Microorganisms: Friend and Foe

Uses of Bacteria, Fungi, Algae, Protozoa

Useful Microorganisms

Humans have many microorganism in their in their digestive system that contribute to overall health. The microbial community in humans not only protects us from disease, but also provides necessary vitamins. Bacteria also help in nitrogen fixation in production of antibiotics, etc. Algae are also useful in a number of industries. Therefore, even through microbes are responsible for food spoilage and many diseases, they can also be very helpful.

Some microorganisms and their uses are listed in Table :

Useful Microorganisms		
Classification	**Species/Name**	**Use**
Bacteria	E.coli, Clostridium sp.	Production of vitamins in the large intestine
	Rhizobium	Nitrogen fixation
	Lactobacillus	Production of dairy products, like yoghurt, cheese, etc.
Algae	Chlorella, Chlamydomoans	Sewage disposal system
	Red and brown algae	Manufacturing culture medium called 'agar' used in laboratories and hospitals
Fungi	Mushroom	Used as food item
	Aspergillus flavus	Aspergillic acid
	Penicillium notatum	Antibiotics (Penicillin)
	Yeast	Preparation of Vitamin B Complex, fermenting for making bread, cakes

Yoghurt or curd (dahi) is the commonest example of beneficial use of microbes. Youghurt is a part of our daily diet and we eat it in various forms, with different flavour. This dahi is made from milk by the action of a bacterium called lactobacillus or latic acid bacteria.

It converts the sugar in milk (lactose) to lactic acid, giving curd its sour taste. This process was initially used as a way to preserved milk.

Lactose (in milk) → Lactobacillus → Lactic Acid (Yoghurt)

Curdling of milk takes places naturally, due to heat (specially in summer).

Curding of milk also takes place due to addition of any of the acid products such as sour curd, lemon juice and even tomato juice.