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Evaluation of Okra Production among Smallholder Farmers in Kabba-Bunu Area of Kogi State, Nigeria

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Abstract

The study was conducted to identify factors of Okra production in Kabba/Bunu Local Government Area. 60 Okra farmers were identified and given a well structure questionnaire. 55 questionnaires were returned by the respondents. The questionnaire were collected and organized for analysis. Percentage was used to analyze the data collected. Results from the study shows that majority of the farmers are male, within the age of 47-56 and above, main occupation is farming; 18.18% are civil servants. Education level is low; 32.73% had no formal education while 29.10% had primary education. Factors affecting Okra production in the area include land acquisition, size of farm land, land preparation method and source of capital. For management practices the study revealed that there is low use of fertilizer (23.64%) and herbicide (25.45%) among farmers, also majority of the farmers use local variety (54.55%). The study established need for improvement in management practices for Okra production in the study area.

[Babalola, T.S., Ibitoye-Ayeni, N.K., Alemoru, M.O., Ayodele, F.G. and Lawal, J.A.. **Evaluation of Okra Production among Smallholder Farmers in Kabba-Bunu Area of Kogi State, Nigeria.** *Nat Sci* 2022,20(10):28-33]. ISSN 1545-0740 (print); ISSN 2375-7167 (online). http://www.sciencepub.net/nature 06. doi:10.7537/marsnsj201022.06.

Key words: Management, Okra, Production, Farmers, Factors

Introduction

Okra (*Abelmoschus esculentus* (L Moench) is an important vegetable crop which is grown and consumed throughout Nigeria (Katung and Kashina, 2005). The genus *Abelmoschus* has four known domesticated species. Among these, is *A. esculentus* (common okra) which is the most widely cultivated in South and East Asia, Africa, and the southern USA. In the humid zone of West and Central Africa, *A. caillei* (West African okra) with a longer production cycle, is cultivated (Siemonsma, 1982). *A.manihot*; this specie sometimes fail to flower for pods and is extensively cultivated for its leaves in Papua New Guinea (Schippers, 2000), Solomon Islands and other South Pacific Islands (Schippers, 2000). The fourth domesticated species *A. moschatus*, is cultivated for its seed, which is used for ambretee in India and several animism practices in South Togo and Benin (Schippers, 2000). It is one of the leading vegetable fruits in the Nigerian market on the basis of land area under cultivation, production and market value (Farinde, et al., 2007; Edet and Etim, 2010).

Okra has a long history, with its beginnings from Egypt in the twelfth century where it is cultivated before the time of Cleopatra. The okra plant spread to many parts of the world during the Atlantic slave trade. During World War II, the shortage of coffee beans made them use okra seeds as a substitute for coffee. Since then, okra became very popular in the local markets and convenient stores and today, it is widely distributed through the world in the tropics, subtropics and warmer parts of the temperate region (ECHO, 2003). In recent times, it is in generally grown and is in great demand in the tropical countries of the world, particularly tropical Asia, East, West, and Central Africa as well as the Caribbean's. Worldwide production of okra as fruit vegetable is estimated at six million tonnes per year. In West Africa, it is estimated at 500,000 to 600,000 tonnes per year (Burkil, 1997). Nigeria is the largest producer (1,039,000 t) in Africa followed by Coted'Ivoire, Ghana and others (FAOSTAT, 2008).

In Nigeria, okra production is mainly during the rainy season, although it can be grown all year round via irrigation depending on varieties. In the rainy season, production is large much more than what the local populace can consume. During the dry season production via irrigation, okra fruits are produced in low quantities, thus scarce and expensive to get (Bamire and Oke, 2003).

Okra is a potential export crop. All parts of okra plant are useful, its leaves and tender shoots can be cooked and eaten by humans and also eaten fresh by livestock like cattle, goat, sheep, etc. The pods are

either consumed fresh or in prepared dried form (Farinde, et al., 2007). Okra fruit contains carbohydrate, proteins and vitamin C in large quantities (Adeboye and Oputa, 1996) thus a very nutritious vegetable crop. The increase in the demand for okra in Nigeria has made many smallholder farmers to go into the production as a means of income either directly in production or marketing or both. This research was therefore conducted in order to assess the major constraints encountered by okra farmers in the study area and proffer possible solutions.

