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ANALYSIS OF SESAME PRODUCTION AMONG INDIGENOUS AND NON-INDIGENOUS FARMERS IN YAGBA EAST, KOGI STATE, NIGERIA

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ABSTRACT

Sesame is one of the oil crops with high economic value. Its production is becoming more pronounced in many parts of the world and gaining more ground among farmers in Nigeria. The study analyzed sesame production among indigenous and non-indigenous farmers in Yagba East, Nigeria. This study employed a Two-stage sampling technique in collecting primary data from one hundred and twenty respondents. It is a comparative study with specific objectives embedded. The data collected were analyzed using Descriptive statistics, t-test, Gross margin analysis, and a 4.0-point Likert scale. The results show that the majority (58.33%) of indigenous farmers were young, while (65.00%) of non-indigenous farmers were middle age. Also, most respondents were married (65.00%, 81.67%) indigenous and non-indigenous farmers. The average total revenue (N370,452.50, N548,712.40) per hectare accrued to indigenous and non-indigenous farmers, respectively. The average total costs the indigenous and non-indigenous farmers expended were (N70,152.28, N84,408.18) per hectare respectively. The findings showed (5.28, 6.50) as benefit-cost ratio (BCR) for the indigenous and non-indigenous farmers, respectively. The results revealed that the high cost of fertilizer (mean score=3.38, 3.88), lack of improved seed (mean score=3.23, 2.53), high transportation cost (mean score=3.25, 3.52), and access to credit (mean score= of 3.43, 3.42) were serious constraints confronting both the indigenous and non-indigenous farmers respectively. Therefore, good road construction is needed through self-help or government intervention for effective transportation of inputs and output, extension visit is paramount, and farmers' resources should be pooled together to enhance farmers' access to adequate finances.

INTRODUCTION

Sesame seeds or beniseed are the tropical annual "*Sesamum indicum*" seeds. The species are cultivated for oil, according to history. It is an important crop that is cultivated extensively all over the world, and it is attracting the interest of many researchers and developers all over the world (Dossa et al., 2023). Sesame is produced in northern, southern, and some parts of southeast and south-south in Nigeria (Mohammed, 2020). There are two types of sesame seeds that are produced in Nigeria; the white/ raw food-grade seeds used in the bakery industry, which contains 98-100% white-grade seeds, and the brown/mixed type, which is primarily used for oil production. Sesame yields in relatively poor climatic conditions and is widely used within Nigeria. Sesame is an important component of Nigeria's agricultural exports. Sesame is often intercropped with other crops by smallholder farmers (Hong et al., 2020). Sesame is majorly grown for its seeds, and the seed is a source of oil for cooking. Due to its economic value, sesame production is becoming attractive to farmers in Kogi State, just as in other parts of Nigeria. Non-indigenes from other parts of the country, especially farmers from Benue State, have been moving to the State to cultivate sesame amidst other food and oil crops. The indigenes from a few villages have

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embraced sesame production. Although many of the farmers are small farm holders, their value calls for attention and empirical study in terms of the resource use, output, profit, and constraints encountered in production. Since sesame has high market potential no matter the output, there is a ready market for it at home and abroad. Every part of the crop is useful, ranging from its stem to other parts. The sesame-dried stem is a good cooking fuel source; the leaves could serve as a vegetable in the human diet, and it is rich in protein and other nutrients (Tunde- Akintunde et al., 2012).

However, it may not be unlikely that sesame production, just as other challenges facing agricultural production, may be limited by inadequate technology or processing facilities for sesame, especially for oil extraction, and lack of access to capital by the farmers, among others (Wacal et al., 2021). Despite the involvement of indigenous and non-indigenous farmers in sesame production in the study area, with many others migrating from other states to settle down in the area for agricultural production, There need to be more empirical studies in this regard. Therefore, this study filled the existing gap by analyzing sesame production among indigenous and non-indigenous farmers in Yagba East, Nigeria. Thus, the study was able to describe the socio-economic characteristics of the respondents, compare the resources used by the respondents, estimate their costs and returns, and identify the constraints facing the respondents to justify the research questions. Which were;

- What are the socio-economic characteristics of indigenous and non-indigenous sesame farmers in the study area?
- Are there differences in the amount of farm resources used by indigenous and non-indigenous sesame farmers in the study area?
- Are there differences in the costs and returns of indigenous and non-indigenous sesame farmers in the study area?
- What are the constraints the indigenous and non-indigenous sesame farmers face in the study area?

