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KERATINOPHILIC AND RELATED FUNGAL FLORA OF JAIPUR-II

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A number of geophilic keratinophilic fungi were found to be present in 72 soil samples out of a total 84 soil samples (pH range 5.5 to 10.5) collected from different localities of Jaipur. Hair, Feathers, Nails were different bait combinations used for purpose of isolation of fungi. These fungi are *Chrysosporium tropicum, C. indicum, Trichophyton terrestre, T. rubrum, T. mentagrophytes, Trichophyton* spp. (unidentified), *Chrysosporium* spp. (unidentified), *Epidermophyton* spp., *Histoplasma capsulatum, Gymnoascus reessii, Gymnoascus* spp. (unidentified). In all these fungi except Gymnoascus were isolated in imperfect stage. In all the species *C. tropicum* was dominated and species of *Epidermophyton* was less common. *T. rubrum* was isolated for the first time from soil sample of Jaipur. Along with these soil fungi, some other related fungi were also reported from these samples like *Fusarium* spp., *Aspergillus* spp., *Alternaria* spp., *Drechslera* spp., *Chaetomium* spp., *Phoma* spp., *Monilia* spp, *Torula* spp. from Jaipur soils for the first time on these baits.

Keywords :Bait; Dermatophytic; Keratinophilic.

The majority of superficial skin infections are caused by a closely related group of keratinophilic fungi called the dermatophytes which cause ring worm infection in man and animals. Keratinic matter in soil evedently influence the biological cycle of the dermatophytes and other keratinophilic fungi. These keratinophilic and dermatophytic fungi are considered primarily soil saprophytes[1] and grow by using native keratin as their main source of nutrition. Dermatophyte (*Microsporum gypseum)* was first time isolated from soil[2]. The first report of isolation of keratinophilic fungi *Microsporum* from soil in India was by Dey and Kakoti[3]. Garg[4] isolated large number of keratinophilic fungi from soil in India including spp. *Chrysosporium corda.* In our previous work Sharma and Williamson[5] first time isolated *Cephaliophora irregularis* and *Gymnoascus reessii* from the soil of Rajasthan. Later on this work was extended by Iyer *et al*[6] who reported *Chrysosporium tropicum* as the most predominant species and *Microsporum cookei* and *Aspergillus* spp. as less predominant species from the soils of Jaipur. Similarly *C. tropicum* was also reported as predominant sps from the soils of Bharatpur bird sanctury[7]. Our present study deal with the presence of keratinophilic and other related fungi in the different soil sample collected from the different sites of Jaipur district.

For the study of Keratinophilic fungi 84 soil samples were collected from vicinity of Jaipur such as Gardens, Nurseries, Swimming pools, Road sides, Animal habitats, Bird habitats, Zoo Farm house and from Hospital areas. For this purpose surface soil upto a depth of 1-2 inches was collected with the help of sterilized spatula and placed in sterilized plastic bags.

For the isolation of keratinophilic fungi hair bait technique was used[8]. In this procedure different baits viz Hair (Human and cattle hair), Nails, Feathers (different birds) were used. In each sterilized petriplate 25-30 gram of soil was taken, moistened with 5 ml of sterilized distilled water. Sterilized baits were placed on the top of soil sample and then incubated at 25-28°C.

The fungi were isolated and maintained on sterilized Sabourad's dextrose agar (SDA) medium; Neopeptone 10 gm, Dextrose 20 gm. Agar 20 gm, Chloramphenicol 0.05 mg/ml, Cycloheximide 0.5 mg/ml. Standard taxonomic literature was followed for determination of fungal species.

The keratinophilic and related fungi present in 84 soil samples are shown in Table 1. A total of 111 strains distributed in 13 genera and 20 species were isolated.

Table 1. Summary of isolation data from different localities of Jaipur District (Total isolates-111; Total number of isolated species/genera-20/13).

S.No.	Species	Number of isolates of	Percentage Frequencies of isolates
1.	*Chrysosporium tropicum*	34	30
2.	*C. indicum*	3	2.6
3.	*Chrysosporium* spp. (unidentified)	1	0.9
4.	*Trichophyton mentagrophytes*	4	3.54
5.	*T. simii*	4	3.54
6.	*T. terrestre*	17	15.04
7.	*T. rubrum*	1	0.9
8.	*Trichophyton* spp. (unidentified)	4	3.54
9.	*Histoplasma capsulatum*	4	3.54
10.	*Epidermophyton* spp.	2	1.77
11.	*Gymnoascus reessii*	4	3.54
12.	*Gymnoascus* spp. (unidentified)	1	0.9
13.	*Alternaria* spp.	2	1.77
14.	*Aspergillus* spp.	11	9.73
15.	*Fusarium* spp.	11	9.73
16.	*Cheatomium* spp.	1	0.9
17.	*Torula* spp.	2	1.77
18.	*Monilia* spp.	1	0.9
19.	*Drechslera* spp.	3	2.65
20.	*Phoma* spp.	1	0.9

In the present studies. *C. tropicum* (30%) was most common and dominant spp. The different species of fungi isolated are *Trichophyton terrestre* (15.04%) *T. mentagrophytes* (3.54%), *T. simii* (3.54%), *Chrysosporium indicum* (2.6%), *Gymnoascus reessii* (3.54%) *Histoplasma capsulatum* (3.54%), *Epidermophyton* spp. (1.77%) and other related fungi i.e. *Aspergillus* spp., *Fusarium* spp., *Torula* spp., *Monilia* spp., *Alternaria* spp. *Drechslera* spp., *Chaetomium* spp. and *Phoma* spp. *T. rubrum* was reported for the first time from road side soil on feather bait.

This fact indicates that the dominance of a particular keratinophilic fungus is not a constant feature at all period of time as reported by previous workers. In our present study some other related fungi are also reported for the first time from Jaipur soils on different baits.

Out of different baits used, human hair and feathers proved to be the most effective baits for isolation of keratinophilic fungi.

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