A STUDY ON ISOLATION & ENUMERATION OF BACTERIA FROM AIR

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ABSTRACT

ISOLATION & ENUMERATION OF BACTERIA FROM AIR

Microbes in air generally come from soil, water, and living organisms' activities. The micro-flora of air is highly dynamic and is affected by temperature, wind speed, moisture/humidity, pollution, and other human and animal activities. They are of great importance as their presence in air may exert adverse effects to the health of population and may cause spoilage, promote composting, biodegradation, etc. The qualitative and quantitative estimation of microorganism present in air is possible using sampling and isolation technique. In exposure plate technique, media plates are exposed in air for specified duration, and the microbial flora settles down on plate. When plates are incubated, the colonies of microorganism develop on plate, which can be further purified and identified. These methods consist of transferring microbes from air onto the surface of the appropriate culture medium. After a period of incubation at optimal temperature, the formed colonies are counted and the result is given as cfu/m^3 of air (colony forming units). Because a colony can form not only from a single cell, but also from a cluster of cells, the air may contain more microbes than suggested by the CFU result. Besides, the method allows the detection of only the cells that are viable and those which are able to grow upon the medium used. The isolation of bacteria in pure culture is important because it facilitates the application of recombinant DNA technology through the isolation of clones.