



Solid-state fermentation of cassava (*Manihot esculenta* Crantz): a review

Egoamaka O. Egbune^{1,2} · Theresa Ezedom³ · Osuwve C. Orororo³ · Olisemeke U. Egbune⁴ · Oghenetega J. Avwioroko⁵ · Eferhire Aganbi^{1,6} · Akpovwehwee A. Anigboro¹ · Nyerhovwo J. Tonukari^{1,2}

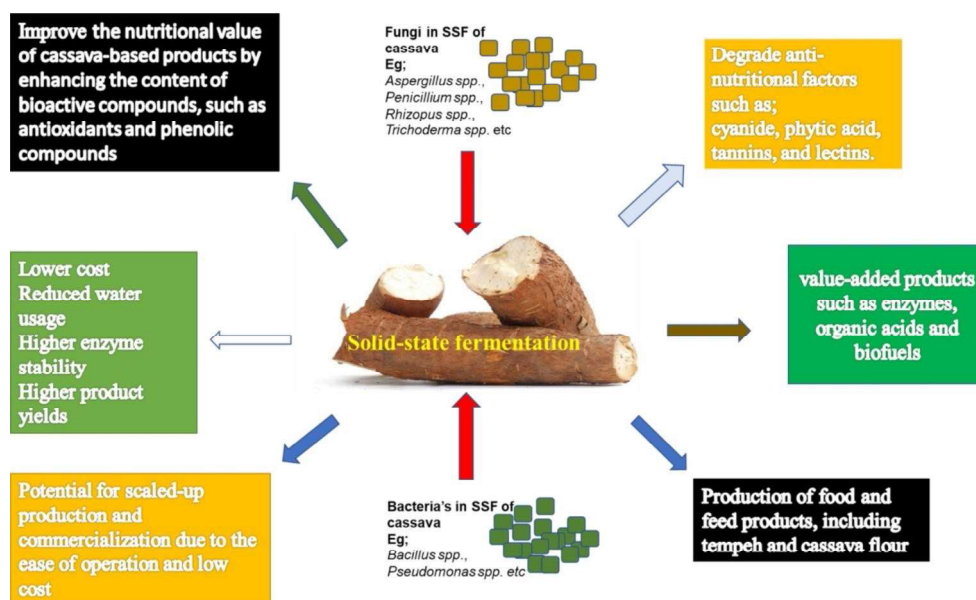
Received: 12 June 2023 / Accepted: 18 July 2023
© The Author(s), under exclusive licence to Springer Nature B.V. 2023

Abstract

Solid-state fermentation (SSF) is a promising technology for producing value-added products from cassava (*Manihot esculenta* Crantz). In this process, microorganisms are grown on cassava biomass without the presence of free-flowing liquid. Compared to other processing methods, SSF has several advantages, such as lower costs, reduced water usage, and higher product yields. By enhancing the content of bioactive compounds like antioxidants and phenolic compounds, SSF can also improve the nutritional value of cassava-based products. Various products, including enzymes, organic acids, and biofuels, have been produced using SSF of cassava. Additionally, SSF can help minimize waste generated during cassava processing by utilizing cassava waste as a substrate, which can reduce environmental pollution. The process has also been explored for the production of feed and food products such as tempeh and cassava flour. However, optimizing the process conditions, selecting suitable microbial strains, and developing cost-effective production processes are essential for the successful commercialization of SSF of cassava.

Keywords Cassava · Microorganisms · Solid-state fermentation · Cassava products · Cyanogenic glycosides

Graphical Abstract



Extended author information available on the last page of the article