

SOCIO-CULTURAL CHARACTERISTICS AND FEED ADDITIVE USAGE HABITS OF POULTRY FARMERS IN SOUTHERN NIGERIA.

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Abstracts

This study focused on socio-cultural characteristics, farm structure and additive use practices of poultry farmers in three southern states of Nigeria namely Imo, AkwaIbom and Oyo states. Each of the three states is divided politically into three senatorial zones, and one of the senatorial zones was selected purposively in each state, namely Owerri, Uyo and Ibadan zones for south east, south south and south west states respectively. One local government area was selected purposively from each senatorial zone in which fifteen respondents (farmers) were selected from a town in each selected local government area. Thus, 45 respondents participated in the study. Data generated were analyzed using descriptive statistics such as means, frequencies and percentages. Gender distribution of the farmers showed 66.67% for male and 33.33% for female. The highest number of farmers fell within 31-40 years age bracket (46.63%), followed by the age group of 41-50 years (22.10%). The marital status of the respondents showed that 17.76% are single while 82.20% are married. Educational qualification of the respondents showed that all the respondents have formal education up to secondary school level. Highest numbers of poultry farmers in the southern part of Nigeria (42.20%) have between 6-10 years experience in the industry. The farm structure of the farmers showed that 49.23% of them keep broilers, 27.93% keep layers while 14.33 and 8.33% keep turkeys and breeders respectively. Farm size of 1-100 was 8.83%, 101-500 was 24.40%, 501-1000 was the highest (33.30%), while 1001-10000 and above 10000 was 19.96 and 13.30% respectively. Majority of the farmers (59.93%) use commercial feeds, 15.50% milled their feed while 24.40% combined both. Deep litter system of management was the highest (71.10%), followed by battery cage (24.40%) and extensive system (4.43%). Majority of the farmers (64.43%) did not retain professionals in their farms while 35.53% did. 77.76% of the farmers use additive while 22.20% do not. Majority of the farmers (45.16%) use additive on self-prescription, 37.06% use them on expert prescription, while 17.63% use them on colleague prescriptions. 65.10% of the farmers use additive on specific periods while 34.80% use it always. Vitamin/minerals additive are mostly used (30.16%), this is followed by mycotoxin binders (10.03%), probiotics (9.26%), antibiotics (8.16%) and amino acids (8.00%). Most of the farmers (39.50%) use additive for weight gain in birds, 26.16% use them for growth, 11.40% for early maturity, 5.70% for egg increase and disease

prevention while 2.80% use them for ailment treatment. However, only 66.43% of the farmers are satisfied with usage, 31.00% got moderate satisfaction while 2.53% are not satisfied.

Keywords: Poultry, farmers, additives, southern Nigeria.

Introduction

The poultry industry has contributed significantly to the growth of the Nigerian economy through direct and indirect impact on national gross domestic product (GDP) and provision of animal protein, employment and income to the different segments of the population (Sonaiya, 1999; Oyesola and Olujide, 2000). The production systems in Nigeria are influenced by many factors, Bassey (2014) and Ogegbuna (2014) highlighted some of the negative practices of poultry farmers in Akwa Ibom and Anambra state respectively, especially in the area of medical prescription and abuses of medication by poultry farmers in the stated localities. Other factors that influenced poultry productions in Nigeria may include health and diseases, housing, feeds and feeding, sales and disposal of products and socio-cultural background of practitioners (Adedeji *et al.*, 2014).

The socio-cultural backgrounds of farmers include the sex, age and marital status of the farmers. Others may include the educational background, field of study for the educated ones and duration of experience in the poultry business (Bassey, 2014). The belief system of the farmers may also be of significance. The farm structures of the farmers include the types of birds, size of farm, feed sources, housing and management systems adopted. Additive use practices include types, prescriptions, frequency of use and source of the additives. Others may include reasons for use of additive, cost effectiveness, satisfaction of usage and uses of expired additives. The estimation of the socio-cultural characteristics, farm structure and additive usage practices of poultry farmer in southern Nigeria will among others contributes to knowledge and provides data for various relevant agencies in various policy formulations in the area.

