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Potentiality of selected seaweed for the production of nutritious fish feed using solid state fermentation (Article)

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Abstract

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The rising cost of imported fish feed ingredients have called for an intensive research towards the production of high nutritional fish feed using cheap and natural nutrient sources. In this study, seaweed and palm kernel cake were used as alternative protein ingredients in fish feed and the enrichment of its nutritional value was achieved by using solid state fermentation. Following the fermentation process, the nutrient compositions of the three types of seaweeds: *Caulerpa lentillifera* (Chlorophyta), *Euclidean cottonii* (Rhodophyta) and *Sargassum fulvellum* (Phaeophyta) were compared. Solid state fermentation was conducted using fungus (*Phanerochaete chrysosporium*) and yeast (*Candida utilis*) to improve the bioprotein production. The comparison between the nutrient compositions before and after the fermentation showed that fermentation process can increase the nutrient value of the bioprotein. Results of the analysis showed that *Sargassum fulvellum* is the best type of seaweed with the highest total protein, 52.28 mg/g, high percentage improvement of ash after fermentation, 61.31% and contains high amount of carbohydrate, 445.89 mg/g which are very important in fish diet. Hence, *Sargassum fulvellum* can be used as an alternative protein ingredient in the fish feed since it was rich in nutritional compounds compared to the other types of seaweed tested. © School of Engineering, Taylor's University.

Author keywords

[Candida utilis](#) [Fish feed](#) [Phanerochaete chrysosporium](#) [Seaweed](#) [Solid state fermentation](#)

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