EFFECT OF TEACHING POULTRY PRODUCTION ON CHOICE OF CAREER BY AGRICULTURAL SCIENCE STUDENTS IN SECONDARY SCHOOLS IN ADAMAWA STATE, NIGERIA

BY

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FACULTY OF EDUCATION
AHMADU BELLO UNIVERSITY, ZARIA.

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A THESIS SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, AHMADU BELLO UNIVERSITY ZARIA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS OF SCIENCE DEGREE IN AGRICULTURAL EDUCATION

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AGRICULTURAL EDUCATION SECTION
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MARCH, 2012

DECLARATION

I, hereby declare that the efforts in this Thesis titled: "Effect of Teaching Poultry Production on Choice of Career by Agricultural Science Students in Secondary Schools in Adamawa State, Nigeria" was performed by me in the Department of Vocational and Technical Education under the Supervision of Dr. D.O. Oni and Dr. B.I. Okeh. The information derived from the literature have been duly acknowledged in the text and a list of references provided. No part of this work has been presented for another degree or diploma at any institution.

_____	_____	_____
Kaduna, GWARKILA	**Signature**	**Date**

CERTIFICATION

This Thesis titled "Effect of Teaching Poultry Production on choice of Career by Agricultural science students in Secondary Schools in Adamawa State, Nigeria" meets the regulations governing the award of the degree of Masters of Science in Agricultural Education of Ahmadu Bello University, Zaria and is approved for its contributions to knowledge and literary presentation.

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DEDICATION

This work is dedicated to Mrs. Asiyina Kaduna Gwarkila (wife), Maria Kaduna Gwarkila, Wunfe Kaduna Gwarkila, Christiana Kaduna Gwarkila (daughters) and Daufe Kaduna Gwarkila (son). It is also dedicated to my parents Late Mwari Gwarkila (father), late Mrs. Asinat Gwarkila (mother) and Alhaji Garba Bolari Gombe (stepfather), Hajiya Jummai Babayo. Alkali (sister), Mr. Livingstone Baba (brother), Ahidjo Lamuel (brother), Markus Zakawon (brother), Yakubu Gwarkila (brother) Zanibi Gwarkila (sister), Wabali Gwarkila (brother) Mosuma Gwarkila (sister) Dajewe Gwarkila (sister) and Ojukwu Zwanyudu (brother).

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ABSTRACT

The study was carried out to investigate the Effect of Teaching Poultry Production on Choice of Career by Agricultural Science Students in Secondary Schools in Adamawa State, Nigeria. The study used of survey research design. Six hundred and fourty-four (644) respondents out of 18,556 were selected from 30 schools that were purposely selected out of 175 in Adamawa Senatorial Districts, using proportional random sampling techniques. Four research questions and four null hypotheses were formulated to guide the study. The instrument used for data collection was the questionnaire. The method of data analysis was by frequency counts and percentage, while mean, standard deviation and standard error were used to find the level of opinions of respondents to the research questions. Pearson Product Moment Correlation (PPMC) statistics was used to test all the four null hypotheses at 0.01 level of significance. All the four Null hypotheses were rejected because for each of the null hypothesis the (p) value was less than 0.01level of significance. Among the findings of the study were: The review of the curriculum of agricultural science had direct effect on poultry production in secondary schools because the use of practical methods of teaching poultry production in secondary schools enhanced the subject learning process. Also the ideas from extension workers and specialist in poultry production made significant effect on poultry production. Based on the findings, it was concluded that the teaching of poultry production to the Agricultural science students contributed to the choice of poultry production as career by the students in Secondary Schools in Adamawa state. There was increase in the level of awareness on the importance of poultry production, as well as government support for agricultural teachers. Recommendations were made among which were that: Governments (State, Local) should encourage poultry production by providing special incentives and remuneration for agricultural science teachers and specialists in poultry production. The use of practical teaching methods should be encouraged in the teaching of poultry production to the students in the secondary schools in Adamawa state.

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OPERATIONAL DEFINITION OF TERMS

1. **Peat-moss:** is a very dusty and as such not recommended for the tropics. It is very absorbent and long lasting. Because it is dusty, the interior of the house tends to get covered with a fine brown dust. It is dark and does not reflect light. A good grade peat-moss with as little dust in it as possible, should be used.
2. **Sawdust:** It is extensively used because of its quality and beautiful colour. It is less dusty than peat and almost equally absorbent. Although it is an excellent absorbent of deep litter yet it is not recommended for the north of West African countries, it breaks down easily in the granules, creating whitish dust on the walls. Poultry inhale the dust which creates chest congestion leading fowl bronchitis.
3. **Straw and Cut straw:** Whole straw with mat. The litter becomes damp and unpleasant it is used as starting material.

   Wheat straw is a little better than oat straw. Cut straw can make a useful litter. The length should not be more than 4 centimetres long.
4. **Shaving:** Timber-shaving are very good and highly recommended for use. They are lighter than peat or saw dust. They do not tend pad down so much. Their absorption capacity is good. They do not blow about easily and cheaply obtainable. They can easily be removed and replaced (many people call this saw dust but it is not).

5. **Chaff:** It is too light to be comfortable for the birds. It is not too absorbent and it is not a really suitable material. Wool Shoddy carvings and oathull are all the same, not good.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Agricultural science students need a good understanding of poultry production and management techniques in choosing it as a career. Poultry production requires well trained and experienced teachers. These teachers are saddled with the responsibility of imparting knowledge to students who will like to take up poultry production as career. They also help in training farmers who have little or no knowledge in poultry management. The effect of this is that, most incompetent people are employed or take up poultry business without undergoing training in poultry production. Akinsorotan Adesiji, Ogunlade, and Opabo (2007) stated that in the developing countries of the World where there is inadequate career guidance, the young ones tend to choose the career line of their parents most especially fathers' occupation. Akinsorotan *et al*. (2007) further stated that, the educational system of the country stipulated that secondary school to be for children between 12 and 18 years. This is the time when they can be tutored and guided towards choosing a career.

They further stated that one of the major problems facing Nigeria is unemployment of youths due to unfavorable disposition to agriculture as a career and all efforts by Government and Non-Governmental Agencies to encourage youths to choose agriculture production as a career have not been effective. Hence, for the young generation participation on agriculture production there should be a positive perception of agriculture production as a progressive and reliable career in order to reverse the drifting of youths towards other professions.

Ogbazi (1988) observed that poultry production in recent times has become an enterprise of concern to individual families, and schools. Ogbazi (1988) went further to observe that Poultry production is relatively less capital intensive compared to other kinds of livestock production. This makes it possible for most secondary schools to establish poultry in their school farms. Ogbazi further pointed out that teachers of agriculture should help agriculture students and other people who are interested in establishing poultry farms in schools or in their homes. In order to be able to offer such a help, the agricultural teachers should possess both the technical and professional competencies needed for effective teaching of poultry production. Onu, (2005) maintained that livestock farms in secondary schools when properly established will equipped the students with relevant skills. Onu (2006) went further to assert that Nigeria is a country with shortage of food supply, while the population is increasing rapidly.

In order to combat this problem, Onu (2006) added that many programmes were put in place which brought the teaching of agricultural science in both primary and secondary schools. Agriculture teachers have the responsibility of educating agricultural science students as prospective farmers in the different methods of producing and processing agricultural products. In order to be able to perform this function, the teachers need to be knowledgeable of the most effective methods of teaching vocational or skill oriented subject (Ogbazi, 1988). Onu (2006) indicated that agriculture and economic development of any nation to a large extent depends on the quality of her teachers especially agricultural teachers.

Agidi (2004) in Akinsorotan *et al,* (2007) stated that, the journey back to the history of agriculture in Nigeria, there is now a trend that is bringing a great concern to

the future of agriculture and food production. It is necessary to educate and make the young generation to be conversant with agricultural farming in order to encourage them to contribute to food production and distribution in the country. Mayer and Onaze (1996) in Akinsorotan *et al.* (2007) stressed that Students who were also in the post primary education stage were taught in the classroom about modern methods of agricultural farming with practical training on the school farm. The National Policy on Education (2004), defined Vocational and Technical Education "as the Education designed to prepare individuals to acquire practical skills, basic scientific knowledge and attitude acquired as a craftsman and technician of sub professional level".

The policy further stated that, the goals of teacher education was to provide teachers with intellectual and professional background adequate for their assignment and make them adaptable to changing situations. The policy further stated that, the goals of secondary and vocational education are for the purpose of:

i. providing technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic development.

ii. giving training and imparting the necessary skills to individual who shall be self-reliant economically.

iii. exposing students to career awareness by exploring usable options in the world of work.

iv. enabling the students to set up their own business and become self-employed and be able to employ others.

Rao, Reddy and Reddy (1995) in Akinsorotan *et al* (2007) stated that Agriculture Education and training in higher schools require professional teachers who understand

the psychology, principles, techniques of teaching and learning process for proper and adequate transfer of information to ensure change in knowledge, skills and attitude towards progressive agricultural practices. Okigbo (1992) in Akinsorotan *et al* (2007) stated that the future of increased food production rested on giving support to the education and training of young generations who are students of agriculture.

1.2 Statement of the Problem

Poultry farms in secondary schools are no longer equipped to make today's modern poultry farming efficient and effective (Onu, 2004) Institution poultry farms such as secondary schools enhance teaching and learning process and motivate the learners to choose poultry production as a career. The students should be acquainted with all the skills required in poultry production and be able to apply such knowledge effectively after graduation. In the five educational zones in Adamawa State, the researcher observed that, most students performed poorly in the West African School Certificate "Mass failure bleak future on WAEC report" (Kunle, 2010). For example Government Day Secondary Schools Burthi, Government Day Secondary School Bobini, Government Day Secondary School Chikila and Government secondary School Banjiram and others. It was further observed by the researcher that secondary school students were not adequately exposed to poultry production practical due to poor teaching methods, unqualified agricultural science teachers and specialists in poultry production, inadequate modern poultry equipment and facilities among others. This poor state of affairs contributed to unemployment of youths in Adamawa State.

1.3 Objectives of the Study

The general objective of the study was to determine the effects of teaching Agricultural Science on choice of poultry production as a career by students in Secondary Schools in Adamawa State.

The specific objectives were to:

1. identify the effects of teaching agricultural science on poultry production in secondary schools in Adamawa state
2. find out the methods used in teaching poultry production by teachers in secondary schools in Adamawa state.
3. determine the major factors militating against the choice of poultry production as a career by secondary school students in Adamawa state.
4. ascertain possible ways of promoting poultry production as a career for secondary school students in Adamawa state.

