Potentiality of Bioconverted Leafy Vegetable Waste as Aquaculture Feed Supplement

ABSTRACT

Purple non-sulfur bacteria (PNSB) are well known for their ability in transforming organic substrates for their own source of nutrients. The nutritional values of leafy vegetable waste could be improved through bioconversion with PNSB. This study was conducted to access nutritional status of leafy vegetable waste bio-converted product and efficacy of derived product as aquaculture feed supplement. Proximate compositions of bio-converted leafy vegetable wastes were improved after 6 days with 30% inoculums of Afifella marina strain ME (KC205142). The crude proteins (%) and ashes (%) in derived product was increased to 51.7% and 19.6% respectively. On the other hand, the fiber (%) in the bio-converted derived product was decreased by 21%. During feeding trial in Tilapia (Oreochromis niloticus), no significant differences were observed in the feed intake (g/fish/day), but significant differences were observed in the value of feed conversion ratio and weight gain (%) among the used diets. However, lower ingestion rate (g/d/fish) and better feed conversion ratio were obtained while fishes were fed with diet composed of commercial feed mixed with 5% of the bio-converted product. The higher ingestion rate (g/d/fish) and lower feed conversion ratio were observed with only commercial diet. There observed no significant differences in the ingestion rate (g/d/fish) and FCR values among the diet composed of commercial feed with 5% (D5) and 10% (D10) of the bio-converted product. The derived bio-converted product can be a promising approach to open new market segment in aquafeed industry.