CHALLENGES OF PRACTICING ORGANIC FARMING IN POULTRY PRODUCTION IN NSUKKA AGRICULTURAL ZONE

Chinweani Theresa Ugonma & Cajethan U. Ugwuoke & Godwin E. Eze

Agricultural Education, University of Nigeria Nsukka chinweani2020@gmail.com 08150255485

Abstract

The study investigated the extent of organic farming practices in poultry production in Enugu State, Nigeria. Three specific purposes and three research questions guided the study. Descriptive survey research design was adopted for the study. The population for the study was 451, made of 330 registered poultry farmers, 95 poultry feed producers and 26 Extension Agents in Enugu state. Random sampling technique was used to select four local government areas in Enugu state. The entire registered poultry farmers and poultry feed producers in the selected Local Government Areas were used in the study. A structured questionnaire was used to solicit data from the respondents. The questionnaire was face validated by three experts from University of Nigeria Nsukka, one from the Department of Agricultural Extension, one from the Department of Animal Science and the other one from the Department of Agricultural Education. Cronbach Alpha reliability coefficient of 0.97 was obtained for the instrument. Data collected was analyzed using mean and standard deviation to answer the research questions. Poultry farmers practiced the use of antibiotics to treat bacterial diseases in broilers, coccidiostats to treat coccidiosis in broilers, feeding broilers with adequately balanced diet, provision of adequate ventilation in the broiler house, regular removal of wet litter to avoid diseases, giving commercial broiler feeds to birds and regular cleaning of the drinkers and feeders at a high extent. Feeding of broilers with purely organic feeds and disinfection of the broiler with organic disinfectant were carried out at a very low extent. Conclusively, the practice of organic farming in poultry production should be done with organic materials. The study therefore recommended among others that policy makers in agriculture should formulate policy that will promote the practice of organic farming in poultry production.

Keywords: Organic, Organic Farming, Challenges, Poultry Production

Introduction

Agriculture is a system of cultivating crops and rearing of animals for human consumption. It is a major source of income for both developed and developing countries. It serves both individual and industrial needs as well as contributes to the national economic growth and development. According to Federal Republic of Nigeria (FRN) (2017), Nigeria has huge agricultural potentials with over 84 million hectares of arable land. Majority of the agricultural practices in Nigeria especially in Nsukka Agricultural zone are conventional in nature. That is to say little attention is given to organic farming practices.

Conventional agriculture is the farming that make use of synthetic chemical fertilizers, pesticides, herbicides, genetically modified organism, antibiotics and growth hormones (Scherr, 2009). The goal of conventional agriculture is to maximize the potential yield of crops. This is achieved through the application of synthetic chemicals and genetically modified organisms.

Conventional agriculture has been criticized for its economic, social and environmental concerns (Maitah, Zidan, Hodrob & Malac, 2015). Production of crops is of no benefit if the health of human and environment are put to risk. Excessive and inappropriate use of synthetic fertilizers, pesticides, herbicides, antibiotics, genetically modified organisms and growth hormones cause environmental hazard, kill beneficial insect and other wildlife and affect those who consume it through food residuals, thereby causing problem to human health (Kassie, & Zikhali, 2009). Realizing the negative implication of conventional agriculture, people decided to try farming without chemicals. The choice to go into organic farming emerged.

Organic farming involves farming without using artificial or synthetic materials. Organic farming is a production system that sustains the health of soils, ecosystems and people (International Federation of Organic Agriculture Movement, 2012). Organic farming makes healthy food, healthy soils, healthy plants and healthy environment a priority (Organic Farming Research Foundation, (2018). Organic farmers use biological fertilizer inputs and management practices such as cover cropping and crop rotation to improve soil

quality and build soil organic matter. Crops produced through organic farming is used to produce organic poultry. Organic farming can be integrated in poultry farming by using non chemical materials in rearing the birds. Thus, the practice of organic poultry production is essential.

Organic poultry production is the farming that involves the non-use of chemical such as antioxidants and growth promoters for the rearing of poultry birds. Clear and verifiable standards for organic poultry production are essential to ensuring consumer confidence in the organic market. Organic poultry producers must establish and maintain year- round living conditions which accommodate the health and natural behavior of the birds. Organic poultry loss their organic status if they are removed from organic farm and managed on a non-organic operation.

Excessive and inappropriate use of synthetic fertilizers, pesticides, preservatives and beneficial insects and other wildlife, can influence those who consume it through food residuals, thereby causing problem to human health.

