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**EFFECT OF IMPORTED FEED AND LOCAL FEED ON GROWTH PERFORMANCE OF TILAPIA (*Oreochromis niloticus*)**

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**ABSTRACT**

A number of 60 Juveniles of *Oreochromis niloticus* were stocked and divided into two plastic ponds of 0.90m by 0.60 in dimension respectively with initial total weight of 120g.The juveniles were two month and half old as the time of collection and they were fed with 4mm of the feeds. Each pond contains thirty *Oreochromis niloticus* which were fed with local feeds, and coppens feed. After weighing the fishes in the two ponds, there was significant difference in the average weight and length, in which the pond that was fed with coppens has the highest average weight and length of 140g and 15.62cm respectively. The quality of the water was checked by measuring pH, dissolved oxygen and temperature of the water using water aquaculture kit. Model: FF-1A.CAT No. 2430-0. The mortality rate was 0%, while the survivability rate was 100%.

**INTRODUCTION**

Tilapia has historically been of major importance in fisheries (small scale -commercial or subsistence fishing) in Africa and the Levant (Archaic Eastern Mediterranean Countries), are of increasing importance in aquaculture and commercial fishing around world.

Indeed, adaptations that have benefited the survival and reproduction of Tilapia-fast growing, large size and a reputable ability to become sexually mature at a young age and small size combined with a desirable taste, also have Tilapia to become one of the most important fish in aquaculture (FAO, 1992)

However, in Nigeria where Tilapia have been made deliberately or accidentally introduced, they have frequently become problematic cultural species. Therefore efforts have been made to know the kind of feed that Tilapia (*Oreochromis niloticus*) will be fed on either locally made feed or imported feed which will affect their growth rate positively and to check their mortality rate.Presently, there are two types of feed in culture system and they are supplementary feed and complete feed.The cost of local feed with imported feed is taken a high percentage of the profit, hence the increasing use of local feed as supplementary feed which involves the use of a compounded feed or single ingredient with crude protein content less than 20% minerals and vitamins are not usually included in such feed. Any culture system that depends on supplementary feeding must be properly fertilized to provide enough natural food for the fish. Tropical examples of supplementary feed are rice bran, brewery waste; ground maize, broken rice, groundnut cakes, wheat, silk worm pupae, bread crumbs, animal remains. They are mainly used in pond and reservoirs where water is stagnant and natural food is available.The complete feed consist of crude protein higher than 20% with vitamins and minerals in their required levels such as feed consist of carbohydrates, fats and oils at level that can take care of all the energy needs of the fish and this allow the protein component to be solely utilized for growth(Ovie and Adeniyi, 1990)

This study aimed to evaluate the effect of local feed and imported feed on the growth performance of *Oreochromis niloticus* and make recommendation based on the findings.

**MATERIALS AND METHODS**

The Project was carried out in Fisheries Department, School of Agriculture, Lagos State Polytechnic, Ikorodu, Lagos State. The materials used for the Project are : Water tank, Basin / container, Coppens feed (Imported feed) of 7.5kg, Local feed of 7.5kg, pH scale, Weighing scale (Dana scale), Scoop net, Sixty( 60) juveniles of *Oreochromis niloticus* of average weight of 120grams each were stocked into three plastic ponds which each of them has 0.90m by 0.60m dimension on a flat surface land with plantain trees and shrubs grown provided the needed shade . The plastic pond consist of a wooden frame work of wire mesh fastened or fixed on the pond as covering to avoid any hazard to the project. It also has an inlet and outlet drainage system with a control pipe.

The imported feed used was COPPENS with the following nutritional component  
Crude Protein 45%, Crude Fat 12%, Ash 9.5%,Phosphorus 1.2%,Calcium 1.8%Lysine 3%,Methionine 1.0%,Preservatives E280, Antibiotics E321,Vitamin A 1500IU/kg, Vitamin D<sub>2</sub> 2000IU/kg, Vitamin E 200mg/kg, Vitamin C 150mg/kg.

**LOCAL FEED FORMULATION**

Nutrient	Quantity
Fish meal	15%
Maize	10%
Soyabean meal	42%
Full fat soya	42%
G.N.C	35%
Wheat offal	15%.

The fishes were fed in the morning and evening at exactly 7:00am and 5:30pm respectively. They feed comfortably when the water is not too hot and the fishes were fed at according to their body biomass.

## RESULTS AND DISCUSSION

Average weight gained by fish sample was done by selecting randomly ten (10) Juveniles of *Oreochromis niloticus* in each pond local feed and Coppens feed. The length gained of the fish fed with coppens feed has average length of 15.62cm and fish fed with local feeds has average length of 14.12cm while the average weight of fish fed with coppens feed has 70g and fish fed with local feed has average weight of 42g which shows that there is significance difference in the growth performance of fish fed with coppens feed.

This observation was important based on the fact that water quality attributes are prime factors that influence all biological production, fish survival and adequate growth performance (Adigun, 2005)

The vitamins in the coppens feed increase or accelerate the growth of *Oreochromis niloticus* compared to the local feeds.

## CONCLUSION

Based on the result obtained in this study, it is well known in that pond two (coppens) was the best alternative for the rearing of *Oreochromis niloticus*. The coppens feed resulted length in the best growth/total length increases.

Again on the basis of easy availability, comatibility, affordability, and less competition of the feeds. Pond two(coppens feed) to be superior to pond one(pond one) and pond three (mixture of coppens and local feeds).

It can be concluded from this study that the growth rate of fish improved and survival rate was 100%

Table 1: Result of Growth Performance of *O. niloticus* in Pond 1 fed with (local feed)

Sampled period (fortnightly)	No of Sampled Fishes	Initial weight (gramms)	Total weight Gained(gramms)	Average weight Gained(gramms)
2 <sup>nd</sup>	10	20	270	27
4 <sup>th</sup>	10	20	300	30
6 <sup>th</sup>	10	20	310	31
8 <sup>th</sup>	10	20	350	35
10 <sup>th</sup>	10	20	400	40
12 <sup>th</sup>	10	20	420	42

Weight gained = final weight – initial weight

$$= 42 - 20$$

$$= 22g$$

Standard deviation  $S = (X - \bar{X})^2 / (n - 1)$

$$S = (72.67) / (6-1)$$

$$S = 72.67 / (5)$$

$$S = \pm 3.812g$$

Table 2: Result of Growth Performance of *O. niloticus* in Pond 2 fed with imported (Coppens) feed.

Sampled period (fortnightly)	No of Sampled Fishes	Initial weight (gramms)	Total weight Gained(gramms)	Average weight Gained(gramms)
2 <sup>nd</sup>	10	20	350	35
4 <sup>th</sup>	10	20	400	40
6 <sup>th</sup>	10	20	470	47
8 <sup>th</sup>	10	20	500	50
10 <sup>th</sup>	10	20	520	52
12 <sup>th</sup>	10	20	700	70

Weight gained = final weight – initial weight

$$= 70 - 20 = 50g$$

Standard deviation  $S = (X - \bar{X})^2 / (n - 1)$

$$S = 466.67 / (6-1)$$

$$S = \pm 9.66g$$

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