

ASSESSMENT OF FEEDS AND FEEDING TECHNIQUES ADOPTION IN IJEBU ODE ZONE OF OGUN STATE AGRICULTURAL DEVELOPMENT PROGRAMME, NIGERIA

Olaoye, O.J.¹; I. A. Akintayo²; M.A. Adekoya³ and O.A. Komolafe⁴
Agricultural Media Resources and Extension Centre ¹
University of Agriculture, PMB 2240, Abeokuta, Ogun State, Nigeria
Nigerian Institute for Oceanography and Marine Research²
Victoria Inland, Lagos State, Nigeria
habaiola@yahoo.com
Department of Plant Breeding and Seed Technology³
University of Agriculture, PMB 2240, Abeokuta, Ogun State, Nigeria
Munawarm11@yahoo.com
Department of Aquaculture and Fisheries Management ⁴
University of Agriculture, PMB 2240, Abeokuta, Ogun State, Nigeria

Abstract

The study was conducted to assess the feeds and feeding techniques adopted in fish farming in the six extension blocks of Ijebu-Ode zone of the Ogun State Agricultural Development Programme, South Western Nigeria namely: Ala, Ago-Iwoye, Isonyin, Ijebu-Igbo, Ijebu-Ife and Ibi-Ade. Primary data were obtained from ninety fish farmers with well structured interview guides while combination of purposive and convenience sampling procedure was used in selecting the fish farmers. The result obtained showed that majority (34%) of the respondents fell within the economic active age distribution of 40-49 years, male (87%) married (90%), Christian 73.3%, tertiary education (47.7%), farming experience (54.4%), membership of cooperative society (63.3%), household size of above five (55.6%), annual income of above N51,000 (94.4%) and 34.4% of the respondents sourced their finance from personal saving. Most of the fish farmers adopted use of concrete tanks, intensive and semi-intensive culture system, culture *Clarias* and *Heterobranchus* species, produced about two tons per culture circle of six months. Majority (61.1%) of the respondents combine use of supplementary feed because it was readily available of desired feed. Lastly, recommendations are; availability of credit and subsidies facilities, accessible feed supplies, farmers' cooperatives, enabling government policies and farmers training and extension services provision.

Key words: Feed Feeding techniques, Adoption, Cultured fisheries

Introduction

As aquaculture production is increasing, intensive feeding of the fish has become a very important issue. Fish and shrimp require food to supply the energy that they need for movement and all the other activities in which they engage, and the 'building blocks' for growth (FAO, 1999). Since fish live in water, they tend to be more efficient users of food than other farm animals. In order to make use of this advantage feeding of fish tends to have over that of feeding other farm animals to optimize profit, fish culturist must feed

nutritionally complete feed in prudent manner to avoid wastage (Eyo, 2003) While developing revolutionary feeds that is cheap, available, meet nutritional requirement of fish and aid growth within the shortest period (Omotayo et al 2006). The feeding practice adopted must also seek to minimize the tendency for loss of materials for growth and productivity. The feeding regime must be that which would increase profitability and productivity without necessarily deterioration of water body (Jamu and Ayinla, 2003). This paper seek to assess the socio economic

profile of fish farmers in the study area, identify the constraint farmers face in feeding cultured fish, determine the feeding techniques adopted and describe the fish production variables of farmers in the study area.

Methodology

The study was conducted in Ijebu-ode zone of Ogun State Agricultural Development Programme (OGADEP) that has additional operational zones at Ikene, Ilaro and Abeokuta, located in South-western Nigeria. Ije-Ode zone has six agricultural extension blocks, which consist of Ala, Ago-Iwoye, Ijebu-Igbo, Isoin, Ibi-Ade and Ijebu-Ife with Agro-service centre at Ijebu-Ode, Odogbolu and Ijebu North East (OGADEP, 2007). A combination of purposive and convenience sampling procedure were used in selecting ninety respondents from the list of fish farmers by OGADEP. The interview done

with interview guides probe into socio-economic variables, adopted feeding techniques and constraints facing farmers in feeding cultured fish. Data were analysed using descriptive statistics such as frequency, mean, bar charts, percentages and pie charts as well as inferential statistics like chi square.