Materials and methods

The study was undertaken in three states one each from the three geo-political zones that make up southern Nigeria. The three states for the study are Imo, Akwa Ibom and Oyo representing south east, south south and south west geo political zones of southern Nigeria respectively. These study states were selected purposively because of the high levels

of commercial poultry activities reported in them (Akandu, 2012). Each of the three states is divided politically into three senatorial zones, and one of the senatorial zones will be selected purposively in each state, namely Owerri, Uyo and Ibadan zones for south east, south south and south west states, respectively. One local government area was selected purposively from each senatorial zone in which thirty respondents (farmers) was selected from a town in each selected local government area. Thus, 90 respondents will participate in the study.

The sampling design is therefore multi-stage sampling. The criteria for selection will be those stated above, in addition to willingness to participate in the study and the participant having a functional poultry farming enterprise.

The data needed for the study is generated with the aid of structured questionnaires and personal interviews. The actual survey is preceded by a preliminary informal survey of the study areas through which the researcher familiarized himself with issues associated with feed additive prescriptions and utilizations in the study areas, while also explaining the purpose of the study to the participants. Tables 1, 2, 3 and 4 below generally show the socio-cultural characteristics, farm structure and additive usage practices of poultry farmers in southern Nigerian states of Imo, Akwa Ibom and Oyo.

Results and Discussion.

The sociocultural characteristics of poultry farmers in the southern Nigerian states of Imo, Akwa Ibom and Oyo.

Table 1 shows the socio-cultural characteristics of poultry farmers in southern Nigerian states of Imo, Akwa Ibom and Oyo.

(a) Sex distribution: Sex distribution of the farmers as shown in table 1 was (66.67%) for males and (33.33%) for females. This is similar to the 63.7% males, and 36.3% females reported by Ibidapo and Ogundipe (2018) in their work in south west Nigeria. Akwa Ibom and Oyo however recorded relatively more male farmers (73.40 and 75.00% respectively than Imo state (60.00%). Several other studies have also reported that more males engage in poultry farming in the area possibly because it is increasingly being modernized with improved breed stock and management systems (Bassey *et al.*, 2018). Also it is becoming more capital intensive and more profitable to which men are more likely to venture in them than women. This is collaborated by the results published by Adam *et al.*, (2014), who also reported a sex ratio of 2:1 male to female in Edo state of South-south Nigeria. Gueye (1988) had earlier reported a sex distribution of 80% female in the ownership of rural chicken flocks in Africa.

(b) Age distribution: Data in the table 1b show the highest number of farmers fell within the 31-40 years age bracket (46.63%) followed by the age group of

41-50 years with the result of 10(22.10). This is similar to the reports of Adam *et al.* (2014), that the age grouping of 21-40 years (47.5%) is the highest followed by the 41-60 years group (41.5%), in South South Nigeria. These findings indicate that young people are actively involved in poultry farming in Southern Nigeria. Imo and Oyo state however recorded relatively higher number of youthful poultry farmers (66.60 and 73.30% respectively) within the 20-40 years age bracket than Akwa Ibom state (33.20%.)

(c) Marital Status: Data in table 1c highlighted the marital status of the poultry farmers. Only (17.76%) of these farmers were single while (82.20%) were married. However, breakdown of the result showed that all farmers from Oyo state were married, while the married respondents accounted for 66.60 and 80.00% in Imo and Akwa Ibom states, respectively.

(d) Educational qualifications: Data on educational qualification of the poultry farmers (table 1d) showed that all had formal education up to secondary school level. The overall secondary school education limit of the respondents was (40.00%) while (62.10%) were educated up to tertiary level. Further breakdown of the results showed that Imo state with (73.30%) had the highest number of tertiary school graduates in poultry farming, followed by the (66.70%), recorded for Oyo state. Bassey *et al.* (2018) also reported a similar trend in educational qualification of the poultry farmers in Akwa Ibom state of southern Nigeria, with 45.76% having secondary education, and 40.67% having tertiary education.

(e) Tertiary education disciplines: The overall results of the farmers that studied up to tertiary level in the southern region (table 1e) showed that (12.23%) studied general agriculture, (23.33%) studied animal science, (26.70%) studied animal health, (8.90%) studied veterinary medicine, while (28.87%) studied other disciplines outside the above enumerated areas. This gives a cumulative value of 71.16% for this group, indicating the tendency for agricultural graduates to engage in poultry productions in the region. The result equally showed that (66.60%) of the tertiary level educated graduates in the Imo state studied courses unrelated to agriculture or animal agriculture, while all the graduate respondents of south Akwa Ibom state studied agriculture and animal related courses. These findings agree with the reports of Wandschneider (2003) and Bassey *et al.* (2018) that better educated individuals are likely to possess skills and capacities to manage a business.