Statement of the Problem

The use of chemical in the production of poultry products has been seriously criticized by various governmental and non-governmental organization. Chemicals like growth promoters, preservatives, antioxidants, coccidiostats, among others have been intensively applied in poultry production to influence production and reduce diseases. Pesticides that are used to removed harmful insects, microorganisms and other pests which are mixed with soils, water and air influences human health and natural balance. Some of the chemicals like antibiotics find its place in the tissue of the poultry products which are transferred to humans when eaten. Large dose of such chemical in human may lead to anti-bacterial resistance condition. The practice of organic farming in poultry production should be practiced without the use of chemical. Organic poultry farming practice should be done using non- chemical materials.

Purpose of the Study

The general purpose of the study was to assess the extent of organic farming practices in poultry production in Nsukka Enugu State Nigeria. Specifically, the study sought to determine the:

1 extent of organic farming practices in poultry production in Nsukka Enugu State.
2 perceived challenges of organic farming practices in poultry production in Nsukka Enugu State.
3 possible ways of mitigating the challenges of organic farming practices in poultry production in Nsukka, Enugu State.

Research Questions

1 What are the extent of organic farming practices in poultry production?
2 What are the perceived challenges of organic farming practices in poultry production?
3 What are the possible ways of mitigating the challenges of organic farming practices in poultry production?

Methodology

A descriptive survey research design was adopted for the study. The design was appropriate for this study since information was collected from farmers considered to be the representation of the entire poultry farmer using questionnaire. The study was carried out in Nsukka Enugu State, Nigeria. The population for the study was 451 comprising of 330 registered poultry farmers, 95 poultry feed producers and 26 Extension Agents in Enugu state (Agricultural Development Project (ADP), 2019. There are 17 local government areas in Enugu State. Because the larger numbers only four were chose. Random sampling technique was used to select four local government areas in Enugu state. The Local Government Areas include: Igbo-Etiti, Igbo-Eze South, Udeni and Nsukka. The entire registered poultry farmers, and feed producers in the selected local government areas were used in the study. The registered farmers from the selected local government areas include: 39 from Igbo-Etiti, 28 from Igbo-Eze South, 20 from Udenu and 45 from Nsukka giving a total of 123. The entire population of 26 extension agents was studied because the size is small and manageable. Data was collected through the use of structured questionnaire. A questionnaire was share to the people by the help of the researcher and her two assistants. The instrument was validated by three experts from University of Nigeria, Nsukka, one from the Department of Agricultural Extension, one from the Department Agricultural Education, and one from the Department of Animal Science, all from the University of Nigeria, Nsukka.

Cronbach alpha reliability technique was used to obtain the coefficient of 0.82 which showed that the instrument was reliable. The data collected were analyzed using mean and standard deviation. The decision rule is that any mean value of 2.5 and above were indicated as agreed while the ones below 2.50 were indicated as disagreed

Results

Research Question 1: What are the extent of organic farming practices in poultry production?

Table 1: Mean and Standard Deviation Analysis of the Extent of Organic Farming Practices in Poultry Production.

S/N	Item Statement	$\bar{x}$	SD	Decision
1	Use of antibiotics to treat bacterial Diseases in boilers	3.17	0.37	High Extent
2	Use of coccidiostats to treat Coccidiosis in broilers	3.27	0.44	High Extent
3	Feeding broilers with adequately Balanced diet	3.05	0.23	High Extent
4	Provision of adequate ventilation in the Broiler house	3.13	0.34	High Extent
5	Regular removal of wet litter to avoid Diseases	3.04	0.21	High Extent
6	Feeding broilers with poultry Organic feeds	1.38	0.48	Very Low Extent
7	Giving commercial broiler feeds to birds	.31	0.46	High Extent
8	Avoidance of the use of growth promoters	1.51	0.50	Low Extent
9	Regular cleaning of the drinkers and feeders	3.13	0.33	High Extent
10	Disinfection of the broiler house with organic disinfectant	1.37	0.48	Very Low Extent
11	Cluster Mean	2.64	0.38	High Extent

Keys: X: Mean, SD: Standard Deviation, N: Number of Respondents

Data presented in Table 1 show that item 1, 2, 3, 4, 5, 7, and 9 had their mean values ranging from 3.04—3.27. This signifies that the poultry farmers use antibiotic to treat bacterial diseases, coccidiostats to treat coccidiosis, feeding broilers with adequate balanced diet, provide adequate ventilation in the broiler house remove wet litters regularly give commercial broiler feeds and clean drinkers and feeders regularly to a high extent. Similarly, in item 8 had a mean value of 1.51 which implies that poultry farmers practice the avoidance of the use of growth promoters to low extent. In the same manner, items 6 and 10 had the mean value of 1.38 and 1.37 respectively, which implies that the respondents practice the feeding of broiler with purely organic feeds and disinfection with organic disinfectants at very low extent. The cluster mean of 2.64 indicated that poultry farmers engage organic farming practices in broiler production to a high extent.