Result and discussion

Socio-Economic Characteristics

Age distribution: Table 1 shows the age distribution pattern of the respondents, 34.0% of the respondents were between 40-49 years, 27.0% were in the age range of 30-39, 8% were in the range of 60-69 years, 6% were within the range of 20-29% while 4% were above 70 years of age. This implies that since age reflects in the physical strength for farm work, hence a labour intensive practice such as this requires fish farmers who are still physically active.

Table 1 Distribution of respondents' age

Age	Frequency	Percentage
20-29	25	6.00
30-39	19	21.00
40-49	31	34.00
50-59	24	27.00
60-69	7	8.00
70 above	4	4.00
Total	90	100

Source: Field survey, 2007

Sex distribution: 87% of the respondents are male while the remaining 13% were female (Figure 1) More male farmers are involved may be because the venture are strenuous.

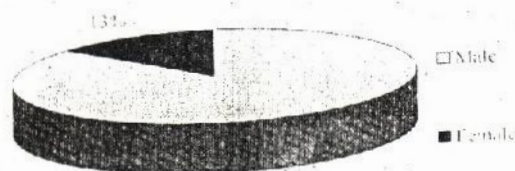


Fig. 1. Sex Distribution of Respondents

Marital status: Figure 2 shows that 90% of the fish farmers were married, 8% were single 1% were either divorced or widow. This implies that most farmer are married limiting migration and enhances labour forces. Fish farming services are source of livelihood



Figure 2. Distribution of respondents Marital status

Figure 1. Sex Distribution of Respondents

Educational status: Table 2 revealed that 47.78% of the farmers had tertiary education, 28.89% had secondary education, 11.11% had both primary education and no formal education while 1.1% did not specify. Education is a factor to shaping the perception of farmers and isolated variable related to adoption of improved innovation (Maduku, 1995).

Fish farming experience

Table 3 shows that 54.44% of the respondents had 1-5 years of experience, 35.56% had 6-10 years, 4.56 had 11-15 years and 2.33% had both 16-20 years and above 20 years. This implies that aquaculture is new in Nigerian compared to artisanal (Williams, 1995).

Table 2: Distribution of respondents by Education status

Level of education	Frequency	Percentage
No Formal Education	10	11.11
Primary education	10	11.11
Secondary education	26	28.89
Tertiary education	43	47.78
Total	90	100

Source: Field Survey, 2007

Table 3: Fish farming experience

Business experience	Frequency	Percentage
1-5 years	49	54.44
6-10 years	32	35.56
11-15 years	5	5.56
16-20 years	2	2.22
Above 20	2	2.22
Total	90	100

Source: Field survey, 2007

Types of pond enclosure: Figure 3 shows that 55-56% of the farmers adopted the use of concrete tanks, 26.68% earthen and concrete tanks, 14.44% earthen pond, 2.22% made used of fibre tanks while 1.11% made used of both concrete and fiber tanks. This implies that there are convenience of culture in fish tanks that were now more prominent features of urban on peri-urban fish farming and greater survival records under culture (OGADEP,2007)

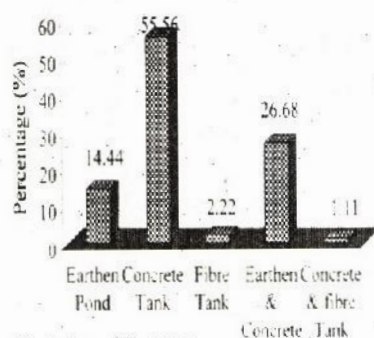


Fig. 3 Type of Pond Enclosure

Annual income: Table shows that 94.44% of the farmers had an annual income of above N50,000, 2.2% had between N41,000 – N50,000 and N21,000,000-N30,000 while 1.11% had between N31,000-N40,000. Higher income generated leads to more business expansion.

Table 4: Distribution of respondents annual income

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Annual income N	Frequency	Percentage
21,000-30,000	2	2.22
31,000-40,000	1	1.11
41,000-50,000	2	2.22
51,000 and above	85	94.44
Total	90	100

Types of fish cultured

Based on the type of fish culture 61.11% cultured Clarias or Heterobranchus fish species 24.44% cultured tilapia and Clarias or Heterobranchus, 5.56% cultured tilapia and

Clarias or Heterobranchus and Hetrotis while 4.44% culture, tilapia only, another 4.4% cultured Clarias and Tilapia fish species. This implies that catfish seeds are readily available and accessible to the farmers in the study areas.

