isolation of aeromycoflora gravity settles plate method was used (Sharma K 2001, 2009). Potato Dextrose Agar (PDA) is used for the isolation of fungi. Isolated species were identified by authorized authority (NCFT, New Delhi).

### RESULT

During rainy season 46 fungal species (161 fungal colonies) belonging to 20 fungal genera was observed. Out of 46 fungal species, 3 fungal species (22 fungal colonies) belongs to 3 fungal genera of Zygomycotina, 1 fungal species (2 fungal colonies) belongs to 1 fungal genera of Ascomycotina, 41 fungal species (132 fungal colonies) belongs to 15 fungal genera of Anamorphic fungi, 1 fungal species (5 fungal colonies) belongs to 1 fungal genera of Mycelia Sterilia (Table 1). During the winter season 52 fungal species (277 fungal colonies) belonging to 27 fungal genera were isolated. Out of 52 fungal species, 1 fungal species (3 fungal colonies) belongs to 1 fungal genera of Zygomycotina, 2 fungal species (1 fungal colony) belongs to 4 fungal genera of Ascomycotina, 48 fungal species (265 fungal colonies) belongs to 24 fungal genera of Anamorphic fungi, 1 fungal species (5 fungal colonies) belongs to 1 fungal genera of Mycelia Sterilia (Table 2). During summer season 44 fungal species (201 fungal colonies) belonging to 24 fungal genera were found. Out of 44 fungal species, 3 fungal species (6 fungal colonies) belongs to 3 fungal genera of Zygomycotina, 3 fungal species (7 fungal colonies) belongs to 3 fungal genera of Ascomycotina,

36 fungal species (180 fungal colonies) belongs to 17 fungal genera of Anamorphic fungi, 2 fungal species (1 fungal colony) belongs to 8 fungal genera of Mycelia Sterilia (Table 3). There are many studies which show similar results, Verma et al. (1997) from poultry farm of India, Tiwari et al. (2005) from dairy area of Raipur city.

**TABLE - 1: SEASONAL VARIATION IN AEROMYCOFLORA OF APEX POULTRY FARM DURING RAINY SEASON**

S. No.	FUNGAL GROUPS	NO. OF FUNGAL SPECIES	NO. OF FUNGAL GENERA	TOTAL NO. OF FUNGAL COLONIES
1.	Zygomycotina	03	03	22
2.	Ascomycotina	01	01	02
3.	Anamorphic Fungi	41	15	132
4.	Mycelia sterilia	01	01	05
TOTAL		46	20	161

**TABLE - 2: SEASONAL VARIATION IN AEROMYCOFLORA OF APEX POULTRY FARM DURING WINTER SEASON**

S. No.	FUNGAL GROUPS	NO. OF FUNGAL SPECIES	NO. OF FUNGAL GENERA	TOTAL NO. OF FUNGAL COLONIES
1.	Zygomycotina	01	01	03
2.	Ascomycotina	02	01	04
3.	Anamorphic fungi	48	24	265
4.	Mycelia Sterilia	01	01	05
TOTAL		52	27	277

**TABLE - 3: SEASONAL VARIATION IN AEROMYCOFLORA OF APEX POULTRY FARM DURING SUMMER SEASON**

S. No.	FUNGAL GROUPS	NO. OF FUNGAL SPECIES	NO. OF FUNGAL GENERA	TOTAL NO. OF FUNGAL COLONIES
1.	Zygomycotina	03	03	06
2.	Ascomycotina	03	03	07
3.	Anamorphic Fungi	36	17	180
4.	Mycelia sterilia	02	01	08
TOTAL		44	24	201

**Photo plate 1: APEX POULTRY FARM****REFERENCE**

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