Research Question 2; What are the perceived challenges of organic farming practices in poultry production?

Table 2: Mean and Standard Deviation Analysis of the Challenges of Organic Farming Practices in Poultry Production.

S/N	Item Statement	$\bar{x}$	SD	Decision
1	Ignorance of organic farming by the farmers	3.00	0.97	Agreed
2	Fewer of organic tools are available to farmers	3.21	0.73	Agreed
3	Poverty of the farmers	2.88	1.03	Agreed
4	No available market for organic products	2.95	0.91	Agreed
5	Scarcity of the organic feed	3.21	0.82	Agreed
6	More expensive to produce organic poultry feed	3.32	0.79	Agreed
7	Poor record keeping	2.89	0.98	Agreed
8	Yield is always low	2.78	0.93	Agreed
9	Organic farming is time consuming	2.86	0.94	Agreed
10	High cost of organic chicks	3.06	0.82	Agreed
11	Seasonal fluctuation of feed ingredients	3.08	0.92	Agreed
	Cluster Mean	3.02	0.44	Agreed

Keys: X: Mean, SD: Standard Deviation, N: Number of Respondents

Data presented in table 2 show the 11 items had their mean values ranging from 2.78 - 3.32. This implies that farmers' ignorance in organic farming, fewer organic tools for the farmers, poverty of the farmers, non-availability of market for organic products, scarcity of organic feed, high cost of producing organic feeds, among others were agreed by the respondents as the challenges facing organic farming practices in poultry production.

Research Question 3: What are the possible ways of mitigating the challenges of organic farming practices in poultry production?

Table 3: Mean and Standard Deviation Analysis of the Ways of Mitigating the Challenges of Organic Farming Practices in Poultry Production

S/N	Item Statement	$\bar{x}$	SD	Decision
1	Adequate enlightenment campaign on organic Farming	3.39	0.72	Agreed
2	Subsidizing the cost of organic chicks	3.29	0.74	Agreed
3	Provision of grants to organic farmers	3.49	0.61	Agreed
4	Provision of market for the sale of organic produce	3.39	0.73	Agreed
5	Provision of organic feeds to the farmers at affordable price	3.36	0.75	Agreed
6	Making available the organic feed processing facilities	3.36	0.77	Agreed
7	Keeping adequate records of the organic farming	3.27	0.80	Agreed
8	provision of incentive and encouragement to the organic farmers	3.39	0.68	Agreed
9	Enactment of appropriate policy to favour organic poultry products	3.34	0.79	Agreed
10	Capacity building of poultry farmers to embrace organic farming	3.20	0.94	Agreed
	Cluster Mean	3.35	0.48	Agreed

Keys: X: Mean, SD: Standard Deviation, N: Number of Respondents

Data presented in Table 3 show that the items had the mean values ranging from 3.20 to 3.49 which are greater than 0.05. This signifies that enlightenment campaign, subsidizing cost of organic chicks, provision of grants to organic farmers, provision of markets for organic produce, provision of affordable organic feeds, making available organic feeds processing facilities, provision of incentives and encouragement to organic farmers, capacity building of the farmers, among others were agreed by the respondents as the possible ways of mitigating the challenges of organic farming practices in poultry production.

Discussion of the Findings

The extent of organic farming practices in broiler production

The study out that poultry farmers use antibiotics to treat bacterial diseases in broilers, uses coccidiostats to treat coccidiosis in broiler, feeding broilers with adequately balanced diet, provide adequate ventilation in the broiler house, regular removal of wet litter to avoid diseases, giving commercial broiler feeds to birds and regular cleaning of the drinkers and feeders at a high extent. It was equally found out that the avoidance of the use of growth promoters was practiced at a low extent. Feeding of broilers with purely organic feeds and disinfection of the broiler house with organic disinfectant were found to be practiced at a very low extent. Altaf *et al*., (2019) found a significant increase in the body weight of commercial broiler supplemented with symbiotic growth promoters It was reported that pure organic broilers should not practice on a large scale but should be practiced in combination with the conventional method because of the poor growth in organic broilers (Adedeji, *et al.*, 2014).

Challenges of organic farming in poultry production

The study found out that the ignorance of organic farming by the farmers, poverty of the farmers, no available market for organic products, scarcity of organic feeds, costlier nature of organic feed production, low yield of organic poultry, among others were the challenges facing organic farming practices in poultry production. With the disbarment of synthetic methionine in organic poultry feed, extremely high level of crude protein and exorbitant feed cost were obtained (Burley, et al., 2016).

