FARMERS'PERCEPTION ON THE STRATEGIES FOR INCREASING TOMATO PRODUCTION IN KABBA-BUNU LOCAL GOVERNMENT AREA OF KOGI STATE, NIGERIA

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ABSTRACT

The study was carried out in Kabba-Bunu Local Government Area (LGA) of Kogi State, Nigeria in the year 2013 to assess the farmers' perception on the strategies for increasing tomato production in the LGA; an area that has potential to produce tomato on commercial level. The objectives of the study were to identify the cultural and agronomic practices considered to boost yield, identify farm inputs, training needs and credit facilities necessary for increasing production of tomato. Ninety tomato farmers were interviewed through the use of structured interview schedule and data analysis was carried out using frequencies, percentages, mean and standard deviation and inferential statistics such as correlation. Results showed that more females than males were involved in tomato production in the study area, while mean age of farmers was 45.6±14.7years. The results of the study also showed that adequate and timely preparation of land, use of improved seeds and fertilizer, irrigation facilities during dry season, prompt access to credit facilities among others were perceived as necessary strategies for increasing tomato production. The correlation results showed positive and significant relationship between socio-economic characteristics of tomato farmers such as level of education(r=0.408), extension contact (r=0.398) and income from tomato production (r= 0.334) and strategies adopted for increased in tomato production (P≤ 0.01). The study therefore recommended the need for the provision of adequate training, necessary incentives, provision of infrastructural facilitates and improved variety of tomato to farmers as a panacea for sustainable and commercial production of tomato in the area of study.

KEYWORDS: Agronomic practices, credit facilities, incentives, strategy, training needs, tomato.

INTRODUCTION

Tomato (Lycopersion esculentium) belongs to the member of the family Solanaceae. It is an important crop that is grown in the tropics for home gardens, family consumptions and processing

purposes. It is a native of south Central America. It was spread to other countries in the 19th century (Tindall, 1983).

Tomatoes can be grown in a wide altitude range from the sub-tropical plains through to the high hills, depending on the variety and sowing dates. Despite this wide range, tomatoes are very sensitive to low light and adverse temperatures. Tomatoes need at least 6 hours of direct sunlight per day to flower. Fruit is eaten raw or cooked. It is used to produce juice, sauce ketchup, tomapep. It is extensively used in the canning industry. Green tomatoes are used as pickles and ripe ones are sometimes preserved locally by sundrying. The seed contains 24% oil which can be used as salad oil, in manufacturing of margarine and soap. The pressed cake residue is used as fertilizer (Centre for Overseas Development and Natural Resources Institute,1983).The nutritional value of tomato has contributed to its being used by different races. Tomato contains appreciable quantity of protein and vitamins A, C and D. (Van Eck *et al.*, 2006). In Nigeria, tomato is a source of income to farmers. Production of tomato is carried out at both small and large scales. The small scale producers are more in number. In Nigeria the high demand for fresh and processed tomato calls for a significant improvement in production technology to ensure increase and facilitate the desired expansion of production (Messianen1992).

The production of tomato in Kabba-Bunu Local Government Area of Kogi State is at subsistence level despite the availability of potentials for large scale production. The experiment on tomato production carried out at Kabba College of Agriculture, identified the study area as one of the best areas for the production of the crop. This identification is based on previous record on production of the crop as demonstrated by experimental result that confirmed an average yield range of 24,850 – 36,125kg/ha depending on the variety and the fertility status of the soil (Jimoh, 2002). The yield compares favourably with the standard yield range of 25,000 – 30,000kg/ha observed by Agricultural Extension Research Liaison Service at Ahmadu Bello University Zaria in 1985. Despite these uncommon potentials, there is very little effort at increasing the production level. The work is therefore conducted to assess the farmers' perception of the strategies adopted to raising the present level of production so as to meet consumer's need and strengthened the revenue base of the producer as a means of empowering them.

The objective of the study was to determine the farmers' perception on the strategies that can be put in place so as to bring about increased production to its endowed capacity in Kabba and its environs. This is with the view of graduating the production of the crop from subsistence to commercial production level hence increasing the revenue base of the farmers.