(f) Years of Experience: Table 1f showed that the highest numbers of poultry farmers in the southern Nigeria (42.20%) have had between 6-10 years experience in the industry. This is followed by the group with 11-15 years experience (20.00%), indicating that above 62% of the farmers have been in the business between 6 and 15 years. Bello *et al.* (2015), reported that about one-third (34.62%) of the

farms in Oyo state were between 5 and 10 years of age, 58.98% have existed for less than 10 years. Bassey *et al.* (2018) however reported that poultry

farms in Akwa Ibom state have existed for less than 10 years.

Table 1: Socio-cultural characteristics of poultry farmers in three states of southern Nigeria

| Parameter | Imo State (n=15) Frequency (%) | Akwabom State (n= 15) Frequency (%) | Oyo State (n=15) Frequency (%) | Mean (n=45) Frequency (%) |
|--|-----------------------------------|---|-----------------------------------|------------------------------|
| (a) Sex | | | | |
| Male | 9(60.00) | 11(73.40) | 10(75.00) | 30(66.67) |
| Female | 6(40.00) | 4(26.60) | 5(25.00) | 15(33.33) |
| (b) Age (years) | | | | |
| 20-30 | 3(20.00) | 1(6.60) | 1(6.60) | 5(11.06) |
| 31-40 | 8(53.30) | 4(26.60) | 9(60.00) | 21(46.63) |
| 41-50 | 2(13.30) | 6(40.00) | 2(13.30) | 10(22.10) |
| 51-60 | 1(6.60) | 3(20.00) | 2(13.30) | 6(13.30) |
| Above 60 | 1(6.60) | 1(6.60) | 1(6.60) | 3(6.60) |
| (c) Marital status | | | | |
| Single | 5(33.30) | 3(20.00) | 0(0.00) | 8(17.76) |
| Married | 10(66.60) | 12(80.00) | 15(100.00) | 37(82.20) |
| (d) Educational qualification | | | | |
| Nil | 0(0.00) | 0(0.00) | 0(0.00) | 0(0.00) |
| Primary | 0(0.00) | 0(0.00) | 0(0.00) | 0(0.00) |
| Secondary | 4(26.60) | 9(60.00) | 5(33.30) | 18(40.00) |
| Tertiary | 11(73.30) | 6(40.00) | 10(66.70) | 27(62.10) |
| (e) Tertiary education discipline | | | | |
| General agric | 0(0.00) | 1(16.70) | 2(20.00) | 3(12.23) |
| Animal science | 2(16.70) | 2(33.30) | 2(20.00) | 6(23.33) |
| Animal health | 2(16.70) | 2(33.30) | 3(30.00) | 7(26.70) |
| Veterinary | 0(0.00) | 1(16.70) | 1(10.00) | 2(8.90) |
| Others | 8(66.6) | 0(0.00) | 2(20.00) | 10(28.87) |
| (f) Years of experience | | | | |
| 1-5 | 3(20.00) | 1(6.60) | 2(13.30) | 6(13.30) |
| 6-10 | 6(40.00) | 8(53.30) | 5(33.30) | 19(42.20) |
| 11-15 | 2(13.30) | 3(20.00) | 4(26.60) | 9(20.00) |
| 16-20 | 2(13.30) | 2(13.30) | 3(20.00) | 7(15.53) |
| Above 20 | 2(13.30) | 1(6.60) | 1(6.60) | 4(8.83) |

Source: Field survey

The Structure of Poultry Farms

Table 2 highlighted the farm structure of poultry farmers in southern Nigerian states of Imo, Akwa Ibom and Oyo.

