

ENVIRONMENTAL STUDIES

LECTURE-16

Food Chain

The sun is the ultimate source of energy on earth. It provides the energy required for all plant life. The plants utilise this energy for the process of photosynthesis, which is used to synthesise their food.

During this biological process, light energy is converted into chemical energy and is passed on through successive trophic levels. The flow of energy from a producer, to a consumer and eventually, to an apex predator or a detritivore is called the food chain.

Dead and decaying matter, along with organic debris, is broken down into its constituents by scavengers. The reducers then absorb these constituents. After gaining the energy, the reducers liberate molecules to the environment, which can be utilised again by the producers.

A food chain refers to the order of events in an ecosystem, where one living organism eats another organism, and later that organism is consumed by another larger organism. The flow of nutrients and energy from one organism to another at different trophic levels forms a food chain.

The two types of food chains. They are:

Detritus food chain

The detritus food chain begins with dead organic material. The food energy passes into decomposers and detritivores, which are further eaten by smaller organisms like carnivores. Carnivores, like maggots, become a meal for bigger carnivores like frogs, snakes and so on. Primary consumers like fungi, bacteria, protozoans, and so on are detritivores that feed on detritus. The detritus food chain includes different species of organisms and plants like algae, bacteria, fungi, protozoa, mites, insects, worms and so on.

Grazing food chain

The food chain that starts with green plants, passes through herbivores and then to carnivores. In a grazing food chain, energy in the lowest trophic level is acquired from photosynthesis.

Parasitic food chain

Parasitic food chain is a type of food chain that starts from herbivore, but the food energy transfers from larger organisms to smaller organisms, without killing in case of a predator.

Food chain	Food web
A linear pathway showing the flow of energy	A multitude of networks showing the flow of energy
An organism of higher-level trophic feeds on a specific organism of lower trophic level	An organism of a higher trophic level has access to more members of a lower trophic level.
Has no effect on the adaptability and competitiveness of organisms.	Has a role in improving the adaptability and competitiveness of an organism.

The difference between food chain and food web

What is Food Web?

There are unique interactions and relationships which are involved in the transportation of energy. The energy, once produced and captured, is distributed throughout the various living organisms. This transfer of energy is termed as the food web.