Sweetpotato Utilization Level among Households in Oyo State, Nigeria

Micah Etukudo*, Favour Eforuoku

Department of Agricultural Economics & Extension
University of Uyo, Nigeria

*Corresponding author's email: micahetukudo [AT] yahoo.com

ABSTRACT— ***The study was designed to determine the level of sweetpotato utilization among households in Oyo state, Nigeria. Structured interview schedule was utilized in obtaining information from eighty sweetpotato consumers in the study area. Data were analysed using descriptive statistics. The study revealed that majority (77.0%, 90.0%, 70.0%, 75.0% and 70.0%) of the respondents are not aware that sweetpotato could be used in making starch, sparri (garri made from sweetpotato), cake, bread and puff-puff respectively. Similar proportion is also reported not to have made use of these sweetpotato products despite its nutritional value while most (96.3%) of the respondents are aware of sweetpotato chips and about 81.3% are currently consuming it. The study revealed that majority (61.3%) of the respondents had low level of sweetpotato utilization. It was concluded that more education, sensitization and information dissemination be done to increase the awareness level on utilization and processing of sweetpotato into other products such as flour, starch, sparri, cake, bread and puff-puff for the full derivation of its invaluable benefits.***

Keywords— Sweetpotato, utilization, household, Oyo, Nigeria

1. INTRODUCTION

Sweetpotato (*Ipomoea batatas L*) belongs to the morning-glory family (*Convolvulaceae).* It is an important, versatile and underexploited food crop with more than 133million tones (FAOSTAT, 1999) in annual production. Record has shown that despite the upward thrust in trends of utilization of other food crops like rice, wheat, maize and cassava, sweetpotato remains underutilized (Ezeano, 2010). It is being cultivated in over 100 countries (Van An, 2004). Sweetpotato ranks fourth as the world most important food crops, after rice, wheat and corn (Babatunde *et al*., 2007). Among the world's root and tuber crops, it ranked third after Irish potato and cassava (Ikeorgu, 2003). In Nigeria, sweetpotato cultivation is found in few states and its production is mainly for local consumption. Tewe, Ojeniyi and Abu (2003) reported that it is only a minor food crop in tropical Africa, despite its potentials as indicated by its growth. It is the only crop among the root and tuber crops with a positive per capita annual rate of production in sub-saharan Africa (Tewe *et al.,* 2003). It has a high yield potential that may be realized within a relatively short growing season. It is adaptable to wide ecological conditions. It can be grown in poor soils, but also performs well in a fertile environment far exceeding yields of cereal crops (Attaliru and Ilangantileke, 2007). It requires low inputs of land, labour and capital and less management in its production. It does well on marginal soils, giving reasonable yield than most other crops (Islam, Haque, Majunder and Hossian, 2002 ; Attaliru *et al.*, 2007).

The importance of sweetpotato is increasing in Nigeria's farming and food systems because it is easy to cultivate, matures early and has enormous industrial and economic potentials. Sweetpotato has high nutritional energy qualities and the leaves are consumed as vegetables (Fawole, 2007). It is very useful to both man and animal (Odebode, Egeonu and Akoroda, 2008). The pigmented ones contain sufficient quantities of Vitamin A precursor known as beta-carotene. Vitamin A deficiency is a particular problem with children under five and for pregnant and lactating women. Serious Vitamin A deficiency can lead to blindness. Chronic deficiency reduces a child's capacity to fight other diseases with sufficient negative long-term effect on the health of humans (Odebode *et al.,* 2008). Sweetpotato can be processed into different products such as flour, chips, cakes, chin-chin, puff-puff, sparri, biscuits etc (Odebode, 2011). It is a short-term crop that can be consumed when boiled and/or mashed. It plays a major role as food reserve in many rural households and its cultivation is important in securing the future. Despite its numerous advantages, its utilization has been found to be below average in Nigeria. The objective of this study was therefore to determine the level of sweetpotato utilization among households in Oyo state, Nigeria. Its utilization needs to be increased to generate income, create employment opportunities and provide food for the teeming population.

2. METHODOLOGY

The study was carried out in Oyo state, Nigeria. Oyo state is in the South west Nigeria. Geographically, the state lies between latitude 7° 2' and 9° 1' north and longitude 2° 4' and 4° 3' east. It is bounded in the north by Kwara state, in the south by Ogun state, in the west by Republic of Benin and in the east by Osun state. It covers an area of approximately 35,743 square kilometres. The vegetation is dictated by rainfall pattern which ranges from rainforest to derived savannah interspersed with tree cover in the northern part of the state. The feature is common to states found in southwest Nigeria. The land in the state is well drained and dissected by Ogun, Osun, Oya and Ofiki rivers. The people of Oyo state are mainly Yorubas and they engage in farming as primary occupation. The state has 33 local government areas. Out of these, 4 local governments were randomly selected for the study. From each of the local governments selected, two wards were sampled using snowballing technique and 10 consumers were randomly selected from each ward. These gave a total of 80 consumers from which structured interview schedule was administered.

