

Selection of *Pichia kudriavzevii* Strain for the Production of Single-Cell Protein from Cassava Processing Waste

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Abstract : A total of 115 yeast strains isolated from local cassava processing wastes were measured for crude protein content. Among these strains, the strain MSY-2 possessed the highest protein concentration (>3.5 mg protein/mL). By using molecular identification tools, it was identified to be a strain of *Pichia kudriavzevii* based on similarity of D1/D2 domain of 26S rDNA region. In this study, to optimize the protein production by MSY-2 strain, Response Surface Methodology (RSM) was applied. The tested parameters were the carbon content, nitrogen content, and incubation time. Here, the value of regression coefficient (R^2) = 0.7194 could be explained by the model, which is high to support the significance of the model. Under the optimal condition, the protein content was produced up to 3.77 g per L of the culture and MSY-2 strain contain 66.8 g protein per 100 g of cell dry weight. These results revealed the plausibility of applying the novel strain of yeast in single-cell protein production.

Keywords : single cell protein, response surface methodology, yeast, cassava processing waste

Conference Title : ICBAE 2015 : International Conference on Biotechnology and Agricultural Engineering

Conference Location : Tokyo, Japan

Conference Dates : May 28-29, 2015