The introduction section reveals the background of the study, uses of the crop, justification, and objectives of the study, which emanated from the research questions raised. The literature review section reveals the volume of sesame production globally and major producers, including Nigeria, and reviews past empirical studies and their recommendations. The methodology section reveals the study area, sampling technique, and analytical tools adopted. The results and discussions of the study's findings were enumerated in this section. This section highlighted the study's conclusion, recommendations, and limitations.

LITERATURE REVIEW

The total sesame produced by sesame-producing countries exceeded 92.6% of the world's production (FAOSTAT, 2022). Sesame is grown globally on over 5 million acres (20,000 km^2), with six countries producing sesame in Asia, thirteen countries producing sesame in Africa, and only three countries producing sesame in both Central and South America (Dossa et al., 2023). Nigeria was among the ten sesame-producing countries in the world in 2018 (Wacal et al., 2021). Sesame surplus is usually bulked up, bagged, commercialized, and exported to other parts of the world after drying and cleaning (RMRDC, 2004). Recently, Yadav et al. (2022) reported the challenges farmers face in sesame production and recommended the need to address technologies and develop the best economic and sustainable development strategies. Wei et al. (2022) showed sesame's nutritional value in terms of chemical composition, pharmacological effect, and processing using sesame and recommended further studies on the pharmacological effects of sesame. Dossa et al. (2023) also conducted a study on the economics of sesame production and recommended developing and promoting the sesame value chain in the agricultural sector. However, this study analyzes sesame production among indigenous and non-indigenous farmers in the study area. The study is a comparative study among the two categories of sesame farmers in the study area.

MATERIALS AND METHODS

Study Area

This study was carried out in Yagba East. Yagba East is situated in Kogi State, Nigeria. Its headquarters are in the town of Isanlu Tedo. It has two (2) major districts, namely: Yagba North-East and Yagba Southeast. It shares boundaries with Mopa/Amuro, Yagba West, some parts of Kabba/Bunu, and others of Ijumu. It is located on Latitude: 8° 16' 60.00" N and Longitude: 5° 49' 59.99" E. It occupies a landmass of 1396 square kilometers with an average temperature of 30 degrees centigrade. It experiences two climatic conditions: the rainy and dry seasons. The rainy period lasts 8.3 months, from March 1 to November 12, with a sliding 31-day rainfall of at least 0.5 inches. The most rain falls during the 31 days centered around September 3, with an average total accumulation of 7.3 inches, and the dry season period of the year lasts for 3.7 months, from November 12 to March 1. The least rain falls around December 29, with an average total accumulation of 0.0 inches. It has an estimated average humidity level of 44 percent and an average wind speed of 10 km/h. This area lies within the country's savanna vegetation belt, including scrub, grasses, and occasional trees.

Yagba East is a hub for agricultural practices, with the area known for cultivating various crops such as yam, rice, cassava**,** maize, millet, sesame, cowpea, and ground nut. Other important economic activities include trade, animal rearing (goats, sheep, poultry birds, and pigs), crafts making and wood carving, and lumbering.

The indigenous dwellers of Yagba East are Okun people (a sub-group of Yoruba ethnic people); the Okun dialect of the Yoruba language is commonly spoken in the area. It also accommodates people from other tribes, such as Igbo, Hausa, Ebiras, and Bassa, who have been living peacefully without rancor and acrimony. Farming and trade is the major occupation, while education is also the largest industry in the community.