3. RESULTS AND DISCUSSION

3.1 Awareness Level on Sweetpotato Utilization

Table 1 revealed that majority (96.3%) of the respondents have heard of sweetpotato chips, more than half (65.0%) of the respondents have heard of *kunnu* made from sweetpotato and about 52.5% of the respondents have heard of sweetpotato chin-chin. On the contrary, 77.0%, 90%, 70%, 75% and 70% of the respondents are not aware that sweetpotato could be used in making starch, sparri (garri made from sweetpotato), cake, bread and puff-puff respectively. The result also revealed that majority (61.3%) of the respondents had low level of awareness on sweetpotato utilization. This implies that there is insufficient and ineffective information dissemination on sweetpotato utilization into various products in the study area.

Table 1a: Distribution of respondents based on level of awareness on sweetpotato utilization

	Variable	Frequency	Percentage (%)
A	Have you heard of sweetpotato chips?		
	Yes	77	96.3
	No	3	3.8
	Total	80	100.0
B	Have you heard of sweetpotato starch?		
	Yes	18	22.5
	No	62	77.5
	Total	80	100.0
C	Have you heard of *kunnu* drink made from sweetpotato?		
	Yes	52	65.0
	No	28	35.0
	Total	80	100.0
D	Have you heard of (sparri) garri made from sweetpotato		
	Yes	8	10.0
	No	72	90.0
	Total	80	100.0
E	Have you heard of sweetpotato cake?		
	Yes	24	30.0
	No	56	70.0
	Total	80	100.0
F	Have you heard of sweetpotato chin-chin?		
	Yes	42	52.5
	No	38	47.5
	Total	80	100.0
G	Have you heard of sweetpotato bread?		
	Yes	20	25.0
	No	60	75.0
	Total	80	100.0
H	Have you heard of sweetpotato puff-puff?		
	Yes	24	30.0
	No	56	70.0
	Total	80	100.0

Table 1b: Categorization of respondents based on level of awareness on sweetpotato utilization

Awareness level	Frequency	Percentage	Mean	Minimum	Maximum	Standard deviation
Low	49	61.3				
High	31	38.8	3.31	0.00	8.00	2.03
Total	80	100.0				

3.2 Sources of Information on Sweetpotato Utilization into other Products

Information is one of the basic human needs after air, water, food and shelter and could be said to be one of the basic necessities of life (Ajayi, Banmeke and Solomon, 2010). Information is an essential tool for promoting, processing and utilizing sweetpotato products in Nigeria; therefore, the need to have and understand the concept and basic principles of agricultural extension in dissemination of information on sweetpotato consumption and utilization is necessary for improved nutritional status of the consumers (Odebode, 2011).

Table 2 reveals that some 46.3% and 33.8% of the respondents obtained information on processing sweetpotato into chips from friends and relatives respectively. This means that mutual coexistence among friends and families is an effective means of information dissemination among individual consumers while very few (3.8%) of them denied having information on sweetpotato processing into chips. Majority (77.5%) are not aware that sweetpotato can be processed into starch. Thirty-five percent of the respondents had information on sweetpotato processing into *kunnu* drink from friends, 22.5% heard this information from relatives, very few (1.3%) had it from marketer while 35.0% are not aware that sweetpotato can be processed into *kunnu* drink. In sum, few (3.8%) of the respondents have heard information from friends on processing sweetpotato into "sparri" (garri made from sweetpotato) while majority (90.0%) are not aware that sweetpotato can be processed into "sparri".

Few (11.3%) of the respondent received information on the use of sweetpotato in making cake from friends, fewer (5.0%) had this information from article while majority (70%) are not aware. It is also shown that about 16.3% of the respondents heard information from friends on processing of sweetpotato into chin-chin. The proportion of respondents who are not aware of this development is higher than those that are aware. Effort should be intensified by relevant agencies in spreading sweetpotato news and its potentials.