1.4 Research Questions

The following research questions were answered by the researcher

1. What are the effects of teaching Agricultural science on poultry production in secondary schools in Adamawa state?
2. What are the methods used in teaching Agricultural science in poultry production in secondary schools in Adamawa state?
3. What are the major factors militating against the students choice of poultry production as a career by students in Adamawa state?
4. What are the possible ways for promoting poultry production as a career by students in Adamawa state?

1.5 Research Hypotheses

The following Null hypotheses were formulated to guide the study at 0.05 level of significance:

1. There is no significant relationship between teaching agricultural science and poultry production in Secondary Schools in Adamawa state.
2. There is no significant relationship between methods used in teaching poultry production and students choice of poultry production as a career in secondary schools in Adamawa state.
3. There is no significant relationship between factors militating against the establishment of poultry production and choice of poultry as a career by secondary schools students.
4. There is no significant relationship between promoting poultry production by teachers and the choice of career by students of agricultural science in Adamawa state.

1.6 Significance of the Study

This study will be of academic significance to agricultural science students in Adamawa state. They will find it very useful resource which will help put agricultural students in perspective.

The study will provide appropriate learning experiences that are precursors to career choice in poultry production. It will also provide relevant skills needed for excellence in poultry business instead of quest for white collar jobs and prevention of other ills in the society.

Teacher competencies in this study will provide a basis for government officials and schools supervisors in evaluating the quality of the present and prospective teachers of agricultural Science in secondary schools on poultry production.

This study will help the teachers of agricultural science in the state to be more aware of their role expectations in relation to poultry production.

Students who desire to choose poultry production as a career will benefit from this research work, as they are the immediate beneficiaries.

Poultry farms in secondary schools in the state, when properly established will equip the students with relevant skills and knowledge. Hence, it will also enable the society at large to know the factors militating against proper establishment of poultry farms. Agriculture Teachers especially specialist in poultry production will immensely benefit from the outcome of this study.

1.7 Assumptions of the study

For the purpose of this study, the following assumptions were made, that:

- there are adequate equipment for teaching poultry production in all secondary schools in Adamawa state.
- agricultural science teachers are well skilled, competent and adequate.
- adequate supply of equipment in secondary schools will enhance poultry production and performance of students at the terminal examination.
- poultry production education will help to create self employment among the youths.
- poultry production will lead the students to acquire more skills and knowledge.

1.8 Delimitation of the Study

This research work was delimited to only 30 randomly selected Senior Secondary Schools, The study was delimited to Agricultural science students in SS III classes. They were selected for the study because they have spent three years in the senior classes and are expected to possess a good knowledge and understanding of Agricultural science subject. They were considered better placed than any other class in the senior secondary schools that can make relevant contributions to the study. The Study was also delimited to the Principals, (Principals in this case means, Principals, Vice-Principals Administration and Academics). The Principals of the schools involved in the study know these subjects offered in their schools, the number of qualified staff available for such subject and the management of the school poultry farms. They also kept records of school examination results that is WAEC and NECO. They were in the position to provide information on the general problems facing the schools. The study was further delimited to the Agricultural science teachers, and poultry attendants in the five (5) Educational zones in the twenty one (21) Local Government Areas in Adamawa State.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviewed literature related to the effect of teaching poultry production on choice of career by agricultural science students. The information gathered was organized into the following sub-headings:

2.1 Conceptual Framework

2.2 History and development of Commercial Poultry in Nigeria

2.3 Poultry Farming in General

2.4 Promotion of poultry Education in Secondary Schools

2.5 Factors Militating against Proper Establishment of poultry production in secondary schools in Adamawa state

2.5.1 Marketing of Poultry and Poultry products

2.6 Empirical studies

2.7 Summary of Reviewed Literature

2.1 Conceptual Framework

The general view of almost every layman about agriculture, is the art of farming to produce crops. This view is actually far from the modern science age. For instance, Ogieva (2003) explained that the word agriculture is taken from the two Latin words "Ager" which means field and cultural means cultivation; thus stating as field cultivation. However Ogieva (2003) pointed out that such definition of the real concept of agriculture is not complete. Ogieva further elaborated by stating that agriculture goes beyond "field cultivation and of course the growing of crops". This is because today agriculture is not limited to the cultivation of field crop plantation, but also involves livestock production.

Hence the definition of agriculture as an art and science of cultivating the soil, producing livestock, processing their feeds, crop processing and their products for human need as well as excess of the products for marketing.

In other words, Ogieva (2003), looked at the concept of agriculture in the following ways:

i. Production of crops, rearing of livestock and general soil management.

ii. It is the scientific manipulation of soil for the production of crops and rearing of animals for human needs.

iii. It is equally a deliberate effort's made by man to cultivate crops, rear animals, caring for them for the benefit the man derives from doing so.

iv. Agriculture, Ogieva further explained embraces various preparations and processing of plant and animal products through marketing strategies for the benefit of man.

The researcher therefore agreed that actual sense of contemporary agriculture is beyond ordinary crop cultivation, but include among other things; modern methods of livestock keeping, formation of their feeds, maintenance as well as marketing of their products and research toward global trend. The primary importance of agriculture in any nation cannot overlook that of provision of food and economic roles. Ogieva (2003), pointed out some of the major importance of agriculture to a nation (Nigeria inclusive) as that provision of food, sources of employment, raw materials for industries, foreign exchange earning, clothing/shelter, rural development and provision of marketing for industrial goals. Ogieva further added that the importance of agriculture in modern times stands for raising standard of living through improved techniques in farming .

Adamawa State is no doubt part of such benefits because its agricultural programme especially poultry farming and teaching in secondary schools in the state will be improved. In the classification of world livestock production systems, poultry systems are described under landless monogastric systems, where feed is introduced from outside the farm (FAO, 1996). Poultry production systems exclusively based on hybrid and high-production of exotic breeds and high energy concentration feeds were described by Sere, Steinfeld and Groenewold (FAO, 1996). Although the intensive poultry production systems can be found in rural areas of Africa, the most dominant production systems were the extensive systems that were based on the local indigenous type and on scavenging feeding systems. Intermediary or semi-intensive systems, also referred to as backyard poultry, have developed recently with higher input and output.

As already noted in the preceding section, the scavenging system dominated the rural poultry sector of most African countries, and the domestic fowl *(Gallus domesticus)* is the most common species. In the present study, the term village chicken is adopted from recent studies in rural poultry development, which differentiates the scavenging chickens from the intensive production systems. The term village chicken best describes the scavenging chickens because of the effect of the village socio-economic and biophysical environment on the production and health status of the chickens. The human settlement pattern, communal housing of chickens, exchange of live chickens and chicken products affect production performance, breeding pattern and disease epidemiology (FAO, 1996).

Table 2.1: Characteristics of Poultry production

Characteristic	Intensive	Semi-intensive	Scavenging
Breed and flock size	Specialized breeds: 500-5 000	Specialized and dual-purpose breeds: 50-200	Local indigenous type: <50j
Housing	Modern housing, generally with concrete walls and regulated internal environment	Varies from modern houses to simple housing made from locally available materials	Specific poultry houses are rare
Feed resource	Commercially compounded feeds	Commercially compounded, homemade mixtures and scavenging	Scavenging and occasional feeding with home grains land household refuse
Health programme	Standard and regular animal health programme	Disease control and health programme at varying levels	No regular health programme of disease control measures in place
Markets	Cold chain system for input-output distribution	Input and output distribution is based on existing trading centres	No formal marketing channels
Infrastructure	Water, electricity and communication available	Modest infrastructure depending on proximity to urban centres	Underdeveloped infrastructure
Product storage and processing	Products refrigerated; dressed birds and table eggs refrigerated	Minimum refrigeration, occasional dressing of birds	No refrigeration, sales of live birds and eggs
Technology/information	Formal training, extension services available - information disseminated through producer and consumer associations	Moderate formal training and extension services	Local knowledge, with moderate or no extension services

Source: Food and Agricultural Organization, 1996

2.2 History and Development of Commercial Poultry in Nigeria

In Nigeria, the first and second decades after independence (1960s and 1970s), witnessed a boom in the supply of poultry products at low prices to urban consumers. In the second decade, broiler production was introduced and with it came the requirement for processing and freezer storage facilities. At the beginning of the third decade there was a further vertical integration resulting in the establishment of frozen poultry meat shops. Presently, in the fourth decade, the few large scale poultry operations are invariably fully integrated feed grain/poultry farms and processors with their own brand names (Sonaiya, 1990). Poultry business was first introduced to Nigeria in the late fifties with the importation of selected breeds of exotic poultry, namely Rhode Island Red, White Leghorn, Barred Plymouth Rock and a number of other breeds and hybrids.

The initial success of introduction and adaptation, as evidenced by improved production records several folds higher than what could be claimed for the local breeds, stimulated the expansion of the industry, first by Government farms and later by entrepreneurs who were quick to recognise the profit potential of the new industry. Hitherto the production, marketing and consumption of poultry products followed purely traditional methods and channels (Obioha, 1992). Commercial poultry production was believed to have started since the 1950s (Ikpi, and Akinwumi, 1979). Since then the industry has gone through different stages. Nigeria's leading role in poultry production dated back to 1965 when the FAO organized the first conference on African Poultry Production which was held in Lagos. Since then, there has been a progressive increase in the scope and number of commercial poultry farms and farmers with the number of exotic birds to 10 million in 1985 (Offiong, 1985) The initial problem was getting people

generally, especially the less educated, to accept the fact that poultry production is able to provide the animal protein and can be importance economic enterprise (Ikpi, *et al,* 1979).

Obioha (1992) stated that poultry were kept practically in every household in Nigeria especially in rural communities. In traditional poultry husbandry, the chicks are allowed to roam about and scavenge for food and water. Although cash income is the motivation, there is hardly any outlay in this system of poultry "business". No special provision or programme is made for housing, breeding, recording or costing. The chickens may be housed in a section of the house or an old barn with a roof and some litter. The hens lay their eggs in odd corners of the house or under cover outside the house. In their free range, they mate at random and hatch their fertile eggs by natural incubation, producing about 10 chicks per hatch. The young chicks are brooded by their mother hen until about 2-3 months when they are "weaned" to fend for themselves. There is no provision for feed and water troughs, medication or laying boxes.

