

## Economics of Fish-Plantain Integrated Farm Enterprise in Southern Nigeria

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**Abstract :** Attempt to improve the income of the rural population is a welcome development in Nigeria. Integrated fish-crop farming has been suggested as a means of raising farm income, reducing wastage and mitigating the risk component in production through the complementarity gain. A feeding trial was carried out to investigate the replacement of maize with fermented unripe plantain (*Musa paradisiaca*) peel meal in the diet of Nile tilapia, *Oreochromis niloticus*. The economics of the integrated enterprise was assessed using budgetary analysis techniques. The analysis incorporated the material and labour costs as well as the returns from sale of matured fish and plantain. A total of 60 fingerlings of Nile tilapia ( $1.70 \pm 0.1$  g) were stocked at 10 per plastic tank. Two iso-nitrogenous diets containing 35% crude protein in which maize meal was replaced by fermented unripe plantain peel meal at 0% (FUP0/Control diet), and 100% (FUP100) were formulated and prepared. The fingerlings were fed at 5% body weight per day for 56 days. Lowest feed conversion ratio of 1.39 in fish fed diet FUP100 was not significantly different ( $P > 0.05$ ) from the highest 1.42 of fish fed the Control diet. The highest percentage profit of 88.85% in fish fed diet FUP100 was significantly higher than 66.68% in fish fed diet FUP0, while the profit index of 1.89 in fish fed diet FUP100 was significantly different from 1.67 in fish fed diet FUP0. Therefore, fermented unripe plantain peel meal can completely replace maize in the diet of *O. niloticus* fingerlings. Profitability assessment shows that the net income from the integration was ₦ 463,000 per hectare and the integration resulted to an increase of ₦ 87,750.00 representing a 12.2% increase than in separate production.

**Keywords :** fish-crop, income, Nile tilapia, waste management

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