

Farmers' Perception towards Organic-based Vegetable Production in Ilaro Agricultural Zone, Ogun State, Nigeria

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Abstract

It is well established that organic farming is a production system that sustain the health of the soils, ecosystems and people. This study assessed the small-scale farmers' perception towards organic based vegetable production in Ilaro agricultural zone of Ogun state, Nigeria. A multi-stage sampling procedure was used in the selection of 85 respondents for the study. Data were obtained using a structured interview schedule. Data collected were analyzed using descriptive and inferential statistics. Results indicated that the mean age of the respondents was 30years and 48.2% of the respondents were married. The major determinants of organic based vegetable production were information from extension agents (18.8%) and consumer's requests (17.7%). Also, the respondent's major perceived effect of organic vegetable production were; organic vegetable is environmentally friendly ($\bar{x}=4.32$) and free from any synthetic chemical ($\bar{x}=4.10$). There were significant association between educational status ($\chi^2=1.923$, $df=5$, $p<0.05$) and perceived effect of respondents. Also, there was positive and significant relationship between sources of information of organic vegetable production ($r = 0.235^$, $p< 0.05$), age ($r = 0.195^{**}$, $p< 0.05$), and perceived effect of respondents. It was concluded that organic based vegetable production is a panacea for sustainable agriculture.*

Keywords: Organic-based vegetable production, perceived effect, small scale farmers.

Introduction

Sustainable agricultural system is crucial to ensuring food security, poverty alleviation, economic and environmental transformation of many developing countries Nigeria inclusive. This is based on the premise that small scale farmers, researchers and Non-Governmental Organizations (NGOs) have increasingly sought to identify, validate and implement practical farming technologies and methods which meets sustainability criteria, although the challenges of doing so having been enormous. (Lumpkin, 2009) Organic farming is an holistic production management system based on ecological principles. It also represents a deliberate attempt to make the best use of local natural resources in an environmental friendly farming system. It avoids the use of synthetic pesticides,

herbicides, chemical fertilizers, growth hormones, antibiotics or gene manipulation. Instead, organic farmers use a range of techniques that help sustain ecosystems and reduce pollution. It dramatically reduces external inputs by refraining from the use of chemo-synthetic fertilizers, pesticides and pharmaceuticals. Instead, it allows the powerful laws of nature to increase both agricultural yields and disease resistance. (Adeoye, 2005)

More significantly however, Anderson, Jolly and Green (2005) posited that organic farming is a production system that excludes the use of synthetically manufactured fertilizer and pesticides but relies mainly on crop rotation, crop residues, animal manures, legumes, green manures, off-farm organic wastes, mechanical cultivation and aspects of

biological pest control to maintain soil productivity and tilting to supply plant nutrients and to control insects, weeds and other pests. Conor (2004) accentuated to the earlier definitions of organic farming as a response to what was perceived to be polluting food supply by modern farming methods and the ensuing degradation of the environment with chemical and other by-products of the industry. In the same vein, the National Organic Standard Board (NOSB) has defined organic agriculture as ‘an ecological production management system that promotes and enhances biodiversity. It is based on minimal use of off-farm inputs and on-farm management practices that restore, maintain and enhance ecological harmony’ (ATTRA, 2007). Similarly, the International Federation of Organic Agricultural Movements (IFOAM) defined it as “a whole system approach based upon sustainable ecosystems, safe food, good nutrition, animal welfare and social justice. Organic production therefore is more than a system of production that includes or excludes certain inputs (IFOAM, 2002; IFOAM, 2006).

Vegetables are common crop grown and consumed in Nigeria. However, the use of chemicals in vegetable production has been identified as a major source of health problems and a cause of extensive environmental damage to the populace. According to Lumpkin (2005) reported that food safety is a major concern as many of today’s vegetable farmers inappropriately use toxic pesticides at pre and post-harvest stages and this threatens the health of the farmers and consumers as well as posing hazards to the environment. The reduction if not total elimination of the use of synthetic inputs through the adoption of organic agricultural production methods will help enhance the potentials of organic agriculture. Furthermore, other inherent benefits and prospects of organic vegetable production are espoused by IFAD (2006) and these include:

1. Consumer’s acceptance: Vegetable consumers are now turning to organic

produces because they believe it is tastier and healthier.

