VARIATION IN THE AIR MYCOFLORA OVER A FISH MARKET AND A FIELD

K. K. PANDEY (1)

Department of Botany, D.A.V. Degree College, Gorakhpur, U. P., India.

The investigations in the field of aeromycology gained momentum after the researches of RAJAN et al. (1951) by SREERAMULU and his students. MISHRA and others (MISHRA and SRIVASTAVA, 1970, 1971, 1972) in a series of papers investigated the aeromycology of Gorakhpur, situated in the sub-Himalayan belt of U.P. (India), dealing with various aspects. The present communication deals with air mycoflora of a fish market and an adjacent field.

Materials and Methods

The two spots (a fish market and an open field) were situated at a distance of two km from Gorakhpur University and were 100 metres apart from each other. Spores were trapped by exposing three nutrient Petri-plates (equal dimension) each of modified Martin's medium, Czapek's agar and modified Warcup's medium. The plates were exposed to air for five minutes at 8 A.M. on the 10th day of each month from August 1973 to March and June 1974. The Petri-plates for trapping spores were exposed at a height of one metre. The exposed plates were brought to the laboratory and incubated at 26 $\pm$ 1°C for six days and the fungal species appearing there in were recorded.

Results

Forty four and 35 fungal species were recorded over the fish market and the field. *Choanephora cucurbitarum, Thielavia sepedonium, Chaetomium homopilatum, Aspergillus tamarii, A. subolivaceous Botryosporium* sp., *Acrophialophora fusispora, Trichothecium roseum, Pullularia pullulans, Memnoniolla echinata, Botryotrichum pululiferum, Curvularia tetramera, Stemphylium* sp., *Fusarium roseum, Myrothecium roridum, Macrosporium* sp., *Chrysosporium pannorum* and Black sterile colonies were restricted over the fish market (Table 1). On the other hand, *Aspergillus aculeatus, A. niveus, A. ochraceous, Paecilomyces varioti, Humicola* sp., *Helminthosporium sativum Fusarium nivale, Acrospeira* sp. were confined over the field only (Table 1). The remaining fungal species were common over the fish and the field (Table 1).

(1) K. K. Pandey, Department of Botany, D. A. V. Degree College, Gorakhpur, U. P., INDIA.

No regular trend was observed for average colonies per plate and number of species recorded The maximum number of colonies per plate and species redcorded was noted in March and least in June in case of fish market (Table 2). In case of the field average colonies per plate (August) and number of species (September) isolated was higher in the months mentioned under brackets and least in June (Table 2)

Discussion

Seasonal variation in the air mycoflora of Gorakhpur has been reported by MISHRA and KAMAL (1971). SREERAMULU and RAMALINGAM (1966), MISHRA and SRIVASTAVA (1971, 1972) and MISHRA and KAMAL (1971) reported the various factors affecting the air mycoflora. An adverse effect of rainfall on fungal flora has been reported by GREGORY (1961) and MISHRA and KAMAL (1971). In the present study some species were trapped from the fish market as well as the adjacent field wherease, a number of species were restricted either over the fish market or the field. This is due to different environmental conditions of the two localities.

Summary

The present paper deals with air fungal spora over a fish market and an adjacent field. The sampling was done by the gravity slide method. Some of the fungal species were trapped from both atmospheres, whereas, a number of species were restricted either to the fish market or to the field.

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Table 1

Distribution of fungi over fish market and the field during August 1973 to June 1974

Fungi isolated	Sampling period								
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	June
Rhizopus nigricans	+/-	-/+				+/+			+/-
Mucor racemosus		+/-	+/+			-/+			+/+
Choanephora cucurbitarum		+/-							
Syncophatastrum racemosum	+/-	+/+			-/+				
Thielavia sepedonium								+/-	
Chaetomium homopilatum								+/-	
Trichoderma viride		-/+			+/-			-/+	
Aspergillus aculeatus	-/+	-/+							-/+
A. fumigatus		+/-	-/+				+/-		
A. nidulans		+/+					-/+	+/+	+/+
A. sydowi	+/+	+/+	+/+	+/+	+/+	+/+	+/+	+/+	
A. versicolor								+/+	
A. flavus	-/+	+/+		+/+	-/+		+/-		+/-
A. terreus	+/+	+/+	+/+	+/-			+/-	+/+	+/+
A. flavipes	-/+			+/-				+/-	
A. niveus	-/+	-/+							
A. niger	+/+	+/+	+/+	-/+			+/+	-/+	+/+
A. ochraceous	-/+	-/+						-/+	
A. tamarii	+/-								
A. gorakhpurensis				+/-	-/+				
A. subolivaceous								+/-	
Penicillium Frequ ntans				-/+					
P. restrictum					+/+				
P. notatum	+/+	+/+	+/-	-/+	+/+	+/-		-/+	
P. oxalicum	+/-	+/-			+/+		+/+	+/+	
P. nigricans		+/+		-/+		-/+			
Acremonium sp.			+/-	-/+			-/+	-/+	-/+
Botryosporium sp.					+/-	+/-			
Spicaria violacea		+/+	+/-						
Paecilomyces varioti					-/+				
Acrophialophora								+/-	

Fungi isolated	Sampling period								
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	June
fusispora									
Trichothecium roseum								+/–	
Pullularia pullulans		+/–	+/–						
Nigrospora sphaerica			+/–			–/+			
Humicola sp.			–/+	–/+	–/+				
Memnoniella echinata								+/–	
Botryotrichum pululiferum					+/–	+/–		+/–	
Cladosporium epiphyllum			+/+	+/+	+/+	+/+	+/+	+/+	
C. herbarum			–/+	+/+	+/+	+/+	+/+	+/+	
Curvularia tetramera								+/–	
C. lunata	+/+	+/+	+/+	+/+	+/+	+/–	+/+		+/+
C. pallescens	+/+	+/+	–/+			+/–		–/+	
Helminthosporium sativum	–/+			–/+	–/+		–/+		
Stemphylium sp.				+/–					
Alternaria alternata					+/–	+/+	+/+	+/+	
Fusarium nivale			–/+				–/+		
F. roseum				+/–				+/–	+/–
Myrothecium roridum	+/–								
Macrosporum sp.			+/–	+/–	+/–				
Chrysosporium pannorum					+/–				

Fungi isolated	Sampling period								
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	June
Acrospeira sp.						-/+			
White sterile colonies	+/+	+/+	+/-	-/+	+/+	+/+	+/+	+/+	
Black sterile colonies		+/-			+/-		+/-	+/-	

Numerator = Fish Market aerospora
Denomerator = The field aerospora

Table 2

Average number of fungal colonies per plate and number species isolated during the sampling

Sampling Month	Over Fish market		Over field	
	Av. colonies plate	No. of species isolated	Av. colonies plate	No. of species isolated
August	12	12	27	13
September	21	18	19	17
October	10	13	23	11
November	12	11	12	13
December	11	15	19	14
January	14	11	13	10
February	18	12	15	12
March	22	20	18	15
June	9	8	10	7

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