Improving Fish Production among Agricultural Students in Secondary Schools in Oyo State

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Abstract

The purpose of this study was to determine the strategies that can be used to improve fish production in secondary schools in Oyo State. Three research questions guided the study. Survey research design was adopted for the study. The population of the study consists of 75 agricultural science students in schools that have fish ponds. The instrument used for data collection was 35-items structured questionnaire which was face validated by three experts. Cronbach Alpha reliability method was used to establish the reliability of the instrument which yielded the reliability coefficient of 0.85. 75 copies of the instrument were administered and all the 75 copies were retrieved and analyzed using weighted mean and standard deviation. It was found out that fish production can be improved among agricultural science students in secondary schools in Oyo State. It was recommended that the findings from the study should be used in training agricultural science teachers during seminars and workshops for improvement in fish production.

Key words: Improving, Agricultural Science Students, Skill, Fish and Aquatic Animal

Introduction

Fish is an aquatic animal. According to Bone and Moore, (2008) the term fish describe any non-tetrapod Chordate (i.e. an animal with a backbone) that has gills throughout life and has limbs, if any in the shape of fins. Unlike groupings such as birds or mammals, fish are not a single clads but a paraphyletic collection of taxa including jawless, cartilaginous and skeletal types. Fish are very diverse and categorized in many ways. Although most fish species have probably been discovered and described, about 250 new ones are still discovered every year. These is more than the combined total of all other vertebrates be it mammals, amphibians, reptiles or birds. Fisheries science is the academic discipline of managing and understudying fish. It is one of the topics covered in agricultural science in secondary school. Swift in Amechi (2016) defined fish farming as the rearing of fish in man made pond. Fish farming in this study is the rearing of fish in man made pond in secondary schools in Oyo Sate.

Many benefits are derived from fish to justify its improvement in production and usage. These benefits include: increased job opportunities in rural areas, food security and poverty alleviation, reduction in rural-urban drift, better use of Nigeria's water, land and other natural resources. When processed, fish can provide by-products such as fish meal, fish oil, manure etc. for other uses. It provides a means of recycling wastes when animal dung from farms, factory wastes and sewage are used in feeding fish, increased availability of fish especially in those areas not having ready access to current supplies, for capacity building at federal, state, local level and teaching. Despite this benefits, fish production still face some problems

Oota (2012) explained that, high cost of input, lack of credit to fish farmers at low interest rate, lack of skilled manpower and an ineffective aquaculture extension service still constrained fish production. In the same vain Adewumi and Olaleye (2011) found out that poor management skills, inadequate supply of good quality seeds, lack of capital, faulty data collection, lack of environmental impact consideration, marketing of products and water related problems are some of the problems facing fish production among fish producers in Nigeria.

Food and Agricultural Organization (2007) explained that improved fish production management includes, fish disease control, good water quality, adequate marketing, good pond management, adequate processing and preservation. Obiyi and Ekubo (2011) explained that fish production can be improved through use of improved technologies, stocking fish with high growth rate, high fecundity and equip fish farmers with necessary skills in breeding and hatching to be able to exploit the immense potential of fish farming.

In addition, Olaitan and Omomia (2006) explained that adequate fishery management requires fish pond fertilization, proper feeding and control of water quality. The authors also explained that adequate stocking and proper harvesting is important in fish production. This can also be done in secondary schools.

Secondary school according to Nwokike (2011) is the school children attend after primary school before tertiary education stage. Children between the ages of 12-18 usually attend secondary schools. One of the objectives of secondary education in the National Policy on Education (2013) is to equip students in secondary schools with necessary skills that will make

them employable after their study. This led to introduction of trade subjects in which Animal Husbandry is one which consists of pig production, poultry production and fishery among others.

Besides, Ugwumba and Chukwuji (2010) reported that, one of the major sources of animal protein in Nigeria is fish and its products; Muhammed and Balogun (2007) stated that 17.82g of animal protein is consumed per day as against the 35g recommended by Food and Agricultural Organisation in Nigeria.   Therefore the problem of inadequate protein needs to be addressed through increasing production and consumption. The demand for fish is increasing and it will continue to increase because of increase in population. For effective production in order to meet the protein needs, there is need for possession of adequate skills by students.

