Definition: algae from Dictionary of Energy

Ecology, singular. alga, any of a large group of mostly aquatic organisms that contain chlorophyll and other pigments and can carry on photosynthesis, but lack true roots, stems, or leaves; they range from microscopic single cells to large multicellular structures, including nearly all seaweeds. Technologies are now being developed to produce biofuel from algae, especially microalgae. This is known by various terms such as algae fuel, algae biofuel, or algae-based biofuel.

Summary Article: algae from The Columbia Encyclopedia

(āl'jē) [plural of Lat. alga=seaweed], a large and diverse group of primarily aquatic plantlike organisms. These organisms were previously classified as a primitive subkingdom of the plant kingdom, the thallophytes (plants that lack true roots, stems, leaves, and flowers). More recently, most algae have been classified in the kingdom Protista or in another major group called the eukarya (or eukaryotes), which includes animals and higher plants. The algae have chlorophyll and can manufacture their own food through the process of photosynthesis. They are distributed worldwide in the sea, in freshwater, and in moist situations on land. Nearly all seaweeds are marine algae. Algae that thrive in polluted water, some of which are toxic, can overmultiply, resulting in an algal bloom and seriously unbalancing their ecosystem.

Types of Algae

The simplest algae are single cells (e.g., the diatoms); the more complex forms consist of many cells grouped in a spherical colony (e.g., Volvox), in a ribbonlike filament (e.g., Spirogyra), or in a branching thallus form (e.g., Fucus). The cells of the colonies are generally similar, but some are differentiated for reproduction and for other functions. Kelps, the largest algae, may attain a length of more than 200 ft (61 m). Euglena and similar genera are free-swimming one-celled forms that contain chlorophyll but that are also able, under certain conditions, to ingest food in an animal-like manner. The green algae include most of the freshwater forms. The pond scum, a green slime found in stagnant water, is a green alga, as is the green film found on the bark of trees. The more complex brown algae and red algae are chiefly saltwater forms; the green color of the chlorophyll is masked by the presence of other pigments. Blue-green algae have been grouped with other prokaryotes in the kingdom Monera and renamed cyanobacteria.

See the separate phyla (divisions) Chlorophyta, Euglenophyta, Dinoflagellata, Chrysophyta, Phaeophyta, Rhodophyta.

Uses of Algae

Algae, the major food of fish (and thus indirectly of many other animals), are a keystone in the aquatic food chain of life; they are the primary producers of the food that provides the energy to power the whole system. They are also important to aquatic life in their capacity to supply oxygen through photosynthesis. Seaweeds, e.g., the kelps (kombu) and the red algae Porphyra (nori), have long been used as a source of food, especially in Asia. Both cultivated and naturally growing seaweeds have been
harvested in the Pacific Basin for hundreds of years. Kelp are also much used as fertilizer, and kelp ash is used industrially for its potassium and sodium salts. Other useful algae products are agar and carrageen, which is used as a stabilizer in foods, cosmetics, and paints.

Bibliography

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