CHAPTER – 10 : MICROBES IN HUMAN WELFARE

Microbes in Household products:

- *A common example is the production of curd from milk. Micro-organisms such as Lactobacillus and others commonly called Lactic Acid Bacteria (LAB) grow in milk and convert it to curd. During growth, the LAB produces acids that coagulate and partially digest the milk proteins. It also improves its nutritional quality by increasing vitamin B12. In our stomach too, the LAB play very beneficial role in checking disease causing microbes.*
- *The dough, which is used for making bread, is fermented by using baker's yeast (Saccharomyces cerevisiae).*
- *"Toddy", a traditional drink of some parts of southern India is made by fermenting sap from palms.*
- *Microbes are also used to ferment fish, soya bean and bamboo-shoots to make foods. Cheese, is one of the oldest food items in which microbes were used. The large holes in 'Swiss cheese' are due to production of a large amount of CO_2 by a bacterium named Propionibacterium sharmanii. The 'Roquefort cheese' is ripened by growing a specific fungus on them for a particular flavour.*

Microbes in Industrial products:

Production on an industrial scale requires growing microbes in very large vessels called Fermentors.

a) Fermented Beverages:

The yeast Saccharomyces cerevisiae used for bread making and commonly called brewer's yeast, is used for fermenting malted cereals and fruit juices to produce ethanol. Wine and beer are produced without distillation whereas whisky, brandy and rum are produced by distillation of the fermented broth.

b) Antibiotics:

Antibiotics are chemical substances, which are produced by some microbes and can kill or retard the growth of other disease causing microbes.

Pencillin was the first antibiotic to be discovered and it was a chance discovery. Alexander Fleming while working on Staphylococci bacteria, once observed a mould growing in one of his unwashed culture plates around which Staphylococci could not grow. He found out that it was due to a chemical produced by the mould and he named it Pencillin after the mould Pencillium notatum. Later, Ernest Chain and Howard Florey made its full potential effective antibiotic.

c) Chemicals, Enzymes and other Bioactive Molecules: