



RESEARCH ARTICLE

PROFITABILITY ANALYSIS OF BENISEED (SESAME) PRODUCTION IN LAFIA LOCAL GOVERNMENT AREA OF NASARAWA STATE, NIGERIA

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ARTICLE DETAILS

Article History:

Received 20 January 2021
Accepted 24 February 2021
Available online 16 March 2021

ABSTRACT

The research was designed to examine the profitability analysis of beniseed (Sesame) production in Lafia Local Government. Data collected was analysed using simple descriptive statistics such as mean, frequency count, percentage and gross margin analysis to satisfy all the objectives. From the data collected, it was deduced that majority of the respondents 94.2% that engaged in sesame production are male. Also, most of the respondents 37.5% are married men and women who participated in the production of beniseed in order to carter for their family needs. Most of the respondents have one form of education or the other but majorities of them 33.8% have primary education predominantly, people who engaged in the production of beniseed in the study area are the small-scale farmers. Most of the respondents have an average number of family 3 – 4 per household. Most of the respondents spend only few number of years 3 – 5 years in beniseed production, 66.67% of the respondents being small-scale farmers make use of their family as a source of labour. In terms of extension awareness, 70.8% of the respondents are aware of extension services while only few number 29.2% are not. In terms of access to credit facilities majority of the respondents 65.0% have no access to credit while only scanty number 35.0% have access to credit facilities majority of the respondents 46.7% have problem of inadequate fund as a source of capital.

KEYWORDS

Profitability, Analysis, Beniseed, Production.

1. INTRODUCTION

Beniseed (Sesame) sesame indicum commonly called beniseed in Nigeria, is an important oil seed crop believed to have originated from tropical Africa. The name is used in literature word wide is known as “Simsim” in East Africa, till in India and Gigely Insri-lanka (Adeyemo *et al.*, 1992). The Hausa, Igbo and Yoruba major tribes, in Nigeria call it “Ridi” Ekuru and Isaba respectively. Other tribes in Nigeria also have name for it.

Sesame is an ancient oil seed primarily adapted to areas with long growing seasons and well drained soil (Karmmel, *et al.*, 1983). The plant is usually 60 – 120cm tall and the fruit is a dehiscent capsule held close to the stem. When the crop mature, the capsule shelters to release a number of small seed, the seed are protected by fibrous hull or skin which may be whitish to brown or to black depending on the varieties (Gapta, 1982). The seed contains fatty acids composition of the tropical sesame oil sample are 70% to 11% of a palmitic, 1 – 2% of stearic, 32 – 54% of oleic amount less than 1% (Hamman, 1998). Antioxidant and several steroids have also been found in sesame oil. Investigation on two of it antioxidant sesame and sesamol, shows that the seed contain 0.34 – 1.113% of sesame and 0.13 – 0.058% of sesamol. The third important antioxidant is sesamol. It occur in a free form but is also liberated from sesamol by dilute mineral acid or by hydrogenation (Ibrahim, *et al.*, 1983).

The protein content of whole sesame range between 26 – 30% while that of the meal varies from 48 – 59%. The protein is high in methionite and essential amino acid with sulphur (up to 3.4%). This is usually for most plant proteins. The meal prepared from dehulled seed does not make sesame an excellent protein source for supplementing soyabean, peanut and other plant protein which lack sufficient methionite, increase their nutritive value (FAO 2000).

Sesame is a vital oil seed which has some inherent characteristics that make it attractive especially to the small-scale farmers in Nigeria (Ibrahim, *et al.*, 1993). It serves as a source of income and employment to the producers and it is also used in various form by rural household in Nigeria.

The marketable sesame products are the whole seed oil and the meal. The whole seed is used industrially in making a variety of breads, cakes and can be eaten roasted. This oil is used as cooking oil for manufacture of margarine, cosmetics, medicines, insecticides and paint (Annussek, 2001).

The young leave may also be eaten in stews and dried stem may be burnt as fuel with the ash used for cooking local soup. It is also useful in the preparation of locally brewed beverage and the meal left after the extraction of oil is used as poultry and livestock feed (Alegbejo, 2003).

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Access this article online

Website:
www.fabm.org.my

DOI:
10.26480/fabm.02.2021.51.53

2. OBJECTIVES OF THE STUDY

The broad objectives of the study is to examine the profitability analysis of beniseed (Sesame) production in Lafia Local Government Area of Nasarawa State, Nigeria.

The specific objectives of the study is to;

- describe the socio-economic characteristic of the small-scale sesame farmers
- identify the input and output level of production
- identify the problem affecting sesame production in the study area.
- identify the cost and returns of benniseed production.

3. METHODOLOGY

This study was conducted in Lafia Local Government Area of Nasarawa State. It is located in south senatorial zone of Nasarawa State with latitude 8° 33'N longitude 8° 32'E and altitude 181.53M, the area has two distinct seasons wet and dry seasons. It has a mean temperature range from 25°C in October to about 36°C in March while rainfall varies from 137.3MM in some places to 145MM in other places (Nasarawa State Ministry of Information, 2005).

Nasarawa State covers an area of 27, 117KM² with estimated population of 1,863,275 people (NPC, 2006). Alluvial soil are found along the Benue trough and their flood plains. The forest soil which are rich in human and literates are found in most part of the state. There are also sandy soil in some part of the state. Solid Minerals notable are salt bauxide. The state is an agrarian state with large percentage of the population engaged in farming and agro-allied activities. Primary data for the study were

collected using a well structured questionnaire. The instrument contained questions covering all the objectives of the study. A purposive sampling technique was used in the selection of six (6) wards out of the thirteen wards based on sesame production namely; Asakio, Adogi, Agyaragu Tofa, Keffi Wambai, Grayam and Ciroma respectively. Out of this six (6) selected wards, twenty (20) sesame small-scale farmers were randomly selected to give a total number of one hundred and twenty (120) respondents that was used for the study.

Data were analyzed using simple descriptive statistics such as mean scores, standard deviation, frequency count and percentage to satisfy objectives i and iii. Gross margin (GM) analysis was used to satisfy objective ii.

The gross margin (GM) analysis is express as:

$$GM = TR - TVC$$

Where GM = Gross margin (N/ha)

TR = Total revenue (N/ha)

GM = total revenue from sesame production minus total variable cost in cure in the cost of the production of one (1) hectare of sesame.

This estimation served as a profit index of sesame farmers in the study area.

The higher the GM, the more likely a farm is considered to be profitable and the smaller the GM, the lesser the profit possibility.

4. RESULTS AND DISCUSSION

Table 1: Socio-economic characteristics of the respondents

Variable	Frequency	Percentage
Age (yrs)		
16 - 25	19	15.8
26 - 35	45	37.5
36 - 45	32	26.7
46 - 55	19	15.8
>56	5	4.2
Gender		
Male	113	94.2
Female	7	5.8
Marital status		
Single	30	25.0
Married	45	37.5
Divorced	15	12.5
Widow	20	16.7
Widower	10	8.3
Family size		
1 - 5	30	25
6 - 10	57	47.5
11 - 15	17	14.2
>15	16	13.3
Farming experience		
1 - 5	25	20.8
6 - 10	35	29.2
11 - 20	40	33.3
>20	20	16.7
Education attainment		
Non formal	31	25.8
Primary school	40	33.3
Secondary school	34	28.3
Tertiary school	34	28.3

Source: Field survey, 202

Table 2: Distribution of respondents according to labour source

Source	Frequency	Percentage (%)
Family	80	66.67
Hired	40	33.33
Total	120	100

Source: Field survey, 2020

Table 2 above shows that majority of the respondents 66.67% make used of their family as labour, while 33.33% used hired labour. It could be deduced that farmers in the study area are peasant farmers who make

used of crude tools in cultivation as such they have no money to hire labour for their production.

Table 3: Distribution of respondents based on extension awareness

Awareness	Frequency	Percentage (%)
Yes	85	70.8
No	35	29.2
Total	120	100

Source: Field survey, 2020

The above table indicates that majority of the respondents 70.8% are

aware of the extension services while few number 29.2% are unaware of the extension service. This shows that most of the respondents can make use of the information disseminated to them by the extension agents in order to improve their agricultural production.

Respondents who are not aware of the extension activities are left behind in terms of hearing of new information and innovation and as such their productivity may be low in agricultural production.

Access to credit	Frequency	Percentage (%)
Yes	42	35.0
No	78	65.0
Total	120	100

Source: Field Survey, 2020

The above table indicates that 35.0% of the respondents agreed to have access to credit facilities, 65.0% said then don't have credit access. It could be deduced that most financial institution are refusing to grant loan to small-scale farmers probably because of lack of collateral and high amount of interest rate charge by some commercial banks that militates against the farmers to have access to credit.