2. Environmentally friendly: Organic-based vegetable production is environmental friendly. This is because chemical have destroyed many beneficial insect species and had caused environmental degradation.
3. Farmers’ motivation: The feasibility of organic-based vegetable production will be much greater if farmers are highly motivated on health and environmental issues.
4. Soil characteristics: Fertile soils will make it easier for farmers because it will be easier and less costly to maintain fertility with available organic technologies.

In most countries including Nigeria, the major goal of organic-based vegetable farming is a sustainable production of quality vegetable with little or no effect on the environment. This goal has not been fully achieved by the current agricultural practices, i.e. conventional farming in the study area, hence, the need to encourage organic-based vegetable production which is capable of providing solutions to the current agricultural problems and help to achieve optimal production of quality food sustainably (IFOAM, 2005). Despite the global awareness of environmental degradation and climatic change that could result from continuous practice of inorganic farming, and the threats it poses on sustainable agricultural production, vegetable farmers in Ilaro agricultural zones are still very much in a system of producing vegetable inorganically. Hence, the need to understand the farmer’s perception towards organic vegetable production for sustainable farming in the study area Specifically the study described the.

1. socioeconomic characteristics of vegetable farmers in the study area; identified the sources of information on organic-based vegetable production;

2. determined the respondents' perception towards organic-based vegetable production in the study area.

Hypotheses of the Study

Based on the drawn up objectives, these null hypotheses were tested:

Ho₁: There is no significant association between respondents' socioeconomic characteristics and perception towards organic-based vegetable production

Ho₂: There is no significant relationship between sources of information and perception towards organic-based vegetable production

Methodology

The study was carried out in Ilaro agricultural zone, of Ogun state, Nigeria between February to April, 2015. Ilaro agricultural zone is one of the four agricultural zones in Ogun state. The daily temperature of Ilaro agricultural zone ranges between an average minimum of 23°C to a maximum of 34.2 °C. The zone is situated between the latitudes of 6° 53' N and longitude 3° 1'E. The climate of the area is classified as tropical while precipitation is 1257mm. According to Ogun State Agricultural Development Programme (OGADEP) structure, Ilaro agricultural zone is divided into four extension blocks namely Imeko, Sawonjo, Ado-odo and Oke-odan. Imeko consists of Imeko, Aiyetoro, Shaala, Idofa, Agboro, Idi-Ayin, Sawonjo consists of Sawonjo, Ibese, Igbogila, Imasayi, Igan, Ohumbe, Ijoun, Oja-odan, Ado-odo block consists of Ado-Odo, Ilaro, Iwoye, Owode, Ere, Agbara, Idolehin, Igbesa while Oke-odan block consists of Oke-odan, Ipokia, Ihumbo, Alari, Ifoyintedo, Ipaja, Ilase, Agossa.

A multiple stage sampling procedure was used for selecting respondents for the study. In the first stage, two (2) blocks namely Ado-odo and Imeko were purposively selected and this was based on the premise that these blocks were the prominent areas of organic-based vegetable production. The second stage

involved random selection of 2 cells) out of the eight (8) cells in the selected blocks. These are: Ilaro and Iwoye were randomly selected from Ado-odo block while Ayetoro and Imeko were randomly selected in Imeko block. Thus, a total of four (4) cells were selected for the study. The third stage involved the selection of the respondents. Simple random sampling technique was used to select 21 respondents from each cell. Therefore, 21 organic-based vegetable small-scale farmers were selected from Ilaro cell, Iwoye and Ayetoro while 22 small-scale farmers were selected from Imeko. Thus, a total of 85 small-scale farmers were used for this study.