Objectives of the Study

1. To identify the socio-economic characteristics of okra farmers in the study area.
2. To identify the factors affecting okra production in the study area.
3. To identify the management practices used in okra production in the study area.

Materials and Methods

The Study Area: The study was carried out in Kabba-Bunu Local Government Area (Longitude 7°50^{I} N, 6°03^{I}E) of Kogi State in the Southern Guinea Savanna ecological zone, during the 2012 cropping season. The location of the area lies within the warm humid climate of the North central zone of Nigeria with a marked dry and wet season.

Sampling Procedure: A purposive random sampling technique was used. Kabba-Bunu Local Government Area is divided into two district; Kabba and Bunu, and each district has a number of villages and towns but two villages in each of the districts where there were extensive production of okra, were randomly selected. A preliminary study was carried out to determine the farmers into okra production in these villages. The villages selected are: Otu and Okedayo in Kabba district; Ijumu and Aye toro in Bunu district. Samples of 15 farmers from each of the 4 villages were purposively selected giving a total of 60 farmers in all.

Data Collection: The research data were collected with the assistance of trained numerators using well-structured questionnaire, interview, and on-farm observations. Sixty (60) questionnaires were distributed in the study area to 60 respondents.

Analytical Technique: Descriptive statistics analytical tool, percentage was used to analyze the data collected from the study.

Results and Discussion

Socio – Economic Characteristics of Respondents

Table 1: Distribution of respondents according to their socio-economic characteristic

Characteristic	Frequency	Percentage%
Gender		
Male	42	76.36
Female	13	23.64
Age		3.64
17-26	2	7.27
27-36	4	7.27
37-46	4	27.27
47-6	15	54.55
- 56	30	
Occupation		
Farming	25	45.45
Civil service	10	18.18
Craftsman/farming	20	36.37
Educational level		
No formal Education	18	32.73
Primary Education	16	29.10
Secondary Education	13	23.64
Tertiary Education	8	14.53
Length of years of cultivating okra		
<1	10	18.18
1-5	2	3.64
5011	12	21.81
11-16	15	27.27
>16	16	29.10

Table 1 show that 76.36% of the respondents are male while 23.64% of them are female. This suggests that farming is dominated by males in the study area. The respondents are mostly > 56 years old 54.55% although the result agrees on the ageing and the farming population in Nigeria (Manyong et.al. 2005) the implication is that with time, the efficiency of these farmers will divide and food crop output will decline. The youthful segment of the population has abandoned farming for educational opportunities and employment property of other ventures. 45.45% of the respondents are into farming while 36.37% are craftsman and farmers. The areas selected for the study constitute the agrarian community of the population are into farming majority of the respondent had no formal Education and primary education (32.73% and 29.10% respectively) while 23.64% had secondary education and those that had Tertiary education are 14.53%. The implication of this result is that perception and acceptance of improved technologies heeded for accelerated food production will be jeopardized more so as 81.82% of the respondents are into farming activity

Results on the length of years of cultivating control shows majority of the respondent have experience of 10 years and above. 21.81% had 6-11 years' experience, 27.27% and 11-16 years while 29.10% had >16 years. The result shows that Okra farmers in the study area are well experienced.

Factors Affecting Okra Production

Table 2: Distribution of respondents according to factors affecting Okra production

Factors	Frequency	Percentage%
Land acquisition		
Inheritance	19	34.55
Purchase	10	18.18
Rented	26	47.27
Size of farmland		
< 1 ha	29	52.73
1- 2ha	18	32.73
3-4ha	7	12.73
> 5ha	1	1.81
Cropping pattern		
Sole cropping	14	25.45
Mixed cropping	39	70.91
Intercropping	2	3.64
Land Preparation		
Plough, harwe and Ridge	6	10.92
Cutlass and hoe	48	87.27
Chemicals (zero tillage)	1	1.81
Source of seeds		
Agric Dev Project	5	9.09
Research Institute	0	0
Local Market	15	27.27
Agro Allied Store	15	27.27
Previous year Produce	20	36.37
Source of Labour		
Family labour	17	30.91
Hired labour	38	69.81
Source of capital		
Banle	2	3.64
Cooperative society	24	43.64
Self finance	29	52.72

Results on factors affecting Okra production are presented in table 2. Majority of the respondent are tenant farmers i.e they rented their farmland (47.27%). This arrangement consists of payment of money before

commencement of operations on a piece of farm land. The arrangement may limit the land availability to farmers for increase crop production. 52.73 to had farm size > 1ha, 32.73% had 1-2 ha. This could be due to the land acquisition method in the study area; other factors that can influence this include capital, farm inputs and adoption of impaired farming methods. The size of farm land in the study area for Okra is not enough in meeting to improved production. 70.91% of the respondents practice mixed cropping this is typical of traditional farming system in Africa.

