

## **PINEAPPLE FARMERS' INFORMATION SOURCES AND USAGE IN NIGERIA**

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### **Abstract**

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Pineapple farmers' access to and use of information have great income generation potentials for farmers, expansion of local industries and foreign exchange earnings for Nigeria. This study, thus investigated farmers' information sources and usage. Interview schedule was used to collect data from 119 respondents which constituted 27% of all pineapple farmers in the study area. Results show respondents were mostly male (60%), married (66%), with one form of education or another ( $X = 3.09$ ,  $SD = 1.46$ ), and aged 28 years and above (71%). Relationships exist between respondents' selected personal characteristics and information sources and usage, years of farming and farming activities challenges. Pineapple farmers will source and use information from easily available and accessible sources such as radio and newspaper. Improving the knowledge base of farmers will facilitate information sharing amongst them. Research and extension should therefore develop contents in both radio and newspapers that will expand farmers' knowledge base and practical skills for improved pineapple production.

*Key words:* pineapple farmers', Information Sources and Usage, Nigeria

### **Background and Introduction**

Until recently, about 80% of pineapple produced in Nigeria came from small scale farms managed under mixed cropping systems. Recent access to international markets, enhanced local values of fresh fruits, resuscitation of pineapple cultivation, and local processing have encouraged the development of few large scale intensive managed farms where pineapple is produced as a monocrop (Ucheagu, 1985). Pineapple as an economic crop has encouraging potentials for foreign exchange earnings. It can also increase national income through the expansion of local indus-

tries and higher incomes for farmers involved in its production. Current production figures show that Nigeria is the 6<sup>th</sup> largest producer of pineapple in the world and if current production and marketing trends are encouraged, commercial production for export and local consumption will be enhanced (FAO/World Bank, 1999).

Enhancing agricultural production in Nigeria is often linked to farmers' access and use of agricultural information. Idachaba (1980) noted the importance of disseminating information in forms easily understood by farmers in improving production. Aina (1985) conducted an adoption study which suggested that

farmers adopt new farming technologies, if information of such technologies, is at their disposal. These observations expectedly have influenced government's enlistment of information in agricultural development in Nigeria. But in spite of efforts by government and extension at improving farmers' access to agricultural information, the export of agricultural products including pineapple has declined due to importation. This has led to poor and weak agricultural production. Consequently, pineapple and its products have become expensive.

As early as 1971, Lesley noted the enormous body of research based-information in agriculture available in research institutes and faculties of agriculture in universities in Nigeria. Olayide and Ogunfowora (1981) examined the dynamics of agricultural production technology under Nigerian condition, and revealed that there is a lag of about 50 years between the development of farm innovations from research and their application. They concluded that the problem lies with the dissemination and flow of information to farmers. Furthermore, Olowu (1990) claimed that numerous studies identified various information sources to farmers but there is yet to be appreciable increase in agricultural production. This situation is also applicable to pineapple production in Nigeria. Pineapple farmers' access to relevant information is critical to increased pineapple production.

Information dissemination to pineapple farmers in the rural areas is an integral part of the clamor for adoption of innovations and agricultural development. The effectiveness of sources and frequency of agricultural information availability then become of paramount importance, if any meaningful development is to be achieved. Information sources may also have contributory linkages to the utilization of information, essential in packaging and adapting information for local relevance.

Consequently, this study was structured to investigate the sources and use of information among pineapple farmers in Nigeria. The objectives guiding the inquiry were to:

I. Determine the personal characteristics of pineapple farmers

II. Determine pineapple farmers' awareness of available information on pineapple production

III. Ascertain pineapple farmers' sources of agricultural information

IV. Determine pineapple farmers' frequency of use of available information

V. Investigate pineapple farmers' frequency of contact with extension agents and

VI. Delineate farming challenges encountered by pineapple farmers.

## Methods

Ovia Local Government Area in Edo State was purposively selected for the study based on two criteria: high concentration of pineapple growers in the area and representativeness of a typical pineapple growing community.

From a list of pineapple growers compiled by the staff of the agricultural unit of the local government area, 120 farmers were randomly selected.

An interview schedule with items based on the objectives of the study was used to collect data from the selected farmers. The interview schedule contained 17 questions measuring:

- demographic characteristics
- information awareness
- information sources
- information usage
- contact with extension agents and
- constraints encountered in pineapple production activities.

## Measurement of Variables

Farmers' were asked to indicate their age, sex, educational attainment, marital status, years of farming production purpose, cultivated variety, capital source, marketing outlet, agrochemical input sources and affordability.

Information awareness: farmers were asked to indicate whether or not they are aware of available pineapple production information.

