PRELIMINARY STUDY OF THE NUTRITIONAL ASPECTS OF FERMENTED COCONUT MEAL

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Preliminary Study of the Nutritional Aspect of Fermented Coconut Meal

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ABSTRACT

Coconut residue, an agro-industrial by-product has limited use in fish feed due to its high fibre and low protein contents. In this study, the coconut meal was fermented by "tempe" (fermented soybean) which contains *Rhizoporus oligosporus*. The objective of this study is to investigate the potential of fermentation in improving the nutritional value of the coconut meal and to determine the optimum temperature for coconut meal fermentation. Fermentation was conducted at three temperatures which were 28 ºC, 32 ºC and 37ºC. Packets that contain coconut meal were inoculated with "tempe" to induce fermentation. The ratio of inoculation of "tempe" to coconut meal is 1:10. The samples were collected everyday for proximate analysis until black spores were formed on the substrates. Results revealed that the optimum temperature for the fermenting coconut meal, in which its nutritional content is improved, is at 37 ºC. The crude protein and ash content of coconut meal were significantly increased by fermentation from 5.05 % and 1.56 %, to 17.36 % and 2.22 % respectively. In contrast, the crude lipid and crude fibre content of the coconut meal were reduced to 30.12 % and 7.83 % from 45.89 % and 14.07 % respectively. Fermentation of coconut meal by "tempe" had improved the nutritional content of the coconut meal. Therefore, fermented coconut meal may be an ideal low cost supplement to the fish feed.