

**GROWTH RESPONSE, NUTRIENT UTILIZATION AND SURVIVAL OF NILE TILAPIA (*Oreochromis niloticus*) FED VARYING LEVELS OF CHAYA LEAF (*Cnidoscolus Chayamansa*) MEAL**

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**ABSTRACT**

A feeding trial was designed and carried out to assess the growth response, nutrient utilization and survival of *Oreochromis niloticus* fed graded levels of Chaya leaf meal based diets. Two hundred and seventy (270) fingerlings of *O. niloticus* of average weight of  $3.75 \pm 0.14$ g were fed with six iso-nitrogenous diets containing 35% crude protein. The Chaya leaf meal (CLM) protein replaced soybean meal in the diets in the following proportions: Diet 1 (0% CLM), Diet II (20%CLM), Diet III (40% CLM), Diet IV (60% CLM), Diet V (80% CLM) and Diet VI (100%CLM). At the end of the trial, the mean weight gain of fish was highest in diet 1 with a value of 5.07g and lowest in diet VI with a value of 3.29g. There was no significant difference ( $P>0.05$ ) in the mean weight gain (MWG) of fish fed diet 1 and fish fed diet II. Feed conversion ratio (FCR) was best in fish fed diet II (2.44) but not significantly different ( $P>0.05$ ) from fish fed diet I (2.50). The highest specific growth rate (SGR) of 0.66%/day in fish fed diet I was significantly higher ( $P<0.05$ ) than others except fish fed diet II with a value of 0.61%/day. The highest protein efficiency ratio (PER) was obtained for fish fed diet I with a value 0.98 while the lowest value was obtained for fish in diet VI with a value of 0.74. There was no significant difference ( $P>0.05$ ) in MWG, FCR, SGR and PER between fish fed diet I and II. The highest net protein utilization (NPU) recorded was also significantly higher ( $P<0.05$ ) in diet I which was 51.40% while the lowest value of 13.13% was recorded in diet VI which was 13.13%. Percentage survival was highest (100%) in fish fed diets V and VI, while fish fed diets I and II recorded 90% each. It was however observed that chaya leaf meal protein can favourably replace 20% of soybean meal protein in the diets of Nile tilapia, *O. niloticus*.

**Keywords:** Chaya leaf meal, Growth response, Nutrient utilization, Survival.