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Fundamental uses of enzymes in industries

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Enzymes are produced naturally and can even be retrieved from cells through various methods. The exploitation of enzymes started in the 1800s but their application in the industry did not start till the 1960s. Earlier, whole cells were used instead of enzymes. Later, enzymes were extracted for use that were found to be more convenient and economical than whole cells. Enzymes are utilised currenty in food, farming, drug industries, etc. to control and accelerate responses to rapidly and precisely get an important result. Enzymes are pivotal in making cheddar, fermenting beer and bread, extracting organic juice, tanning leather, etc. In addition, it may be surprising to know that various enzymes are involved in non-food industries as well, for instance, in detergents production to remove oils, food (amylase), blood or milk (protease), and in the production of acrylamide from acrylonitrile by using the enzyme nitrile hydratase. Enzymes have numerous advantages over their chemical analogues; they are more explicit, and to a great extent exhibit high catalytic properties. Enzymes also possess reusable properties, which indicate that they can be used repeatedly and hence reduce the production cost and save energy. Furthermore, considering the harmful effect of chemicals, enzymes are completely biodegradable and do not cause any hazards to the environment. To conclude, the enzyme industries did not have a spectacular growth rate at the beginning of their establishment due to variegated reasons. But as understanding and the need to protect human health increased, people came up with new and better ideas with which the enzyme industry flourished. It is expected that the global enzyme market will grow at a rate of 7.1% by 2027. The reason behind this is the increasing demand for enzymes in many sectors, such as the food, pharmaceutical, beverage and non-food industries.

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