The data obtained were subjected to descriptive (frequency counts, percentages and mean) and inferential (Chi-square test and Pearson Product Moment Correlation) statistics using Statistical Package for Social Sciences (SPSS) version 15.0

Results and Discussion

Socio-economic characteristics of the respondents

Result in Table 1 revealed that the mean age of the organic-based farmers was 30.3 years with 54.1% of them being less than of less than 30 years. This implies that many of the organic-based farmers are in their active, economic and productive age group. More than half (56.5%) of the respondents were males, Table 1 also indicates that 48.2% were married and 32.9% were single and had family to cater for. The mean household size of the respondents was 6 members and 51.8% had a household size of between 4 and 6 persons. The result is similar to the report of Fabusoro, Lawal-Adebowale and Akinloye cited in Olaoye (2010) that the average household size in Nigeria was about 7 persons per household.

Also, Table 1 showed that 47.6% were Christians, 40.5% were Muslims and 11.9% were traditional worshippers. It implies that the people of the area were multi-religious with predominance of Christians and Muslim as well as a sizeable number of traditional worshippers. About 52% of the respondents

had secondary school education while 21.2% had tertiary education. This implies that majority of the organic-based farmers were literate. It is also noted that the educational status of the respondents can influence their involvement in organic-based vegetable

production. In addition, Table 1 showed that the mean farm size was 0.76 acres, 47.6% had about 0.5-1 acre of land while 45.5% has less than 0.5 acre. This indicates that the respondents are small scale holders.

Table 1: Distribution of respondents according to Socio-economic Characteristics (n=85)

Variables	Frequency	Percentage	Mean
Age (Years)			
Less than 30	46	54.1	30.3 years
30-39	20	23.5	
40-49	17	20.0	
50 and above	2	2.4	
Sex			
Male	48	56.5	
Female	37	43.5	
Marital Status			
Single	28	32.9	
Married	41	48.2	
Divorced	11	12.9	
Widow	5	5.9	
Household Size (Persons)			
Less than 3	19	22.4	6 persons
4-6	44	51.8	
7 and above	22	25.9	
Religion			
Christianity	41	47.6	
Islam	34	40.5	
Traditional	10	11.9	
Educational Status			
No formal education	4	4.7	
Primary education	12	14.1	
Secondary education	44	51.8	
Tertiary education	18	21.2	
Adult education	7	8.2	
Farm Size (Acres)			
Less than 0.5	34	45.5	0.76 acres
0.5-1.0	41	47.6	
1.0 and above	10	11.9	

Source: Field survey, 2015

Sources of Information on Organic-based Vegetable Production

The finding revealed that 18.8% indicated that extension agents were the major

sources of information on Organic-based vegetable production in the area while 17.7% indicated consumers' request as a sources of information of organic-based vegetable

production (Table 2). This implies that extension agents and the consumers' requests are the major farmers sources of information on organic – based vegetable production in the study area.

Table 2: Sources of Information on organic-based vegetable production (n=85)

S/N	Sources of Information	Frequency	Percentage	Rank
1	Extension agents	16	18.8	1 st
2	Consumers request	15	17.7	2 nd
3	Fellow farmers	13	15.3	3 rd
4	Radio and Television	11	12.9	4 th
5	Newspaper	10	11.8	5 th
6	Family and friends	8	9.4	6 th

Source: Field survey, 2015

Farmers' perception towards organic-based vegetable production

Results in Table 3 show the statements that consumers are willing to pay higher price for organic-based vegetables (\bar{x} 4.44), organic-based vegetable mature early (\bar{x} 4.42), Organic vegetable is more nutritious than chemically grown vegetable (\bar{x} 4.33), Production of organic vegetable is environmental friendly (\bar{x} 4.32), Organic vegetable have greener and bigger leaves (\bar{x} 4.21) and Organic vegetable is free from any synthetic chemicals (\bar{x} 4.10) were favourably disposed to by the respondents.

