

## **Profitability Analysis of Sesame Production among Women Farmers in Ofu Local Government Area, Kogi State, Nigeria**

By

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### **ABSTRACT**

*This study analyzed the profitability of Sesame among women farmers in Ofu Local Government Area, Kogi State, Nigeria. The study specifically: described the socio-economic characteristics of women sesame farmers, identified various production activities and estimated the costs and returns of women sesame farmers in the study area. Multi-stage sampling technique was employed in the study. A well-structured questionnaire was used to elicit information from one hundred and twenty (120) respondents in the study area. Data obtained were analysed using descriptive statistics and gross margin analysis. Results of the descriptive analysis showed that majority (70.83%) of the respondents were married with mean age of 47 years. The respondents had mean household size of 7 members. The findings also showed that respondents carried-out land clearing (95.00%), planting (92.5%), stumping (72.5%), weeding (71.67%), pesticide/insecticide application (77.5%) and supplying (75.0%) during sesame production. Results on the costs and returns showed that sesame women farmers in the study area earned an average revenue of ₦590,942.22 per annum but incurred an average total cost of ₦240,049.39 per annum. Thus, the gross margin of ₦350,882.42 was earned per annum with benefit cost ratio of 2/46 and the rate of return (ROR) was 1.46 for women sesame farmers. Therefore, women sesame farmers should be encouraged to invest more into sesame production and plant high yielding varieties to incur more profit since the enterprise was found to be profitable and viable.*

**Keywords:** Profitability, Women, Farmers, Sesame, Production

## **1 INTRODUCTION**

Sesame (*Sesamum indicum L.*) otherwise known as sesamum, a member of the family padaliaceae, is one of the most ancient oil seed known to mankind. Sesame plays a major role in human nutrition. Most of the sesame seeds are used for oil extraction and the rest are used for edible purposes (El Khier *et al.*, 2008).

Initially, it is widely grown in the northern and central part of Nigeria as a minor crop till 1974, when it became a major cash earner in Kogi, Benue, Nasarawa, Jigawa, Kano, Katsina, Plateau and Yobe States and in Abuja, the Federal Capital Territory of Nigeria (National Agricultural Extension and Research Liasion Services (NAERLS), 2010) and it is commonly grown by small-holder farmers.

Sesame is an important component of Nigeria's agricultural export (Chemonics, 2002). It ranks second to cocoa in terms of export volume in Nigeria and is fast becoming prominent among non-oil exports, because it is one of the few cash crops that can earn the country foreign exchange. According to Abdullahi (2009), sesame has numerous health and industrial benefits, could be used for baking, medicine, cosmetics, and animal feeds with a high oil content of between 44 and 60 percent. Considering its numerous health benefits and the growing preference for organic foods, the demand for the commodity has continued to grow and this is positive for Nigeria (Ali *et al.*, 2015). Sesame is highly demanded abroad by pharmaceuticals and industries that produce soap, shampoo, lubricants, paints, cosmetics, and vegetable oil. A popular women's body lotion Neutrogena' is made from sesame oil (Fariku *et al.*, 2007). The oil extracted from the seed is used in making vegetable oil and for medicinal purposes for the treatment of ulcers and burnt. The stem and oil are used by the cosmetic industry for the production of soaps and other beauty products. It has high market demand in respective of the quantity of supply (Ikwuakam *et al.* 2016).

Sesame is majorly cultivated by small-holder farmers and often intercropped with others crops (Abu *et al.*, 2011). Sesame seeds according to Nigerian Export Promotion Council (NEPC) (2020) is one of the Nigeria's agricultural export biggest earners in the past years and the trend continued until the first half of 2019 in which ₦60.6 billion worth of sesame seeds were exported from Nigeria. The report also stated that sesame oil and its fraction made up the top ten agricultural export with ₦928.1 million. According to the report countries where sesame found biggest markets are Japan, Belgium, South Korea, Turkey, China and German.