Table 2: Distribution of respondents based on the sources of information on sweetpotato utilization

		Sources of Information										
	Products	Extension agents	Friends	Farmers' association	Relatives	Radio	Television	Marketers	Internet	Article	NGO	Not aware
A	Chips	3(3.8%)	37(46.3%)	2(2.5%)	27(33.8%)	2(2.5%)	2(2.5%)	3(3.8%)	-	-	1(1.3%)	3(3.8%)
B	Starch	2(2.5%)	5(6.3%)	1(1.3%)	5(6.3%)	2(2.5%)	1(1.3%)	-	-	2(2.5%)	-	62(77.5%)
C	Kunnu	2(2.5%)	28(35.0%)	3(3.8%)	18(22.5%)	-	-	1(1.3%)	-	-	-	28(35.0%)
D	Sparri	1(1.3%)	3(3.8%)	1(1.3%)	-	-	-	-	1(1.3%)	2(2.5%)	-	72(90.0%)
E	Cake	2(2.5%)	9(11.3%)	-	2(2.5%)	-	3(3.8%)	1(1.3%)	-	4(5.0%)	3(3.8%)	56(70.0%)
F	Chin-chin	3(3.8%)	13(16.3%)	2(2.5%)	10(12.5%)	4(5.0%)	4(5.0%)	1(1.3%)	4(5.0%)	4(5.0%)	1(1.3%)	38(47.5%)

G	Bread	1(1.3%)	4(5.0%)	1(1.3%)	4(5.0%)	3(3.8 %)	2(2.5%)	-	-	4(5.0 %)	1(1.3 %)	60(75.0 %)
H	Puff-puff	1(1.3%)	9(11.3%)	1(1.3%)	5(6.3%)	1(1.3 %)	2(2.5%)	-	-	4(5.0 %)	1(1.3 %)	56(70.0 %)

3.3 Sweetpotato Use Status

Table 3 revealed that most (81.3%) of the respondents are currently consuming sweetpotato chips, few (10.0%) experimented its consumption once while 6.5% of them never eaten it. Likewise, majority (91.3%) of the respondents have never used sweetpotato starch, few (5.0%) experimented its use once while very few (3.8%) is currently using starch made from sweetpotato. 43.8% of the respondents have never consumed *kunnu* prepared from sweetpotato, less than one third (27.5%) have experimented its consumption once while fewer (26.3%) are currently consuming. Similarly, (96.3%) of the respondents have never eaten sparri (garri processed from sweetpotato), few (2.5%) experimented its consumption once and fewer (1.3%) is currently consuming it. This may be due to the fact that consumers are already used to the conventional garri processed from cassava.

Majority (91.3%) of the respondents never used cake made from sweetpotato, few (5.0%) experimented its use once while fewer (2.5%) is currently using. In the same vein, most (75.0%) of the respondents never used sweetpotato chin-chin, few (10.0%) are currently using while fewer (8.8%) have experimented its use. The study further revealed that majority (91.3%) of the respondents have never used sweetpotato bread, few (7.5%) experimented its use once while very few (1.3%) of them are currently using. This may be because people in bakery and confectionary businesses are used to flour made from wheat for their production. The result further revealed that a higher proportion (92.5%) of the respondents has never used sweetpotato in making puff-puff, few (3.8%) experimented its use once and fewer (2.5%) abandoned. Despite the fact that all the products mentioned above are widely consumed by the people in the study area, although produced with other raw materials such as wheat flour and cassava, sweetpotato is yet to be adequately utilized in confectionaries.

Table 3: Distribution of Respondents Based on Sweetpotato Use Status

		Use Status			
	Products	Never Used	Abandoned	Experimented Once	Currently Using
A	Chips	5(6.5%)	2(2.5%)	8(10.0%)	65(81.3%)
B	Starch	73(91.3%)	-	4(5.0%)	3(3.8%)
C	*Kunnu* drink	35(43.8%)	2(2.5%)	22(27.5%)	21(26.3%)
D	Sparri	77(96.3%)	-	2(2.5%)	1(1.3%)
E	Cake	73(91.3%)	1(1.3%)	4(5.0%)	2(2.5%)
F	Chin-chin	60(75.0%)	5(6.3%)	7(8.8%)	8(10.0%)
G	Bread	73(91.3%)	-	6(7.5%)	1(1.3%)
H	Puff-puff	74(92.5%)	2(2.5%)	3(3.8%)	1(1.3%)

4. CONCLUSION AND RECOMMENDATIONS

The study examined the level of sweetpotato utilization among households in Oyo state, Nigeria. It observed that majority (77.0%, 90.0%, 70.0%, 75.0% and 70%) of the respondents have not heard that sweetpotato could be processed into other products such as starch, sparri (garri made from sweetpotato), bread, and puff-puff respectively. On the use status of sweetpotato, the study revealed that majority (91.3%, 96.3%, 91.3%, 75.0%, 91.3% and 92.5%) of the households has never used or consume starch, sparri (garri made from sweetpotato), cake, chin-chin, bread and puff-puff (respectively) made from sweetpotato. These results have shown that the level of awareness and sweetpotato use in the study area is generally low. In the light of the findings, the study recommends the need to sensitize, educate and further create awareness on sweetpotato utilization for the realization of its economic and nutritional benefits.

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