

Effect of enzyme concentrations on total reducing sugar from leftover croissants and doughnuts via enzymatic hydrolysis

ABSTRACT

Croissants and doughnuts are among the largest of pastry wastes, which if not properly disposed of might affect the environment due to its biological degradation. Due to high amounts of carbohydrates and sugars in its formulation, croissants and doughnuts are suitable sources for recovery of total reducing sugar via enzymatic hydrolysis. In this study, the effect of different levels (0.1-1%) of enzyme concentrations (w/w%) were investigated on the leftover of croissants and doughnuts. It was found that as enzyme concentration increased, the yield of total reducing sugar also increased. The enzyme concentration of 1% recorded the highest total reducing sugar (4.71 ± 0.54 g/L) for doughnuts, while the enzyme concentration of 0.7% recovered the highest total sugar yield of 5.30 ± 0.03 g/L.

Keyword: Leftover; Croissants; Doughnuts; Enzymatic hydrolysis; Sugar recovery