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A STUDY OF AIR BORNE FUNGAL DISTRIBUTION AND SPECIES DIVERSITY IN HILL FORT REGION OF CHANNAGIRI, KARNATAKA, INDIA

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Abstract
Air borne fungi of Hill fort region of Channagiri is studied with help of Petriplate exposure method using Pottato dextrose agar media, petriplate exposure time is 15min. Sampling is taken in the month of January 2013 total 74 fungal colonies represented 07 fungal types were observed during the present investigation period. Environmental condition plays an importance role in the distribution of the fungal spores. Out of 07 fungal species most numbers of fungi are anamorphic groups. The fungal species were *Aspergillus, Pencillium, Curvilaria, Cladosporium, Fusarium Rhizopus, Alternaria* species were identified. *Aspergillus species (47.2%)* showing maximum contribution is observed where as *Rhizopus* shows minimum contribution.

Key words: Fungal species, Channagiri city.

Introduction

Fungal spores is also called as mold spores, they are a normal component of the outdoor air. They are present in the atmosphere air from existing on dead or decaying organic matter is the soil or elsewhere in the environment or parasites i.e., infecting living tissues most are plant pathogens) species of fungi are found as leaf surface microorganisms where they exist on organic matter produced by the plant. Concentrations outdoors can be high, especially in the late summer or fall. The study of atmospheric constituents, living and non- living e.g. airborne fungal spores are essential step for existence of life and over come on life threatening problems (Sharma, 2011).

Airborne spores can destroy our health. Many people are unaware that they are breathing spores until they are very sick. If you have been exposed to the dangerous fungal spores you can have chronic bronchitis, learning disabilities, mental deficiencies, heart problems bleeding lungs and more. Many molds produce airborne toxins that can cause serious breathing difficulties, memory and hearing loss, dizziness, flu-like symptoms, and bleeding in the lungs. Common ailments from spores including allergies, asthma and bruising usually can be treated and reduced after people leave their contaminated environment. But other health problems may remain permanently, such as brain damage and weakened immune systems. The air carries many kinds of dust of meteor as well as terrestrial origin, microorganism, pollen salt particles, solids impurities resulting from human activities and spores of fungi. (Sharma, 2011).

Atmospheric fungal spores have frequently been studied on aims to understand their impact on health, environment, or on agricultural and forest production (Sharma et al., 2011). Fungus reproduces into spores that come in many different sizes, shapes and colors. The spores will reproduce and germinate into new mold growth which in turn can produce millions of more spores.

Research paper shows the concentration and diversity of fungal spores in Chnnagiri region of Davangere district and also pointed out the health impact from spores which are exposed in air.

Materials and Methods

Channagiri is located at 14°02′N 75°56′E, it has an average elevation of 662 meters (2171 feet). Channagiri have a hill fort of about 1770 A.D. with a Ranganatha temple inside it, which rises to a height of about 200 feet to the west of the town consists of a single soft dark covered with earth which commands a wide plain. The fort consists of two rubble walls defending by moats, the chief gate being on the north

where the gradient is lowest. Fungi to be identified are collected different location of Channagiri fort region. For isolation of fungi, PDA culture media were used; at the end of the incubation period fungal colonies were counted. Identification of the fungal spores was done on the basis of microscopic examination and with the help of available literature (Bernett, 1960; Ellis, 1976)

Sampling Location

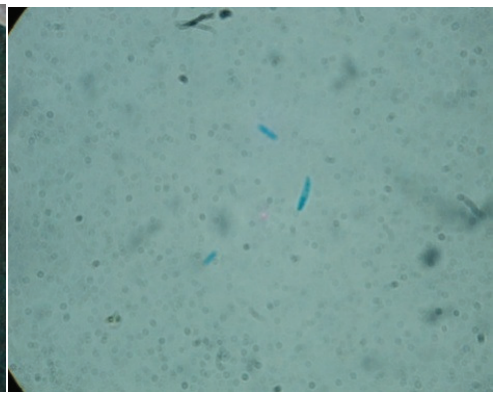
1. Upper region of Hill Fort (UR)
2. Middle region of Hill fort (MR)
3. Lower region of Hill Fort (LR)

Result and Discussion

Fungal spores are not equally distributed in the environment their distribution varies according to geographical location and meteorological conditions. The climate of channagiri region divided by three seasons; Rainy season (July–December), winter season January – March) and summer season (March–July). During investigation period, it is also observed that the maximum fungal species are recorded in winter season, moderate fungal species in rainy season and minimum fungal species are recorded in summer season.