Sole cropping is rare in traditional farming system rather a pseudo –rotation exist in which a mixed culture of different species of crops is followed by a different set of dominant and subsidiary crops also in mixed culture, some of which may have been relay intercropped with the preceding crops (Okigbo and Greenland, 1979).87.27% of the respondents prepare their land using cutlass and hoe. This shows that village is superficial and restricted to clearing of land send making heaps, the loss of physical soil quality associated with mechanized operations is absent however low adoption of mechanized operations reflects the laid of production of okra in the study area which can be adjudged to be low. 9.09% of the respondents sourced for okra seeds from local market, 27.27 from Agro allied store and 36.37% sourced their seed from local market and farms year produce cannot ascertain viability, quality and productivity of seeds. These may be a feature hampering the production of okra in the study area.

Majority of the respondents use hired labour (69.81), 30.91% use family labour. This could be due to size of family or young family members and gone to the urban areas to seek for other jobs. Self-finance (52.72%) constitutes the major source of capital for reproduction in the area. While 43.64% succeed their capital from cooperative society. The result reveals that there is low access to bank loan for Okra farmers in the area. This will invariably affect expansion of production to meet the food demand of the increasing population.

Table 3: Distribution of respondents according to management practices

Management practices	Frequency	Percentage %
Variety planted		
Local	30	54.55
Improved	25	45.45
Number of seeds/hole		
One	8	14.55
Two	42	76.36
Three	5	9.09
Plant spacing		
75cm x 25cm	15	27.27
70cm x 30cm	20	36.36
30cmx 40cm	20	36.36
Fertilizer use		
Yes	13	23.64
No	42	76.36
Weed control method		
Chemical control c	14	25.45
Manual weeding	41	74.55
Biological control	0	0
Pest and Disease control method		
Chemical control 1	28	50.91
Cultural method	26	47.27
Biological method	1	1.82
Harvesting method		
Manual	54	98.18
Mechanical	1	1.82

Management Practices used in Okra Production

Results on management practices in okra production for the study area is presented i.e table 3. 54.55% the farmers used local variety. According to FFD (2002) not many improved varieties are available in Nigeria hence farmers are encouraged to use local varieties of good quality, velvet and lady's finger are recommended for farmers in the study area. These two varieties are commonly planted in the area.

For plant spacing 27.27% adopt 75cm x 25cm 36.36% adopt 70cm x 30cm while 36.36% used 30cm x 40cm spacing. These spacing are recommended for okra (FFD,2002). However 30cm x 40cm results in considerable yield increase. Also spacing is determined by the type of variety planted. 23.64% of the farmers used fertilizer in okra production; hence there is inadequate use of fertilizer among Okra farmers this could be due to cost of fertilizer and level of production. The implication of this result is that there will be low yield especially with the fact that majority of farmers in the area practice mixed cropping and cultivate majorly roots and tubers which depletes soil nutrients.

Weed control by farmers in the area is majorly manual weeding (14.55%). Manual weed control is labour intensive and not as effective as chemical control (Abolusoro S.A- Personal Communication 2011). Prometyre or metolachler (Dual) at 2.0hg 9.1/ha is recommend (FFD. 2002) 50.91% control pest and Disease using chemical control while chemical control is 47.27% harvesting method is mainly by manual method (98.18%). This is the widely used harvesting method among Okra farmers in Nigeria.

Conclusion

There is need for improvement on the current practices in Okra production in the area in other to actualize optimum production of Okra. This can be achieved through the following;

1. There is need for extension efforts by extensive Agencies present in the study area on
   (a) Sensitizing the youth in the need to go into Okra production.
   (b) Adult literacy among farmers
   (c) Education on improved crop management practices for Okra production.
2. Finance houses such as NARCBD, Microfinance Banks and community Banks should work with farmers in the provision of loan for Okra production.
3. Improvement on land acquisition, access to tractor and subsidize farm inputs for okra farmers in the study area.

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10/8/2022