Feed used and feed techniques adopted for various stages of fish cultured: Table 5, reveals the various feed used and feeding techniques accepted for different stages of fish cultured in the study area.

Feed used and Feed techniques adopted for various stages of fish cultured: Table 5, Reveals the various feed used techniques for different stages of fish cultured in the study area. The implication of this was that extruded or floating pellet are the easiest to feed in order to meet this feeding criteria because feeding techniques are affected by fish species and size, the time of the year and type of production system.

Table 5: Specific Feed used and Feed techniques adopted for various stages of fish

Feed type	Fingerlings %	Jveniles %	Tables size %	Brood stock %
Non conventional eg maggot	-	-	-	-18.89
Animal care	-	10.00	13.33	-
Coppes	68.89	6.67	4.44	-
CHI	-	37.78	-	-
Cyprico	5.56	-	-	-
Artemia	4.44	-	-	-
Locally Compound	-	7.78	82.22	81.11
Coppes/animal care	22.22	-	-	-
Coppes/cyprico	18.89	-	-	-
CHI/loally compound	-	15.56	-	-
CHI/coppes	-	13.33	-	-
CHI/animal care	-	3.33	-	-
Locally compound	-	5.56	-	-
animal care % body weight				
3%	20.00	10.00	1.11	-
5%	8.99	2.22	13.33	15.56
3-5%	45.56	68.89	71.11	40
Unspecified Feeding frequency	25.56	18.89	14.44	44.44
Once daily	3.33	4.4	5.56	44.44
Twice daily	2.22	8.69	80.00	21.11
Trice daily	12.22	76.67	10.00	-
Four times daily	82.22	10.00	4.44	34.44
Unspecified Potein content %	-	-	-	-
Below 30%	16.67	16.67	16.67	42.2
30-35%	27.78	16.67	44.44	26.7
40-45	22.22	27.78	11.1	22.22
Over 45%	33.33	38.86	16.67	8.88
Pellet size				
Below 1.00m				
2.0-30mm	-	100	-	-
4.0-5.0mm	-	-	53.33	43.44
Over 6.0mm	-	-	44.44	65.55

Feeding method adopted: Table 6 shows that 47.78% of the respondents made use of point or feeding technique, 30% adopted

broadcasting methods while 22.22% combined the two methods of feeding

Table 6: Distribution of respondents by feeding method adopted

Feeding method	Frequency	Percentage (%)
Point feeding	43	47.78
Broadcast method	27	30.00
Both methods	20	100
Total	90	100

Feeding constraint encountered: Table 7 reveals that, 76.67% of the fish farmers attributed lack of capital as major constraint

while non-availability of desired feeds was 5.56 percent

Table 7: Distribution of respondents by feeding constraint

Constraint	Frequency	Percentage (%)
Lack of capital	69	76.67
Non-availability of desired feeds	5	5.56
Both constrains	8	8.86
Other constraints	8	8.89
Total	90	100

Relationship between socio-economic profile and feeding techniques: Table 8 Indicates that the result of chi-square analysis of socio

economic characteristics of the fish farmer and their feeding techniques had significant relationship.

Table 8. Relationship between socio-economic profile and feeding techniques

Variable	X ² calculated	DF	P Value	Decision
Age	66.40	33	0.000	S
Sex	50.40	1	0.000	S
Marital status	203.87	3	0.000	S
Household size	74.24	11	0.000	S
Educational status	61.44	4	0.000	S
Mode of fish farming	10.00	1	0.000	S
Other occupation	58.40	7	0.000	S
Feeding method adopted	9.27	2	0.000	S
Growth enhancement	28.56	5	0.000	S
Feeding problems	140.33	3	0.000	S
Solution to feeding problems	143.94	3	0.000	S

Source: Field survey, 2007

Conclusion and recommendation

Fish farming seemed to be popular and attractive venture in the study area by the fish farmers. It was clear that lack of uniformity in the level of knowledge and business experience had created a wide variation as well as profitability. The farmers adopted both spot and broadcasting feeding techniques. The major problems facing them are inadequate capital and non availability of desired feeds. Lastly, recommendations are: availability of credit and subsidies facilities, accessible feed supplies, farmer's cooperatives, enabling government policies and farmers training and extension services provision

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