



Lecture No.: 16

Date: 21st April, 2020

CORE CONCEPT OF
Group A - Algae

HONOUR'S PART 1
Paper - 1

ECONOMIC IMPORTANCE OF ALGAE

Algae have been very useful in discovery of some of the steps in photosynthesis. About 90% of total photosynthesis in the world is carried on by algae. Algae also purify air by continuous liberation of oxygen. All organism are directly or indirectly benefited from algae. Here some economic importance of algae are mentioned :

- 1. Algae constitute the link of food chain** - Both fresh waters and salt contain an enormous variety of algae which constitute the primary link of many food chains. Algae synthesize organic food stuffs , just as do the plants of the land. Fish and other aquatic forms of animal life are dependent , directly or indirectly , upon algae. Fish is Important item of daily diet of animals and man.
- 2. Algae used for recreational purposes** - Certain algae are grown in areas such as lakes and streams along with fish for recreational purposes.
- 3. Algae useful in fish culture** - The algae are utilised in fish culture.
- 4. Algae and water supplies** - In summer season the phytoplankton in lakes, ponds and water reservoirs may get extremely conspicuous. The water becomes dirty and forms yellowish or greenish tinge. The blue-green algae are most frequently involved in the contamination of water supplies. Some *Microcystis* spp. and other species cause mortality of fish and domestic animals that drink water infested with these algae.
- 5. Algae useful in sewage treatment plants** - Species of *Chlorella*, *Chlamydomonas*, *Scenedesmus* and *Euglena* are used in sewage treatment plants for providing through photosynthesis, the oxygen necessary for repeat decomposition of the sewage by bacteria



6. Algae and limestone formation - Many species of algae forms calcium from water both fresh and salt. The blue-greens are chiefly important in fresh water. The red algae are the most important calcareous algae of the seas. The algae are not only important in the present age in the formation of calcareous deposits both in the the seas and fresh waters.

7. Algae as the origin of petroleum and gas - Minute marine algae captured the energy of sunlight, which was in turn transferred to animals that fed upon them. Organic compound derived from the plankton accumulated in mud deposits in shallow waters of the ocean floor. Gas is generally associated with oil and can result from the action of methane producing bacteria upon organic compounds.

8. Algae used in space research and other fundamental studies - In these days chlorella is being used in space research. Chlorella has been found very suitable for keeping the air in space vehicles on interplanetary flight.

9. Algae used as fertilizers - The value of seaweeds in fertilizing of soil was discovered in the history of agriculture. The bulky organic substances decay slowly in the soil and form humus. Again yield of paddy is increased substantially when paddy field is inoculated with nitrogen fixing blue-green algae, such as - Anabaena, Aulosira, Nostoc, Tolypothrix and cylindrospermum etc.

10. Algae used as fodder - Some kinds of algae, such as Rhodymonia palmata and Alaria Esculenta are favourable food of goats, cows and sheep.

11. Algae as food - Large number of algae are countable in human diets. The most dietary use of seaweeds. Man obtains carbohydrates, vitamins from algae also. In Japan, powdered chlorella has been used in with green tea. In Germany chlorella has been used as an alternative source of animal feed and of human vegetable food.

12. Algae used as medicine - Algae has medicinal value also. Chinese used Sargassum and various laminarials for treatment of goitre and other glandular treatments. Chlorella is used for the preparation of antibiotic chlorellin.

13. Algin industry - The algin industry has become so important to such a wide variety of industries that extensive survey of Kelpbed ecology. Algin occurs generally throughout the



brown algae as, a cell wall constituent. Algin provides ice cream with a smooth texture by preventing the formation of ice crystals.

14. Parasitic algae - There are large number of parasitic algae. Different species of green algae Cephaleuros grow as parasitic on and in the leaves of angiosperms, such as magnolia Rhododendron, tea (Thea Sinensis) and papper (Piper Nigrum). Their plant body composed of one or more branched interwoven threads produces rhizoids which penetrate the cells of the host and induce various abnormalities.

15. Biological control of algal growth - The virus cyanophage and several other phycoviruses infect various blue-green algae and may be used to control their growth in water.

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