Population and Sampling Techniques

The target population for the study comprises all indigenous and non-indigenous sesame farmers in Yagba East. A Two-stage sampling technique was used for the selection of respondents. In the first stage, three villages where sesame farmers (indigenous and non-indigenous) were prominent were purposively selected, namely Ijowa Isanlu, Ponyan, and Ife-olukotun. In the second stage, twenty (20) indigenous and twenty (20) non-indigenous sesame farmers were randomly selected from the farmers' group lists (indigenous and non-indigenous sesame farmers), respectively. A total sum of one hundred and twenty (120) respondents, that is, sixty (60) indigenous sesame farmers and sixty (60) non-indigenous sesame farmers, were selected for this study. A well-structured questionnaire and a personal interview were used to elicit information from the respondents.

Data collected were analyzed using descriptive statistics, t-test, Gross margin analysis, and a 4.0-point Likert scale.

T-test

In statistics, the term "t-test" refers to the hypothesis test in which the test statistic follows a Student's t-distribution. According to Kim (2015), a comparison of two independent groups is possible using a t-test. It can be used to check whether two data sets were significantly different from each other or not. This study compares the resources used by the respondents in this study (indigene and non-indigene) using a t-test. Mathematically, it is represented as,

$$t = (\bar{x}_1 - \bar{x}_2) / \sqrt{[(s_1 / n_1) + (s_2 / n_2)]}$$

Where:
$\bar{x}_1$ = Observed Mean of 1st Sample
$\bar{x}_2$ = Observed Mean of 2nd Sample
s_1 = Standard Deviation of 1st Sample
s_2= Standard Deviation of 2nd Sample
n_1 = Size of 1st Sample
n_2 = Size of 2nd Sample

Gross margin Analysis

Measurement of the profitability of respondents was achieved using Gross Margin analysis in estimating costs and returns of the two categories of sesame farmers following other authors (Djokoto & Zigah, 2021; Choumbou et al., 2015; Ukpabuku & Ohen, 2020). The total revenue represents the value of the output from the farm multiplied by the unit price. The total costs include the variable and fixed costs of the respondents. The Gross Margin (GM) is expressed mathematically as:

$$GM = TR-TVC \text{ ----------(1)}$$

Where:

GM- Gross Margin (₦)
TR- Total Revenue (₦)
TVC- Total Variable Cost (₦)
Labour (Man day)
Seed purchase (kg)
Fertilizer (Kg)
Pesticides (Litres)

4-Point Likert Scale

According to Tunde-Akintunde et al. (2012), Likert scale technique provides interesting results in analyzing constraints or challenges faced by farmers in agricultural production. Dossa et al. (2023) adopted 5- point Likert Scale in identifying constraints faced by sesame farmers in their study.

The constraint associated with sesame production was achieved using a mean score from a 4-point Likert scale in this study. These were rated as strongly agree (SA) =4, Agree (A) = 3, Disagree (D) = 2, and strongly disagree=1 the mean score of respondents based on the 4- point Likert Scale**.**

Opinion	**Point**
Very Serious (VS)	4
Serious (S)	3
Not Serious (NS)	2
Not a problem	1

The mean response to each item was calculated using the following formula;

$$X = \frac{\sum FX}{N}$$

It was computed as:

$$\frac{4+3+2+1}{4} = \frac{10}{4} = 2.5$$

Decision rule: Any mean scores below 2.5 (i.e., MS< 2.5) were ranked "Not serious; while those greater than 2.5 (MS>2.5) were considered 'Serious.'

RESULTS AND DISCUSSIONS

The results in Table 1 show that 58.33% of the indigenous sesame farmers were 30-50 years old, while the majority (65.00%) of the non-indigenous sesame farmers were within the age range of 51-70 years. The results imply that younger, active, and productive farmers who were indigenes of the study area engaged in sesame production, unlike the non-indigenous farmers who were much older. The older non-indigenous farmers could have laid their hands on other agricultural and non-agricultural activities before discovering and venturing into sesame production. However, the indigenous farmer could have discovered the crop's economic importance through the non-indigene who were grossly engaged in sesame production in the area. Thus, the productive age of the indigenous farmers, if properly utilized, would, in turn, enhance high productivity. Uwagboe et al. (2016) observed that age is an important factor in farm work; if the bulk of the farmers are old, they will have less energy, which will, in turn, affect their productivity.