The chickens serve a dual purpose, providing meat and fertile eggs which-'were hatched to replace the culls. Whatever increase there is in body weight or growth in flock size is realized as net margin. Culling is only practiced when chicks are sick or dying or when some excess cocks or pullets can be sold, for extra cash or for sacrifice. Thus marketing is prompted by cash needs and purchasing is prompted by such events as festivals, sacrifice or settlement of herbalist bills which invariably included eggs, cocks and other livestock. Accordingly, the consumption of poultry products by the household follows no regular pattern and is usually limited to such events as feasts, the remains of unhatchable eggs, or gifts from a guest herbalist usually after he has satisfied the requirement of the "gods". (Obioha, 1992)

Ikpi *et al,* (1979), stated that due to sociological attainments to different kinds of belief, it blinded people in the country thereby serving as a deterrent to egg and broiler production in the country to the high nutritional value of the egg and the economic returns brought by poultry production. Adegbola (1989) stated that the poultry industry is already well established in Nigeria. This is due to success of exotic breeds of chicken over the performance of the local breed. In commercial poultry, the chicken has been the most extensively exploited in terms of animal protein (Dafwang, 1979). Okaiyeto, (1983), also noted that Kano, Plateau, Kaduna and Borno states were the largest producers of local chicken accounting for 50.34% of the nations total. The current state of the poultry industry in Nigeria gives much cause for concern. Its history can only be summarized as an industry that expanded rapidly and collapsed rapidly.

Today, the industry is beset with too many problems causing the industry to die slowly. One of the most important problem in poultry development since 1983 is political instability. This has continued to hamper the development of poultry industry in Nigeria to date (Adu, 1996). With the successful adaptation of exotic poultry in Nigeria around the middle to late fifties and around the main Government Agricultural Stations like Samaru, Moor Plantation, Umudike, the foundation of modern commercial poultry agriculture was laid. There was the specialisation of flock and breeds into layers and broilers, and the initial popularity of the Rhode Island Red (RIR) as a dual purpose bird was not a surprise. Government programmes were developed, based on accelerated poultry production through the importation of laying flock and distribution of day-old chicks at subsidised prices to farmers. (Adu, 1996).

These programme; - the Eastern Nigeria Poultry Scheme at Abakaliki, the Fashola project, Samaru, Moor Plantation and others were very successful and despite occasional disastrous disease outbreaks were responsible for a substantial increase in the national flock size as well as sizable cash income for benefiting farmers. By 1964, the "Green Revolution" had started to pay off, at least in the poultry sector. Medium sized eggs then sold for 20k also dozen in Government production farms and 30k also in urban areas, while mature broilers sold for 75k on the average. By all indications, supply appeared to catch up with and even to exceed demand although given the poor distribution facilities and machinery in the country, the observed surplus was only apparent.

One important factor that contributed to this apparent surplus of poultry products in the sixties was the fact that the consumption of poultry products, particularly eggs, was not a habit in every household. Various government information agencies and extension services had to mount campaign programmes to improve nutrition education and break the residual taboo on egg consumption by children and women.

Obeng–Asamoah (1982) stated that before you buy them ask for their history, and remember to find out the following.

a. The parent hens ability to lay more than 200 eggs
b. The ability to lay large eggs
c. The ability to lay continuously - Persistence as they call it
d. The ability to produce a strong egg shell
e. Resistance to minor diseases e.g. cold and heat
f. The ability to convert feed to egg
g. The ability to eat less feed in proportion to eggs produced

2.3 Poultry Farming in General

The establishment of livestock which poultry belongs stands to equip the students with relevant skills in their production as reported by (Onu, 2005) Onu further pointed out that livestock keeping especially secondary schools in Nigeria is a must for practical agricultural science examinations that is West African Examination Council (WAEC). Like most poultry business in many developing countries, the Nigerian poultry industry also suffered, seriously from a shortage of qualified and experienced personnel (Badejo, 1983). More than 80% of the poultry produced in the country was done by peasant farmers and backyard rearers who had little or no knowledge in poultry production. The effect of this is that incompetent people are employed that have little or no knowledge about poultry management. Hence, most of the farmers who are novice are speculative in their approach resulting in poor level of adopting improved recommended technology passed to them, leading to a low level management that is inadequate to sustain expected performance of higher producing exotic breads in terms of feed intake, feed efficiency, growth rate, reproductive performance, and low mortality rate.

Little attention is paid to vaccination and medication programmes. In as long as birds are alive and laying eggs every morning, the farmer may not be very much concerned about record keeping as far as the eggs that are produced are not decreasing (Badejo, 1983). A great deal of knowledge, foresight and dedication is needed for any poultry to be successful, therefore an intensified training at professional, middle and low management levels by the organization of training workshops and conference for poultry farmers will help in imparting knowledge and skills that are required for a successful poultry production. An important problem concerning poultry production in Africa is the high

cost of feed ingredients particularly grains, proteins, concentrates and vitamins-mineral-premix while there is adequate supply of grains for intensive production, filed experience confirms that there are sufficient grains, grain by-products, oil seedcakes and other by-products to sustain small to medium-scale production.

What is needed is the knowledge of the nutritive value of these available feeds stuffs and of their efficient uses in poultry feeding (Ngoupayou, 1990). The basic requirement of a poultry house is to provide a suitable environment for maintaining and growing the flock contained within (Recce and Lott 1982). The housing systems collectively known as the intensive system, prevents access to pasture, unless it is brought to the birds. It also prevents access to sunlight although the housing pattern in the tropics may allow some entry of sunshine through the sides of the poultry houses (Uraih, 1986). Using laying cages for table egg production is widely accepted in the poultry industry. Less labour is required during feeding of caged birds, and non productive or diseased bird can be cull readily. More pullets can also be housed in a given area (Petitte *et al*, 1982).

Hughes (1976), housed breeder pullets in stair-step cages, colony cages and slat-litter floor pens. When he put two birds per cage in the stair-step cages, they performed better than those put in colony cages in terms of cleaner eggs and egg production. There was no difference found in egg production between birds housed in cages and pens and percentage of large eggs and dirty eggs, but the eggs that cracked were more in birds that were caged in pairs and in colony cages. Reproductive performance of broiler breeders in the cage and floor pens through 59 week s of age was examined by (Fuquay and Renden, 1980).

Fuquay and Renden (1980), noted mean body weights of caged females at 60 weeks was greater than those floor housed birds. Floor housed birds were more uniform than caged birds. Flock uniformity theory predicts that highly uniform flocks reach peak production earlier than peak at a higher level than non-uniform flocks (North, 1980). The complete free-range system, while cheap, also exposes young birds to predators. Poultry development projects that include housing increased egg production, especially if hens are kept in their houses before 10.00 am since most eggs are laid before 10.00 am and in nest boxes rather than in the surrounding bush. Chick mortality can also reduce even by simple chick run which protects them from rain and predators. (Sonaiya, 1990).

2.4 Promotion of Poultry Education in Secondary Schools

The promotion of any educational scheme or enterprises depends on the number of factors. These include: adequate articulation of the objectives/goals, good planning, adequate qualified staffing, provision of adequate equipment, facilities, conducive environment, security, proper funding, monitoring effort/managerial skills and accountability among others for transparency (Onu, 2004). Onu further investigated " on the cost effective strategies for enhancing the establishment of poultry farms in post primary schools in Nigeria found out that lack of proper funds, poultry facilities and trained poultry attendants were mere part of problem in poultry farming establishment in schools". On the other hand, developing, encouraging and promotion of any agricultural scheme, such as poultry farm in school and its enterprises in a community requires collaborative effort of which the agricultural extension service has roles to play for community.

Schemeider (1973) in Ogbazi (1988) saw the competency based teacher education as an important tool for teachers to meet performance criteria for classroom teaching. Tanner and Tanner (1975) in Ogbazi (1988) stressed that the competency based teacher education programme attempts to explicitly specify the objectives for training teachers and holds the teachers accountable for meeting the teachers accountable for meeting the objectives. Educational instruction could only be effective when handled by teachers with the right attitude, knowledge and skills. It is therefore, seen by this research that poultry teaching and farming in both secondary schools of Adamawa state will do well where competent educators of agriculture are recruited with collaboration with the existing agricultural extension workers in the state.

2.5 Factors Militating against Proper Establishment of Poultry farms in Secondary Schools in Adamawa State

There are good number of factors standing against the proper footing and appreciation of poultry education scheme, its production particularly in secondary schools. This study will consider parts of such factors which include; inadequate qualified poultry teachers to handle the scheme in the secondary schools and the degree of availability in proper funding by many school principals for poultry farming (Ogbazi, 1988). Lyon (1981) in Akinsorotan *et al* (2007) said that the aim of school agricultural programme should include the following, these are to:

a. promote interest and pleasure in agriculture among students so that they can take agriculture as a career.

b. train the students in modern agricultural methods that will enable them perform well in their practical examination.

c. develop attitudes of self-help and cooperation among the students.

Akinsorotan et al (2007) observed that it appeared that there still unfavourable perception and disposition to the choice of career in agricultural profession which have to be changed; adding that if the dream of sustainability in agricultural production is to be realized, certain approach for better solution are needed. Further suggested the followings:

(a)The need for adequate and proper education on practical agriculture with provision of effective agricultural instructors who are capable of directing, guiding and motivating the students towards various areas of interest in agriculture.

(b) The use of effective and efficient teaching methods and processing of agro-business management which can influence the students perception towards making them realize agricultural profession as befitting and profitable venture.

(c)Prompt and adequate funding of secondary schools of agricultural programme, including proper monitoring by government agents for accountability.

Ogundipe (1976) reported that the greatest proportion of cost in livestock production was expended on animal feed accounting for between 60% to 80% total cost of production. The banning of the importation of maize and other relevant items for production of poultry feed such as soyabeans, caused sharp increase of soyabeans which increased by 50%. This was largely because of government liberal policy on vegetable oil importation. These imports caused local processing firms where beans, groundnut and cotton seed which reduce production capacity or close down completely causing an acute shortage of these necessary ingredients thereby causing them to be expensive.

The Muscovy duck which belongs to the same family (Anseridae) as the goose is the most common duck in Africa and an extremely good forager that thrives well under the free-range. Water fowls are more heat tolerant and less susceptible to disease than chickens or turkeys (Sonaiya,1990). Alternatives, substitutes and supplements must be sought in order to minimize feed ingredient importation. In countries with marine resources, fish (all marine animals) meal potentials must be exploited for example shrimp head meal, fish offal, periwinkle shells and others. In landlocked countries, slaughterhouse by-products must be recovered, processed and utilized for examples vegetable/blood meal (Sonaiya, 1989)

When improving poultry production the first question that comes to mind is what breed of chicken to use. Information on the local chicken with regards to classification is very limited. Selection and breeding work on the chicken is very scanty in Nigeria. It does not possess economic traits that would be considered valuable in modern commercial senses. Under traditional management, it takes the local chicken not less than one year to attain slaughter size while the typical broilers may be ready for the table in 12 weeks (Obioha, 1992). The local chicken is characterized by poor growth rate, feed efficiency, egg production and mature weight when compared with exotic chicken under identical and ideal feed and management condition (Obioha 1992). They are reputed for their high level of adaptability to local tropical conditions.