High viability of sesame data from Food and Agriculture Organization (FAO) shows that sesame production in Nigeria has been uneven in comparison with the demand over the years (PREMIUM Times, 2021). This increasing demand for sesame seed provides Nigeria an opportunity to increase its production to meet the international demand for the commodity. The realization of the potential of sesame production in the acquisition of foreign currency for the country made increased production of the crop a prominent priority in the Agricultural Transformation Agenda of the Federal Government of Nigeria (National Cereals Research Institute (NCRI), (2012). Nigeria has the technology to produce significant output of sesame for export in view of the yield potentials of the varieties released to farmers (NCRI, 2012). Despite all attempts to increase production of sesame in Nigeria, the average farmer still produces only at a subsistence level, using traditional system of farming and low-yielding varieties.

Women play significant and crucial roles in agricultural development and allied fields including the main crop production, livestock production, horticulture, post-harvest operations, agro-forestry, fisheries, post-planting operations and processing (David, 2015). The nature and extent of women's involvement in agriculture, no doubt, varies from region to region. Even within a region, their involvement varies widely among different ecological sub-zones, farming systems, castes, classes and stages in the family cycle (David and Madu, 2014). But regardless of these variations, there is hardly any activity in agricultural production, except ploughing in which women are not actively involved. Studies on women in agriculture conducted in Nigeria and other developing countries all point to the conclusion that women contribute more to agricultural production than has generally been acknowledged. Recognition of their crucial role in agriculture should not obscure the fact that farm women continue to be concerned with their primary functions as wives, mothers and homemakers. The role of women in agricultural activities is of paramount importance to economic development in Africa. More importantly, recognizing and supporting this is crucial and vital for the development or growth of women and the fulfillment of their economic potentials, while they are often hidden, silent and not

appreciated, rural women represent probably the world's most powerful untapped natural resources (Adekanye, 2009).

Despite their importance to agricultural production, women face diverse limitation (David, 2015). They are in fact, the largest group of landless labourers with little real security in case of break-up of the family owing to death or divorce; inheritance laws and customs discriminate against them land reform and settlement programmes usually give sole title and hence the security needed for obtaining production credits to the husband (Shortall, 2010). Agricultural development programmes are usually planned by men and aimed at men (Okali, 2011).

Many studies show how structural socio-cultural barriers to women's access to productive resources, markets, information, and technologies limit their productivity, creating a "gender gap" (Hill and Vigneri, 2011; FAO, 2011; Quisumbing *et al.*, 2014). Women are effectively involved in sesame production and marketing in Ofu Local Government Area, Kogi State, Nigeria. Women have been working on their husbands' farms as part of their cultural obligation as wives in terms of land clearing, planting, weeding, harvesting and marketing. However, they also have their own personal sesame farms and they are effective in marketing sesame from their personal farms. On this note, there is need to know whether they are making profit or not in their personal engagement in this enterprise. Therefore, the study main objective is to analyse the profitability of sesame production among women in Ofu Local Government Area (LGA), Kogi State, Nigeria. Thus, the study specifically, described the socio-economic characteristics of women sesame farmers, identified various production activities carried-out by them during sesame production, estimated costs incurred in sesame production and returns that accrued to them after the sales of their produce.

## **2.0 METHODOLOGY**

This study was carried out in Ofu Local Government Area (LGA), Kogi State, Nigeria with headquarters at Ugwolawo. The north easterly line of equal Latitude and Longitude passes through the LGA. It has an area of 1,681 km<sup>2</sup> and a population of 192,169 at the 2006 census. The current estimated population of the LGA is put at 247,930. Ofu Local Government Area is one of the twenty (21) Local Government Areas in Kogi State. It is one of the oldest Local Governments created on 11<sup>th</sup> May, 1989. It is made up of six wards; including Ogbonicha which is made up of a population of over one hundred thousand (100, 000) people who are mainly farmers and petty traders.