Table 1 shows that the majority (75.0%) of indigenous and 71.67% of non-indigenous sesame farmers were male in the study area. These agree with the findings of Tiamiyu et al. (2013), who reported that men dominated sesame farming. Also, Musa et al. (2020) also asserted the dominance of males in sesame production in their study. This could be attributed to the fact that male farmers have more access to family land than their female counterparts because of the exclusive right of male children to inherit family land. In contrast, the male non-indigenous farmers could have more drive to rent, purchase or lease farmland for sesame cultivation due to its economic value. Another reason for male predominance in the study area could be attributed to the labor-intensive nature of sesame farming, which could be hectic and time-consuming, especially for female respondents who combine farming with other domestic chores.

The results in Table 1 show that 65.00% of the indigenous and 81.67% of the non-indigenous farmers were married, respectively. This implies that most indigenous and non-indigenous sesame farmers were responsible and could be assisted by their wives and children if available on the farm. The results concur with Abu et al. (2011), who stated that a high proportion of married indicates family labor availability. Also, Rahman et al. (2009) findings also stated that a high proportion of married respondents would contribute widely to the use of family labor.

The results in Table 1 further show that 48.33% of the indigenous sesame farmers had household sizes of 6-10 individuals, and 91.67% of the non-indigenous sesame farmers had household sizes of 11 and above individuals. This implies that family labor would be readily available when needed for sesame farming operations by the respondents. Larger household sizes have been reported to enhance family labor availability. Hence, the need for hired labor will be minimal, alleviating labor constraints. However, a large household size means more mouths to feed so large households could provide a smaller marketed surplus for a given farm size.

The results in Table 1 show that the majority (96.66%) of the indigenous sesame farmers had formal education from primary education to tertiary education. In comparison, 30.00% of the non-indigenous respondents needed formal education. Although some non-indigenous sesame farmers also had one form of education or the other, their level of education still needed to be higher than the indigenous sesame farmers. The findings imply that there is potential for increased sesame production in the study area since education will give farmers access to information on new agricultural innovations that can be adopted to enhance their productivity. Farmers who can read and write are expected to adopt innovation with its effect on productivity. This finding agrees with Ezeh et al. (2012), who found that the level of education attained by farmers increases farm productivity and enhances their capacity to understand and evaluate new production technologies.

The results in Table 1 showed that 46.67% of the indigenous respondents were full-time farmers, while 91.67% of the non-indigenous were full-time farmers. This implies that the non-indigenous sesame farmers were fully engaged in farming; no wonder they were majorly devoted to sesame cultivation, unlike their counterparts, who gave more priority to other occupations, thus taking farming as a part-time venture.

The results in Table 1 also show that 31.67% of the indigenous sesame farmers had farming experience between 10-20 years, while 51.67% of the non-indigenous respondents had farming experience between 10-20 years. These imply that indigenous and non-indigenous sesame farmers are experienced in sesame cultivation. However, the non-indigene had a higher percentage of sesame cultivation in the study area. One can infer that the non-indigenous farmers have been in business ahead of the indigenes who later joined the train, probably, due to the prospect foreseen through the non-indigenous farmers. The results align with the findings of Abu et al. (2011), who reported that the average farming experience of sesame farmers in Nasarawa State was 12.8 years. Amaza and Olayemi (2002) also stated that the higher the number of years spent in farming by a farmer, the more he becomes aware of new production techniques. Also, the farming experience could be an added advantage to the farmers regarding management practices that could increase productivity and cost of production minimization.

The results also show that the majority (86.67%) of the indigenous sesame farmers hired labor for sesame production. In comparison, the majority (93.33%) of the non-indigenous sesame farmers made use of their family members on the farm. The results buttress the larger household size, especially for the non-indigene who had large members within their reach, who became sources of labor on their farms, and the entire family members took sesame production as their means of income.

Therefore, the non-indigenous farmers spent less on labor while their indigene counterparts spent more on hired labor. It may be likely that they even employed non-indigenous farmers to help on their farms since many indigenous sesame farmers were part-time farmers, as stated earlier.