It is largely due to failure of these local breeds to provide meat and eggs that would be enough for the country that has caused the importation of exotic breeds (Badejo, 1983). Nigeria has imported birds from several parts of the world. As the demand for poultry has rapidly in recent years the cross-breeding of poultry has brought consideration attention.

This is because cross-breed or hybrid birds have the benefit of hybrid vigour which results in greater production of large-sized eggs and better hatch (Kekeocha, 1984). There are about 175 varieties of fowls which have 13 common colour patterns used to determine the varieties in modern breeds (Kekeocha, 1984).

The breeds available range from Harco, cob, Anak, Yaffa, Yarkon, Hyline, Babcock, 365 – t, t – 173 and B 159. some of these are imported day-old chicks that have abnormalities like cross-beaks, poorly healed navels, swollon hock-joint, etc. These are sold at exorbitant prices to the farmer who may not have knowledge of their poor adequatability in our kind of environment (Badejo, 1983). Most of the commercial hatcheries are franchise of international or foreign poultry genetic companies that develop new breeds, this is sent to their representatives in Africa and other tropical areas for cross-breeding and production of day-old hybrid chicks. The headquarters of these companies provide the necessary technical expertise whereas the local representatives in each of the countries provide the labor and the land. It is by this type of arrangement that many commercial breeds have been distributed in Africa. In some areas, however the government farms engage in the production of day-old hybrid chicks (Kekeocha, 1984).

Abdu, Bashu, and Adeboye, (1983) stated that tropical climate particularly during the hot months of the year is somewhat harsh on poultry in Nigeria. Further state that local breeds are relatively adoptable to the climatic condition in Nigeria whereas the exotic breeds suffer discomfort under conditions of high temperature and humidity. During favourable weather conditions such as the cold dusty hamattan period, sub-clinical infection could spread to a disease outbreak than can have serious economic consequences. Report on the effect of hot climates on egg production indicate that

temperature affects both egg size and rate of egg production. Ogbogu (1988), noted the comfort zone for layers to be between 13 -21^{o}C above this at 30-40^{0}C causes the egg size and number to drop drastically due to reduced feed consumption. The shell and internal quality of eggs are poor.

Bawa, (2007), stressed that disease is a singular factor that had constituted a great threat to profitable poultry production in Nigeria. It has scare many would-be poultry farmers from starting poultry business while some farmers have to either scale down their flock size or close down their poultry farm of recent on account of disease (especially birds flu). Obeng-Asamoah (1982) stated that, it is imperative that one should provide anti-bacterial solutions for disinfecting boots and shoes at the entrance of the chicken house. By undergoing the following processes:

a. Use either izal or dettol in water
b. Put the solution in a shallow trough immediately outside the door of the chicken house
c. A shallow trough can be dug in the ground, cemented, left to dry, and the liquid then poured into it.
d. All farm workers should step in the disinfectant before they enter the chicken house
e. It is economical to soak a jute sack in the liquid and leave it at the entrance. This stops people from getting their socks, shoes and trousers wet.
f. The farm workers and visitors should step on the soaked sack before they go into the chicken house.
g. There is no need to change the solution but extra liquid can be added to the sack.

h. Never place the disinfectant inside the house the scent of it may be inhaled by the chicks, many chick get nasal discharge, caused by these disinfectant.

Umoh, Ezeokole, and Adesiyun, (1982), said that poultry industry in Nigeria has undergone rapid expansion during the past few years. The expansion which has been coupled with high stocking raise, has created a high risk to rate the flocks where explosive outbreak of disease have occurred in recent times. The importation of exotic breeds of chickens has resulted in the concurrent importation of diseases. Diseases imported included Mareks's and Gumboro.

Obeng-Asamoah (1982) observed that when starting poultry the knowledge of litter comes first. A number of materials are suitable for deep litter. But some are more suitable than others. The main attributes of a litter are that it should be absorbent and as free from dust as possible. The following are used on their own or in combination with others for example peat-moss, saw dust, straw and cut straw, shavings and chaff. Factors such as changing the litter frequently, keeping the litter dry, avoiding over-crowding, immediate culling of the sick birds and concern shown by the farmer also helped a part in controlling diseases (Obeng-Asamoah, 1982).

Nawathe and Larmorde (1982) stated that epizootics in chicks could result to between 5 – 30% mortality chronic respiratory ailments, poor feed conversion and immuno suppression against vaccination with New-Castle disease vaccines. In commercial farms, vaccination seems to be more efficient because the movement of the birds is controlled.

In Zaria, Umoh *et al,* (1982) noted that most poultry owners vaccinated their chickens when they were two weeks old. Nawathe and Larmorde (1982) noted that vaccination failures occasionally happened primarily due to improper storage, transportation and

administration of vaccine or secondarily due to maternal antibody interfering with active immunization. Chronic Respiratory Disease (CRD) of poultry is common in Nigeria (Abdu *et al,* 1982). Data on the actual prevalence or epidemiology of the disease were very limited. Diagnosis of the disease has been tentative, this was based on mainly clinical signs of respiratory distress that is supported by post-mortem findings of airsacculities.

Anti-Coccidial drugs have been used in poultry feeds since the introduction of sulfonamides in the 1940s. Evidence showed that sensitivity of coccidian to drugs declined due to the extensive use of some anti-coccidials. In a survey carried out by Yusuf, Fayomi, and Salami, (1986) in some poultry farms in the Kaduna area. They found that most of the poultry farms practiced mixed farming, producing layers and broilers. The bird population which ranged from 500–8000 birds were mostly kept in deep litter houses. It was discovered that out of all diseases, Gumboro 52.6% was most prevalent. It was diagnosed in 10 farms. New–castle 26.3% in 5 farms, while fowl typhoid 5.3% was reported in only one farm. Vaccination records for Gumboro as found in 9 farms, while 14 had New-castle.

Coccidiosis was the most prevalent parasitic disease encountered. Ogundipe, (1976) stated that broiler chicks should be vaccinated for protection against the common diseases as follows:

From 1-7 days: give first dose of new castle (Lasota) vaccine via the drinking water

From 7 – 10days: give first dose of gumboro disease vaccine

From 4 – 5 weeks: give second dose of gumboro disease vaccine

Broiler feed should contain a coccidiostat which should be removed at least four days before the birds are slaughtered. Mortality rate should not exceed 2 percent during the first one week and a total of 5 percent mortality may be allocated up to 8 weeks of age.

2.5.1 Marketing of Poultry and Poultry Products

The aim of marketing of poultry and poultry products is to exposed trainees to the conventional way of processing poultry meat and eggs so as to improve their market value and to create more job opportunities for our unemployed youths (Bawa, 2007).In Nigeria, the marketing of poultry and poultry products such as eggs was not highly organized. Because of non-availability of processing and storage facilities in the production area, sales of poultry products depended largely on the farmers initiative (Kekeocha, 1984). The primary purpose of processing poultry and eggs is to improve sales and profit by supplying attractive, convenient and instant source of product. Most poultry in Nigeria are not processed beyond poultry carcass or meat, while most eggs are not processed beyond cooked or fried eggs.

The little processing involved has reduced amount of readily available ready-to-cook or ready-to-eat products. Badejo, (1982) said that efforts to establish poultry and egg marketing schemes in various states have not been successful and there were no large commercial packaging companies, this is a big problem to farmers and acts as a brake to production. Kekeocha (1984), observed that during glut, price cutting became acute and farmers had no choice but to sell the produce at lower prices and to reduce stock population. Eggs are among the most delicate and perishable food products, food value flavor and general attractiveness are better when the egg is first laid than at a later stage.

Kekeocha, stated that eggs should reach the consumers with the least possible loss of their original quality.

Kekeocha (1984) further asserted that table birds were often sold alive, some farmers sold to middle-men, direct to the market or to hotels and restaurants, Kekeocha further stated that some consumers complained that eggs from birds kept artificially are inferior to those from birds reared naturally. Also people complained of broilers being too soft and tasteless. This problem however did not affect the marketing of these products nor has it stopped people from buying the products. Offiong (1979), reported that the aim of marketing poultry products is to ensure that the products is to ensure that the product reach consumers in a good condition because of the perishable nature of the products. A means of maintaining egg quality would be to treat the surface with an oil as this is effective in sealing the pores and thereby, to some extent, reducing evaporation, weight loss and quality deterioration. In years to come, factories that would process and package eggs for retail and whole sale markets and plants for dressing will come into being (Badejo, 1982).

2.6 Empirical Studies

There is no doubt about the fact that substantial studies have been carried on poultry production as choice of career. But a closer look at these showed that they were heavily in the area of problem of teaching Agricultural Science on poultry production. There has been relatively little research work carried out in Nigeria on the cost-effective strategies for enhancing the establishment of poultry farms in post primary schools. However, some little work have also been done on it as regard to the teaching of poultry production in Agricultural science which is the main purpose of the study.

Akinsorotan *et al*, (2007), carried out a research study titled the effects of school agricultural programme in Oyo state on career choice of students in Ibadan South-West Local Government Area in Oyo state, Nigeria. The target population was 816 out of which 98 students were selected as samples. These were obtained through simple randomization from 4 schools that were purposely selected out of 26 schools in Ibadan Southwest Local Government Area in Oyo state using multistage sampling technique. Primary data were collected through the use of structured pre-test questionnaire which included respondents personal characteristics, parent primary occupation, students exposure to farming activities. Performance in JSSIII agricultural science, examinations, level of participation in School of Agricultural Programmes of Oyo State (SAPOS) and their perception about the activities of SAPOS.

Data were analysed using descriptive statistics such as frequency counts and percentages, while inferential statistics were used for the testing of the 2 null hypotheses at 0.05 level of significance. The study revealed that 43.9% of the respondents were males and 56.1% were females. This showed that the students population offering agricultural science had more females than males in the selected secondary schools. This is contrary to the wide belief that males were more dominant in agriculture activities compared to the females. The result showed that 93.9% of the respondents age were 15 years and above. This age distribution reflected the educational system in the country which stipulated secondary school age to be for children between 12 and 18 years. This is the time when they can be effectively taught and guided towards choosing a career. The result further showed that Christian students population had higher percentage (76.5%)

compared to Muslim students 23.5%, while traditional religion had none in the selected secondary schools.

The religion distribution revealed that Christian students, participation in agriculture was higher than Moslem students. It was discovered that majority of respondents parents 90.8% of father and 88% of the mothers occupation were non-farming occupation, while only 9.2% of fathers and 11.2% of mothers were involved in farming occupation. Based on the findings this might influence the choice of respondents, career to be non-farming occupation.