The Local Government Area is bounded to the North by Bassa and Dekina Local Government Areas, to the East by Ankpa and Olamaboro Local Government Areas, to the South by Igalamela-Odolu Local Government Area, and to the west by the River Niger. The area enjoys both wet and dry seasons. The wet season lasts from April to October with a short break in the middle of August tagged (August break). The dry season lasts from November to March. The total annual rainfall ranges from 1000mm to 1500mm. They are predominantly Igala speaking people. The communities have high concentration of primary schools with few community secondary schools. Food crops such as sesame, maize, beans, groundnuts, rice, cassava, melon, guinea corn, bambara nuts are grown in LGA. Cash crops such oil palm trees, including cashew and mangoes are also common in the area. Common minerals found in the LGA are marble, lime, kaoline, feldspars, galena. Ugbakoji hills at Itobe, UlokoAnao waterfalls at Ofokopi, Ala natural tunnel and Ofakete natural bridge are the common tourist centres in the LGA.

The population for this study comprises of all sesame women farmers in Ofu Local Government Area (LGA), Kogi State. Multi-stage sampling techniques was adopted in this study. In the first stage, six wards were purposively selected from the LGA. In the second stage, one village from each of the ward were randomly selected.

The six (6) villages selected were; Ajaka, Okabo, Umomi, Ofagolo, Ejule and Ogbakpedo. In the third stage, twenty women sesame farmers were purposively selected from each village due to the concentration of women sesame farmers, making a total sample size of one hundred and twenty (120) respondents. A well-structured questionnaire coupled with personal interview schedule were used for eliciting information from the respondents. Data collected were analysed using descriptive statistics and gross margin analysis.

### **Model Specification**

The costs and returns on sesame profitability was obtained through gross margin analysis. Gross margin is the difference between the gross farm income (GI) and the total variable cost (TVC). It is a useful planning tool in a situation where fixed capital is a negligible portion of farming enterprise as in the case of small-scale subsistence agriculture (Abdullahi, 2012,). The following method was used:

$$GM = TR - TVC \dots\dots\dots (i)$$

Where;

GM = Gross Margin (₦ /Ha)

TR = Total Revenue (₦ /Ha)

TVC = Total Variable Costs (₦ /Ha)

Profit = Total Revenue – Total Cost

The following Profitability ratios were calculated:

$$\text{Benefit Cost Ratio, BCR} = \frac{TR}{TC} \dots\dots\dots (ii)$$

$$\text{Rate of return (ROR)} = \frac{\text{Average Return}}{\text{Investment cost}} \dots\dots\dots (ii)$$

### **3.0 RESULTS AND DISCUSSION**

Table 1 showed the results of the descriptive analysis. The mean age (47 years) of women sesame farmers in the study area implies that they were active, young and energetic enough to carry out various production activities. The results agree with the finding of Ibitoye *et al.* (2015) who reported that majority of farmers in Kogi State falls within the age range of 41-60 years. Majority (70.83%) of the farmers were married. Thus, they were responsible and also have access to productive resources especially, family labour which reduces costs of production and in turn increase their profitability. This agrees with the findings of Sekumade and Toluwase (2014) who reported above 70.0% married respondents in their study, The women sesame farmers average years of experience of 12 years implies that production and management decision in terms of weather forecast, pests and diseases control, post-harvest decision and market decision could be enhanced based on their past experiences. This concurs with Patric *et al* (2016) findings who reported that women sesame farmers in Benue State had farming experience of upward of 11years. The women sesame farmers were found to have average household size of 7 persons which could make family labour readily available for production activities. The findings of Fikru *et al.* (2017) stated that larger household sizes enhances family labour availability. However, a large household size means more mouth to be fed, this may lead to smaller market surplus (Minot *et al*, 2006). Majority of the women sesame respondents had primary, secondary and tertiary education. Their level of education could facilitate the utilization or adoption of new technological innovation in sesame production. This results agree with the findings of Issa *et al.* (2016), who found that majority of the farmers (65.8%) had some form of education. This assertion concurs with the findings of Fabiyi and Akande (2015), who posited that there is need for a type of education which must equip the receiver with necessary skills to face challenging situations which could be economic, social, political and cultural in nature. The results also showed that most of the women sesame farmers cultivated inherited farm land (40.0%), while others leased and rented farm land respectively.