Information sources: farmers were asked to indi-

**Table 1**  
**Demographic characteristics of respondents**

Variables	Mean	Categories	SD	Frequency/percentage N=119
Age	20.7yrs	13-27 years	0.79	34 (28.6)
		28-37 year		43 (36.1)
Sex	1.4	Male	0.49	71 (59.7)
		Female		48 (40.3)
Marital status	1.66	Single	0.47	40 (33.6)
		Married		79 (66.4)
Religion	1.56	Christianity	0.74	68 (57.1)
		Islam		37 (31.1)
		Traditionalist		12 (10.1)
Educational attainment	3.09yrs	Others	1.47	2 (1.7)
		No formal education		22 (18.5)
		Adult Education		26 (21.8)
		Primary Education		20 (16.8)
Farming experience	1.92yrs	Secondary Education	0.99	21 (17.6)
		Tertiary Education		30 (25.2)
		1-5years		52 (43.7)
		6-10years		36 (30.3)
Farm size	1.82ha	11-15years	0.72	20 (16.8)
		16 years and above		11 (9.2)
		Less than 1 hectare		43 (36.1)
Labour source	2.17	2-4 hectare	1.09	54 (45.4)
		5 hectares and above		22 (18.5)
		Personal Labour		40 (33.6)
Planted variety	1.81	Hired Labour	0.79	41 (34.5)
		Communal Labour		22 (18.5)
		Family labour		16 (13.4)
Production Purpose	1.24	Smooth Cayenne	0.43	62 (52.1)
		Queen		42 (35.3)
Planting materials preferred	1.24	Ornamental	0.71	11 (9.2)
		Profit making		90 (75.6)
Capital sources	2.22	Others	1.16	29 (24.4)
		Suckers		69 (58.0)
		Crowns		35 (29.0)
Capital sources	2.22	Slips	1.16	15 (12.6)
		Personal savings		44 (37.0)
		Relatives		30 (25.2)
Capital sources	2.22	Bank loan	1.16	20 (16.8)
		Cooperatives		25 (21.0)

**Table 1 continued**  
**Demographic characteristics of respondents**

Variables	Mean	Categories	SD	Frequency/percentage N=119
Market outlets	2.42	Village market	1.25	72 (60.6)
		Urban market		24 (20.2)
		Farm market		23 (19.9)
Agrochemical types used	2.62	Herbicides	0.79	21 (17.6)
		Fertilizers		59 (49.5)
		Pesticides		18 (15.1)
Input affordability	1.61	Affordable	0.73	64 (53.8)
		Relatively affordable		38 (31.9)
		Not affordable		17 (14.3)

cate their information source and frequency of information of indicated sources.

Information usage: farmers were asked to indicate on a 3-point scale the frequency of available information usage.

Contact with extension agents: farmers were asked to indicate on a 3-point scale their frequency of contact with extension agents.

**Farming challenges:** farmers' were asked to react to multiple choice statements indicating challenges encountered.

### **Analysis**

Descriptive and inferential statistics were used to analyze the data collected.

Demographic characteristics of farmers were analyzed using percentages and frequencies.

Significant relationships between selected variables were established using chi-square statistics.

## **Results**

The results of this study are discussed according to the objectives of the study.

Demographic data (Table 1) show that pineapple farmers' mean age is 20.7 years. They are mostly male (60%) between the ages of 28-37 years (36%), married (66%), Christians (57%) with one form of

education or another (81.5%). This finding is consistent with previous studies focused on farmers in Nigeria which revealed that agriculture is predominantly in the hands of active middle aged farmers (Olowu et al., 1988). The results also indicate that the farmers have 1-5 years farming experience (43%), own between 2 – 4 hectares of farmland (45%), use mainly personal savings (37%) and hired labour for pineapple production activities. The farmers' inability to obtain loans may be due to the stiff loaning conditions of banks. On the other hand, their use of hired labour may be linked with their planting of smooth cayenne variety using suckers. This is usually done manually and therefore labour intensive. This labour requirement is of necessity met through hiring labour from the farmers' communities.

The results further indicate that the farmers' main purpose of production is profit (75%) and village markets are their major outlets (60%). The use of fertilizers among the farmers is widespread (59%) because they can afford to buy those (53%). The sale of their products (pineapple) in village markets is consistent with the poor rural infrastructural base prevalent in Nigeria while their use of fertilizers reflects the farmers' profit-oriented production and educational profile.