The present research study is similar with the previous research study in the use of questionnaire as instrument for data collection. The present research study is different from the past research work in the following ways: The target population for the previous research work was 816, while the target population for the present research study was 18,556. The past study was carried out in Ibadan South-west Local Government, Area in Oyo state, Nigeria, while the present study was carried out in Adamawa state. In the past research work all JSSIII students in the sampled schools were used for the study, while the present research work included: all final year students in SSS III offering Agricultural Science Principals, Agricultural science teachers and poultry attendants in the sampled schools were also involved in the present study.

But the researcher had sampled only 4 schools out of 26 schools in one Local Government Area in Oyo State. However, the result of one Local Government Area cannot be generalized to the entire Oyo State.

Onu, (2005) carried out a research study titled “Constraints militating against the establishment of livestock farms in secondary schools in South-Eastern Nigeria. Two

research questions and two null hypotheses were formulated, while proportionate sampling techniques were used to sample 930 subjects made up of 465 Principals and 465 agricultural science Heads of Department from Government Secondary Schools in the South-Eastern Nigeria. The instrument for data collection was the questionnaire and the method of data analysis was by mean standard deviation and t-test statistics. Among the findings of the study were; inadequate provision of funds and high cost of constructing livestock houses in secondary schools. The strategies to be employed to establish livestock farms included; inclusion of agricultural science fees in the school fees where fees were charged to help in financing agricultural science programmes like livestock farming.

The present research study is similar with the past research in the use of questionnaire as an instrument for data collection. Random sampling technique was used by the past researcher, while in the present research work proportional sampling technique was used. In the past research work, two research questions and two null hypotheses guided the study, while in the present research work four research questions and four null hypotheses were formulated for the study.

Hence, his result cannot be generalized to the entire state because of the limited number of Local Government Areas selected.

Onu, (2004) carried out a research study titled "Cost-effective strategies for enhancing the establishment of poultry farms in post primary schools in Nigeria. Two research questions and two null hypotheses guided the study. Questionnaire was used to collect data from a sample of 950 school principals and 950 senior agricultural science teachers using simple random sampling technique. Data were analysed by use of means,

standard deviation and t-test statistics. It was found that, lack of funds, poultry facilities and trained poultry attendants were constraints to poultry establishment in schools. Cost-effective strategies identified for enhancing the establishment of poultry farms in schools included, using low profile intensive system of poultry keeping and formation of co-operative societies for poultry enterprise in post primary schools. Based on the findings, recommendations were made among which was that Government and Parent Teachers Association should assist to provide funds for poultry keeping in school.

The present study is different from the past research work in the following ways: In the past research work, two research questions and two null hypotheses guided the study, while in the present research work, four research questions and four null hypotheses were formulated for the study. In the past research study, questionnaire was used to collect data from a sample of 950 school principals, and 950 senior agricultural teachers in Nigeria, while in the present study questionnaire was used to collect data from a sample of 28 schools, 560 Agricultural science students, 28 Agricultural science teachers, 28 school principals and 28 poultry attendants.

The researcher came up with the following differences:

a. Lack of funds, poultry facilities and trained poultry attendants were major constraints to poultry establishment in schools.

b. Cost-effective strategies identified for enhancing the establishment of poultry farms in schools included: using low profile intensive system of poultry keeping and formation of poultry co-operative societies for poultry enterprise in post primary schools.

Mohammed (1996) carried out a research study titled "problems of poultry farming among selected farms in Zaria, Kaduna state". The study was carried out in three Local Government Areas, which comprised of Zaria, Sabon Gari and Giwa Local Government Areas in Kaduna State. A total of 120 copies of questionnaires were distributed out of which 65 copies were satisfactorily completed by the respondents and returned. The survey lasted for five (5) months (May – September). The farmers visited were located in Samaru, Shika, Hanwa, Palladan, Wusasa and Zaria city. A 77- item questionnaire were drawn to cover respondent's bio-data and other important aspects involved in poultry production such as housing, feeding, management, productivity, disease, economics of production/marketing and other problems associated with poultry production. Numerical aspects of the data collected were analyzed using simple descriptive statistics. Results of the survey identified lack of capital 47.70%, diseases 46.20%, lack of building 43.10%, lack of extension services 36.20%, lack of drugs or vaccines 35.40%, high cost of feeding 32.30%, poor marketing 30.80% and lack of storage facilities 27.70% to be the major problems that militated against commercial poultry production in Zaria. The survey showed that poultry production would be very profitable and productive in Zaria and its environs if adequate attention can be paid to the identified problems.

The present research study is similar with the past research work in the use of questionnaire as instrument for data collection. But the present study is different from the past research work in the following ways: The past study was carried out in the three Local Government Areas in Kaduna state, while the present research work was carried out in Adamawa state. The researcher had failed in sampling only 2 Local Government

Areas in Kaduna State. However, the result of these 2 Local Government Areas cannot generalize the entire state.

2.7 Summary of the Reviewed Literature

In this chapter, the researcher reviewed the literature related to the study. In doing this, the conceptual framework was highlighted. The review focused on the history and development of commercial poultry in Nigeria, this showed how broiler chicks were introduced with the requirements for processing and freezer storage facilities. The review also focused on poultry farming in general and the establishment of livestocks (which poultry belongs) that will equip students with skills in their production. The promotion of poultry education scheme depended largely on a number of factors which included: articulation of the objectives, good planning, adequate qualified staffing, provision of adequate equipment, conducive environment, security, proper funding and others.

Factors militating against proper establishment of poultry farms in secondary schools were reviewed. This focused on a good number of factors standing against poultry education scheme. The study considered some of the factors which included; adequate qualified poultry teachers to handle the scheme in secondary schools and the degree in the availability in the proper funding by government. The marketing of poultry and poultry products aimed at exposing the students to the conventional way of processing poultry meat and eggs so as to improve their market value and to create job opportunities for the unemployed youths were reviewed.

The provision of special incentives and remuneration for teachers specialist in poultry production were reviewed, thus the need for the study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter on methodology contained the following sub-headings.

3.1 Research design

3.2 Population for the study

3.3 Sample size and Sampling procedure

3.4 Instrument for Data Collection

3.4.1 Validation of the Instrument

3.4.2 Pilot study

3.4.3 Reliability of the Instrument

3.5 Procedure for Data Collection

3.6 Procedure for Data Analysis

3.1 Research Design

The research design for this study was descriptive survey research design. This research design was chosen to collect detailed factual information on the teaching of poultry production as well as identifying problems or justify current conditions of poultry farms in secondary schools in Adamawa state. It was also chosen because the researcher was interested in the accurate assessment of the characteristics of the whole population, of the people.

3.2 Population for the Study

The population consisted of 354, Agricultural Science teachers, 358 Principals, 17,500 Agricultural Science students, 344 Poultry attendants given a total of 18,556

target population in the five Educational zones in Adamawa state and with a total of 175 Senior Secondary Schools. The zones included: Ganye zone with thirty (30) senior secondary schools; Mubi zone with fourty –one(41) senior secondary schools; Numan zone with thirty six(36) senior secondary schools, Yola zone, has thirty four(34) senior secondary school. These gave a total of one hundred and seventy five (175) senior secondary schools in the twenty-one(21) Local Government Areas in the state. All final year senior secondary school students (SS III) who were studying Agricultural science, Principals, Agricultural science Teachers and Poultry Attendants constituted the target population for this study as presented in Table 3.1.

Table 3.1 Population for the study

Zones	No of schools	No of *Principals	No of Agric Teachers	No of students	No of poultry attendants	Total
Ganye zone I	30	60	60	3,000	55	3175
Gombi zone II	34	76	72	3,400	73	3621
Mubi zone III	41	82	80	4,100	80	4342
Numan zone IV	36	72	72	3,600	70	3814
Yola zone V	34	68	70	3,400	66	3604
Total	**175**	**358**	**354**	**17,500**	**344**	**18,556**

Source: Department of Planning Research and Statistics, Ministry of Education Yola 2010).

* These were made up of Principals, Vice-Principals Administration and Vice-Principal Academic

3.3 Sample Size and Sampling Procedure

In order to select the sample schools, the researcher went to the Department of Planning Research and Statistics in the Ministry of Education and collected all the list of Senior Secondary Schools, Principals, Vice-Principals Administration and Vice-Principals Academics, Agricultural Science Teachers, Agricultural Science Students and Poultry

Attendants in Adamawa State. These gave a total of 18,556 respondents which constituted the target population. Hence, the sample size was selected from this population using proportionate sampling technique. This technique was chosen because the number of schools and students in each zone were not the same. The number of schools in table 3.2 were sampled from the selected schools in table 3.1. These gave a total of 30 schools that were used as samples for the study. Since the number of students in each school and in each zone are not the same, proportionate sampling technique was also used. The number of students in table 3.2 were also sampled from the selected students in table 3.1, given a total of 560 students. In addition to these, Principals, Vice-Principals Administration and Vice-Principals, Academic, Agricultural Science teachers and Poultry Attendants were also selected. The total respondents selected as samples for this study was 644. The details of the sample size for the study were as presented in Table 3.2.

Table 3.2 Sample size for the study

Zones	No of sampled schools	No of sampled students	No of sampled principals	No of sampled teachers	No of sampled attendants	Total
Ganye zone I	5	96	5	5	4	110
Gombi zone II	6	109	6	6	6	127
Mubi zone III	7	131	6	6	7	150
Numan zone IV	6	115	6	6	6	133
Yola zone V	6	109	5	5	5	124
Total	**30**	**560**	**28**	**28**	**28**	**644**

Sampling of Administrators, Teachers and Attendants

Based on the fact that the numbers of the respondents were small and can be properly managed. All Principals 358, Agricultural Science Teachers 354 and Poultry Attendants 344 of the selected senior secondary schools from the Zones were used as samples for the study.

3.4 Instrument for Data Collection

The main instrument used for the data collection was questionnaire on 4-point point rating Scale. The responses were based on a four- point rating scale of SA=Strongly Agree (4 point), A= Agree (3 point), D= Disagree (2point), SD=Strongly Disagreed (1 point). The rating scale techniques were used because according to Batch (1985) in Agbamu (2005), it will enable the respondents to indicate the degree of their opinions in a given statement.

The questionnaire was divided into five sections A,B,C,D and E. Section "A" focused on the demographic characteristics of the respondents; Sections "B, C, D, and E" were based on the research questions. Items 1-5 focused on the effect of teaching agricultural science on poultry production in secondary schools, Section "C" with items 6–10 focused on methods of teaching poultry production, section "D" with items 11 -15 focused on factors militating against the establishment of poultry production and choice of career while section "E" with items 16-20 focused on the possible ways of developing and promoting poultry production as a career by students. These helped to answer research questions and to obtain data to test the four Null hypotheses.

