

Chapter 2

MICROORGANISMS FRIEND AND FOE

Dairy Industry:

- Production of dairy product like curd, cheese, Butter.

Curd:

Milk is converted to curd by lactic acid bacteria. Lactic acid produced by the bacteria Convert the milk protein Casein into curd

Cheese:

The milk product obtain from Coagulation of milk protein by bacteria.

Fungi:

- Ripening of cheese - processing of cheese and ripening done by propioni bacterium
- Sharmanii - Swiss cheese
- Penicillium roqueforti - roqueforti cheese

Baking Industry:

Yeast:

Used in baking Industries to raise the Clough and also brewing industry to prepare alcohol from Sugars.

E.g., bread, pastries, cakes.

Food yeast contains vitamins of B group, E group and 15% proteins.

Pencillium and Aspergillus release enzymes like Amylase, pectinase, invertase.

Commercial use of Microorganisms:

Mineralisation:

Process of conversion of dead organic material into Simple in organic compounds - Nitrates, sulphates, phosphates.

Nitrogen fixation:

Conversion of Nitrogen into Ammonia.

Production of Biogas - Anaerobic break down of cow dung to produce methane gas.

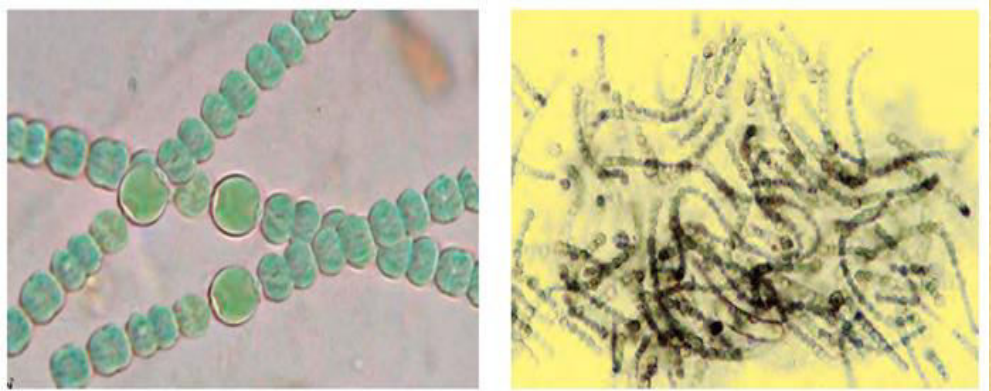


Fig.2.7 : The Nitrogen fixing cyanobacteria(blue green algae)

Medicinal Use:

- Certain microbes used in the preparation of medicines like antibiotic tablets, capsules & injection

- Medicine helps to control disease spreading by killing microorganisms

- Those are called as Antibiotics.

- Antibiotics Discovered by ?

- In 1929 Alexander Fleming discovered Antibiotics during culture of disease causing bacteria.

- Antibiotic – Definition:

- Any substance that inhibits the growth and Replication of a bacterium or kills it outright.

An antigenic substance that develops immunity against a disease which can be delivered through needle injections or by mouth or by Aerosol.

E.g., DPT, BCG, MMR.

Vaccination:

Vaccination is the injection of a dead or weakened organisms that forms immunity against that organism in the body.

Discovered by:

Vaccine discovered by Edward Jenner in 1798.

In Agriculture:

- Some bacteria and Blue green algae are able to fix Nitrogen from Atmosphere to enrich soil with Nitrogen and Increase its fertility.

Soil fertility:

- Some bacteria cleaning up Environment,

- Organic waste vegetable peels, Faeces and Decay Animals.

