Document details

‹ Back to results | 1 of 1

CSV export Download Print E-mail Save to PDF Save to list More...

International Food Research Journal
Volume 24, Issue 6, December 2017, Pages 2632-2639

Optimization of protein enrichment of fruit peels by mixed culture of Phanerochaete chrysoporium and Schizophyllum commune as animal feed supplement (Article)

Olorunnisola, K.S., Jamal, P., Alam, M.Z.

Bioenvironmental Engineering Research Centre (BERC), Biotechnology Engineering Department, Faculty of Engineering, International Islamic University Malaysia, P. O. Box 10, Kuala Lumpur, Malaysia

Abstract

View references (32)

Optimization of the process conditions of mixed culture of bacidiomycete fungi for improved protein enrichment of fruit peels is necessary to ease replication and scale-up processes. Sixday fermentation period and temperature of 32°C were optimum for elevated protein synthesis and enzyme activities (78.99 units/ml for a-amylase and 0.36 units/ml for cellulase). A highly significant quadratic model obtained from Face Centered Central Composite Design (FCCCD) described the process optimization. Linear effect of pH and inoculum size were significant ($p < 0.05$) while pH and moisture content (MC) interact significantly. 70.2% MC, pH 5.4 and 6.1% inoculum were the optimum level for a maximum crude protein synthesis of 198.77 mg/g. The crude protein contained essential and non-essential amino acid at a comparable level with other bioprocessed materials that are currently used as animal feed supplement.

Author keywords

Amino acid | Bacidiomycete | Fermentation | Optimization | Process conditions

ISSN: 19854668
Source Type: Journal
Original language: English

Document Type: Article
Publisher: Universiti Putra Malaysia

References (32)

View in search results format ›

All CSV export Print E-mail Save to PDF Create bibliography

1 Adney, B., Baker, J.
Measurement of cellulase activities
(1996) *National Renewable Energy Laboratory*, 6, pp. 1-8. Cited 36 times.