Possible ways of mitigating the challenges of organic farming practices in poultry production

The findings of the study show that the mitigating measures for practice of organic farming in in poultry production in Enugu state are as follows: provision of grants to organic farmers, provision of market for the sale of organic produce, adequate enlightenment campaign for organic on poultry farming practices, provision of incentives and encouragement to the organic farmers, provision of organic feeds to the

farmers at affordable prices and enactment of appropriate policy to favour organic poultry products.

The findings are in line with Mstsaet (2012) who found out that for effective practice of organic farming there should be provision of grants, loan, and incentives support to organic farmers. The findings are in support of those of Adebayo and Tunde (20`2) who reported that organic farming practices in poultry production can be enhanced by providing farmers with credit facilities and extension services. Also, the findings support Mgbenka, Onwubuya and Ezeano (2015) who found out that organic farming can be enhanced by encouraging capacity building at different levels, provision of market for the sale of organic produce and educating and sensitizing Nigerians on the benefits of organic farming produce. Organic farming production is system that sustains the health of soils, ecosystems and people (International Federation of Organic Agricultural Movement, 2012). Organic farming makes healthy food, healthy soils, healthy plants and healthy environments a priority (Organic Farming Research Foundation, 2018)

Conclusion

The extent of organic farming is very low. This is attested by the use of chemical like coccidiostats and antibiotics in disease prevention control, addition of preservatives and antioxidants in feeds. However, the implementation of the organic farming mitigation measures will reduce the problems hindering the practice of organic farming in poultry production. Organic poultry production should be practice in a standard operation because of its essential for ensuring consumers' confidence in organic market. Organic farmers should maintain regular use of organic materials and ensure that synthetic materials are included.

Recommendations

Based on the findings, and conclusion, the following recommendations are made:

1 Policy makers in agriculture should formulate policy that will promote the practices of organic farming in poultry production.
2 Farmers should be trained on organic farming practices in poultry production by extension agents so that they can benefits from their farm.
3 Seminar, workshop and conferences should be organized by ministry of agriculture to educate farmers in organic poultry production which are human and environmentally friendly.
4 The state government through the ministry of agriculture should provide funds and technical know-how for training of extension agents on the strategies for marketing organic produce.
5 The government through the ministry of agriculture should provide a hitch- free process of organic product certification.

References

Adedayo A. & Tunde, A. M. (2012). Motivations for Women Involvement in Urban Agriculture in Nigeria.

Adedeji, O. S., Amoao, S. R., Oyewumi, S. O., & Atimi, D. H. (2014). Growth Performance of Organically Raised Broiler Chickens At 8 Weeks Age. *International Journal of Applied Research and Technology,* 3 (2): 140-147

Agricultural Development Project (ADP), (2019). Department of Records and Statistics, Enugu State Agricultural Development Project.

Altaf, M. T., Mahmed, A., Metmood, S., & Saima, S. (2019). Effects of Supplemented Growth Promoters on Performance and Intestinal Morphology in Broiler Reared Under Different Stocking Densities. *Asian Journal of Agriculture and Rural Development 2* (3) 337-343

Burley, H. K., Anderson, K. E., Patterson, P. H. & P. B. Tillman. (2016). Formulation Challenges of Organic Poultry Diets with Readily Available Ingredients and Limited Synthetic Methionine. *Journal of Applied Poultry Research,* 25: 443-454

International Federation of Organic Agriculture Movement (2012). Organic Agricultural Movement. Retrieved from http://www. IFOMA. ORG/ Partners/Projects/Osea

Kassie, M. & Zikhali, P. (2009. Sustainable Land Management and Agriccultural Practices in Arica: Bridging the Gap Between Research and Farmers. Gothenburg, Sweden: University of Gothenbury From https:// sustainabledevelopment.un.org/content/dsd/ susdevtopics/sdt-pdfs/meetings/egmo409/BriefsustAgric.pdf on September 26, 2020

Matsaert, H. (2012), Socio- Economic Methdologies for Natural Resources Research Best Practice Guidelines: *Institutional Analysis in National Resources Research. Chatham. UK: Natural Resources Institution.*

Mgbenka, R. N., Onwubuya, E. A., & Ezeano, C. I. (2015). Organic Farming in Nigeria: Need for Popularization and Policy. *World Journal of Agricultural Science,* 11(6) :346-360

Organic Farming Research Foundation, (2018). Organic Farming Research Foundation Report Identifies Top Challenges Facing Farmers. From https://sustainable agriculture.net/blog/ofrf-repot-top-organic-challenges/

Scherr. J. S. (2009). Agriculture in Export Boom Economy: *A Comparative analysis of Policy and Performance Indonesia, Mexico and Nigeria. World Developmen*t. 17 (4) :543-560

The Federal Republic of Nigeria (FRN) (2017). Agricultural Sector Food Security and Nutrition Strategy 2016 2025 Abuja: Federal Ministry of Agriculture and Rural Development.