3.4.1 Validity of the Instrument

In order to make sure that the final copy of the questionnaire is valid for the study, the researcher gave the questionnaire to some experts in the Department of Vocational and Technical Education for vetting. Based on the inputs of the experts a final copy of the questionnaire was produced.

3.4.2 Pilot Study

A pilot study was carried out at Walter Gowans Memorial College Lassulle-Shongom in Gombe State. This was done to determine the reliability of the designed questionnaire and to assess the ease with which the Principals, Teacher, students and poultry attendants of the school will respond to it. Fifty copies of questionnaire were distributed each to the Principals, Agricultural Science Teachers, Agricultural Students and Poultry Attendants in Gombe State. They were not within the study location but shared similar characteristics in almost all respects. The questionnaire were distributed and personally retrieved by the researcher. The data collected were subjected to statistical analysis to determine the reliability co-efficient of the instrument

3.4.3 Reliability of the Instrument

The data collected from the pilot study were statistically analysed to determine the reliability co-efficient. The Guttman option of the split-half and Spearman-Brown reliability coefficient were used. Consequently, reliability coefficient of alpha level of .840 and standard alpha level of 0.910 were obtained. These reliability coefficients were considered adequate for the internal consistencies of the instrument. This was a confirmation of test of reliability which Spiegel and Stevens (1999) said that an instrument is considered reliable if it lies between 0 and 1, and that the closer the

calculated reliability coefficient is to zero, the less reliability of the instrument. But the closer the calculated reliability coefficient is to 1, the more reliable is the instrument. This therefore confirmed the reliability of the instrument used for the study.

3.5 Procedure for Data Collection

The researcher obtained an approval letter of introduction from the Head of Department of Vocational and Technical Education, Faculty of Education Ahmadu Bello University, Zaria to the secondary schools being studied. The copies of the questionnaire were administered to Principals and Vice-Principals, Agricultural science Teachers, SSIII students and Poultry Attendants. Administration of copies of the questionnaire was carried out personally by the researcher to the respondents with the help of five research assistants who were trained and given details about the procedures. The researcher and the research assistants were in each of the schools and administered the copies of the questionnaire to the 560 students, 28 principals, 28 teachers and 28 poultry attendants. The research assistants also helped to collect back the filled copies of the questionnaire from the respondents after 5 weeks.

3.6 Procedure for Data Analysis

The responses to the items in the questionnaire were coded and transformed from ordinal scale to interval scale. Data were statistically analyzed using descriptive statistics such as frequency counts and percentage. Pearson Product Moment Correlation (PPMC) statistics was used for testing of the four Null hypotheses. The reason was to find the relationship between the dependent and independent variables. All the null hypotheses were tested at 0.01 level of tolerance. Mean (X), Standard Deviation (SD), and Standard

Error (SE) were used to determine the level of opinions of respondents to research questions. The decision rule for accepting or rejecting the Null hypotheses is: if t calculated is greater or equal to (t) critical the Null hypothesis will be rejected and vice versa (Sambo, 2008).

CHAPTER FOUR

PRESENTATION AND DATA ANALYSIS

In this chapter, the data collected through the use of structured questionnaire were presented using simple frequency tabular format. The four-point rating scale, the mean response ($\overline{X}$), standard deviation (SD) and standard error (SE) were all built into the tables. The tabular presentation was followed by an analysis of each table. The analysis focused on the major highlights of the tables.

The presentation of results is in line with the four (4) Null Hypotheses stated. Each of the Four Null Hypothesis was recapitulated and was followed by corresponding table. Results of the findings on the table formed the last part of this chapter. Samples of 644 respondents comprised of Principals 28, Agric teachers 28, students 560 and Poultry attendants 28. Their responses were analysed with the use of Statistical Package for the Social Sciences (SPSS) under the following sub-headings:

4.1 Analysis of Bio-Data Distribution

4.2 Answers and Research questions

4.3 Test of Null Hypotheses

4.4 Discussion of the Findings

4.5 Summary of Major Findings

4.1 Analysis of Bio-Data Distribution

The Table 4.1.1 showed the gender of the respondents.

Table 4.1.1 Percentage Distribution of Respondents by Gender

Students	Frequency	Percentage
Male	399	72.5
Female	151	27.5
Total	**550**	**100**
Principals		
Male	25	88.5
Female	3	11.5
Total	**28**	**100**
Teachers		
Male	27	96.4
Female	1	3.6
Total	**28**	**100**
Poultry Attendants		
Male	25	88.5
Female	3	11.5
Total	**28**	**100**

The sex of the students as shown in Table 4.1.1 showed that 399 of the respondents representing 72.5% were males, while 151 representing 27.5% were females. Also for the Principals, 25 of the respondents that is 88.5% were males, and 3 of the respondents representing 11.5% were females. Based on the Table data, the Teachers were 27 males representing 96.4%, while 1 respondent, representing. 3.5% was a female. The data in the Table further showed that 25 of the Poultry Attendants representing 88.5% were males, while 3 of the respondents that is 11.5% were females.

4.2 Answers to research questions

Research Question 1: *What are the effects of teaching agricultural science on poultry production in secondary schools in Adamawa State.*

The Research question was answered with the data in Table 4.2.1

Table 4.2.1 Opinions of respondents on the effect of teaching agricultural science on poultry production in secondary schools

S/No	Effects of teaching agric science in secondary school	Response categories		Mean	SD	SE
		Agreed	Disagreed			
1.	The curriculum content of agricultural science enhances better teaching of poultry production	603	27	3.51	.60	.02
2.	The availability of poultry production is as a result of better teaching in agricultural science in secondary schools	434	196	2.90	0.96	.04
3.	Poultry production has encouraged the regular review of the curriculum of agricultural science	531	99	3.11	0.68	.04
4.	The effect of agricultural science on poultry production is felt by every student in the college	248	382	2.41	.95	.04
5.	Establishment of poultry production increases the number of agricultural science teachers in the state	427	203	2.91	.91	.04

Table 4.2.1 presented data on the opinions of respondents on the effects of teaching agricultural science in secondary schools. The curriculum content of agricultural science enhanced better teaching of poultry production gave the highest mean response of 3.51. The response showed that 603 respondents 'Agreed' with the view, while 27 respondents 'Disagreed'.

Also poultry production has encouraged the regular review of the curriculum of agricultural science. This gave the second mean response of 3.11. The response showed that 531 respondents 'Agreed' with the view, while 99 respondents 'Disagreed'.

Also on if the establishment of poultry production increased the number of agricultural science teachers in the state, this gave the third mean response of 2.91. The response showed that 427 respondents 'Agreed' with the view, while 203 respondents 'Disagreed'.

On whether the availability of poultry production was as a result of better teaching in agricultural science in secondary schools, this gave the fourth mean response of 2.90. The response showed that 434 respondents 'Agreed' with the view, while 196 respondents 'Disagreed'.

The respondents opinions on if the effect of agricultural science on poultry production was felt by every student in the college, this gave the fifth mean response of 2.41 with 248 respondents 'Agreed' with the view, while 382 respondents 'Disagreed'.

Research Question 2: *What are the methods used in teaching poultry production and students choice of poultry production as a career in Adamawa state.*

The Table 4.2.2 was used to answer the Research Question 2.

Table 4.2.2. Opinions of respondents on the method of teaching poultry production

s/no	Method of teaching poultry production	Response categories				
		Agree	Disagree	Mean	SD	SE
6.	The use of practical method of teaching poultry production in secondary school enhances the subject learning process	588	42	3.49	0.68	.03
7.	Group method of teaching poultry production is suitable for large class of students	542	88	3.22	0.76	.03
8.	Demonstration method of teaching poultry production enables every student to be involved	565	65	3.33	0.75	.03
9.	The practical method of teaching poultry production enables the student to relate it to practical knowledge	575	55	3.36	0.71	.03
10.	The curriculum of poultry production should include ideas from extension workers and specialist in poultry production	579	51	3.38	0.75	.03

Table 4.2.2 presented data on the opinions of respondents on the methods of teaching poultry production. The opinion that the use of practical method of teaching poultry production in secondary school enhanced the subject learning process gave the highest mean response of 3.49. in which 588 respondents 'Agreed' with the view, while 42 respondents 'Disagreed' with the view. Also the curriculum of poultry production should include ideas from extension workers and specialists gave the second mean response of 3.40. in which 579 respondents 'Agreed' with the view, while 51 respondents 'Disagreed'.

The opinions on whether practical method of teaching poultry production enabled the students to relate it to practical knowledge, gave the third mean response of 3.36. in which 575 respondents 'Agreed', while 55 respondents 'Disagreed'.

Using demonstration method in teaching poultry production enabled every student to be involved, had the fourth mean response of 3.33. in which 565 respondents 'Agreed' and 65 respondents 'Disagreed'.

Group method of teaching poultry production was suitable for a large class of students, gave the fifth mean response of 3.22. with 542 respondents 'Agreed' with the view while 88 respondents 'Disagreed'.

Research Question 3: *What are the major factors militating against the students choice of poultry production as a career after graduation in Adamawa state*.

The Research question 3 was answered using the Table 4.2.3 data.

Table 4.2.3 Opinions of respondents on factors militating against the establishment of poultry production and choice of career

s/no	Factors militating against the establishment of poultry production and choice of career	Response categories		Mean	SD	SE
		Agree	Disagree			
11.	Lack of modern poultry farm house and equipment	479	151	3.07	0.98	.04
12.	Lack of qualified poultry specialists	493	137	3.15	0.95	.04
13.	Lack of adequate incentives and remuneration of agric teachers that specializes in poultry management	513	117	3.21	0.80	.03
14.	Lack of proper awareness on the importance and management of poultry farm in secondary school	551	79	3.26	0.73	.03
15.	Corruption on the part of those officials to implements the successful poultry farm programme in secondary school in the state	512	118	3.17	0.04	.92

The data in Table 4.2.3 indicated the opinions of respondents on factors militating against the establishment of poultry production as career. On this, lack of proper awareness on the importance and management of poultry farm in secondary schools, gave the highest mean response of 3.26. where 551 respondents 'Agreed', while 79 respondents 'Disagreed'.

Lack of adequate incentives and remuneration of agriculture teachers who specialized in poultry management, gave the second mean response of 3.42. On this 513 respondents indicated 'Agreed', while 117 respondents indicated 'Disagreed'.

Corruption on the part of those officials to implement the successful poultry farm programme in secondary schools in the state, gave the third mean response of 3.17. The response showed that 512 respondents 'Agreed' with the view, while 118 respondents 'Disagreed'.

Lack of qualified poultry specialist, gave the fourth mean response of 3.15. with 493 respondents 'Agreed' and 137 respondents 'Disagreed'.

Lack of modern poultry farm house and equipment had the fifth mean response of 3.07. and on this 479 respondents 'Agreed', while 151 respondents 'Disagreed'.