Table 1 : Socio-economic Characteristics of Respondents

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Mean/Mode</b>
<b>Age</b>			
25 – 34	3	2.50	
35 – 44	45	37.50	
45 – 54	47	39.17	47.43(8.93)
55 – 64	19	15.83	
65 – 74	6	5.00	
Total	120	100.00	
<b>Marital Status</b>			
Single	2	1.67	
Married	85	70.83	
Divorced	6	5	Married
Widow	20	16.67	
Separated	7	5.83	
Total	120	100	
<b>Farming Experience</b>			
1 -- 10	64.00	53.33	
11 -- 20	39.00	32.50	
21 – 30	15.00	12.50	12.92(8.40)
31 – 40	2.00	1.67	
Total	120.00	100.00	
<b>Household Size</b>			
1 -- 10	117	97.5	
11 -- 20	3	2.5	7.08(1.87)
Total	120	100	
<b>Education</b>			
No Formal Education	24	20	
Primary	41	34.17	Primary
Secondary	24	20	
Tertiary	31	25.83	
<b>Total</b>	120	100	
<b>Source of Land</b>			
Inherited	48	40	Inherited
Rent	4	3.33	
Purchase	22	18.33	
Gift	10	8.33	
Lease	36	30	
<b>Total</b>	120	100	



**Source of Capital**

Cooperative Society	31	25.83	
Personal Saving	41	34.17	Personal saving
Microfinance	24	20	
Friends and Family	12	10	
Commercial Banks	8	6.67	
None	4	3.33	
Total	120	100	

Source: Field Survey, 2020

Therefore, the right to the use of land in the study areas is to a large extent customary. The results confirm the findings of Olukosi & Erhabor (2005) who stated that in some subsistence farming communities, pieces of land are acquired through inheritance passed from one generation to another while others are either bought or rented. According to the results personal savings is the source of capital to the women sesame farmers in the study area. This implies that their level of production is limited to their own source. They may also have difficulty in purchasing inputs such as fertilizers, herbicides, maintenance of farm and payment of wages because access to credit enhances efficiency and facilitate adoption of high yielding varieties and makes it possible for farmers to access useful information for increase productivity and efficiency (Ogundari, 2006; Oluwatosin, 2011).

**3.2 Activities Carried- out by Women Sesame Farmers**

The results in Table 2 showed the types of activities carried out by respondents in sesame production. Results showed that land clearing (95.00%), planting (92.5%), stumping (72.5%), weeding (71.67%), pesticide/insecticide application (77.5%) and supplying (75.0%) were the major production activities carried out by respondents in the study area. This implies that women in the study area were energetic and able to carry- out activities involved in sesame production, thus, paying less on higher labour which may results into higher profitability. The results agree with the findings of Agada and Ameh (2017), who asserted that women carried out land clearing (91.6%), weeding (80.8%0, harvesting (87.55%) among other agricultural activities in their study in Okpo District, Kogi State, Nigeria. Damisa *et al.* (2007) also stated that women contributed to farm work as high as

between 60-90% of the total farm tasks which ranges from land clearing, land tilling, planting, weeding, fertilizer application, harvesting, processing among others.