Constraint	Frequency	Percentage (%)
Inadequate fund	56	46.7
Unavailability of improved seed	32	26.7
Cost of seed	18	15.0
Fertilizer cost	18	11.7
Total	120	100

Source: Field Survey, 2020

The above table shows that majority of the respondents 46.7% complained of inadequate fund as a major constraint, 26.7% complained of unavailability of improved seed, 15% complained of cost of the seed while 11.7% said high cost fertilizer is the problem. It could be observed here that capital form of money plays an important role in many establishment. It can also be used for the development of other sector of the economic: without capital there will be no development farmers' need capital for the purchase of farm inputs such as fertilizer improved seed and animal in order to produce the best output.

Source	Unit/quantity	Unit/price	Value (N)
A. Returns	400	400	160,000.00
Benniseed yield (kg)			
B. Variable cost seed (kg)	700	25	42,500.00
Transportation	7	450	3,150.00
Labour (hr)	124	300	37,150.00
Fertilizer (kg)	9	500	4,500.00
Herbicide (kg)	4	200	800.00
C. Total variable cost			88,150.00

Source: Field survey, 2020

Gross margin (A - B)

$$= 160,000 - 88150$$

$$= 71,850.00$$

Average rate of return on gross margin

$$71,850.00/88,150 = 82\text{kb}$$

The cost and return of benniseed production by farmers in the study area was analyzed by using gross margin analysis. For this study, variable such as seed, transportation labour, fertilizer and herbicides were used. Other cost such as marketing cost and herbicides were used. Other cost such as marketing cost were not considered while fixed cost were negligible.

Returns were calculated base on the average by every benniseed farmer per kg of benniseed. The total variable cost of the farmers was N88,150.00.

The labour accounted for N37,200.00 of the total variable cost and fertilizer amounted N4,500. Seed cost N42,500 while transportation cost N3,150 and the herbicide cost N800. This shows that benniseed farmers use fertilizer and herbicide in benniseed production although production vary from farmer to farmer on the average estimated to be 400kg per hectare, the gross margin obtained was therefore N71,850.00. The average rate of returns which measure the failure or success of the farm was 0.82. This means that on average a gross margin of 82 kobo was gained on every Naira invested in benniseed production in the study area.

Quantity (Kg)	Frequency	Percentage (%)
1 - 2bags	18	15.0
2 - 3 bags	28	23.3
3 - 4 bags	50	41.7
4 bags and above	24	20.0
Total	120	100

Source: Field Survey, 2020

The above table indicates that 15.0% of the respondents harvested 1 - 2 bags, 23.3% harvested 2 - 3 bags, majority 41.7% harvested 3 - 4 bags, while 20.0% harvested 4 and above bags.

It could be deduced here that majority of the respondents who normally harvested the beniseed averagely may have adopted good cultural practices such as early planting, weeding, fertilizer application, pest and disease control etc that makes them to have minimum respond of the crop.

5. CONCLUSION AND RECOMMENDATION

The study revealed that majority of the sesame production are male who fall with the active age of 26 - 35 years. Many of them have one form of education or the other and predominantly make used of their family members as a source of labour. Many are aware of the extension services but only few are not. The major problem encountered is inadequate of capital for the purchase of farm inputs such as improved seed and animal, fertilizer etc in order to increase production. In the with the above forgoing, the following recommendations are deduced:

- Extension workers and other relevant organization should provide training for sesame farmers on the best way of combining the various input used in sesame production, this is to enhance their efficiency level.
- Sesame farmers, should expand the scope of production to absorb the excess family labour used in sesame production as a means of improving cost efficiency.
- Credit should be given to the sesame farmers at subsidize interest rate in order to enable them to have access to purchase farm inputs such as fertilizer, improve varieties of seed and animal.
- Government should look into the inherent potential in sesame production as that will increase foreign earning and local industries for processing sesame into industrial uses.

REFERENCES

- Adeyemo et al. (1992). Agro-industrial project analysis second edition John Hopkins University press Baltimore M.D, USA.
- Alegbejo et al., (2003). Expression of oil seed production using sesame, Engineer research.
- Anussek (2001). Economic Geography, Roland Press Co. New York.
- Gapta (1982). Reading in Agricultural Marketing Department of Agriculture University of Ibadan Longman, Nigeria.
- Hamman (1998). Agricultural Economics and Marketing in the tropics. University of New England, Australia
- Ibrahim et al. (1983). Marketing Management Analysis, Planning and Control Prentice Hall: Engle Wood Chiffs, N.J.
- Karmel et al. (1983). Agricultural Marketing second edition Oxford University Press, London.