

# Fermentation Encyclopedia Article

## Fermentation

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# Fermentation

Fermentation is a natural metabolic process that produces energy by breaking down carbohydrates (such as sugars) in the absence of oxygen. It occurs in many micro-organisms (such as yeasts), and the end product can be either ethyl alcohol (ethanol) or lactic acid; energy is typically given off in the form of heat. The chemical reaction of this process was first described in 1810 by the French chemist Joseph Louis Gay-Lussac. Fermentation is important to the production of many foods and beverages, the most popular of which are bread, butter, cheese, beer, and wine.

## Figure 1

*Grapes*

Fermented foods first occurred naturally, when stored or forgotten caches were found to be altered but edible. In ancient times, wheat and barley were domesticated, farmed, stored, and used to make breads and porridges—some of which fermented and formed brews. Since that time, the process of fermentation has been used worldwide. Industrial means provide huge quantities of fermented foods, as well as alcohol, which is obtained by DISTILLATION from fermented juices of fruits, grains, vegetables, and other plants.

## See Also

Beers and Brews)