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Information needs in melon (*Citrullus lunatus thumb*) production among farmers in Ibadan/Ibarapa zones of Oyo State, Nigeria

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Abstract

Information remains a critical issue in the production of food crops such as melon (egusi). The study examined the information needs in melon production among farmers in Ibadan/Ibarapa Agricultural Development Zone of Oyo State. Multi stage sampling procedure was used in the selection of one hundred and twenty (120) respondents. Data were collected with the use of structured questionnaire and analysed using descriptive and inferential statistics. Results show that 61.7 percent of the respondents were female, married (84.2%) with an average age of 43years and cultivate an average 2.9 hectares of land. Major information needed on melon production was of seed treatment ($\bar{x}$= 2.00). It was also revealed that fellow farmers/families (x = 2.28), farm centres ($\bar{x}$ = 2.10) and radio/television ($\bar{x}$= 2.03) constituted the major source of information. Farmers were constrained with the challenges of poor feedback system ($\bar{x}$= 2.22) and reliability of information source ($\bar{x}$= 2.03). There was a significant relationship between age (χ^2 = 10.80 df = 8), marital status (χ^2= 18.04, df = 3), years of education (χ^2= 44.38, df 6), farming experience (χ^2 = 21.69, df = 6), family size (χ^2 = 43.45 df = 6) and extension contact (χ^2 = 29.49, df = 3) and information needs at 5% significant level. It was concluded that melon farmers were in need of information on melon production. It is therefore recommended that adequate information especially on seed treatment be provided for farmers' usage. Attention should be given to feedback systems to the information provided to enhance effective usage among farmers.

Keywords: Farmers. Information need, melon (egusi), production,

Introduction

Melon (Egusi) (*Citrullus lunatus, Thunb*) is a well-known and widely cultivated crop in West Africa and many other African Countries for food (van der Vossen *et al.,* 2004), income generation and gift to relatives (Achigan-Dako *et al.,* 2008). It is a popular recipe for delicacy especially in most part of Nigeria. It complements the grains and roots diets. The melon (egusi) seed like soyabean (Glycine max) is rich in oil and protein with about 53.1% and 33.8% respectively (Ogbonna 2013). Besides the oil and protein content, melon is found to be rich in carbohydrate, vitamins, amino acids and minerals (Funmi, 2015) which are good for human health.

The oil extracted from the seed is of high nutritional value which composed mainly of unsaturated fatty acids that gives a unique flavor to foods during cooking (Ogbonna and Obi, 2010). Melon apart from its nutritional value, is known for its industrial usage as the oil extract can be processed for soap- making, pharmaceuticals etc (Adewusi *et al.,* 2000). The by-product from the seeds after oil extraction can be used as livestock feed,

since it contains about 20% proteins (Eugene and Gloria, 2002). The crop is reported to be of agronomic values. It can be intercropped with cassava, maize and yam to suppress weeds thereby cutting down the cost of production (Bello and Makanjuola, 2011). The crop can also be used as mulch, leaving high residual nitrogen in the soil after harvesting.

Considering the numerous importance of melon (egusi), production of melon is very low compared to other crops. The need for increase in its production however, remains a subject of concern among farmers. In this regards, information remains very critical in the production of melon. This is because productivity of farmers depends mostly on access to appropriate agricultural information (Ekumankma and Nwankwo, 2002). Information is becoming a major input in agriculture, whilst, knowledge and information plays a central role for farmers to respond to opportunities that could improve their agricultural productivity (Nzonzo & Mogambi, 2016). Essentially, agricultural information is a key component in improving small-scale agricultural production and linking increased production to remunerative markets which thus leads to improved rural livelihoods, food security and national economics (Masuki *et al.,* 2010).

According to Mittal and Mehar (2013), access to reliable, timely, and relevant information can help significantly in many ways to reduce farmer's risks and uncertainty, empowering and to make good decisions. It will also help farmers to effectively and efficiently combine the production factors into meaningful and productive use. Several studies have found that a stable and increased flow of information and knowledge between farmers and other market actors has a positive effect on agricultural development (Fawole, 2008). Magesa, Michael and Ko (2014) affirmed that information enables smallholder farmers to decide what to plant, when and where to sell and to negotiate better for the prices of their agricultural produces.

