

NEW HORIZON SCHOOL
STUDY MATERIAL-BIOLOGY CLASS VIII (2018-19)
CH - CROP PRODUCTION AND MANAGEMENT

- ◆ Agriculture is the cultivation of crops in the field.
- ◆ Crops are the plants of same kind grown at a place.
- ◆ Crops depending on seasons are of two types, Rabi and Kharif crops.
- ◆ Cultivation of crops involved several steps:-
 - 1) Preparation of soil
 - 2) Sowing
 - 3) Adding manure and fertilizers
 - 4) Irrigation
 - 5) Protecting from weeds
 - 6) Harvesting
 - 7) Storage
- ◆ Preparation of soil is done by ploughing, leveling and manuring.
- ◆ Various agricultural tools are plough, hoe, cultivator,, seed drill, combine, sickle etc.
- ◆ Plough is oldest agricultural implement used for tilling the soil, adding manure and fertilizers to crops, removing weeds, scraping of soil etc.
- ◆ Sowing of seeds is done by broadcasting method, use of seed drill and transplantation of seedlings.
- ◆ Manures and fertilisers improve the soil fertility.
- ◆ Watering of plants in the field is called irrigation. It is done by tube wells and canal system. Both traditional and modern methods are used.
- ◆ Best technique for watering plants/crops is drip system as water is not wasted in this technique and it is a boon for regions where water availability is less.
- ◆ Unwanted plants that grow along the main crops are called weeds.
- ◆ Crops are improved with desired characters through cross breeding.
- ◆ Special festivals associated with the harvest season are Pongal, Baisakhi, Holi, Diwali, Nabanya and Bihu.
- ◆ Large scale storage of grains is done in silos and granaries.
- ◆ Proper storage of grains is necessary to protect them from pests and microorganisms.
- ◆ The rearing, breeding and feeding of animals on large scale for food and food products are called animal husbandry.

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CH - MICROORGANISMS: FRIEND AND FOE

- ◆ Microorganisms are very tiny single celled organisms that can only be seen under the microscope. They are found almost everywhere.
- ◆ Microorganisms include diverse type of organisms such as bacteria, fungi, protozoa and algae of the living kingdom.
- ◆ Most of them can be grown on culture media in the laboratory for detailed study.
- ◆ Bacteria are single-celled prokaryotic organisms lacking an organised nucleus. They may be round, oval or spiral in shape.
- ◆ Viruses are the link between living and non-living. They are the smallest parasitic and pathogenic organisms.
- ◆ Viruses reproduce only inside the cells of host organism, which may be bacterium, plant or animal.
- ◆ Protozoa are single celled organisms, e.g., amoeba and paramecium. Some of them cause serious human diseases such as dysentery and malaria.
- ◆ Fungi are saprobiotic (saprophytic) or parasitic in nature. Some of them damage and spoil food products, leather, paper and textile. Whereas others are pathogenic to crops and animals.
- ◆ Yeasts are saprobiotic (saprophytic) unicellular fungi which are used in fermentation to produce bread, cakes and beverages such as wine and beer.
- ◆ Blue-green algae, also called cyanobacteria, are helpful in fixing atmospheric nitrogen and in increasing soil fertility.
- ◆ Microorganisms are used in production of alcohol, wine, curd, cakes, biscuits, antibiotics and vaccines
- ◆ Antibiotics work against bacteria and fungi. Some of the commonly used antibiotics are Streptomycin, Tetracycline, Erythromycin and penicillin etc.
- ◆ Antibiotics are used to control plant and animal diseases. They are also mixed with feed of livestock and poultry to check microbial infection in animals

- ◆ Antibodies are produced by our body to fight and kill the microbes.
- ◆ Certain diseases like Cholera, Tuberculosis, smallpox and hepatitis can be prevented by vaccination.
- ◆ Some microorganisms are parasitic and can cause diseases. They are called germs/pathogens.
- ◆ Microbial diseases are spread by Air, water, food, insects and contact.
- ◆ The process by which spoilage of food by microorganisms is prevented is called food preservation.
- ◆ Various methods of food preservation are boiling, Dehydration, Refrigeration, Freezing, Canning, Using preservatives, Salting, Pasteurization etc.