(a) **Types of poultry in the farms:** Table 2a showed that (49.23%) of the farmers were broiler farmers, (27.93) are egg producers. Only(14.33%) and 4(8.33%) were turkeys and breeder chicken producers respectively. Oyo state had all the breeder farms while turkey farms were more prevalent in Imo state (25.00%). The results show that broiler production is more popular than other forms of poultry production in Southern Nigeria. Ogegbuna (2014) reported that 48% of poultry farmers in Anambra state Nigeria have mixed broiler and layer farms, while 44% reared only broilers. In Akwa Ibom state, in South-South Nigeria, Bassey (2014) reported 40.70, 33.89 and 25.42% for broiler, layer and mixed farming respectively. The present result from Oyo state, south west Nigeria however showed that broiler and egg production stands at the same

percentage of 31.10 each. Bello *et al.* (2015) reported that 53.85% of the farmers in South west Nigeria raised layers, and concluded that majority of the commercial farms were small-scale enterprises, and that layers constituted the highest proportion of chickens reared in the zone.

(b) **Farm Size:** Table 2b showed the most common farm sizes were 501-1000 birds (33.30%) and 101-500 birds (24.40%). In Imo state however, about 26% of the farms stocked up to 1000-10000 birds while in Oyo state up to 20% stocked above 10000 birds. These results agrees with the reports of several authors who reported that small-scale producers dominate the commercial poultry industry space in southern Nigeria (Adene and Oguntade, 2006; Akandu, 2012; Bassey, 2014; Bello *et al.*, 2015).

(c) **Feed Sources:** The data in table 2c also show that about 60% of the poultry farmers depended on commercial feeds for their poultry production, the group that combined commercial feeds and farm milled feeds accounted for 24.40%. More farmers

(26.60%) practiced on-farm milling in Oyo state than the other states, while the use of commercial feeds was more common in Imo and Akwa Ibom states (66.66% each). Quality feeds of appropriate nutritional value, suitable for efficient production are critical inputs in the poultry enterprise in Southern Nigeria (Omede, 2008; Okoli *et al.*, 2009). Since most small-scale farms utilize commercially produced feeds in feeding their birds, the large number of small-scale farms in the zones reflects the success of commercial feed milling in the zones, while the large-scale farms produce their feeds in-house (Adene and Oguntade, 2006).

(d) **Housing Systems:** Table 2d shows that most of the farmers (64.40%) reared their birds in separate pens within the same building. Although this is a common housing approach among small-scale farmers in the zone, it has been shown to have several bio-security disadvantages especially in the prevention and control of common infectious diseases of poultry (Chima, 2012).

(e) **Rearing Systems:** Deep litter system was the predominant rearing system in the zones (71.10%) followed by the battery cage system (24.40%), while the least was the extensive system (4.43%), (table 2e) Oyo state specifically, recorded the highest number of battery cage system (46.60%), followed by Imo

state (20.00%). The result is collaborated by the reports of Ezuoke (1995), and Ugwu (2009) that deep litter system is the preferred rearing approach by most of the farmers in the southern Nigeria, although cage system is increasingly being used, especially in the large-scale farms (Adene and Oguntade, 2006). Akandu (2012) reported a 50.00% adoption of deep litter, 15.60% of cage system and 34.40% of combined approach. The present findings are however at variance with the results of a 2004 focused study on Imo state which showed that most (100%) farmers kept their birds on deep litter probably because of their inability to access of battery cages at that time (Okoli *et al.*, 2004a).

(f) **Professional retainership in farms:** Table 2f shows that most of the farms (64.43%) operate without retaining professionals, while only 35.53% retained professionals in the farms. Interestingly, 60.00% of farms in Oyo state retained the services of professionals reflecting the higher number of large-scale farms in that state. Ogegbuna, (2014) reported that only 48.00% of poultry farmers in Anambra state retained the services of animal health workers, while 52.00% did not retain or require such services. Bassey (2014) however reported a higher 72.00% retainership of animal health workers by poultry farmers in Akwa Ibom state.