Most farmers have access to a variety of traditional information sources (television, radio, newspapers, other farmers, government agricultural extension services, traders, input dealers, seed companies and relatives), which they regularly access for agricultural information (Sarvanan, 2011). However, Oduwale and Ikhizma (2003) identified various types of agricultural information needed which include information on pest and diseases control, services available from government and private organizations, marketing farm produce, credit and loan facilities to farmers, utilization of fertilizer etc. useful to farmers. In the same vein, farmers should have information on crops, production techniques, production equipment, agricultural input and that of marketing in order to meet their information need and improve their production (Milovanovic, 2014). There is no doubt that useful and accurate information will boost the production of melon. This study therefore sought to examine the information needs of melon farmers in Ibadan/Ibarapa ADP zone of Oyo State.

Methodology

The study was conducted in Ibadan/Ibarapa Agricultural zone of Oyo State. The Climate is equatorial, notably with dry and wet seasons with relatively high humidity.

The dry season lasts from November to March while the wet season starts from April and ends in October. Average daily temperature ranges between 25 °C (77.0 °F) and 35 °C (95.0 °F), almost throughout the year. The favourable climate of the area encouraged about 70 per cent of the inhabitants to engage in farming. The vegetation of the zone is mostly evergreen forest which favours production of permanent and food crops like cassava, maize, yam, millet, rice, plantains, cocoa, palm produce, cashew etc.

A multi-stage sampling procedure was used in the selection of respondents. Stage one involves selection of three blocks in the zone namely Ibarapa-central, Ibarapa North and Ibarapa East using purposive sampling technique because of the predominance of melon (Egusi) production. At the second stage, four cells out of the existing eight cells in each of the block were randomly selected making a total of twelve cells. In each of the twelve cells, ten (10) melon farmers were selected from the existing list of melon farmers using simple random sampling technique to arrive at a sample size of one hundred and twenty (120) respondents. Primary data were collected for the study using a structured questionnaire and interview schedule. Analysis was done using descriptive statistics such as percentages, frequency count and mean. The hypothesis of the study was tested using chi-square.

Results and Discussion

Socio-economic characteristics of respondents

Findings in Table 1 show that most of the respondents (61.7%) were female while the remaining 38.3percent were male. This implies that melon production was female dominated. The results also show that 39.2percent of the respondents were between the ages of 21years and 30years, 24.4% were in the age of 60years and above, 19.2percent fell within the age range of 31-40 years, 10.8 % were between 41-50years, while very few (6.7%) were within the ages of 51years and 60years. The average age was 43years. This implies that melon producers in the study area were agile and this is expected to influence their performance positively. Furthermore, results in Table 1 show that most of the respondents (84.2%) were married while 15.8percent were single. Marriage confers a sense of responsibility among the farmers in the area and as such marriage partners could be a source of labour for the production of melon. Half of the respondents (50.8%) had secondary schools education, 48.3% had primary school education while 0.8percent had tertiary education. This implies that the literacy level in this study area is relatively high. This might help the farmers in sourcing and adopting improved technologies in melon production. Thus, the findings agree with Eze *et al.* (2006) that the level of formal education correlated positively with farmers' utilization of information. Majority of the respondents (70.0%) cultivated between 1-3hectares of farm land while 30.0percent cultivated between 4-6hectares. This shows that most of the melon farmers operated on a small scale. This result corresponds with the findings of Kolawole and Ojo (2007) that agricultural practice in Nigeria is usually carried out by small-scale farmers who are scattered over wide expanse of land area. The result in Table 1 also indicates that 42.5percent of the respondents had been into melon production between 1-5 years, while 24.2 percent had been in melon

Table 1: Distribution of respondents by socio-economic characteristics (n=120)

Variable	Frequency	Percentage	Mean
Sex			
Male	46	38.3	
Female	74	61.7	
Age (Years)			
21-30	47	39.2	
31-40	23	19. 2	
41-50	13	10.8	43years
51-60	8	6.7	
61 and above	29	24.2	
Marital status			
Single	19	15.8	
Married	101	84.2	
Levels of education attained			
Primary Education	58	48.3	
Secondary Education	61	50.8	
Tertiary Education	1	0.8	
Farm size (Ha)			
1-3	84	70.0	2.9hectares
4-6	36	30.0	
Farming experience (Years)			
1-5	51	42.5	
6-10	40	33.3	7.1years
11-15	29	24.2	
Family size			
1-5	79	65.8	
6-10	37	30.8	10members
11 and above	4	3.3	
Extension contact			
Yes	49	40.8	
No	71	59.2	

Source: Field survey, 2016

cultivation for about 11-15 years. The average years of farming experience was 7. This implies that farmers in the study area have had relatively shorter period of farming experience. Furthermore, more than half of the respondents (65.8%) claimed to have household size between 1-5years while very few (3.3%) claimed to have household size of 11 and above. Finally, Table 1 revealed that 59.2percent of the respondents claimed that they had no extension contact while 40.8percent had extension contact. This is an indication of low coverage of extension workers in the study area.