The results revealed in Table 1 further show that 53.33% of the indigenous respondents had no contact with the extension agents. Likewise, the majority (66.67%) of the non-indigenous respondents had no contact with the extension agents. This may negatively influence the adoption of improved sesame production technologies because contact with extension agents exposes farmers to new technologies, improved seed varieties, and others. The low extension access recorded in this study could be associated with the low extension staff-to-farmers ratio observed in Nigeria and other developing countries.

Table 1. Socio-economic Characteristics of Indigenous and Non-indigenous Sesame Farmers

	Indigenous			Non-indigenous		
Socio-economic variables	**Frequency**	**Percentage**	**Mean/mode**	**Frequency**	**Percentage**	**Mean/mode**
30-50	35	58.33		17	28.33	
51-70	20	33.33		39	65.00	
71-90	5	8.33		4	6.67	
Total	60	100,00		60	100,00	
Sex						
Female	15	25.00		17	28.33	
Male	45	75.00	Male	43	71.67	Male
Total	60	100.00		60	100.00	
Marital status						
Single	4	6.67				
Widow	3	5.00		8	13.33	
Widower	7	11.67	Married	3	5.00	
Married	39	65.00		49	81.67	Married
Divorced	7	11.67				
Total	60	100.00		60	100.00	
Household size						
1-5	23	38.33		1	1.67	
6-10	29	48.33		4	6.67	
11-15	8	13.33		55	91.67	
Total	60	100.00		**60**	**100.00**	
Level of education						
No formal education	2	3.33		18	30.00	
Primary education	5	8.33		26	43.33	
Secondary education	15	25.00	Tertiary education	14	23.33	Primary education
Tertiary education	38	63.33		2	3.33	
Total	60	100.00		60	100.00	
Other occupation						
Other occupation	32	53.33		5	8.33	
Full-time Farming	28	46.67	Other occupation	55	91.67	Full-time farming
Total	60	100.00		60	100.00	
Source of capital						
Self-finance	21	35.00	Self-finance	28	46.67	Self-finance
Credit and thrift	6	10.00		14	23.33	
Cooperative	19	31.67		18	30.00	
Agric bank	7	11.67		0	0.00	
Friends and family	7	11.67		7	11.67	
Total	**60**	**100.00**		60	100	
Farming experience						
10-20	19	31.67		21	35.00	
21-40	34	56.67		31	51.67	
Above 41	7	11.67		8	13.33	
Total	60	100.00		60	100.00	
Land source						
Inherited	30	50.00	Inherited	5	8.33	
Gift	23	38.33		19	31.67	

Purchase	5	8.33		16	26.67	Rent
Rent	2	3.33		20	33.33	
Total	**60**	**100.00**		**60**	**100.00**	
Source of labour						
Family	4	6.67		56	93.33	
Hired	52	86.67	Hired	3	5.00	Family
Cooperative farming	4	6.67		1	1.167	
Total	**60**	**100.00**		**60**	**100.00**	
Extension access						
No access	32	53.33		20	33.33	
Access	28	46.67	No access	40	66.67	No access
Total	60	100.00		60	100.00	

Source: Field Survey, 2021

Comparison of Resources Used by Indigenous and Non-indigenous Sesame Farmers

The result in Table 2 showed that non-indigenous farmers planted more seed (303.33kg) than the indigenous sesame farmers (91.25kg); the difference in seed quantity planted was significant at 1%. This implies that the expected output of the non-indigenous sesame farmers should be greater than their counterparts, all things remaining equal. The costs incurred by the respondents were in line with the seed quantity purchased, as shown in the Table. This implies that the non-indigenous sesame farmers cultivated more land than the indigenous sesame farmers. The evidence of these is revealed in the land area cultivated by indigenous sesame farmers (11.02ha) and non-indigenous sesame farmers (23.26ha), which was also significant at 1%. This implies that the non-indigenous sesame farmers acquired more land than the indigenous sesame farmers, who were indigenes and rightful land owners. However, the indigenous farmers need to attach more importance to sesame production on their land, thus, leaving the strangers to take better advantage of their possession economically.

