

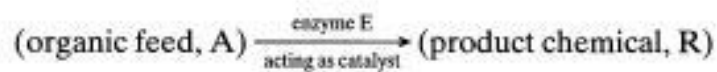
# Enzyme Fermentation

The term "fermentation" can be used in its original strict meaning (to produce alcohol from sugar-nothing else) or it can be used more or less broadly. We will use the modern broad definition:

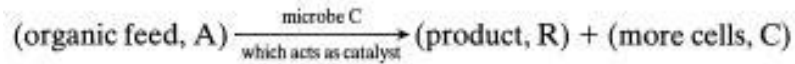
*From the simplest to the most complex, biological processes may be classed as fermentations, elementary physiological processes, and the action of living entities. Further, fermentations can be divided into two broad groups: those promoted and catalyzed by microorganisms or microbes (yeasts, bacteria, algae, molds, protozoa) and those promoted by enzymes (chemicals produced by microorganisms). In general, fermentations are reactions wherein a raw organic feed is converted into product by the action of microbes or by the action of enzymes.*

This whole classification is shown in Fig. 27.1.

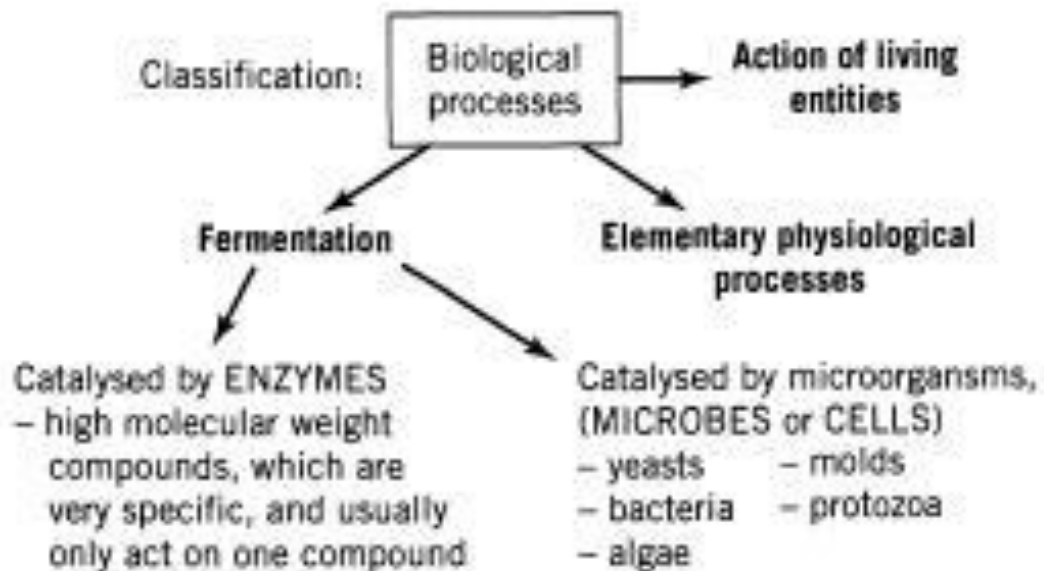
Enzyme fermentations can be represented by



Microbial fermentations can be represented by



The key distinction between these two types of fermentation is that in enzyme fermentation the catalytic agent, the enzyme, does not reproduce itself, but acts as an ordinary chemical, while in microbial fermentation the catalytic agent, the cell or microbe, reproduces itself. Within the cells it is the enzyme which catalyses the reaction,



**Figure 27.1** Classification of biological processes.

just as in enzyme fermentation; however, in reproducing itself the cell manufactures its own enzyme. In this chapter we introduce enzyme fermentations, in the following chapters we take up microbial fermentations.

Source:

<http://chemichal-engineering.blogspot.in/2010/04/enzyme-fermentation.html>