Information needs of farmers in melon production

Table 2 reveals the information needs of farmers on melon production. It was discovered that melon producing farmers need information on seed treatment ($\bar{x}$ = 2.00). Also, there was need for information on sources of credit ($\bar{x}$ = 1.98), planting techniques ($\bar{x}$ = 1.91), improved varieties ($\bar{x}$ = 1.83), weed control ($\bar{x}$ = 1.81), and diseases management ($\bar{x}$ = 1.77). The findings suggest that quality and performance of planting material were imperative in the production of melon. The farmers may have witnessed crop failure which can be attributed to seeds planted which can be addressed through proper treatment. The treatment given to seed has considerable effect on its performance. This likely suggests the need for information on seed treatment among the farmers. However, information on marketing of melon ($\bar{x}$ = 1.23) was found to be the least of all information needed. This is expected because melon is widely acceptable as a delicacy among many households and as such, marketing is not a barrier to its production.

Sources of information on melon production

Findings in Table 3 reveal the distribution of respondents according to sources of information on melon production. Fellow farmers/friends ($\bar{x}$ = 2.28), farm centers ($\bar{x}$ = 2.10), radio/TV ($\bar{x}$ = 2.03) were the most frequent sources of information on melon production. Moreover, farmers get information occasionally from extension agents ($\bar{x}$ = 1.88) and research institute ($\bar{x}$ = 1.87) on melon production. The farmers rarely source information through newspaper/extension bulletin ($\bar{x}$ = 1.67) and poster ($\bar{x}$ = 1.51). Information is one of the crucial factors that enhance crop production. The findings are in line with that of Agwu and Adeniran (2009) that fellow farmers/friends are the major source of agricultural information. Sourcing information from the village head implies that farmers hold their leaders with high esteem, especially when such leaders are in support or respond to their needs. The findings show that many sources of information were explored for melon production. However, the information sources have not been able to bridge the information gap among farmers. This will undoubtedly have negative effect on the efficiency of farmers.

Perceived challenges facing famers' use of information in melon production

The findings in Table 6 reveal the perceived challenges facing farmers' use of information in melon production. It was found that poor feed feedback system ($\bar{x}$ = 2.22) and unreliability of information source ($\bar{x}$ = 2.03) were the most perceived challenges that affect use of information in melon production. Other perceived

Table 2: Distribution of respondents according to information needs of farmers in melon production (120)

Information need	Mostly needed (%)	Needed (%)	Not needed (%)	Mean	Rank
Seed treatment	32(26.7)	56(46.7)	32(26.7)	2.00*	1
Source of credit	41(34.2)	41(34.2)	38(31.7)	1.98*	2
Planting technique	42(35.0)	47(39.2)	31(25.8)	1.91*	3
Improved varieties	28(23.3)	84(70.0)	8(6.7)	1.83*	4
Weed control	50(41.0)	43(35.8)	27(22.5)	1.81*	5
Disease management	44(36.7)	60(50.0)	16(13.3)	1.23	6
Land preparation	69(57.5)	21(17.5)	30(25.0)	1.68	7
Storage information	47(39.2)	65(54.2)	8(6.7)	1.68	7
Pesticide application	49(40.8)	62(51.7)	9(7.5)	1.67	8
Processing techniques	120(100.0)	0(0.00)	0(0.00)	1.60	9
Harvesting methods	72(60.0)	40(33.3)	8(6.7)	1.47	10
Marketing information	93(77.5)	27(22.5)	0(0.00)	1.77*	11
Grand mean				20.63	
Mean level				1.72	

Source: Filed survey, 2016
Figures in parentheses are percentages
*Mostly needed information

Table 3: Distribution of respondents according to sources of information on melon production (n=120)