Specifically the study sought to:

1. describe personal, socio-economic characteristics of farmers in the study area;
2. identify agronomy practices considered by extension worker to boost yield of tomato;
3. assess various farm inputs required for increasing tomato production;
4. examine credit facilities needed to increase tomato production; and

5. assess the major training needs of farmer in increasing tomato production

Hypothesis
There is no significant relationship between socio-economic characteristics of tomato farmers and farmers' perception on the strategies adopted for increase in tomato production.

METHODOLOGY

The study was conducted in Kabba/Bunu Local Government Area (LGA) of Kogi State between 20th June to August 2013. Kabba /Bunu LGA comprises of forty villages. Multistage sampling procedure was employed to select the vegetable farmers in Kabba/Bunu. At the first stage, 50% comprising 10 of the communities with highest concentration of tomato production were selected. These villages were Iyah, Alyedun, Egunbe, Egbeda, Apange, Okedayo, Abeleko, Oke-bukun and Alyede-Opa. At the second stage, 90 registered vegetable farmers were randomly selected from 480 ADP registered farmers in the selected 10 villages in Kabba-Bunu LGA.

The instrument for data collection was a structured interview scheduled for vegetable farmers. Data were elicited on the perception of farmers about agronomic practices introduced by extension agents, constraints to tomato production and training needs of farmers in the area of improved practices in tomato production. In order to determine the strategies used by the farmers, 10 statements were constructed on a likert format on a five point scale which dealt with various aspect of objectives raised for the study. Frequencies, percentages, mean and standard deviation were used to describe the data and inferential statistics such as correlation were used to analyse the data. Mean value was used in rating the strategies in descending order. Any item with a measure of 3.5 and above was considered as highly perceived strategy and any item below was not considered as low perceived strategy. The perception of tomato farmers about the importance of training needs in different strategies adopted was regarded as standard of measurement. The range adopted for the importance of training was as follows: 0 – 3.05 (low) and 3.05 – 5.0 (high) in line with (Ajayi, 1995) recommendation.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Tomato Farmers
Results in Table 1 shows that majority of the farmers (69.50%) were adults with their ages ranging between 30 and 60 years. This indicated that majority of the farmers were in their active year. This finding corroborates that of Ogunjimi *et al.,* (2012), who reported that majority of farmers in Southwestern Nigeria were within productive age range. Majority (56.7%) were females while (44.3%) were males. The Involvement of more females than male might be due to the fact that men are more involved in planting of cash crops which bring in more money. The results in Table 1 also show that about 70.00% of the respondents were married, 15.60 percent

were single while7.70 percent were widow. This result alluded to the report of Jibowo (2000) and Ipaye (1995) that majority of responsible adults in rural areas were married. The mean household size of the respondents was 7.80 with standard deviation of 3.20. Majority (65.60%) had household sizes ranging between 5 and 8 members while 23.30% had household sizes between 1 and 4 members and 11.10% had household size of 9 and above.

The educational status of the respondents showed that 22.20% of the respondents had no formal education, 30.00% had only primary education, and 40.00% had secondary education and above. Also, a high level of literacy among the farmers indicates that they can easily comprehend whatsoever they learn, read instructions and manuals of fertilizers, chemicals and market information.

Results in Table 1 further show that 56.70% of the respondents had less than 5 times contact with extension agents within a year. The low level of extension contact might be due to the fact that extension agents were not well equipped to face the challenges ahead, like inadequate funding and inadequate training on the improved technology. The implication of low extension contact is that farmers may not be well exposed to the requisite training on the management practices which may subsequently affect production of the tomatoes in the study area.

The mean annual income realized by tomato farmers was ₦45, 000 with standard deviation of ₦11, 201. Low income might affect the adoption of most of the strategies for increase in tomato production in the study area.