Research Question 4: *What are the possible ways for promoting poultry production as a career by teachers in Adamawa State.*

The Research question 4 was answered using the data in Table 4.2.4.

Table 4.2.4 Opinions of respondents on possible ways of promoting poultry production

s/no	Possible ways of promoting poultry production as career by teachers	Response categories		Mean	SD	SE
		Agree	Disagree			
16.	Poultry production should be a compulsory subject in secondary schools	421	209	2.90	1.03	.04
17.	Government should sponsor the development of poultry production in secondary school	599	31	3.45	0.65	.03
18.	Soft loans should be made readily available to students who want to take up poultry production as career	603	27	3.42	0.65	.03
19.	Extension workers experts in poultry management should visit secondary school regularly to motivate them	604	22	3.47	0.60	.02
20.	The importance of poultry production. As revenue generation and to the body health be made known to all students, parents and the general public.	584	46	3.45	0.70	.03

Table 4.2.4 showed the respondents opinions on ways of developing and promoting poultry production. On the use of Extension workers and experts in poultry management to visit secondary schools regularly to motivate them gave the highest mean response of 3.47 and on this, 603 respondents 'Agreed', while 27 respondents 'Disagreed'.

Another possible way of developing / promoting poultry production as a career by students according to the respondents was that government should sponsor the

development of poultry production in secondary schools. This gave the second highest mean response of 3.45. where 599 respondents 'Agreed', while 31 respondents 'Disagreed'.

The importance of poultry production as a revenue generation and for the body health should be made known to all students, parents and the general public, had the third mean response of 3.45 and 584 respondents 'Agreed', while 46 respondents 'Disagreed' with this item.

Soft loan should be made readily available to students who wanted to take up poultry production as career, gave the fourth mean response of 3.43. The response showed that 603 respondents 'Agreed', while 27 respondents 'Disagreed'.

Poultry production should be a compulsory subject in secondary schools, had the fifth mean response of 2.90, on this 421 respondents 'Agreed', while 209 respondents 'Disagreed' with the item.

4.3 Test of Null Hypotheses

Null Hypothesis One: *There is no significant difference between teaching agricultural science and poultry production in Adamawa State.*

Data on the tested Null hypothesis one were presented in Table 4.3.1.

Table 4.3.1 Pearson Product Moment Correlation (PPMC) statistic on the difference between teaching Agricultural Science and Poultry production in Adamawa state.

Variables	N	Mean	SD	Correlation index r	Df	Sig (P)
Effects of teaching agric science On	630	14.84	2.68	.644**	628	.000
Poultry production	630	64.17	6.70			

** Correlation is significant at the .0.01 level (2 –tailed), sig (P) <0.01

Data in Table 4.3.1 showed that there was significant relationship between teaching Agricultural Science and Poultry production. This is because the calculated (P) value of .000 was less than the 0.01 level of tolerance with a correlation index value of .644. Therefore, the Null hypothesis which stated that there is no significant relationship between poultry production and teaching Agricultural Science, was rejected.

Null Hypothesis Two: *There is no significant relationship between methods used in teaching poultry production and students choice of poultry production as a career in secondary schools in Adamawa state*.

Data for the tested Null hypothesis two were presented in Table 4.3.2.

Table 4.3.2: Pearson Product Moment Correlation (PPMC) statistics on the difference between methods used in teaching poultry production and students choice of poultry production as a career on secondary school.

Variables	N	Mean	SD	Correlation index r	df	Sig (P)
Methods used in teaching poultry production and	630	16.78	1.93	.482**	628	.000
Students choice of poultry production as a career in secondary school in Adamawa state.	630	16.69	2.27			

**Correlation is significant t the 0.01 level of (2-tailed) sig (p) < 0.01

The data in Table 4.3.2 showed that there was significant relationship between the methods used in teaching poultry production and student choice of poultry production as a career. This is because the calculated significant (P) value of .000 was less than 0.01 level of tolerance with a correlation index value of .482. Therefore the Null hypothesis which stated that there is no significant relationship between methods used in teaching

poultry production and students choice of poultry production as a career in secondary schools was rejected.

Null Hypothesis Three: *There is no significant relationship between factors militating against establishing of poultry production and students choice of poultry production as a career*.

Data on tested Null hypothesis three were presented in Table 4.3.3.

Table 4.3.3.: Pearson Product Moment Correlation (PPMC) Statistics between on factors militating against establishment of poultry production and students choice of poultry production and students choice of poultry production as career.

Variables	N	Mean	SD	Correlation index r	df	Sig (P)
Factors militating against establishment of poultry production and	630	15.87	2.94	.381**	628	.000
Students choice of poultry production as a career	630	16.69	2.27			

** correlation is significant the 0.01 level (2 – tailed); Sig (P) <0.01

The data in Table 4.3.3 indicated that there was significant relationship between factors militating against establishing poultry production and student choice of career. This is because the calculated significant (P) value of .000 was less than the 0.01 level of tolerance with a correlation index value of .381. Consequently, the Null hypothesis which stated that there is no significant relationship between factors militating against establishing poultry production and student's choice by poultry production as a career was also rejected.

Null Hypothesis Four: *There is no significant relationship between ways of promoting poultry production and the choice of career by students of agriculture in Adamawa state.*

Data on test of null hypothesis four were presented in Table 4.3.4.

Table 4.3.4. Pearson Product Moment Correlation (PPMC) statistics on the differences between ways of developing and promoting poultry production and the choice of career by students of agriculture in Adamawa state.

Variables	N	Mean	SD	Correlation index r	Df	Sig (P)
Ways of promoting poultry production and the choice of	630	19.86	2.74	.950**	628	.000
career by students of agriculture in Adamawa State	630	16.69	2.27			

** correlation is significant the 0.01 level (2 – tailed); Sig (P) <0.01

Table 4.3.4 data indicated that there was significant relationship between ways of developing and promoting poultry production and students choice of poultry production as a career. This is because the calculated significant (P) value of .000 was less than the 0.01 level of tolerance, with a correlation index value of .950. Therefore the Null hypothesis which stated that there is no significant relationship between developing and promoting poultry production and choice of career by students of agriculture was rejected.

4.4 Discussion of the Findings

In the sections of this chapter, the results of the analysis were presented and interpreted. The study sampled 28 Principals, 28 Agricultural teachers, 28 Poultry Attendants and 560 Agricultural science students as the respondents. The distribution of students according to their sex showed that 399 of the respondents representing 72.5% were males, while 161 representing 27.5% were females. The distribution of Principals according to their sex revealed that 25 of the respondents, that is 88.5% were males, while 3 of the respondents representing 11.5% were females. The distribution of teachers according to their sex indicated that 27 of the respondents representing 96.45 were males, while 1 of the respondent that is 3.5 was a female. The distribution of poultry attendants according to sex showed that 25 of the respondents that is 11.5% were females. The study considered four research questions and four null hypotheses and the discussions of their findings were presented henceforth.

Null Hypothesis one showed that there was significant relationship between teaching agricultural science and poultry production. Poultry production is a component of agricultural science. Ogieva (2003) defined agricultural science as the production of crops, rearing of animals and general soil management. Ogieva (2003) further stated that agricultural science is the scientific manipulation of soil for the production of crops and rearing of animals for human needs. From the foregoing it can be said that the level of poultry production can be determined by the emphasis on the Agricultural science. Infact this explained why the respondents had highest mean response of 3.51 on the effect of teaching of agricultural science on poultry production.

Null Hypothesis two also showed that there was significant relationship between methods used in teaching poultry production and students choice of poultry production as a career in the secondary schools. The respondents highest mean response of 3.49 indicated that the use of practical method of teaching poultry production in secondary school enhanced the subject learning process. Also the curriculum of poultry production should include ideas from extension workers and specialists in poultry production. The implication from the foregoing, was that the teaching method adopted significantly influenced the student choice of poultry production as a career. The use of practical method was therefore the best method of teaching agricultural science in order to enhance student's choice of career in poultry production in secondary school (Ogbazi, 1988).

Null Hypothesis three also showed that there was significant relationship between factors militating against establishing poultry production and students choice of poultry production as a career. The respondents opinions on this issue were that lack of proper awareness on the importance and management of poultry farm in secondary schools had the highest relationship that is, if affected the students choice of poultry production as a career. The second highest factor militating against poultry production which affected student's choice as career was the lack of adequate incentives and remuneration of agricultural teachers who specialized in poultry production. From these views it could be seen that adequate awareness on importance of poultry production and adequate production will significantly improve the student's choice of poultry production as a career.

Null hypothesis four showed that there was significant relationship between developing and promoting poultry production and students choice of poultry production

as a career. The researcher suggested that Government should sponsor the development of poultry production in secondary schools. According to the respondents, agricultural extension workers and experts in poultry production should visit secondary schools regularly to motivate students in their choice of poultry production as a career.

4.5 Summary of Major Findings

The following are summary of the major finding of this study.

i. The teaching of poultry production in Agricultural science in secondary schools has enabled the students to choose poultry production as a career.

ii. Practical method of teaching poultry production was the most effective in the teaching of poultry production.

iii. The study showed that Qualified Agricultural Science Teachers and specialists in poultry production, as well as adequate modern poultry equipment and facilities were employed and provided.

iv. Base on the fact that poultry production was made a compulsory subject with the regular visit of Agricultural workers to secondary schools really motivated students to choose poultry production as a career.

The regular review of the curriculum of agricultural science had direct effect on poultry production in secondary schools, because this enhanced better teaching of poultry production. The use of practical method of teaching poultry production in secondary schools enhanced the subject learning process, while ideas from extension workers and specialist in poultry production made significant effect on poultry production.

Another important factor that militated against the establishment of poultry production and the choice of poultry production as a career were the lack of proper awareness on the importance and management of poultry farms in secondary schools, and lack of adequate incentives and remuneration of agricultural science teachers who specialized in poultry management. Possible ways of promoting poultry production to make the students take poultry production as a career is for government to sponsor the development of poultry production in secondary schools. According to Adu, (1996), one of the most important problems in poultry production development since 1983 was political instability. The best possible ways of promoting poultry production as expected was that agricultural extension workers and experts in poultry management should visit secondary schools regularly to motivate students. Government also should contribute to the development of poultry production in secondary schools through provision of adequate funding.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This chapter contained the summary, conclusion as well as recommendations under the following sub-headings:

5.1 Summary

5.2 Conclusion

5.3 Recommendation

5.4 Limitation of the study

5.1 Summary

The study was carried out to find out the Effect of Teaching poultry production on choice of career by agricultural science students in secondary schools in Adamawa State, Nigeria. The main objective was to determine the effects of teaching poultry production in Agricultural science as a career by students in secondary schools in Adamawa State. The research design adopted for this study was descriptive survey research design. The population of the study was 18,556 which comprised of Principals, Agricultural Science teachers, Agricultural Science students and poultry attendants. A proportional random sampling technique was used to sample 644 respondents from the target population. Structured questionnaire was used to get data from the respondents. Four research questions and four null hypotheses were formulated to guide the study. Pearson Product Moment Correlation (PPMC) statistics was used to test all the four null hypotheses at 0.01 level of tolerance.