However, the following statements were unfavourably disposed to by the sampled farmers: if faced with the choice of producing organic vegetable alone, then I will be happy

about it (\bar{x} 2.36), plan to continue growing organic vegetable in the future (\bar{x} 2.29) , Organic vegetable is a luxurious product that is too expensive to produce (\bar{x} 2.15), willingness to introduce organic vegetable to my friends and family (\bar{x} 2.04), consumers buy more of chemically grown vegetable compared to organic vegetable (\bar{x} 1.95), that farmers gained more in the production of organic vegetable than chemically grown vegetable (\bar{x} 1.29). This indicates that organic-based vegetable production and consumptions increases consumers' intake of minerals and vitamins vegetables that are void of pesticides and agro-chemicals. This corroborated the finding of Arponen (2009) who noted that Organic farming can guarantee the global food security.

Table 3: Distribution of the respondents according to Perception towards organic-based vegetable production (n=85)

Perception statements	SA	A	U	D	SD	\bar{x}	S.D	Rank
Production of organic vegetable is environmental friendly	54(63.5)	17(20.0)	7(8.2)	1(1.2)	6(7.1)	4.32	1.14	4 th
I belief organic vegetable mature early	45(53.0)	31(36.5)	9(10.6)	-	-	4.42	0.68	2 nd
Organic vegetable is more nutritious than chemically grown vegetable	51(60.0)	20(23.5)	9(10.6)	1(1.2)	4(4.7)	4.33	1.04	3 rd
Organic vegetable have greener and bigger leaves	39(45.9)	30(35.3)	13(15.3)	1(1.2)	2(2.4)	4.21	0.91	5 th
Organic vegetable is free from many synthetic chemicals	34(40.0)	30(35.3)	19(22.4)	1(1.2)	1(1.2)	4.10	0.87	6 th
Organically grown vegetable is tastier	24(28.2)	28(33.0)	22(25.9)	6(7.1)	5(5.9)	3.71	1.01	10 th
I am of belief that consumers prefer organic vegetable to chemically grown vegetable	28(32.9)	24(28.2)	26(30.6)	3(3.5)	4(4.7)	3.70	1.13	11 th
I prefer organic vegetable because it is of better and natural quality	42(49.4)	20(23.5)	15(17.6)	4(4.7)	4(4.7)	3.81	1.08	9 th
Organic vegetable cannot supply nutrients needed by the body	2(2.4)	2(2.4)	13(15.3)	48(56.5)	20(23.5)	4.08	1.13	7 th
I am willing to introduce organic vegetable to my friends and family	54(63.6)	20(23.5)	7(8.2)	3(3.5)	1(1.2)	2.04	0.88	20
I am aware that consumers are willing to pay higher price for organic vegetable	25(29.4)	29(34.1)	26(30.6)	-	5(5.9)	4.44	0.88	1 st
I do not see any difference between organic vegetable and chemically grown vegetable	4(4.7)	14(16.5)	14(16.5)	29(34.1)	24(28.2)	3.81	1.05	10 th
If I am faced with the choice of producing organic vegetable alone, I will be happy about it	28(32.9)	31(36.5)	21(24.7)	3(3.5)	2(2.4)	2.36	1.19	17 th
I am ready to promote organic vegetable production	45(53.0)	23(27.1)	15(17.6)	2(2.4)	-	3.94	0.97	8 th
I gain more in the production of organic vegetable than chemically grown vegetable	21(24.7)	32(37.7)	21(24.7)	7(8.2)	4(4.7)	1.29	0.84	22 nd
Production of organic vegetable takes more time than chemically grown vegetable	12(14.1)	8(9.4)	12(14.1)	23(27.1)	30(34.1)	3.69	1.09	12 th
Any preferences should not be given to organic vegetable	3(3.5)	3(3.5)	11(12.9)	38(44.7)	30(35.3)	2.42	1.41	16 th
After harvest, consumer buy more of chemically grown vegetable compared to organic vegetable	15(17.6)	10(11.8)	17(20.0)	18(21.2)	25(29.5)	1.95	0.98	21 st
I am of belief that organic based vegetable have low storage life	14(16.5)	19(22.4)	11(12.9)	12(14.1)	29(34.1)	2.71	1.45	14 th
Organic vegetable cannot supply nutrients needed for the body	4(4.7)	3(3.5)	9(10.6)	55(64.7)	14(16.5)	2.75	1.52	13 th
Organic vegetable is a luxurious product that is too expensive to produce	11(12.9)	9(10.6)	15(17.6)	30(35.3)	20(23.5)	2.15	0.91	19 th
Whatever peoples' opinion about organic vegetable I will continue to produce it	49(57.7)	17(20.0)	16(18.8)	1(1.2)	2(2.4)	2.55	1.32	14 th
I plan to continue growing organic vegetable in the future	44(51.8)	16(18.8)	14(16.5)	9(10.6)	2(2.4)	4.29	1.15	18 th
Producing organic vegetable takes more time than chemically grown vegetable	9(10.6)	13(15.3)	14(16.5)	18(21.2)	31(36.5)	2.44	1.39	15 th