**Table 2: Distribution of Respondents according to Production Activities**

<b>Production Activities</b>	<b>Frequency (*)</b>	<b>Percentage</b>
Land Clearing	114	95
Stumping	87	72.5
Planting	111	92.5
Fertilizer Application	25	20.83
Watering	14	11.67
Weeding	86	71.67
Thinning	36	30
Supplying	90	75
Pesticide / Insecticide Application	93	77.5
Storage	101	84.17
Processing	101	84.17

**Source: Field Survey, 2020**

**(\*) = Multiple Response**

### 3.3 Costs and Returns of Sesame Production

The result in Table 3 showed that ₦240,049.39 per cropping season was the total cost incurred in sesame production while ₦590,942.22 per cropping season was accrued to the respondents as return. This indicates that an average farmer earned ₦350,882.42 as profit per cropping season, suggesting that sesame farming is a profitable venture in the study area. Benefit cost ratio was 2.46 which implies that sesame production is viable and profitable among women sesame farmers in the study area. The rate of return (ROR) on naira invested was ₦ 1.46k for women sesame farmers. This implies that for every one naira invested by women sesame farmers in sesame production, ₦ 1.46k was realized. This implies that sesame production is a profitable and viable venture among women farmers. This is evident in the study of OLAM (2006) whose findings also revealed profitability of sesame production. The differences could be based on the types of varieties cultivated, differences in the land area cultivated, soil type and variation in market prices.

Similarly, Abu *et al.* (2011), in their study on the costs and returns of sesame production in Nasarawa State, revealed that sesame production was profitable. Makama *et al.* (2011) also affirmed the profitability of sesame production in their study.

**Table 4: Cost and Returns in Sesame Production**

<b>Cost/ Returns Items</b>	<b>Qty</b>	<b>Unit Price-<del>N</del>:K</b>	<b>Value-<del>N</del>:K</b>
<b>Variable Cost</b>			
a. Seed	8.966 kg	1500	13,450.00
b. Herbicide	5.13litre	1,336.58	6,861.13
c. Pesticide	4.28litre	4,354.08	18,649.99
d. Fertilizer	2.29 kg	6,857.14	15,673.47
e. Labour	8 mandays	1,143.33	9,146.67
f. Bagging	1 dozen	190	2,208.33
<b>Total Variable Cost (TVC) = (a+b+c+d+e+f)</b>			<b>65,989.59</b>
<b>Fixed Cost (After Depreciation)</b>			
g. Hoe			30,809.80
h. Cutlass			25,800.00
i. Sprayer			58,050.00
j. Wheel barrow			59,400.00
<b>Total Fixed Cost (TFC) = (g+h+i+j)</b>			<b>174,059.80</b>
<b>Total Cost (TC) = (TVC + TFC)</b>			<b>240,049.39</b>
<b>Revenue</b>	<b>11.82 (100kg bag)</b>		<b>50,008.33</b>
<b>Gross Margin = (Revenue - TVC)</b>			<b>524,942.22</b>
<b>Net Farm Income = (Gross Margin - TFC)</b>			<b>350,882.42</b>
<b>BCR = (TR/TC)</b>			2.46
<b>ROR</b>			1.46

Source: Field Survey, 2020

#### 4.0 CONCLUSION AND RECOMMENDATION

The study showed that women sesame farmers were in their active productive age brackets and engaged in various production activities which are culturally performed by men such as land clearing and stumping. The findings showed that sesame enterprise is profitable and viable among the respondents. Therefore, women sesame farmers in the study area should be encouraged to invest more into sesame production and plant high yielding varieties to incur more profit since the enterprise was found to be profitable and viable.