Skill is a well establish habits of doing things by people. Nwokolo (2010) define skills as knowledge and competencies which individuals supply and gainfully utilized for the purpose of achieving optimum productivity in industries. In this study, skills are the competencies agricultural science students in secondary schools can gainfully utilized for the purpose of achieving optimum production in fish farming. Furthermore, the Senior Secondary Agricultural Curriculum is offered after the Junior Secondary Pre-vocational agriculture programme. The objectives of the subject according to Federal Ministry of Education (2013) are as follows:

i.   to stimulate and sustain students' interest in agriculture
ii.   to enable students acquire basic knowledge and practical skills in agriculture
iii.   to prepare students for further studies in agriculture; and
iv.   to prepare students for occupations in agriculture.

Due to lack of skills in fish production most of the students roam about the street and engaged in social vices such as armed robbery, prostitution and drug trafficking.   Base on the above there is need for adequate training for skill, hence the study.

The major purpose of this study is to find out the strategies that can be used to improve fish production secondary schools in Oyo state. Specifically the study sought to:

1. Examine the problems encountered in fish farming among secondary schools in Oyo State,

2. Determine the strategies to improve fish farming among agricultural science students in

secondary schools in Oyo State,

3. Determine the skills needed in fish production among agricultural science students in

   secondary schools in Oyo State.

Research Questions

The following research questions guided the study:

1. What are the problems encountered in fish farming amomg secondary schools?
2. What are the strategies to improve fish farming among agricultural science students in secondary schools in Oyo State.
3. what are the skills needed in fish production by agricultural science students in secondary schools in Oyo State

Methodology:

A descriptive survey research design was adopted for the study. According to Osuala (2001) descriptive survey research focused on people, their opinion, attitudes, motivation and behaviour. It is suitable for this study because the opinion and ratings of agricultural science students were used to determine the strategies for improving fish production among agricultural science students in secondary schools in Oyo. The population of the study was 75 agricultural science students selected from 750 students from 15 selected secondary schools out of the 25 with fish ponds. A 35 items questionnaire was developed based on the research questions and was used for data collection. The instrument had a 4-point response scale of strongly agree, agree, disagree and strongly disagree with corresponding values of 4, 3, 2 and 1 respectively. The instrument was face validated by three experts, from Department of Vocational Teacher Education, University of Nigeria, Nsukka. Their suggestions were used to improve the final copy of the questionnaire. To obtain the reliability of the instrument, 20 copies of the questionnaire were trial tested in Osun State agricultural science students. Cronbach Alpha reliability method was used to establish the reliability of the instrument which yielded the reliability coefficient of 0.85. 75 copies of instruments were administered by personal contact of the researcher with the help of two research assistants who are familiar with the area of the study. The whole 75 copies

was retrieved, completely filled and used for data analysis representing 100% rate. Mean was used to answer the research questions. Using 2.50 as cut off point, any item with mean value of 2.50 and above was regarded as "Agreed" while any questionnaire item with mean value of less than 2.50 was regarded as disagree.

Results

The results for the study were obtained from the research questions answered.

Research Question 1: *What are the problems encountered in fish farming in secondary schools?*

Table 1:Mean responses of agricultural science students on problems encountered fish production in secondary schools.
N = 75

Items		$\bar{x}$	SD	Remarks
1.	Scarcity of fingerlings (fries)	3.11	0.48	Agreed
2.	Unfavourable weather condition	3.20	0.51	Agreed
3.	Lack of money to establish fish pond	3.27	0.53	Agreed '
4.	Incidence of parasites and diseases	3.33	0.50	Agreed '
5.	No good site for location of ponds	1.93	0.94	Disagreed
6.	There is problem of over flooding during raining seasons	3.20	0.51	Agreed
7.	Lack of storage facilities	3.13	0.54	Agreed
8.	No harvesting equipment	3.19	0.53	Agreed
9.	Problem of predators	3.36	0.51	Agreed
10.	High cost of manufactured feed	3.35	0.50	Agreed

$\bar{X}$ *= Mean   SD=Standard Deviation*

The results from the table above indicated that item numbers 1-4 and 6-10 received the mean responses greater than 2.5 and it shows that agricultural science students agreed that they are problems facing fish production in secondary schools. However items 5 received means less than 2.5 which indicated that agricultural science students disagreed with it as a problem encountered in fish production in secondary schools. The standard deviation of the ten items ranges from 0.48-

0.94. This indicates that the responses of the respondents were not very far from the mean and from one another in their responses.

Research Question 2. *What are the ways of improving fish farming in secondary schools?*

Table 2 Mean responses of agricultural science students on ways of improving fish production in secondary schools.

