FAQ's

Q1. What is water quality?

Ans. The term 'water quality' is used to describe the condition of the water, including its chemical, physical and biological characteristics, usually with respect to its suitability for a particular purpose (i.e., drinking, swimming or fishing). Water quality is also affected by substances like pesticides or fertilizers that can negatively affect marine life when present in certain concentrations.

Q2. Is water with chlorine in it safe to drink?

Ans: Chlorine is the most common disinfectant used throughout the world. An ideal disinfecting system supplies free chlorine in water at a concentration of 0.3-0.5 mg/L. However, in most disinfected drinking-water, chlorine is present in at concentrations of 0.2–1 mg/L. This amount of chlorine used is sufficient to kill germs, but is not enough to harm humans. Nevertheless, researchers raised concerns about the by-products of chlorine in the 1960's. It was found that chlorine could combine with naturally occurring, non-toxic, chemicals in the water to form compounds that may cause cancer. These compounds are called disinfection by-products. There are strict regulations about the amount of disinfection by-products allowed in water supplies. Any risk of harmful effects to humans from disinfection by-products is small and difficult to measure, especially when weighed against the real risks associated with the lack of chlorine in water.

Q3. Why does chlorine smell stronger in my water during certain times?

Ans: Although, the level of chlorine in our drinking water is constantly monitored and does not change from the target level, yet at certain times of the year, it is observed that the water possesses more chlorine like smell. Chlorine can react with substances, such as algae, in the source water during certain times of the year. The combination of algae and chlorine create a stronger chlorine smell at the tap. This is usually what makes the smell of chlorine more noticeable, particularly in late summer.

Q4. What is potable water?

Ans: Potable water may be defined as water that is wholesome or will not affect the wholesomeness of the food in question. This would normally mean that the water would meet the requirements of local standards for safe drinking water or meet the requirements of the WHO Guidelines for Drinking-water Quality.

Q5. List some sectors of food industry which are the most important users of water.

Ans: The most important water consuming sectors within the food industry are:

- a) Potato, vegetables and fruit preserving industry;
- b) Dairy industry;
- c) Meat industry;

- d) Fish processing industry;
- e) Beverage industry and Breweries (malting industry);
- f) Sugar and starch industry;
- g) Margarine, oil and fat industry.

Q6. What are the chief functions of water when used as a washing/ cleaning agent in food industry?

Ans: Immediately upon receipt at the food industry, raw food materials are thoroughly washed. The objectives of washing are to:

- a) Separate soil and other foreign materials from the product;
- b) Reduce load of spoilage bacteria naturally present in foods;
- c) Improve quality and appearance of food.

Q7. What is the significance of British Standards for chemicals used for treatment of water?

Ans: Many chemicals used in the treatment of water are subject to comprehensive test requirements and purity checks to ensure that there are no detrimental effects on the safety and quality of water for public supply. These chemicals are considered to conform to the Specific British Standards.

Q8. What are the sources of acidity of water?

Ans: Acidity arises from the presence of weak or strong acids and/or certain inorganic salts. The presence of dissolved carbon dioxide is usually the

main acidity factor in unpolluted surface waters.

Q9. Name the indicators used for determination of acidity of water.

Ans: The determination of acidity in water is arbitrary to a degree in that the end-point pH values will depend on the choice of indicator reagents made by the analyst. Commonly, methyl orange or bromophenol blue are used in the first stage as indicator (colour change around pH 4.5) known as methyl orange acidity and, phenolphthalein is used in the second stage (colour change around pH 8.3) known as phenolphthalein acidity.

Q10. What is the health/sanitary significance of the presence of ammonia in drinking water?

Ans: Ammonia is generally present in natural waters, though in very small amounts, as a result of microbiological activity which causes the reduction of nitrogen-containing compounds. When present in levels above 0.1 mg/l N, sewage or industrial contamination may be indicated. From the viewpoint of human health, the significance of ammonia is marked because it indicates the possibility of sewage pollution and the consequent possible presence of pathogenic micro-organisms.

Q11. What is biological oxygen demand (BOD)?

Ans: When organic matter is discharged into a watercourse it serves as a food source for the bacteria present there that commence the breakdown of this matter to less complex organic substances and ultimately to simple compounds such as carbon dioxide and water. These do so by utilising the dissolved oxygen present in water. Biological oxygen demand (BOD) is the amount by which the dissolved oxygen level has dropped during the fixed incubation period of water. In other words, it is the amount of dissolved oxygen taken up by the bacteria present in water for decomposing the organic wastes disposed in it.

Q12. What are the means of contamination of water?

Ans: Contamination can arise in raw water (untreated water), as a consequence of improper storage, and/or pick-up of contaminants from distribution systems into the water. It can also occur as a consequence of leakage from a dirty water system into a clean water system.

Q13. What are the risks associated with the use of contaminated water in different foods?

Ans: The risks associated with the use of contaminated water in different foods may include:

- Presence of the pathogens of faecal or non-fecal origin that cause food-borne illnesses.
- Presence of the harmful chemicals.
- Presence of chemicals that are not harmful but have a concentration above their allowable daily intake (ADI).