

PRODUCTION OF ANIMAL FEED SUPPLEMENT FROM FERMENTATIVE PROCESS USING SHRIMP WASTE AND MOLASSES AS SUBSTRATES

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Single cell protein production by yeast *Candida utilis* was studied using shrimp waste hydrolysate (SWH) and molasses as substrates for growth. The batch fermentation experiments were carried out using a bioreactor (BioFlo2000, New Brunswick Scientific) with a working volume of 1 L at 30°C, aeration rate 1 vvm and stirred speed 150 rpm for 48 h of cultivation. The yeast was cultivated (3 replicates) in medium containing: 2% of molasses (w/v), 50% of SHW (v/v), 0.01% of anti-foam (v/v) and 50% of distilled water (v/v). *C. utilis* showed the highest biomass production (9.90 g/L) at 48 h of cultivation consuming around 75% of the initial sugar concentration. Values of specific growth rate coefficient (μ) and biomass yield ($Y_{x/s}$) were 0.20 h⁻¹ and 0.8 g/g, respectively. Under investigated conditions pH was constant during the growth. The results suggest that *C. utilis* has potential in the production of invertase enzyme for breaking sucrose molecules of the molasses in reducing sugar. Fermentative processes using agro-industry waste could allow production of animal feed supplement low cost, improving also nutritional quality.

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