Table 2 Farm structure of respondents in three states of southern Nigeria

| Parameter | Imo State (n=15) Frequency (%) | Akwalbom State (n=15) Frequency (%) | Oyo State (n=15) Frequency (%) | Mean (n=45) Frequency (%) |
|---------------------------------------|-----------------------------------|--|-----------------------------------|------------------------------|
| (a)Types of poultry | | | | |
| Broilers | 14(50.00) | 12(66.60) | 5(31.10) | 31(49.23) |
| Layers | 7(25.00) | 5(27.70) | 5(31.10) | 17(27.93) |
| Turkeys | 7(25.00) | 1(5.50) | 2(12.50) | 10(14.33) |
| Breeders | 0(0.00) | 0(0.00) | 4(25.00) | 4(8.33) |
| (b)Farm size | | | | |
| 1-100 | 2(13.30) | 1(6.60) | 5(31.10) | 8(8.83) |
| 101-500 | 4(26.60) | 4(26.60) | 3(20.00) | 11(24.40) |
| 501-1000 | 4(26.60) | 5(33.30) | 6(40.00) | 15(33.30) |
| 1001-10000 | 4(26.60) | 3(20.00) | 2(13.30) | 9(19.96) |
| Above 10000 | 1(6.60) | 2(13.30) | 3(20.00) | 6(13.30) |
| (c)Feed sources | | | | |
| Commercial feed | 10(66.60) | 10(66.60) | 7(46.60) | 27(59.93) |
| Self-milling | 2(13.30) | 1(6.60) | 4(26.60) | 7(15.50) |
| Both | 3(20.00) | 4(26.60) | 4(26.60) | 11(24.40) |
| (d) Housing systems | | | | |
| Separate building | 5(33.30) | 6(40.00) | 5(33.30) | 16(35.53) |
| Separate pens within Same building | 10(66.60) | 9(60.00) | 10(66.60) | 29(64.40) |
| (e) Rearing systems | | | | |
| Battery cages | 1(6.60) | 3(20.0) | 7(46.60) | 11(24.40) |
| Deep litter | 12(80.0) | 12(80.0) | 8(53.30) | 32(71.10) |
| Extensive | 2(13.3) | 0(0.00) | 0(0.00) | 2(4.43) |
| (f) Professional retainership | | | | |
| Yes | 3(20.00) | 4(26.60) | 9(60.00) | 16(35.53) |
| No | 12(80.00) | 11(73.30) | 6(40.00) | 29(64.43) |

Source: Field survey

The feed additive use habits of the poultry farmers

Table 3 shows the feed additive use habits of poultry farmers in southern Nigeria.

(a) Feed additive use: Table 3a showed that overall, most of the poultry farmers in the states (77.76%) used feed additive to improve their various production indices while 22.20% did not find additives useful in their production. In Nigeria, poultry farmers are increasingly using different types of feed additives to improve the productivity of poultry, especially when the non conventional feed stuffs are used. These feed additives have been used to improve the utilization of energy feedstuffs such as cassava, yam, cocoyam and potato (Ugwu and Okoli, 2017) as well as fibrous materials like palm kernel cake, rice and wheat offals among others (Uchegbu *et al.*, 2017).

(b) Self prescription: Table 3b highlighted that self prescription of additives was being practiced by 45.16% of the farmers, while 37.06% depended on expert prescription. Okoli *et al.* (2002) reported high levels of self medication and poor consultation of animal health workers by farmers in southern Nigeria and attributed these to relative high cost of veterinary services, small-size of poultry operations and remote rural locations of many small-scale poultry farms. However, Bassey *et al.*, (2018) reported a higher veterinary prescription of medications to the farmers (63.29%) in Akwa Ibom state, and attributed it to the improved appreciation of the importance of sound animal health care intervention in profitable poultry production by the farmers. This agrees with the lowly 27.20% value of self prescription recorded in this study for Akwa Ibom state.

(c) Frequency of additive use: Table 3c shows that majority of the respondents (65.10%) used these feed additives during specific periods of production, while (34.80%) use them throughout their production cycle. Poor quality feed has been listed by Okoli *et al.* (2005) as one of the major challenges of poultry farmers in the zone that necessitates the use of feed additives. Again, the economic and public health significance of diseases in intensive poultry operations in the region have been emphasized in several reports indicating the need for their mitigation (Chima *et al.*, 2012; Okoli *et al.*, 2012b). These could explain the high use of feed additive by farmers in the zones to possibly suppress losses due to poor feed quality and diseases, and boost the general performance of their animals.

(d) Types of additive use: The table 3d shows that 14 types of additives were being used by the farmers. The most commonly used were vitamins and minerals (30.16%), mycotoxin binders (10.03%), probiotics (9.26%), antibiotics (8.16%) and synthetic amino acids (8.00%). None of the farmers however used flavourants, while only one farmer used acaricides. It has been emphasized that quality feeds of appropriate nutritional value suitable for efficient

production are critical inputs in the poultry enterprise (Omede, 2008; Okoli *et al.*, 2009). This perhaps explains the high use of vitamins and minerals by farmers in the zone to boost performance. Also the high use of mycotoxin binders in the zones by farmers indicates compromised feed quality in southern Nigeria due to the hot humid nature of the area (Okoli *et al.*, 2005).

