

by Adebayo Osesusi

Enzymes are biocatalysts produced by living organisms to increase the rate of a set of chemical reactions required for various life processes. They are responsible for the catalysis of all essential life processes such as DNA replication and transcription, protein synthesis, metabolism, and signal transduction. Their ability to perform very specific chemical transformations has made them increasingly useful in numerous industrial processes.

Microorganisms possess numerous abilities, producing an array of enzymes that have been studied and utilized over a long time now. Microorganisms are preferred as enzyme sources because of their short life span, high productivity rate, cost-effectiveness, and are free of harmful chemicals that are found in enzymes from plant and animal sources

Microbial enzymes are produced by fungi, bacteria and actinomycetes. Microorganisms of interest are subjected to varying genetic manipulations and hence provide the opportunities for strain improvement and further investigation. The increasing demand for eco-friendly biotechnological products has resulted in microbial enzymes being recognized as very efficient industrial tools, thus increasing the need to assess various microbial sources for enzyme production.

Pectinase enzymes comprise a group of enzymes that are involved in the degradation of pectin into monogalacturonic acid by opening glycosidic linkages. Pectins are the high molecular weight polysaccharides, primarily composed of galacturonic acid residues with a small number of rhamnose residues in the main chain and arabinose, galactose and xylose on its side chain. Pectin provides rigidity to plants and occurs in the middle lamella and primary cell wall of higher plants in the form of calcium pectate and magnesium pectate.

Pectinases from fungi possess appreciable thermal stability and activity over a range of pH 4 – 7 and may be suitable for various industrial applications that require the usage of elevated temperatures, extremes of pH and ionic concentrations. Hence the necessity to assess a range of unique habitats and study the indigenous flora with the better enzymatic ability. The

sludge from vegetable oil factories offers a suitable niche for various fungi due to the abundance of moisture and organic debris of plants and animals. There are also several parameters influencing enzyme production in submerged fermentation, usually, it consists of physical and chemical parameters.

*Adebayo Osesusi is our consultant on industrial biotechnology in MicroBiotics. To get in touch with him, kindly visit our [industrial biotechnology page](#).*

Facebook Comments

Share:

[Facebook](#)

[LinkedIn](#)

[WhatsApp](#)

[Twitter](#)