The results also showed that the indigenous farmers, despite their low land cultivation, still hired more labor (10.56) than the non-indigenous sesame farmers who used low-hired labor (4.18). It may be likely that the indigenous farmers also hired the non-indigenous sesame farmers on their farms because indigenes always see strangers in their land as cheap sources of labor.

Also, there were significant differences in the quantities of herbicides and pesticides used by the two categories of sesame farmers. These variables were significant, mostly at 1%, apart from the quantity of fertilizer, which was not significant for both categories of farmers. These results show that in terms of management practices, the non-indigenous sesame farmers could take good care of their farms regarding pest and weed control. These could translate to more output during the harvest period for the non-indigenous sesame farmers who were always on the ground to look after their farms.

Table 2. Farm Resources Used by the Indigenous and Non-indigenous Sesame Farmers

Resources	**Indigenous**	**Non-indigenous**	**t-value**
Seed quantity (kg)	91.25	303.33	9.5884***
Seed cost (₦)	55,343.33	485,565.33	2.7437**
Land quantity (ha)	11.02	23.65	4.1318***
Labour quantity (person-days)	10.56	4.18	3.8766***
Labor cost (₦)	22,755.17	10,800.00	2.0087**
Pesticides quantity (liters)	10.28	18.22	6.0207***
Pesticides cost (₦)	13.025.83	38.438.83	2.6120***
Herbicides quantity (liters)	10.72	18.83	6.1789***
Herbicides cost (₦)	14,887.50	31,675.83	5.0201***
Fertilizer quantity (50kg bag)	9.98	19.13	1.3412
Fertilizer cost (₦)	35,882.14	64,720.00	5.2247***

Note: Significant at ***1%, **5%
Source: Field Survey, 2021

Costs and Returns of Indigenous and Non-indigenous Sesame Farmers

The results in Table 3 show that the average total revenue obtained by indigenous sesame farmers was ₦370,452.50 per hectare, and the total variable cost was ₦59,942.78 per hectare while the Gross margin was ₦310,509.72 per hectare with 5.28. As Benefit Cost Ratio. The non-indigenous sesame farmers' average total revenue was ₦548,712.40 per hectare, average total variable cost was ₦72,867.73 per hectare while the Gross margin was ₦475.844.67 per hectare with Benefit cost Ratio (6.50). These results showed that sesame production is highly profitable in the area, and thus, any effort at expanding it would be a good decision. The results align with the findings of Abu et al. (2011), who found that sesame production is profitable in West African countries. The results also buttressed the findings of Makama et al. (2011), who found that sesame production is profitable, in which sesame farmers' realized a BCR of 1.40.

Table 3. Costs and Returns of Indigenous and Non-Indigenous Sesame Farmers/Hectare

Variables	**Indigenous**			**Non-Indigenous**		
Items	Qty.	Unit Price	Amount (₦)	Qty.	Unit Price	Amount (₦)
Return (100 bags)	10.45	35,450.00	370,452.50	15.50	35,400.80	548,712.40
A. Total Revenue, TR			370,452.50			548,712.40

Variables Costs						
Seed (kg)	17.4	550.45	7,376.03	18.35	555.16	10,187.19
Labour	13.5	2,200.50	29,706.75	15.5	2200.00	34,100.00
Pesticide (liters)	3.8	1400.00	5,320.00	3.3	1350.85	4,457.81
Herbicide (litres)	2.0	3100.00	6,200.00	2.7	3100.50	8,371.35
Fertilizer (bag)	1.8	6300.00	11,340	2.5	6300.55	15,751.38
B. Total Variable Cost, TVC			59,942.78			72,867.73
Fixed Cost						
Depreciation on fixed items	-	-	10,209.50	-	-	11,540.45
C. Total Fixed Cost, TFC			10,209.50			11,540.45`
Total Costs, TC = B+C			70,152.28			84,408.18
Gross Margin, GM= A – B			310,509.72			475,844.67
Profit, π = A – C			300,300.22			464,304.22
BCR = A/C			5.28			6.50

