

# ASSESSMENT OF AIRBORNE MICROFLORA IN THE ACADEMIC INSTITUTE OF DEHRADUN

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## ABSTRACT

This study was carried out to have an idea of bacterial diversity in our environment so that this could later on serves as a basis for developing database of the microbial load and to have a preliminary idea of the environmental status. An assessment of the air borne bacteria & fungi at Institute campus, Dehradun was experimentally investigated and also checks out their antibiotic sensitivity and heavy metal tolerance activity. Experiments were carried out at 3 different sites (Reception, Toilet, Library) of Dolphin Institute during Months of March, April and May 2013. The highest bacterial population was observed in month of March ( $846 \times 10^{36}$ ) and lowest in the month of May ( $709 \times 10^{36}$ ). The most dominant bacteria and moulds isolated from air were: *Staphylococcus* sp, *Micrococcus* sp, *Bacillus* sp and *Fusarium* sp. Different isolates shows variable antibiotic resistance pattern. For detecting the heavy metal tolerance of bacterial isolates Lead, Copper, Iron and Aluminium at various concentrations (100, 200, 400, 800, 1600  $\mu\text{g}/\text{ml}$ ) were used. All isolates shows similar pattern against metals used in the current study i.e. with increase in the concentration of heavy metal the bacterial growth become less with less pigmentation. For the evaluation of tolerance potential among fungal isolates PDA medium was prepared and amended with various concentrations ( 0, 25 ,50 and 100  $\mu\text{g}/\text{ml}$ ) of heavy metal (lead, iron and copper). In case of fungus the zone of diameter decreases with increase in concentration of metals.

**KEYWORDS:** Antibiotic Sensitivity, Environment, Heavy Metal Tolerance