



## CHARACTERISED IDENTIFICATION AND LOW COST PRESERVATION OF *MALASSEZIA* spp.-ENABLING FUTURE POSSIBILITY FOR CONTROL

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### ABSTRACT

In a study, the scalp scales of infected and healthy persons (age between 18-35 years) were observed to contain predominantly the yeast *Malassezia*. The species were identified as *Malassezia furfur* (37.93%), *Malassezia restrictum* (22.41%), *Malassezia pachydermatis* (17.24%), *Malassezia globosa* (5%) in proportion and rest was other forms of fungi. Several classical and modern techniques have been employed by workers to identify different *Malassezia* species and to study its control mechanism. But remarkable success could not be achieved in standardizing the processes due to the changing behavior of the organism during culturing and difficulty in revival of the species after long term preservation. The present study has established novel ways to make simultaneous identification of different *Malassezia* spp. in culture (10 spp.) and to make easy long-time preservation. Interesting observations were also recorded about *Malassezia* during the study like, it is a part of rare to mild infected scalp (50% *Malassezia* spp. of total microorganisms) but not necessarily in the heavily infected dandruff scales (only 14.28% *Malassezia* spp. of total microorganisms). The long-term preservation of *Malassezia* in selected broth coated ceramic beads at  $-20^{\circ}\text{C}$  was achieved. Similarly, a trial with only water as medium in the vial to store this fungus at  $-20^{\circ}\text{C}$  has also worked out with high percentage of revival after six months. The coordinated identification methods and the cost-effective preservation approaches envisaged through this piece of research certainly opened new possibilities to study more of *Malassezia* spp. and its genuine control over scalp and skin.

### KEY WORDS

*Malassezia* spp., dandruff, tween assimilation, lipophilic yeasts, preservation

### INTRODUCTION

*Malassezia*, an opportunistic yeast pathogen related to the Basidiomycota has been identified with 15 lipophilic species by different authors in their studies, when isolated from healthy and diseased human and animal skin (1). Over 150 years, *Malassezia* has been of interest to medical microbiologists in view of it being a member of the human cutaneous microbiota and etiologic agent of certain skin diseases (2). In the present-day health conscious society, hair loss and hair disorders have become great concern to individuals and to the hair

therapists. Various reasons and conditions are assigned to hair problems such as too oily or dry skin conditions of the scalp and severe form of dandruff (seborrheic dermatitis). These conditions are associated with hair loss due to depletion of lipids present in different layers of epidermis and dermis resulting weakening of hair root (3, 4). Hence, isolation, culture and studies of scalp micro-fungal flora are undertaken by researchers that include *Malassezia*. The major difficulty in isolation of *Malassezia* is of its slow growing nature and variation of growing period in the culture. Long time preservation