N = 75

Items		$\bar{x}$	SD	Remarks
1.	Use of monoculture	3.08	0.45	Agreed
2.	Use of multiple culture	3.13	0.50	Agreed
3.	Control of parasites, predators and diseases	3.09	0.53	Agreed
4.	Regular and adequate quality and quantity feeding	3.07	0.44	Agreed
5.	Good water quality control	3.07	0.44	Agreed
6.	Proper vaccination	3.04	0.45	Agreed
7.	Adequate pond fertilization	3.08	0.51	Agreed
8.	Proper pond harvesting	3.05	0.60	Agreed
9.	Adequate preservation and processing	3.09	0.50	Agreed
10.	Proper marketing and fish products	3.05	0.52	Agreed

$\bar{X}$ = Mean   SD =Standard Deviation

The results from the table above indicated that item numbers 1-10 received the mean responses greater than 2.5 and it shows that agricultural science students agreed that they are ways of improving fish production in secondary schools. The standard deviation of the ten items ranges from 0.45-0.60. This indicates that the responses of the respondents were not very far from the mean and from one another in their responses.

Research Question 3: *What are the skills needed by agricultural science students in fish farming?*

Table 3 Mean responses of agricultural science students on Skills needed in fish production in secondary schools

N = 75

S/N	Items	$\bar{X}$	SD	Remarks
1	Ability to locate suitable site	3.89	0.52	Agreed
2	Excavation of pond	3.85	0.50	Agreed
3	Building drainage system	3.67	0.45	Agreed
4	Building Walls	3.87	0.51	Agreed
5	Seal the pond floor	3.93	0.55	Agreed
6	Proper Stocking skills	3.91	0.53	Agreed
7	Feeding the fish	3.85	0.50	Agreed
8	Disease prevention and control	3.92	0.65	Agreed
9	Water quality management	3.93	0.55	Agreed
10	Pond fertilization	3.88	0.51	Agreed
11	Harvesting skills	3.95	0.60	Agreed
12	Preservation skills	3.85	0.70	Agreed
13	Marketing skills	3.92	0.69	Agreed
14	Ability to control water quality	3.51	0.49	Agreed
15	Ability to breed fish properly	3.60	0.55	Agreed

$\bar{X}$ = Mean   SD=Standard Deviation

The results from the table above indicated that item numbers 1-15 received the mean responses greater than 2.5 and it shows that agricultural science students agreed that they are skills needed in fish production in secondary schools. The standard deviation of the ten items ranges from 0.45-0.70. This indicates that the responses of the respondents were not very far from the mean and from one another in their responses.

Discussion of Findings

The result from the study revealed that there is high cost of manufactured feeds. This in agreement with the findings of Oota (2012) that high cost of input is one of the problems facing fish production. The result from the study revealed that scarcity of fingerlings and unfavorable weather condition are some of the problems facing fish production in secondary schools. This is in

consonance with the finding of Adewumi and Olaleye (2011) who explained that lack of good quality seeds and poor environmental condition are part of constraints to fish production.

Furthermore the study also revealed that fish production can be improved by control of parasites and predators and diseases regular and adequate quality and quantity feeding and good water quality control. This is in agreement with the finding of Olaitan and Omomia (2006) that adequate fishery management requires fish pond fertilization, proper feeding, control of water quality control of weeds and predators and diseases. This can also be done in secondary schools. In addition, the study revealed that stocking and harvesting skills is also needed in proper fish production. This is also in agreement with the findings of Olaitan and Omomia (2006) who explained that adequate stocking and proper harvesting is important in fish production. The study also revealed that there is need for proper Ability to breed fish properly, this is in agreement with Amechi (2016) who observed that youths needed skills in planning, selecting species and in induction in fish breeding.

Conclusion

From the study, it is concluded that all available skills of fish farming must be explored to maximum benefit for efficient production of fish. Also fish production can be improved in secondary schools by adequate prevention and control of diseases and popper breeding.

Recommendations

1. The following recommendations were made base on the finding of the study.
2. Schools should be provided with necessary facilities for teaching of fishery.
3. Principals of secondary schools should show positive attitudes towards establishing fish ponds and adequate cares for the existing ones.
4. Workshops should be organized for teachers of agricultural science in secondary schools to update their knowledge in fishery.
5. Teachers should be ready to equip students with necessary skills in fishery.

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