Table 1: The Distribution of Farmers According to Socio-Economic Characteristics
N=90

Variables	Frequency	Percentage	Mean	Standard deviation
Age (Years)				
≤ 30	16	17.8		
31 – 60	63	70.0	45.6	14.7
61and above	11	12.2		
Sex				
Male	39	43.3		
Female	51	56.7		
Marital Status				
Single	14	15.6		
Married	63	70.0		
Divorced	6	6.7		
Widowed	7	7.7		
Household size				
1-4	21	23.3		
5-8	59	65.6	7.9	3.1
9 and above	10	11.1		
Year of schooling				
1-6	27	30.0		
7-12	36	40.0		
13 and above	7	7.7		
Never	20	22.2		
Extension contact				
1-4	51	56.7		
5 and above	39	43.3		
Income realized from tomato production	Mean	Standard deviation		
Less than N50,000	55	61.1	N45, 420	N11, 201
51,000-100,000	25	27.8		
101,000 and above	10	11.1		

Perceived agronomy practices required for increasing tomato production

Results in Table 2 indicate that the use of improved varieties of seeds (mean=4.3) was highly rated than any other agronomic practices. Other agronomic practices were ranked in descending order of usage. Raising tomato in the nursery (mean=4.2), timely planting (mean=4.2) and irrigation of the farm during dry season were ranked next to use of the improved varieties of seeds. Next in rank to the above agronomic practices were adequate land preparation (mean= 4.1), field sanitation at all stages (mean=4.0), adherence to right planting distances of 75cm by 90cm (mean=4.0), seed dressing against pest and diseases (mean=3.5), mulching at early stage (mean=3.5), and fertilizer application before fruiting (mean=3.5).

In general, the results show that vegetable farmers in Kabba/Bunu LGA required all the agronomic practices for increasing in tomato production. The finding was in line with Jimoh's (2002) findings in the experiment on tomato production carried out at Kabba College of Agriculture in which all these agronomic practices were put in place during the experiment that led to the increase in tomato production in the experimental station.

Table 2: The Mean Rating on Agronomic Practices Required for Increasing Tomato Production

S/N	AGRONOMIC PRACTICES	Mean	**Rank**
1	Use of improved varieties of seeds	4.3	1st
2	Raising tomato in nursery	4.2	2nd
3	Timely Planting	4.2	2nd
4	Irrigation of the farm during dry season	4.2	2nd
5	Adequate land preparation	4.1	5th
6	Field Sanitation at all stages	4.0	6th
7	Adherence to right planting distances of 75cm by 90cm	4.0	6th
8	Seed Dressing against pest and diseases	3.5	8th
9	Mulching at early stage	3.5	8th
10	Fertilizer application before fruiting	3.5	8th

Field survey 2013

The Perceived farm inputs required for increasing the production of tomato

The results in Table 3 revealed the input required for increasing the production of tomato with the grand mean rating score of 3.5. This indicated that any items higher than grand mean score were required for increase in tomato production.

The inputs were rated in descending order of their importance as indicated by the respondents. The most important input required for indicated by farmers for increase in tomato production are irrigation facilities and healthy seedlings (mean=4.2) respectively, followed by fertilizer (mean=4.0). Others include insecticides/pesticide (mean=4.0), good water source (mean=4.0), Poultry manure (mean=3.8) and

improved seed (mean=3.8). Lime was ranked last with mean score of 3.0. A critical evaluation of the farmers and extension workers' response on the eight items showed that all the items were required for increase in tomato production except for lime application. This was not surprising as most of the farmers did not apply lime on their farm.

