

Bioconversion of Starch Base Food Waste into Bioethanol

ABSTRACT

The global demand for fuel keeps increasing daily. The massive depletion of fossil fuels and their influence on the environment as pollution is a severe problem. Meanwhile, food waste disposal is also a complex problem in solid-waste management since one-third of every food consumed is discarded as waste. The standard waste management methods, including food waste incineration and landfilling, are considered hazardous to the environment. Food waste constituents are majorly starch-based and contain various biomolecules, including sugar, lipids, proteins, vitamins, cellulose, etc. These polysaccharides can be hydrolysed into monosaccharides such as glucose, which can then be fermented using microorganisms to produce ethanol through the fermenting of sugars derived from enzymatic hydrolysis treatment of food wastes. The human food system is rich in starch, which can be a potential resource for bioethanol production.