Feasibility tests of a fish farm integrating the breeding of poultry and a fly

Abstract

A locally improvised poultry house built with pure local material called bamboo and covered with dried treated grasses (roof) known as sana which housed 300 laying birds was built near 20m X 20m earthen fish pond with an underground spring water as source of intake with a flow through system and stocked with an improved catfish clariasgeripinus juveniles 2000 in number. The floor of the poultry house was cemented to prevent leakages of water and permanently coveted with thick nylon white rubber and layer were placed at high level above the floor on top of bamboo tree having gaps in between them. The usage of these gaps created was to allow layers (chicken) dropping directly on the rubber which eventually served as breeding places for maggot. The maggot was collected washed thoroughly and processed to serve as feed to the fishes. The processed maggot reduces about 40% of total cost of feed in raising the fishes. The birds produced 70piecers of eggs per day 7½ crates and a crate is sold for N2,700 per crate. The fishes were harvested after six (6) months of stocking with a total piece of 1,680 with an average of 800g (1344kg) and is sold at N1500 per kg. The revenue realized took care of both capital and recurrent cost with a working force of three (3) people. The experiment contribute significantly ($P<0.05$) in reducing the level of poverty and also contribute to food security, transformation agenda of Federal government of Nigeria.

KEYWORDS: Maggot, bamboo, Clarias geripinus, Juvenile and treated grasses

1.0 Introduction

Poultry is the foremost developing segment of theAgricultural sector in Nigeria, Africa and indeed globally. The increasein poultry production has enhanced the per capitaavailability of eggs and per kilogram of poultry meat perannum (Ajadi et al 2019).

In Nigeria, the average daily consumption of 54g protein with 6.5g from animal source falls belowthe recommended daily protein of 86g and 8.4g of protein from animal source (Abu, et.al., 2008) the reason being the exorbitant cost of fish, chicken and its products owing to high cost of feed which accounts for 60% - 80% total cost of production (Abu, 2008).

Theintegrated poultry-fish based farming provides enormousopportunities for improvision of some of the necessary inputs especially feeds so that cost is saved and profit is improved as supplementary income for men and womenempowerment and livelihood security to rural families.

The farming system also offersopportunities to these resource-poor families at meagre financial investments and addresses the issues ofwomen empowerment and livelihood security at thegrass root level. To encourage poultry entrepreneurshipamong women in rural households
so asto support backyard or intensive broiler production andhatchery/small poultry feed mills in the rural areas and villages.

The basic reasons behind poor growth of poultryproduction in most of our villages and rural areas is the accessibility to basic poultry needs like good feedmills, feed ingredients and vetenary clinics and most importantly movement of youths from rural area to cities. (Lawal et, al,.2013)

This type of system will bring a kind of recycling in Agriculture between fishery and poultry will create jobs for the rural peoplewith minimum capital requirement to take off there by reducing poverty and also contribute to food security, transformation agenda of Federal government of Nigeria.

1.1 Justification

i-Poultry feaces is produced in large quantity in every poultry farm and this can cause nuisance
ii-Majority of the rural people are jobless
iii-one of the major inputes in poultry production is land, which is readily available in the rural area

1.2 Objective of the study

i-Build both the poultry and fish pond on each other
ii-Feed the fishes with poultry dropping

2 Material and Methods

Site of experiment: The experiment was carried out in the Agricultural garden if the department of Agricultural Technology

Construction: A locally improvised poultry house built with pure local material called bamboo and covered with dried treated grasses (roof) known as sana which housed 100 laying birds was built near 20m X 20m earthen fish pond with an underground spring water as source of intake with a flow through system and stocked with an improved catfish clariasgeripinus juveniles 2000 in number. The floor of the poultry house was cemented to prevent leakages of water and permanently coveted with thick nylon white rubber and layer were placed at high level above the floor on top of bamboo tree having gaps in between them. The usage of these gaps created was to allow layers (chicken) dropping directly on the rubber which eventually served as breeding places for maggot.

Sources o the juvenile : The juvenile was purchased from Ministry of Agriculture, fisheries section along yidi road in Ilorin.

Sources of the layers : The point of layer was purchased from, Affcom farm Kulendejumction , sango in Ilorin, the point of lay was allowed to start laying properly.

Sources of feed ingredients : The few feed ingredients that was used was purchased from Gbemisola feedmill house, Offa garage, Ilorin

Egg collection : egg were collected everyday into crates directly around 4pm, no sorting was done and the eggs was sold the way it is picked.

Statistics analysis : Data like feed intake, number of eggs collected, equivalent amount of money for the eggs collected, all these was subjected to complete randomized design.

3 Results and Discussion

Every three hundred laying (200) birds will be fed by a bag of feed which is 25kg but the 300 birds that was used in the experiment, 1½ a bag will be fed to them on a daily basis, the table 1 below shows the amount of feed consumed when the maggot is supplemented and this accounts for about 40% reduction of the feed they were supposed to consumed a day and this has drastically reduced the amount of money for keeping the laying birds while the production rate is well above 65% or 70% in some situation, The fishes were harvested after six (6) months of stocking with a total piece of 1,680 with an average of 500g (1344kg) and is sold at N1500 per kg. The revenue realized took care of both capital and recurrent cost with a working force of three (3) people.

Table 1 : Performance characteristics of poultry and Fish combined production

Months	1	2	3	4	5	6
Feed intake	7.5	7.9	7.5	7.0	7.0	7.1
Egg prod	2130	2100	2070	2130	2190	2130
No of crates	2.3	2.3	2.3	2.3	2.4	2.3
Equiv. amt of money (N)	106,500	105,500	103,500	106,500	1680	106,500
SEM	0.1	0.4	0.1	0.1	0.2	0.1

4 Conclusion and Recommendation

It is concluded that the cost of feed has been reduced by 40% and egg production rate is about 70%. The sales of fishes is another source of income for sustainability. It is recommended that this system of farming could be adopted even in large scale production. The maggot could also be used in poultry feed production because it is a good source of methionine.

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