Channagiri Hill fort Region

Fungal Growth



Fusarium

Table: 1 showing total number of fungal spores is identified in Channagiri region

S.L No	Name of the fungi	Station Name				Percentage Contribution
		UR	MR	LR	Total	
1	*Aspergillus* sp	14	12	09	35	47.2
2	*Pencillium* sp	05	02	04	11	14.8
3	*Curvilaria* sp	01	00	02	03	4.0
4	*Cladosporium* sp	02	01	00	03	4.0
5	*Fusarium* sp	00	02	05	07	9.4
6	*Rhizopus* sp	02	03	00	05	6.7
7	*Alternaria* sp	07	04	02	13	17.5
	Total	**30**	**24**	**22**	**74**	

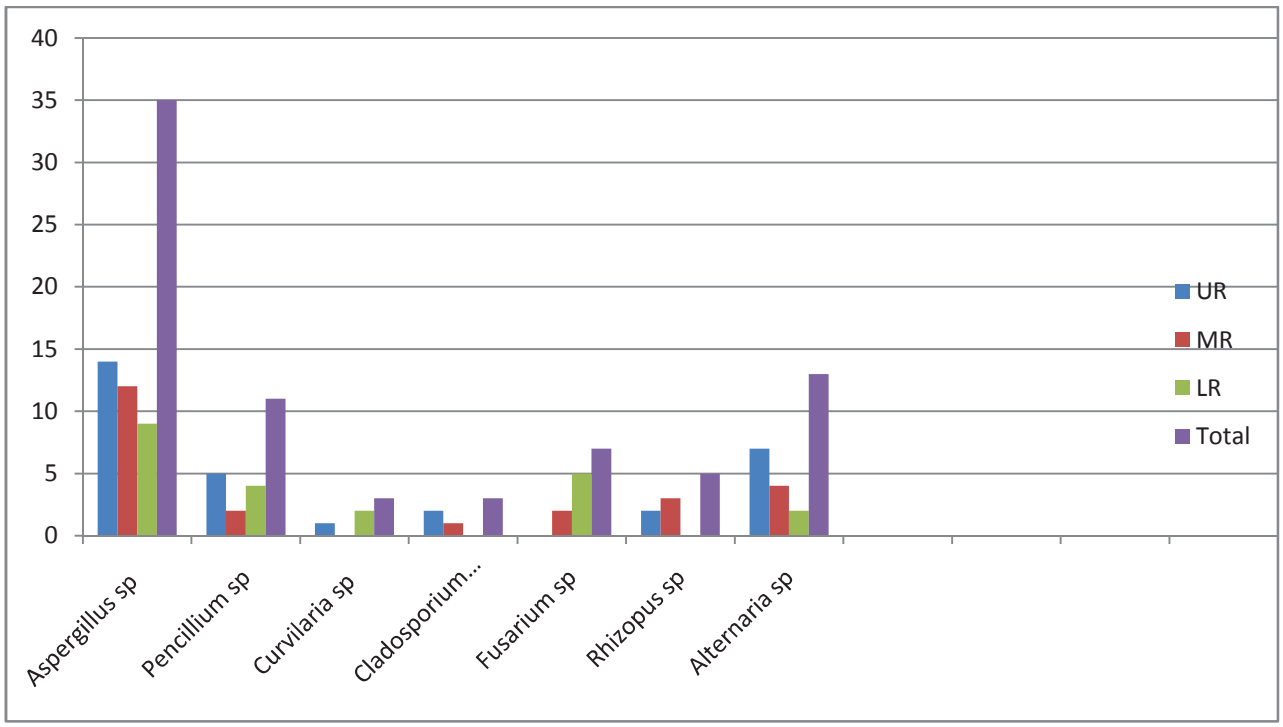


Fig: 1 shows the variations of fungal spores

Total 74 fungal spores were identified from different sampling site of chnnagiri region (Table 1). Fungal species recorded were *Aspergillus, Pencillium, Curvilaria, Cladosporium, Fusarium Rhizopus, Alternaria* is observed.the *Aspergillus* groups of fungi is most dominated (Fig.1). The fungi, Pencillium, Curvilaria, Cladosporium, Fusarium Rhizopus, Alternaria is also observed.

The maximum percentage contribution is observed for *Aspergillus* (47.2%), *Alternaria* (17.5%), *Pencillium* (14.8%), *Fusarium* (9.4%), *Rhizopus* (6.7%), on minimum percentage contribution (4%) is observed for *Cladosporium* and *Curvilaria*. similar result was also reported by Tiwari et al. (2006). Anamorphic fungi recorded as the most contributed fungal group throughout the study period similar result also recorded.

Acknowledgement

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