Source: Field Survey, 2021

Constraint Faced by Indigenous and Non-indigenous Sesame Farmers

The results in Table 4 show that the indigenous and non-indigenous sesame farmers faced the constraints of the high cost of fertilizer (mean scores = 3.38, 3.88), respectively**.** The implication is that the high fertilizer cost would limit farmers' purchasing and applying adequate fertilizers to increase their production. Thus, soil fertility would be depleted faster each year without adequate replenishment, which could lead to low sesame production in the current and subsequent years. Nyiatagher and Ocholi (2015) state that low fertilizer application could lead to low yield. Lack of improved seeds (mean scores = 3.23, 2.53) was another serious constraint faced by indigenous and non-indigenous sesame farmers, respectively. Thus, the local sesame cultivar is majorly planted by the farmers in the area, which would have affected the volume of their output. Also, inadequate access to credit was a serious constraint faced (mean scores = 3.43, 3.42) by the indigenous and non-indigenous sesame farmers, respectively. This implies that the respondent's means of expansion will be limited to probably their savings or from friends and relatives. This could limit their land area to be cultivated, managed and total output. The inability of farmers to have access to credit from financial institutions may be due to the lack of collateral required for credit acquisition. Invariably, family and friends may remain their main sources of farm credit, whose disbursement volume is usually low. This collaborates with the findings reported that producers complained that shortage of capital and stringent conditions imposed by banks for securing loans had deterred farmers' performance in sesame production. Also, Abu et al. (2011) discovered funds as a constraint to sesame production among farmers in Nasarawa State.

Table 4. Constraints Facing Indigenous and Non-indigenous Sesame Farmers

Constraint	**Indigenous**					**Non-Indigenous**				
	VS	**S**	**NS**	**NP**	**MS**	**VS**	**S**	**NS**	**NP**	**MS**
High cost of fertilizer	41	8	4	7	3.38	54	5	1	0	3.88
Lack of improved seed	27	25	3	5	3.23	4	26	28	2	2.53
Disease and pest infestation	13	6	26	15	2.28	0	15	40	5	2.17
Low output per hectare	8	13	22	17	2.20	1	18	34	7	2.22
Inadequate processing facilities	16	10	23	11	2.25	5	16	24	15	2.18
High transportation cost	34	13	7	6	3.25	43	8	6	3	3.53
Poor storage facilities	18	5	17	20	2.35	17	5	15	23	2.27
Inadequate access to credit	37	14	7	2	3.43	40	9	7	4	3.42
Pilfering/theft	2	5	18	35	1.57	5	3	19	33	1.67

Note: VS= Very Serious, S= Serious, NS=Not Serious, NP= Not a problem, MS= Mean Score
Source: Field Survey, 2021

CONCLUSIONS

The study compared sesame production among indigenous and non-indigenous farmers in Yagba East, Kogi State, Nigeria. The findings showed that the majority of the respondents (indigenous and non-indigenous) were married men. The indigenous sesame farmers were more educated than the non-indigenous sesame farmers. The non-indigenous farmers cultivated more land area than the indigenous farmers. Also, the non-indigenous farmers were mostly given to full-time farming of sesame, and they had more years of experience in sesame production than their counterparts. The findings showed that higher returns, gross margins, and benefit-cost accrued to the non-indigenous farmers than the indigenous, who also found sesame production profitable. The high cost of transportation, lack of improved seed varieties, high fertilizer cost, and inadequate access to credit facilities and extension services were serious constraints faced by indigenous and non-indigenous sesame farmers, respectively.

Therefore, good road networking construction is paramount for the effective transportation of inputs and output; extension agents visits are needed in the study area to disseminate new techniques to enhance increased sesame production, and sesame farmers (indigenous and non-indigenous) should pool their resources together as cooperatives to enhance easy access to credit in other to purchase farm inputs such as fertilizer to replenish soil fertility and increase their output in the study area. The limitations of this study were inadequate funding and the inability of older respondents to read and write. Future research should compare technical efficiency and value addiction among different categories of sesame producers in the study area.

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