Farmers' reaction to 12 pineapple production activities information was designed to assess their awareness of production information (Table 2). Data on

**Table 2**  
**Awareness of pineapple production information**

Variables	Categories		Mean	SD
	Aware	Not Aware		
Planting Materials	93[*78.2]	26[21.8]	1.22	0.42
Propagation Method	77[64.7]	42[35.3]	1.35	0.48
Fertilizer Application	90[75.6]	29[24.4]	1.24	0.43
Spacing	80[67.2]	39[32.8]	1.33	0.47
Weeding	80[67.2]	39[32.8]	1.33	0.47
Mulching	64[53.8]	54[46.2]	1.46	0.5
Spraying	79[66.4]	40[33.6]	1.34	0.47
Harvesting	89[74.8]	30[25.2]	1.25	0.44
Post-harvesting	79[66.4]	40[33.6]	1.35	0.47
Storage	66[55.5]	53[44.5]	1.45	0.5
Processing	54[45.4]	65[54.6]	1.55	0.5
Marketing	61[51.3]	58[48.7]	1.49	0.5
Transportation	63[52.9]	56[47.1]	1.47	0.5

Figures in Parentheses are Percentages

Table 2 show that between 64% - 78% of the farmers are aware of seven activities (planting materials, fertilizer application, harvesting, spacing, weeding, spraying and propagation); 51% - 55% are aware of 4 activities (storage, mulching, transportation and marketing); while 45% are aware of only one activity (processing information). This high level of awareness of available pineapple production information tallies with the relatively high educational level of the farmers.

Results show that pineapple farmers receive information at varying intervals from various sources (Table 3). Radio (71%), television (46%) and neighbours (46%) constitute major daily information sources. Major weekly and monthly information sources are newspapers (53%) and extension (42%). Generally, therefore, this study indicates that the mass media and interpersonal channels are the major information sources of pineapple farmers. Literature is replete with evidence that farmers generally obtain and use

information from these sources (Olowu and Igodan, 1989, Patel and Ekpere, 1978, and Yahaya and Badiru, 2000). It is worthy of note that pineapple farmers source information from newspapers on a weekly basis. Again, this may not be unconnected with the farmers' educational level as well as the increased reportage of agricultural content in Nigerian dailies (Fawole, 1997).

Results on Table 4 show that the farmers use available information on the various cultivation technique on a varying degree. They 'always use' information on the miniset techniques of cutting suckers (83%) and crowns (80%) into bits. Similarly, they "always use" information on sectioning technique of stem defoliation (54.6%) and trenching technique of harvesting plantlets as they emerge (63%). In the case of milking techniques, they "always use" information on splitting pineapple crowns longitudinally into four equal parts (72%) and treatment with benomyl solution and air dry (56.3%). This notable use of production information by pineapple farmers may be linked to the efforts of the International Institute for Tropical Agriculture (IITA), in partnership with several national agricultural institutions as well as extension delivery services (Ucheagu, 1985).

Farmers' contact with extension agents was assessed using a 3-point scale. Findings show different modes of farmers' contact with extension agents (Table 5). Table 5 shows extension agents' visits to farmers were mostly "occasional" (68%). This low frequency of contacts by extension mirrors the limited number of extension agents (1:4000 farmers) in Nigeria which makes it impossible to reach all farmers by interpersonal means (Akinpelu, 1987). Mass media alternatives of reaching large number of farmers are therefore essential supplementary imperatives. Frequency of interaction with contact farmers is high (65.8%) is consistent with the training and visit extension system adopted by the ADPs in the state. Farmers were asked also to react to multiple choice statements designed to assess farming activities challenges. The challenges identified included lack of income, pest and diseases, weather vagaries, market trend and transportation. Farmers' prevalent challenges (constraints) are pest

**Table 3**  
**Frequency of farmers receiving agricultural information**

Information Source	Frequencies					N = 119	
	Daily	Weekly	Bi-Weekly	Monthly	Quarterly	Mean	SD
Radio	58[*71.4]	25[21.0]	1[0.8]	8[6.7]	0[0]	1.43	0.6207
Television	55[46.2]	40[33.6]	8[6.7]	13[100]	3[2.5]	1.9	11.123
Extension Agents	8[6.7]	25[21.0]	19[16.0]	51[42.9]	16[13.4]	3.35	11.541
Newspapers	28[23.5]	64[53.8]	13[0.9]	8[6.7]	6[5.0]	2.16	10.250
Neighbour	55[46.2]	30[25.2]	7[5.9]	25[21.0]	2[1.7]	2.07	12.332
Farmers Association	22[10.1]	19[16.0]	36[30.3]	39[32.8]	13[10.9]	3.18	1.422

