# Producers Encyclopedia Article

## Producers

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# Producers

Producers, sometimes called primary producers, are organisms that make their own food. Because these organisms change relatively simple inorganic nutrients into more complex, energy-rich, organic forms, they are autotrophs. Thus, they do not need any environmental source of organic material. Producers include green plants, algae and some bacteria.

Producers can use either sunlight or chemicals from inorganic chemical reactions as their source of energy. The process of using sunlight to produce food is called photosynthesis. The vast majority of producers, including plants, algae and some bacteria, produce their food using photosynthesis. Producers that use chemicals from inorganic chemical reactions as their source of energy are using the process known as chemosynthesis. Chemosynthesis generally occurs where there is no sunlight for photosynthesis, and bacteria are the only organisms that carry out this process. For example, in the deep ocean at hydrothermal vents, chemosynthetic bacteria are the base of the food web. All other organisms in this ecosystem rely on the chemosynthetic bacteria for food.

Producers hold an extremely important position in food webs in every ecosystem on Earth. In fact, without producers, an ecosystem would not be self-sustaining; it would not be able to exist on its own without the introduction of materials from another ecosystem. Producers are at the base of all food webs. They produce the organic nutrients upon which all other organisms in the ecosystem depend. Without these producers, there would be no way of capturing energy from the sun or chemical reactions, and therefore no new energy or organic material would enter the food web. When producers are consumed by herbivores or omnivores, organic material from the producers, as well as the stored energy they contain, is passed on to all other levels of the food web.