

Microbial Research

An Overview

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CHAPTER

Microbial Aspects of Drinking Water

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Abstract

Water is essential to life, but many people do not have access to clean and safe drinking water, and many die due to water-borne bacterial infections. The contaminants in drinking water cause serious health hazards which include nausea, lung irritation, skin rash, vomiting, dizziness, and even death. In this review, we have discussed diseases transmitted through water. Microbiological analysis of water is mainly based on the concept of faecal indicator bacteria, so we have covered different bacteria lying in this category. We have discussed conventional and current microbiological techniques used for maintaining potable water quality. In addition to this, different methods used for water treatment, namely, removal of microbes, filtration and disinfection have also been covered. One of the serious issues which is regrowth of bacteria after water treatment has also been taken into account.

Keywords: Water, Faecal indicator, Microbiological techniques, Disinfection.

DRINKING WATER: QUALITY CHARACTERISTICS

Water is a natural resource and it is necessary for sustaining life. The quality of drinking water and associated health risks vary throughout the world. Nowadays, water gets contaminated by various microbial and non-microbial contaminants (heavy metals, pesticides, chemicals, etc.). The levels of contaminants in drinking water are not often high enough to cause acute (immediate) health problems which include nausea, lung irritation, skin rash, vomiting, dizziness, and even death.

Contaminants are more likely to cause chronic health problems that occur long after repeated exposure to small amounts of a chemical. Chronic health problems include cancer, liver and kidney damage, disorders of the nervous system, damage to the immune system, and birth defects. However, evidence relating chronic health effects to specific drinking water contaminants is limited.