#### REFERENCES

- Abdullah, N. M. (2009). Nigeria: Sesame seeds farming can provide 1 million jobs and US\$1.5 billion for northern states. Sesame Pilot Project Report, 2007. Published by National Sesame Seed Association of Nigeria, Abuja, Nigeria.
- Abdullahi, M. R. (2012). Women in Agriculture: The Role of African Women in Agriculture. National Agricultural Extension and Research Liaison Service, Ahmadu Bello University, Zaria, Nigeria
- Adekanye, T.O. (2009). Women in African Agriculture, African notes. *Journal for the Institute of African Studies*, 3(8), 1999.
- Agada and Ameh (2017): Rural Women's Involvement in Agriculture in Okpo District, Kogi State, Nigeria. *Global Journal of Science Frontier Research. D Agriculture and Veterinary*,. 17 (4):27-35.
- Ali, A. Salawu, A. J. and Sani, R.M. (2015). Factors Influencing Sesame (*SesamunIndicumL*) Marketing in Jigawa State, Nigeria. *Journal of Agricultural Extension*, 19 (2): 12-133.
- Chemonics International Inc. (2002). Overview of the Nigerian Sesame Industry. The United States Agency for International Development (USAID)/Nigeria RAISE IQC Contract No. PCE-I-00-99-00003-00.
- Damisa, M.A., Samdu, J.B. and Yohanna, M. (2007): Women Participation in Agricultural Production: A Probit Analysis. *Journal of Applied Sciences*, 7(3): 412-414.
- David, S. (2015). Getting a Piece of the Pie: An Analysis of Factors Influencing Women's Production of Sweet potato in Northern Nigeria. *Journal of Gender, Agriculture and Food Security*,1 (1): 1-19.

- David, S. and Madu, T.(2014). “A gender situation analysis of sweet potato production in Nigeria”, *Reaching Agents of Change Project*, International Potato Center (CIP) and Helen Keller International (HKI). Unpublished report.
- El Khier, M. K.S., Ishag K.E.A and Yagoub A. E.A. (2008). Chemical Composition and Oil Characteristics of Sesame Seed Cultivars Grown in Sudan. *Research Journal of Agriculture and Biological Sciences*, 4(6): 761-766.
- Fabiyi E.F. and Akande, K. (2015). Economic Empowerment for Rural Women in Nigeria. *Journal of Agricultural Science*,7(9): 236-241.
- Fariku, S., Ndongya, A.E. and Bitrus, P.Y.(2007). Biofuel Characteristics of Sesame (*Sesamum indicum*) Oil. *African Journal of Biotechnology*, 6(21): 2442-2443.
- Fikru, T., Efa G and Hailu M. (2017). Analysis of Sesame Marketing Chain in Case of Gimbi Districts, Ethiopia. *Journal of Education and Practice*, 8(10).
- Food and Agriculture Organization (FAO) (2011). *The State of Food and Agriculture: Women in Agriculture, Closing the Gender Gap*. Rome: Food and Agriculture Organization
- Hill, R. and Vigneri, M. (2011) “Mainstreaming gender sensitivity in cash crop market supply chains”, *ESA working paper 11-08*. Rome: Food and Agriculture Organization.
- Ibitoye, S. J., Shaibu, U. M., and Omole, B. (2015). Analysis of Resource Use Efficiency in Tomato (*Solanum lycopersicum*) Production in Kogi State, Nigeria. *Asian Journal of Agricultural Extension, Economics and Sociology*, 6(4): 220-229.
- Ibitoye, S.J., Orebiyi, J.S. and Shaibu, U. M (2014) Economic Effect of Inorganic Pesticide Use on :adama II Rice Farming in Ibaji Local Government Area, Kogi State, Nigeria. *International Journal of Agric. and Rural Development*, 15 (2): 1063 – 1070.
- Ikwuakam, O.T., Iyela, A and Sangotegbe, N.S (2016). Information Needs of Sesame Farming Households in Selected Agricultural Zones of Katsina State, Nigeria. *Mediterranean Journal of Social Sciences* (1):.204
- Issa, F. O. Kagbu, J. H. and Abdulkadir, S. A (2016). Analysis of Socio-Economic Factors Influencing Farmers’ Adoption of Improved Maize Production Practices in Ikara Local Government Area of Kaduna State, Nigeria. *Agrosearch*, 16 (2): 15-24