(e) Sources of additives: None of the respondents manufactures the feed additive they use, while majority were sourced from Agro-veterinary outlets (90.90%) and 9.00% were locally sourced. This is in agreement with the reports of Bassey (2014) that poultry farmers in Akwa Ibom state source their veterinary pharmaceuticals from agro-service providers and veterinary outlets.

Reasons for use and benefits of additive use

Table 4 highlighted the reasons why the farmers use the different additives and the benefits they derive from their use.

(a) Reasons for additive use: Table 4a showed that majority of farmers (39.50%) use the additive to achieve weight gain in their flocks, while others (26.16%) apply them as growth promoters, for early maturity (11.40%), increase in egg production (5.70%) as well as increase in egg size (3.80%). Other reasons given by the farmers include use for disease prevention (5.70%) and treatments of ailments (2.83%). In spite of the different reasons given by the farmers, the general purpose is basically to improve performance. This is understandable because the cost of producing meat, and egg is heavily burdened by the high cost of feed materials which is estimated to be more than 70% of the production cost of the finished products (Esonu, 2006). Income from poultry production is thus highly dependent on feed efficiency for all types of intensive poultry production in the region (Adebowale *et al.*, 2008).

(b) Costs effectiveness of additive use: Table 4 showed that, most of the farmers (81.10%) agreed that the feed additives are cost effective while only (18.90%) thought otherwise. This translates to a relatively high percentage of farmers (66.43%) being satisfied with additive use results, while about 31.00% were moderately satisfied.

(c) Uses of expired additives: Table 4c showed that majority of the farmers 73.66% destroyed the additives when expired. Another 17.26% claimed that they return them to their source of purchase while 9.06% agreed that they still use them after expiration dates. Bassey (2014) also reported limited use of expired drugs by farmers in Akwa Ibom state. Okoli *et al.* (2002) however reported that the use of expired drugs to medicate livestock is a common practice among poultry farmers in Southern Nigeria.

(d) Determinant of additive use: Table 4d shows that most farmers (57.80%) chose the additives because of their efficiency, while cost (23.76%) and

availability (18.40%) were ranked much lower than efficacy.

Table 3: Feed additive use habits of poultry farmers in three states of southern Nigeria

| Parameter | Imo State (n=15) Frequency (%) | AkwaIbom State (n= 15) Frequency (%) | Oyo State (n=15) Frequency (%) | Mean (n=45) Frequency (%) |
|--|-----------------------------------|--|-----------------------------------|------------------------------|
| (a)Feed additive usage | | | | |
| Yes | 12(80.00) | 11(73.30) | 12(80.00) | 35(77.76) |
| No | 3(20.00) | 4(26.60) | 3(20.00) | 10(22.20) |
| (b) Self prescriptions | | | | |
| Expert | 4(33.30) | 4(36.30) | 5(41.60) | 13(37.06) |
| Self | 6(50.00) | 3(27.20) | 7(58.30) | 16(45.16) |
| Colleague | 2(16.60) | 4(36.30) | 0(0.00) | 6(17.63) |
| (c)Frequency of additive use | | | | |
| Specific period | 11(91.60) | 5(45.40) | 7(58.30) | 23(65.10) |
| Always | 1(8.30) | 6(54.50) | 5(41.60) | 12(34.80) |
| (d)Types of feed additives used | | | | |
| Vitamin/mineral | 9(20.9) | 8(53.30) | 10(16.30) | 27(30.16) |
| Herbal/plant | 2(4.70) | 2(13.30) | 0(0.00) | 4(6.00) |
| Antibiotics | 1(6.30) | 0(0.00) | 5(8.20) | 12(8.16) |
| Flavorants | 0(0.00) | 0(0.00) | 0(0.00) | 0(0.00) |
| Prebiotics | 1(2.30) | 0(0.00) | 5(8.20) | 6(3.50) |
| Probiotics | 2(4.70) | 2(13.30) | 6(9.80) | 10(9.26) |
| Colourants | 0(0.00) | 0(0.00) | 2(3.20) | 2(1.06) |
| Acaricides | 1(2.30) | 0(0.00) | 0(0.00) | 1(0.07) |
| Enzymes | 3(6.90) | 0(0.00) | 6(9.80) | 9(5.56) |
| Synthetic growth | | | | |
| Promoters | 7(16.30) | 0(0.00) | 1(1.60) | 8(5.96) |
| Mycotoxin binders | 3(6.90) | 3(6.90) | 10(16.30) | 16(10.03) |
| Seed Oils | 2(4.60) | 0(0.00) | 3(4.90) | 5(3.16) |
| Mold inhibitors | 2(4.60) | 0(0.00) | 2(3.20) | 4(2.60) |
| Amino acids | 4(9.30) | 0(0.00) | 9(14.70) | 13(8.00) |
| Methyl donors | 0(0.00) | 0(0.00) | 2(3.20) | 2(1.06) |
| Not aware of basic | | | | |
| Components | 0(0.00) | 0(0.00) | 0(0.00) | 0(0.00) |
| (e)Source of additive | | | | |
| Agro-vet shop | 13(100.00) | 8(72.7) | 13(100.00) | 34(90.90) |
| Locally sourced | 0(0.00) | 3(27.2) | 0(0.00) | 3(9.06) |
| Self-made | 0(0.00) | 0(0.00) | 0(0.00) | 0(0.00) |

