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Optimization of raw starch digesting amylase (rsda) production medium for isolate dmf78 and determination of hydrolysis products from sago starch

Sheba Mae M. Duque^{1,2}, Mitchell Rey M. Toleco^{1,2}, Erlinda I. Dizon² and Dulce M. Flores¹ ¹University of the Philippines, Mindanao, Philippines ²University of the Philippines, Los Banos, Philippines

n an effort to lower the cost of RSDA production by isolate DMF78, optimization of production parameters was conducted using statistical tools. Plackett-Burman and Box-Behnken designs of experiment were employed. Seventeen factors were considered and proteose peptone, beef extract, and MRS salts were found to be positive significant effectors for amylase production. On the other hand, yeast extract, sodium dodecyl sulfate (SDS), and corn steep liquor were negative effectors. An optimized medium resulted to a 466.67% increase in amylase activity and 41.99% decrease in cost compared to the modified MRS medium with the elimination of yeast extract, trub, SDS, corn steep liquor (CSL). Partial purification of the enzyme using ammonium sulfate resulted to a 2.64-fold purification. A zymogram done revealed the presence of two clearing zones indicating two different amylases present. The identified hydrolysis products of the RSDA from isolate DMF78 using sago starch as substrate were found to be glucose, maltose, maltotriose, and possibly isomaltose.

Biography

Sheba Mae M. Duque is an M.S Food Science (Minor in Biochemistry) student from the University of the Philippines Los Baños. She is a budding scientist who found love in doing research in the fields of fermentation and enzyme technology.

shba_duque@yahoo.com