Laboratory (1) Water Microbiology Dr Duaa Suhail

Collection of Water Samples

About 71% of the earth surface is water-covered. Oceans hold about 96.5% of all earth water. Water also exists in rivers and lakes. Essential information should be taken into consideration when water samples are collected for microbiological studies such as:

1- The origin of the water sample (oceans, seas, rivers, lakes, ponds, sewage and agricultural water etc.).

2- the depth of the water sample to be studied.

3- Chemical and physical properties of the water sample. For example, temperature, the degree of turbidity, dissolved oxygen content, organic matter content, soluble salts proportion and hydrogen ion concentration.

Several points should be also determined for investigation the microbial content of water samples:

1. Information related to the location of water sampling should be recorded such as the buildings near the collection site (residential area, factories or hospitals).

2. Samples must be collected in replicates and the correct statistical method should be chosen which is suitable for the aim of the study.

3. Water samples are collected using wide-mouth bottles with tight lids to avoid contamination.

4. The tap nozzle should be sterilized before taking samples of a tap water (drinking water) by heating then leave it to cool. This procedure is

used for the purpose of drinking water test. However, avoid sterilization of the tap nozzle when investigating the sources of water pollution.

5. Sewage water samples must be taken opposite the water flow direction. Contact of hands or any other external subject with water sample should be avoided.

6. A space must be left inside the bottles filled with water to allow creating aerobic conditions and to allow shaking the sample before examination.

7. Some materials could be added to the water sample, such as sodium sulfate which is a satisfactory dechlorinating agent that neutralizes any residual chlorine and prevents continuation of bactericidal action during sample transit. EDTA could be also added as a chelating substance to remove minerals from water such as iron.