Source: Field survey, 2015 SA=Strongly Agree; A=Agree; U=Undecided; D=Disagree; SD=Strongly Disagree; X=Mean; S.D=Standard deviation

Categorization of Respondents based on perception towards organic-based vegetable production

Result in Table 4 shows the categorization of farmers based on perception towards organic – based vegetable production. The categorization of famers on their perception towards organic based vegetable production ranged from 1-40 (unfavorable perception), 41-80, (neutral perception) and 81 -120 (favourable perception).

Majority (74.1%) of the farmers indicates their favourable perception towards organic - based vegetable production while few with 20.0% showing they are neutral on the perception they have on organic – based vegetable production. From the findings it only show that majority of the farmers have a good orientation and perception towards involving the organic – based vegetable production.

Table 4: Distribution of the respondents according to categorization of respondents based on perception towards organic-based vegetable production (n=85)

Variables	Categorization	Frequency	Percentage
Unfavorable	1 – 40	5	5.9
Neutral	41 – 80	17	20.0
Favourable	81 - 120	63	74.1

Source: Field survey, 2015

Hypotheses Testing

Test of relationship between socio-economic characteristics of respondents and perception towards organic-based vegetable production

The result of Chi-square test (χ^2) for data measured at nominal level (marital status, sex, religion and educational status) in Table 4

shows that there was significant association exist between educational status ($\chi^2=1.923$, $P<0.05$) and farmers' perception towards organic-based vegetable production. This is expected because the more educated an individual's is, the more the respondent's perceived organic-based vegetable production favorably.

Table 5: Summary of Chi-square test showing association between socio-economic characteristics and farmers' perception towards organic-based vegetable production

Variable	Chi-square value	Df	P-value	Remark
Marital status	1.442	3	0.696	Not significant
Sex	0.336	1	0.562	Not significant
Religion	3.630	2	0.163	Not significant
Educational level	1.923	5	0.008	Significant

Source: Field survey, 2015

Furthermore, in Table 5, the correlation analysis shows that there was positive and significant relationship between farmers age ($r= 0.195$, $p<0.05$) and perception towards

organic-based vegetable production. This implies that as the farmers advanced in age the more favourable they are towards organic-based vegetable production.

Table 6: Summary of correlation analysis showing relationship between socio-economic characteristics and farmers' perception towards organic-based vegetable production

Variable	r	p-value	Decision
Age	0.195	0.001	Significant
Household size	0.055	0.619	Not significant

Source: Field survey, 2015

R-Value is significant at 0.05 levels

Conclusion and Recommendation

From the study, it could be concluded that the organic-based vegetable farmers were middle-aged and have favourable perception towards organic-based vegetable production. The major sources of information on organic-based vegetable productions were extension agents and consumers requests. It is recommended that extension agents and other relevant stakeholders should organized sensitization programmes on health and environmental benefit of organic-based vegetable production.

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