Table 3: The Mean Rating on Farm Inputs Required for Increasing the Production of Tomato

S/N	Input required for growing tomato	X	Ranking
1	Irrigation facilities	4.2	1st
2	Healthy seedlings	4.2	2nd
3	Fertilizer	4.0	3rd
4	Good water source	4.0	4th
5	Improved seed	4.0	5th
6	Insecticides/pesticides	3.8	6th
7	Poultry manure	3.8	7th
8	Lime	3.0	8th

Field survey 2013

Perceived Required Credit Facilities to Boost Tomato Production
Results in Table 4 showed mean rating on the required credit facilities to boost tomato production.
The mean scores were ranked in descending order of requirement. The Availability of fertilizer at subsidized rate (mean=4.0), provision of tractor hiring services at a subsidized rate (mean=4.0) and supply of seed/seedlings at subsidized rate were rated first (mean=4.0) respectively. Others included: securing loan from bank was ranked next, followed by the distribution of motor cycle to be paid installmentally which was ranked least (mean=2.8). Findings revealed that the listed credit facilities
were required except for the distribution of motor cycle to be paid for that has a mean less than 3.5. The low rating showed that distribution of motor cycle on hire purchase was not an important facility needed.

Table 4: The Mean Rating on Required Credit Facilities to Boost Tomato Production

S/N	Required credit facilities	Mean	Rank
1	Availability of fertilizer at subsidized rate	4.0	1st
2	Provision of tractor hiring services at a subsidized rate	4.0	2nd
3	Supply of seed/seedlings at subsidized rate	4.0	3rd
4	Loan from bank	3.6	4th
5	Distribution of motor cycle to be paid installment ally	2.8	5th

Field survey 2013

Training Needs on Standard Practices Required For Increasing the Production of Tomato

Result in Table 5 showed the ranked mean scores of respondents' area of training needs on standard practices which were set as strategies for the increase in tomato production to follow in Kogi State. The first area of training needs of the farmers was in the area of dry season tomato production. Other areas of training needs were ranked in the following order: Use of fertilizer and other chemicals (Mean=4.0), sterilization of nursery soil (Mean=3.8), production of seedling with high vigor (Mean=3.7), technique in transplanting tomato seedlings (Mean=3.6) and ability to select good site (Mean=3.5). The finding revealed that the majority of vegetable farmers need training in all the afore-mentioned practices. This is in line with Ijere (1992) who reveals that for sustainable agricultural production to take place, informal education and training must be a priority.

Table 5: Mean Rating on Training Needs on Standard Practices Required for Increasing the Production of Tomato

S/N	TRAINING NEEDS OF FARMERS	X
1	Dry season tomato production	4.0
2	Use of fertilizer and other chemicals	4.0
3	Sterilization of nursery soil	3.8
4	Production of seedling with high vigor	3.7
5	Technique in transplanting tomato seedlings	3.6
6	Ability to select good site	3.5

Field survey 2013

Hypotheses

The correlation results in Table 6 showed that socio-economic characteristics of tomato farmers such as the level of education(r=0.408), extension contact (r=0.398), income from tomato production (r= 0.334), had positive and significant relationship with strategies adopted for increase in tomato production. This implies that the higher the level of education and extension contact the higher the strategies adopted for increase in tomato production. Since knowledge is wealth, the higher one is exposed to formal and informal education, the more they are exposed to new innovation. However, age (r= -0.356) and household size (r= 0.228) have a negative significance with strategies adopted. This indicated that the higher the age and size of household the less the usage of improved management practices as strategies for increase in tomato production.

Table 6: The Correlation Analysis between Strategies Adopted by Tomato for Increased in Tomato Production and Personal, Socio-economic Characteristics Variables

Variables	Correlation r	Co-efficient of determination r^2
level of education	0.408**	0.166
extension contact (r=)	0.398**	0.158
Income realized from tomato production	0.334**	0.112
Household size	0.228**	0.052
Age	-0.356*	0.127

**Positive significant   * Negative significant

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CONCLUSION AND RECOMMENDATIONS

Conclusively items such as credit facilities, training, improved varieties and inputs were highly perceived as strategies for increase in tomato production. If adequate capacity building, necessary incentives, infrastructural facility and improved variety are provided there will be sustainable production of tomato in the study area. It will also bring about empowerment especially among those involved in the production. It is therefore recommended that government should provide necessary training, input, credit facility and infrastructural facilities in the study area so as to raise tomato production beyond the substance level to commercial level to eventually generate employment among youth and also boost socio-economic development of the area.

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