Null hypothesis one was rejected because significant (P) value of .000 was less than 0.01 level of tolerance with a correlation index value of .644. Null hypothesis two

was rejected because significant (P) value of .000 was less than 0.01 level of tolerance with a correlation index value of .482. Likewise Null hypothesis three was rejected because significant (P) value of .000 was less than 0.01 level of tolerance at a correlation index value of .381. The Null hypothesis four was also rejected because significant (P) value of .000 was less than 0.01 level of tolerance and a correlation index value of .950.

It was found that there was significant relationship between teaching agricultural science poultry production and career choice by secondary school students. Poultry production is a component of agricultural science. This agreed with Ogieva (2003) who defined agricultural science as the production of crops, rearing of animals and general soil management.

Among the findings of the study were that the review of the curriculum of agricultural science had direct effect on poultry production in secondary schools and the curriculum content of agricultural science enhanced better teaching of poultry production. The use of practical method of teaching poultry production in secondary schools also enhanced the better learning of the poultry production. Furthermore, results indicated that the ideas from extension workers and specialists in poultry production contributed significantly to poultry production. One of the important factors which militated against the establishment of poultry production as choice of career was the lack of awareness on the importance and management of poultry farms in secondary schools. Also lack of adequate incentives and remuneration for agricultural science teachers who specialized in poultry management militated against poultry establishment in the secondary schools.

One of the ways for promoting poultry production as a career by students is for Government to sponsor the development of poultry production in the secondary schools.

In addition the experts in poultry production should visit secondary schools regularly to motivate students to choose poultry as a career. Government also should contribute to the development of poultry production in secondary schools through provision of adequate funding.

5.2 Conclusion

Based on the findings it was concluded that the teaching of poultry production to the Agricultural Science students contributed to the choice of poultry production as a career by the students in Secondary Schools in Adamawa State. Also it increase the level of awareness on the importance of poultry production, as well as government support for agricultural teachers.

The practical methods used in teaching poultry production had positive effect on student choice of poultry production as a career.

5.3 Recommendations

Based on conclusion, the following recommendations were made:

1. Governments (State, Local) should encourage poultry production by providing special incentives and remuneration for agricultural teachers and specialists in poultry production.
2. The use of practical teaching methods should be maintained and encouraged in the teaching of poultry production.
3. The curriculum of poultry production should be regularly reviewed to up-to-date the contents using the ideas from extension workers and specialists in poultry production.

4. There should be regular visit by agricultural extension workers and specialists in poultry production to the secondary schools in Adamawa State.

5.4 Limitation of the study

During the course of the study, the researcher encountered some constraints which included difficulty in the accessibility to schools located in the rural areas, where most roads were bad. Some respondents did not cooperate with the researcher, especially some Principals. In some cases the researcher had to follow them to their houses to seek for permission. The copies of questionnaires administered were not all returned. These affected the researchers study by prolonging the period of administration of questionnaire.

5.5 Suggestions for further studies

The researcher put forward the following recommendations for further studies in the related area:

1. The Effect of Poultry production on the diet needs of the people in Adamawa state.
2. The relationship between Poultry production practices and Agricultural science in secondary schools in Adamawa State.

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APPENDIX 1

Questionnaire for principals, agric teachers, students and poultry attendants of senior secondary schools in Adamawa state.

Agric. Education Section,
Department of Vocational and
Technical Education
Faculty of Education,
ABU, Zaria.

8th June, 2011

Dear Respondent,

Request to Complete Questionnaire

I am a postgraduate student of Agric Education in the Department of Vocational and Technical Education, Ahmadu Bello University, Zaria. I am carrying out a research on "Effect of Poultry Production on Career Choice of Agricultural science students in Adamawa State".

You are requested to complete the attached questionnaire as your response will be useful in this research, which is purely for academic purpose. The information you will provide will be treated as confidential and will be used only for the purpose of the research. Your identity will not be disclosed. Please be as accurate as possible to enable the researcher get valid information.

Thanks for your cooperation.

Yours faithfully,

Gwarkila, Kaduna

APPENDIX II

Questionnaire for principals, agric teachers, students and poultry attendants of senior secondary schools in Adamawa state.

SECTION A: BIO DATA

Name of school_____

Please tick [√] as appropriate where necessary

Age (in years)

1. Below 20 [ ]
a. 21 – 30 [ ]
b. 31 – 40 [ ]
c. 41 – 50 [ ]
d. 50 and above [ ]

2. Location of School

a. Urban [ ]
b. Rural [ ]

3. Sex

a. Male [ ]
b. Female [ ]

4. Religion

a. Islam [ ]
b. Christian [ ]
c. Others (specify) ----------

5. Highest Educational Status

a. Not applicable [ ]
b. DIP/NCE [ ]
c. First degree [ ]
d. M.Sc/ Ph.D [ ]

6. Status of respondent

a. Principal [ ]
b. Agric Teacher [ ]
c. Student [ ]
d. Poultry attendant [ ]

There are four options in each item as follows:

Strongly Agree (SA)
Agree (A)
Disagree (D)
Strongly Disagree (SD)

Section B: Effect of Teaching Agricultural Science on Poultry Production in Secondary School.

1.	The curriculum content of Agricultural science enhances better teaching of poultry production	**SA**	**A**	**D**	**SD**
2.	The availability of poultry production is as a result of better teaching in Agricultural science in secondary schools				
3.	Poultry production has encouraged the regular review of the curriculum of Agricultural science				
4.	The effect of Agricultural science on poultry production is felt by every student in the college				
5.	Establishment of poultry production increases the number of Agricultural science teachers in the state.				

Section C: Methods of Teaching Poultry Production

6.	The use of practical method of teaching poultry production in secondary school enhances the subject learning process	**SA**	**A**	**D**	**SD**
7.	Group method of teaching poultry production is suitable for large class of students				
8.	Demonstration method of teaching poultry production enables every student to be involved				
9.	Theoretical method of teaching poultry production enables the student to relate it to practical Knowledge.				
10.	The curriculum of poultry production should include ideas from extension workers and specialist in poultry production.				

Section D: Factors militating against the establishment of poultry production and choice of career

11.	Lack of modern poultry farm house and equipment	**SA**	**A**	**D**	**SD**
12.	Lack of qualified poultry Specialist				
13.	Lack of adequate incentives and remuneration of Agricultural science teachers that specialize in poultry management				
14.	Lack of proper awareness on the importance and management of poultry farm in secondary schools				
15.	Corruption on the part of those officials to implement the successful poultry farm programme in secondary schools in the state				

Section E: Possible ways of promoting poultry production as a career by students

16	Poultry production should be a compulsory subject in secondary schools	**SA**	**A**	**D**	**SD**
17	Government should sponsor the development of poultry production in secondary schools				
18	Soft loans should be made readily available to students who want to take up poultry production as a career				
19	Agricultural extension workers experts in poultry management should visit secondary schools regularly to motivate them				
20	The importance of poultry production as revenue generation and to the body health be made known to all students' parents and the general public.				

APPENDIX III

ADAMAWA STATE ZONAL EDUCATION OFFICES

S/No.	Zone	No. of Local Governments	No. of secondary schools
1.	Numan	5	36
2.	Yola	3	34
3.	Mubi	5	41
4.	Gombi	4	34
5.	Ganye	4	30
	Total	21	179

Source: Department of Planning Research and Statistics, Ministry of Education, Yola (2010)

APPENDIX IV

Distribution of Sampled Schools Picked from Each Zone

	Name of school	No of Agricultural Science Students Per school	
Zone (I) Ganye	FGC Gnaye	18	
	GSS Jada	20	
	GSSS Sugu	21	
	GDSS Ganye	20	
	GDSS Dashen	21	100
Zone (II) Gombi	GSS Gombi	20	
	GSS Garkida	21	
	GSS Hong	18	
	GSS Song	20	
	GSS Girci	21	
	GSS Pella	20	120
Zone (III) Mubi	E.Y.N. CSS Kwarhi		
	DSS Fed Poly Mubi	21	
	GSS Mubi		
	GDSS Michika		
	GSS Madasali	22	
	GASS Shuwa	22	
		22	
		23	
		20	120
Zone (IV) Numan	GSS Lamurde	22	
	GSS Pare Numan	21	
	GSS Banjiram	22	
	GDSS Burthi	23	
	GSS Guyuk	22	
	GSS Shelleng	20	120
Zone (V) Yola	FGGC Yola	20	
	ABTI Academy Yola		
	St. peter SSS Yola	22	
	GMMC Yola	24	
	GSS Duobeli	23	
		23	100
Total		**560**	

APPENDIX V

Summary of Responses on the Items

ITEM	SA	A	D	SD	X	SD
1.	350	253	23	4	3.5063	0.8615
2.	196	238	133	63	2.9000	1.0572
3.	174	357	92	7	1.4096	.0925
4.	112	136	284	98	2.4158	1.0092
5.	202	225	147	56	2.9095	1.0560
6.	362	226	29	13	1.1911	1.1107
7.	245	297	68	20	2.3174	0.9251
8.	294	271	45	20	1.4669	0.8509
9.	295	280	40	15	1.4861	0.7211
10.	316	263	25	26	1.3750	0.7252
11.	262	217	86	65	1.4111	0.0565
12.	284	209	85	52	1.3494	0.0112
13.	267	246	102	15	1.5207	0.0920
14.	258	293	65	14	2.5800	1.0612
15.	277	235	66	52	1.4128	0.0987
16.	223	198	130	79	2.8968	1.1129
17.	325	274	20	11	1.8777	0.8580
18.	309	294	12	15	1.4638	0.0865
19.	325	283	15	7	1.4084	0.0912
20	343	241	31	15	1.2720	0.0852

APPENDIX VI

Reliability Test

Questionnaire for Principals, Agricultural Teachers, Students and Poultry Attendants of Senior Secondary Schools.

		N	%
Cases	Valid	50	100.0
	Excluded	0	.0
	Total	50	100.0

a listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Part 1	Value	.696
	Part 2	N of items	12[a]
		Value	.840
		N of items	12[b]
Total N of items			24
Correlation Between Forms			.835
Spearman-Brown	Equal Length		.910
Coefficient	Unequal Length		.910
Guttman Split-Half Coefficient			.901