

WATER AS A BIOLOGICAL SOLVENT

Aquatic environments occupy roughly more than 70% of earth's surface. Most of this area is occupied by oceans. Besides oceans, there is also a broad spectrum of other aquatic environments. The study of microbial communities and their activities in natural water environments. Such as lakes, ponds, streams, rivers, estuaries, harbours, springs, aquifers and oceans is known as aquatic microbiology. Microbial communities of aquatic environments include viruses, bacteria, archaea, fungi, algae, protozoans and other microorganisms.

Domestic and industrial waste water enters lakes and streams, and its degradation and effects on microbial life and human health are important areas of aquatic microbiology. Microbiological tests of water for its safety in consumption, pollutants making water unfit for drinking, and methods of its purification are also studied in this field of microbiology.

Types of water: There are two major types of water.

1. Ground water: It originates from deep wells and subterranean springs. This is virtually free of bacteria.

due to filtering action of soil, deep sand and rocks. However, it may become contaminated when it flows along the channels.

2. Surface water: It is found in streams, lakes and shallow wells. The air through which the rain passes may contaminate the water. Other sources are the various types of establishments and agricultural farms etc. by the sides the water flows. Possible sources of microbial contamination of a body of water are soil and agricultural runoff, farm animals, rain water, industrial waste, discharges from sewage treatment plants and storm water runoff from urban areas.

In water microbiology the water is contaminated when it contains a chemical or biological poison or an infectious agent. These conditions also apply to water which is polluted except that the agent or poison is often obvious and the water carries an unpleasant taste or appearance. Potability refers to the drinkability of water. When potable, it is fit for drinking. When unpotable it is unfit due to some contaminant or pollutant.