- Kanton, R.A.L., Yirzagla, J., Asungre, P.A., Lamini, S., Ansoba, E., Kuukaraa, C., and Alebkia, M. (2013). Contribution of Plant Spacing and N Fertilizer Application to Growth and Yield of Sesame (*Sesame indicum L.*). *Journal of Advanced Agricultural Science Technology*, .1(1):: 9 – 13.
- Kuye, T.M., Adinya, I.B. and Inyang, N.N. (2004). The Role of Extension in Agricultural and Rural Development in Nigeria. *Journal of agro-Business and Rural Development*, 4(4): 60-65.
- Makama, S.A., Murtala, N & Abdul, Z. (2011). Economic Analysis of Sesame Production in Taura Local Government Area, Jigawa State. *Savannah Journal of Agriculture*, 6(2): 6-12.
- Minot, N., Epprecht M, Anh, T.T.T. and Trung L.Q (2006). Income Diversification in the Northern Upland of Vietnam research 145. International Food Policy Research Institute Washington D.C.
- NAERLS (2010). Benniseed Production and Utilization in Nigeria. *Extension bulletin No 154 and Horticulture series No 5*. 17/07/11. Available at [www.naerls.gov.ng/extmat/bulletins/Beniseed .pdf](http://www.naerls.gov.ng/extmat/bulletins/Beniseed.pdf)
- National Cereals Research Institute [NCRI] (2012). Modern Agronomic Practices in Sesame Production. In: Training Manual for Sesame Stakeholders in Nigeria. Shokalu. O. (Eds) Federal Ministry of Agriculture/NCRII, Nigeria. .
- Nigerian Export Promotion Council (NEPC) (2020). Sesame Tops Nigeria’s Agric Export amid COVID-19 pandemic.
- Ogundari, K. (2006). Economic Efficiency of Food Crop Production in Ondo State of Nigeria. An M.Sc Thesis, Department of Agricultural Economics and Extension, FUTA, Akure
- Okali, C. (2011). Achieving Transformative Change for Rural Women’s Empowerment’, Expert paper presented at Expert group meeting”, Enabling Rural Women’s Economic Empowerment: Institutions, Opportunities and Participation. Accra, Ghana.
- OLAM, (2006). OLAM Nigeria Limited: Nucleus Estate Initiatives. Paper Presented at NESG Agricultural Submit, Abuja, November, 2006.
- Olowe, V.I.O. (2007). Optimum Planting Date for Sesame (*Sesame indicum L.*) in the Transition Zone of South West, Nigeria. *Agricultura Tropica et Subtropica*, 40::156 – 153.

- Olukosi, J.O. and Erhabor, P.O. (2005): Introduction to Farm Management Economic; Principles and Applications AGITAB publishers. Zaria.
- Oluwatosin, F. M. (2011). Measuring Technical Efficiency of Yam Farmers In Nigeria: A Stochastic Parametric Approach. *Agricultural Journal*, 6(2): 40-46
- Onyibe, J. E., Abu, S. S. and Tologbonshein, E. B. (2011). The Role of Extension Research and Information Dissemination in Enhancing Benniseed Production, Marketing of Resource Poor Farmers. Proceeding of the First Workshop on Benniseed, Held at the National Cereal Research Institute, Badegi, Nigeria, Pp. 86-89.
- Patrick, N. M, Ukpe, U. H, Djomo, R. F & Dzever, D. (2016). Factors Influencing Market Participation among Sesame Producers in Benue State, Nigeria. *International Journal of Research Studies in Agricultural Sciences (IJRSAS)*, 2(5): 1-5.
- Quisumbing, A., Meinzen-Dick, R., Terri, R., Raney, L., Croppenstedt, A., Behrman, J. A. and Peterman, A. (Eds.). (2014). Gender in Agriculture: Closing the Knowledge Gap. Washington DC: International Food Policy Research Institute.
- Raw Materials Research and Development Council of Nigeria [RMRDC] (2004). Reports on Survey of Agro-Raw Materials in Nigeria: Benniseed. The Raw Materials Research and Development Council of Nigeria, Garki Abuja. First Edition, Pp 99.
- Sekumade, A. B., and Toluwase, S.O.W.(2014). Profitability and Production Efficiency of Indigenous Tomato Cultivation among Farmers in Osun State, Nigeria. *Journal of Agriculture and Veterinary Science*, 7(11): 13-23.