Source: Field survey

Table 4 Reasons and benefits of feed additive use by farmers

| Parameter | Imo State (n=15) Frequency (%) | AkwaIbom State (n= 15) Frequency (%) | Oyo State (n=15) Frequency (%) | Mean (n=45) Frequency (%) |
|---|-----------------------------------|--|-----------------------------------|------------------------------|
| (a) Reasons for additive use | | | | |
| Growth | 3(21.40) | 4(40.00) | 6(17.10) | 13(26.16) |
| Weight gain | 8(57.10) | 5(50.00) | 4(11.40) | 17(39.50) |
| Early maturity | 3(21.40) | 1(10.00) | 1(2.80) | 5(11.40) |
| Increase egg | 0(0.00) | 0(0.00) | 6(17.10) | 6(5.70) |
| Increase egg size | 0(0.00) | 0(0.00) | 5(14.20) | 5(4.73) |
| Egg quality | 0(0.00) | 0(0.00) | 4(11.40) | 4(3.80) |
| Prevent disease | 0(0.00) | 0(0.00) | 6(17.10) | 6(5.70) |
| Treat ailments | 0(0.00) | 0(0.00) | 3(8.50) | 3(2.83) |
| (b) Cost effective of additive use | | | | |
| Yes | 8(61.50) | 9(81.80) | 13(100.00) | 30(81.10) |
| No | 5(38.50) | 2(18.20) | 0(0.00) | 7(18.90) |
| (c) Uses of expired additives | | | | |
| Returned to source | 1(7.7) | 4(36.40) | 1(7.70) | 6(17.26) |
| Used | 0(0.00) | 3(27.20) | 0(0.00) | 3(9.06) |

| | | | | |
|--|-----------|----------|----------|-----------|
| Destroyed | 12(92.30) | 4(36.40) | 12(92.3) | 28(73.66) |
| (d) Determinants of additive use by farmers | | | | |
| Additive use | | | | |
| Efficacy | 10(76.90) | 3(27.30) | 9(69.20) | 22(57.80) |
| Cost | 1(7.70) | 7(63.60) | 0(0.00) | 8(23.76) |
| Availability | 2(15.40) | 1(9.00) | 4(30.80) | 7(18.40) |

Source: Field survey

Conclusions

Poultry farmers in Southern Nigeria have formal education, suggesting that the farmers are likely to properly evaluate various production factors and make the appropriate decisions on adoption of modern and recent technologies in poultry production, thus making easier the dissemination of poultry farming improvement information in the zone.

The majority of poultry farmers in southern Nigeria raise broiler chickens, no respondents in Imo and AkwaIbom state stocked breeder chickens while few farmers stock breeder birds in Oyo state. The farm size of 500-1000 birds are predominant in the southern region while the deep litter system of management is mostly adopted the area.

Additive use was popular among the farmers, although self-prescription was predominant among them in the area. Additive use pattern of the farmers showed that vitamins and minerals supplements were the additives commonly used in the area for mostly boosting of performance of birds. Most of the respondents are however satisfied with the results they received from the additive use.

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