Information sources	Always Freq (%)	Occasionally Freq (%)	Not at all Freq (%)	Mean	Rank
Fellow farmers/families	17(14.2)	52(43.3)	51(42.5)	2.28*	1
Farm centers	43(35.8)	22(18.3)	55(45.8)	2.10*	2
Radio/TV	23(19.2)	70(58.3)	27(22.5)	2.03*	3
Village head	39(32.5)	55(45.8)	26(21.7)	1.89	4
Extension agents	22(18.3)	90(75.0)	8(6.7)	1.88	5
Research institutes	24(20.0)	88(73.3)	8(6.7)	1.87	6
Newspaper/Extension bulletins	47(39.2)	66(55.0)	7(5.8)	1.67	7
Posters	66(55.0)	47(39.2)	7(5.8)	1.51	8
Grand mean				15.23	
Mean level				1.90	

Source: Field survey, 2016
Figures in parenthesis are percentages

Table 6: Perceived challenges facing farmers' use of information in melon production (n=120)

Perceived challenges	Most serious Freq (%)	Serious Freq (%)	Not serious Freq (%)	Mean	Rank
Poor feedback system	16(13.3)	62(51.7)	42(35.0)	2.22*	1
Unreliability of information source	35(29.2)	61(38.2)	39(32.5)	2.03*	2
Complexity of information	34(28.3)	77(64.2)	9(7.5)	1.70	3
Time of dissemination	56(46.7)	47(39.2)	17(14.2)	1.60	4
Low level of literacy	50(41. 7)	61(50.8)	9(7.5)	1.66	5
Inaccessibility of information sources	57(47.5)	59(49.2)	4(3.3)	1.56	6
Irrelevant information	81(67.5)	31(25.8)	8(6.7)	1.39	7
Grand mean				12.16	
Mean level				1.74	

Source: Field survey, 2016
Figures in parenthesis are percentages

Table 7: Test of relationship between socio-economic characteristics and information needs in melon production

Variables	x^2-value	df	p-value	Decision
Sex	1.639	2	0.65	Not significant
Age	10.80	8	0.00	Significant
Marital status	18.04	3	0.00	Significant
Years of education	44.38	6	0.04	Significant
Farm size	8.49	3	0.00	Significant
Household size	21.69	6	0.00	Significant
Extension contact	29.49	3	0.02	Significant

Source: Field survey, 2016
Significant at 0.05%

challenges identified were complexity of information ($\bar{x}$ = 1.70), time of dissemination ($\bar{x}$ = 1.60), level of literacy ($\bar{x}$ = 1.66). It was also found that inaccessibility to information sources ($\bar{x}$ = 1.56) and irrelevant information were ranked low among the perceived challenges (6^{th} and 7^{th} respectively). Feedback plays an important role in agricultural communication. This is because it enables the sender to know if the message is understood the way it was expected. However, feedback system can have influence on farmers' response to useful information. Unlike the poor feedback system, good feedback system will enhance farmers' usage and management of information received. Hence, there is need for special consideration on the feedback system in the information communication pathway.

Test of relationship between socio-economic characteristics of the respondents and information needs of farmers in melon production

Findings in Table 7 show a significant

relationship between age (χ^2 = 10.80 df = 8), marital status (χ^2= 18.04, df = 3), years of education (χ^2= 44.38, df 6), farming experience (χ^2 = 21.69, df = 6), family size (χ^2 = 43.45 df = 6), extension contact (χ^2 = 29.49, df = 3) and information needs at 5% significant level. This implies that farmers' socio-economic characteristics play a strong role in determining their needs for information in melon production. This is in agreement with the findings of Mittal and Mehar (2013).

Conclusion

Agricultural information is dynamic, due to increased awareness of farmers of their needs. Access to useful information is key in the production of crops such as melon. It can be concluded from the findings that that farmers were in need of information in melon production. Among the information needed for melon production include that of seed treatment, sources of credit and planting techniques. Seed is one of the most important inputs for increasing agricultural production and therefore holds the key to achieving great socioeconomic benefits among melon farmers. In accessing the needed information, many information sources were explored. The farmers were constrained with many challenges that hinder their usage of the available information. The constraints include poor feedback system, unreliability of information sources, and complexity of information among others. It was found that socio-economic characteristics of the farmers significantly affect their information needs.

Based on the major findings, it is recommended that adequate and useful information should be provided for the farmers' usage. In doing this, attention should be given to feedback systems to enhance effective usage of the information.

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