Figures in Parentheses are Percentages

**Table 4**  
**Frequency of usage of pineapple information**

Variables	Usage		Categories		N = 119	
	Always Used	Rarely Used	Never Used	Mean	SD	
Miniset Technique						
i. Crowns Cut into Bits	96(80.7)	19(16.0)	4(3.4)	1.23	0.4947	
ii. Suckers Cut into Bits	99(83.2)	12(10.1)	8(6.7)	1.24	0.5631	
Sectioning Technique						
i. Stem Defoliation and Split longitudinally	65(54.6)	49(41.2)	5(4.3)	1.5	0.5804	
ii. Treatment with 1% Benomy! Fungicide Solution	47(39.5)	68(57.1)	4(3.4)	1.64	0.5482	
Trenching Technique						
i. Burying de-foliated Pineapple Stump	59(49.6)	54(45.4)	6(5.0)	1.55	0.5923	
ii. Harvest Plantlets as they Emerge	75(63.0)	41(34.5)	3(2.5)	1.39	0.5402	
Milking Technique						
i. Split Pineapple Crown Longitudinally into 4 Equal Parts	86(72.3)	26(21.8)	7(5.9)	1.34	0.5862	
ii. Treat with 1% BenomyI Solution and Air Dry	67(56.3)	44(37.0)	8(6.7)	1.5	0.6227	

**Table 5**  
**Contact of farmers with extension agents**

Variables	Frequencies				N = 119	
	Always	Occasional	Never	Mean	SD	
Attendance at ADP Meetings	48 (40*.3)	51 (42.9)	26 (16.8)	1.76	0.7214	
Visit by Extension Agents	24 (20.2)	81 (68.1)	14 (11.8)	1.92	0.5612	
Participation in WIA Campaign	17 (14.3)	78 (65.5)	24 (20.2)	2.06	0.5665	
Group Visit by block extension agents	38 (31.9)	70 (58.8)	11 (9.2)	1.77	0.6028	
Participation with contact farmers	78 (65.8)	41 (34.5)	0 (0)	1.34	0.4772	

\*Figures in parenthesis are percentages  
ADP – Agricultural Development Projects  
WIA – Women in Agriculture



**Table 6**  
**Chi-square ( $\chi^2$ ) test of selected farmers' personal characteristics, information sources utilization, contact with extension agents and encountered constraints**

Variables	$\chi^2$	Degree of Freedom	Significant Level ( $p < 0.05$ )
Personal Characteristic and Information Source:			
Age	13.43	6	0.04*
Gender	4.1	3	0.03*
Marital Status	12.08	3	0.01*
Religion	5.41	9	0.8
Education	25.26	9	0.02*
Farming Experience	5.37	9	0.8
Agricultural Information Usage and			
Age	8.68	4	0.07
Gender	7.47	2	0.02*
Marital Status	2.2	2	0.33
Religion	7.38	6	0.29
Education	14.58	8	0.07
Farming Experience	3.87	6	0.69
Contact with Extension Agents			
Age	6.78	4	0.15
Gender	3.72	2	0.16
Marital Status	5.59	2	0.06
Religion	7.02	6	0.00*
Education	26.08	8	0.01*
Farming Experience	16.42	6	
Constraints Encountered			
Age	9.84	8	0.28
Gender	11.1	4	0.03*
Marital Status	16.83	4	0.00*
Religion	27.25	12	0.01*
Education	33.81	16	0.01*
Farming Experience	30.17	12	0.01*

and diseases (47.9%) and lack of income (23.5%).

Chi-square ( $\chi^2$ ) test reveals a mix of relationships. The analysis shows significant relationships between farmers' age, marital status and educational level and their information sources ( $\chi^2 = 13.43$ ,  $p = 0.037$ ,  $\chi^2 = 12.08$ ,  $p = 0.007$ ,  $\chi^2 = 25.26$ ,  $p = 0.023$ , respectively). These relationships are expected as Yahaya (2002) reported that higher educational status influence information seeking behavior of farmers. Also,

married adults are generally regarded as more responsible, while knowledge comes with years of farming.

However, only sex is significantly related to their use of available agricultural information ( $\chi^2 = 7.47$ ,  $p = 0.02$ ). Pineapple production activities are therefore along gender lines in Nigeria. Indeed, majority of the respondents are adult males (Table 1) who are culturally household heads, better educated and are responsible for providing household needs.

Also only, pineapple farmers' religion and educational level are significantly related to frequency of contact with extension agents ( $p > 0.05$ ), (Table 6). Previous studies have provided evidence on the positive relationship between education and exposure to contact farmers. That is more educated farmers have more contact with extension agents. Others have also shown the relationship between religion and exposure to extension agents.

On the other hand, sex, marital status, religion, educational level and farming experience are significantly related to farming activities challenges ( $\chi^2 = 11.10$ ,  $p = 0.03$ ,  $\chi^2 = 16.82$ ,  $p = 0.002$ ;  $\chi^2 = 27.25$ ,  $p = 0.01$ ; educational level:  $\chi^2 = 33.81$ ,  $p = .01$ ;  $\chi^2 = 30.17$ ,  $p = 0.003$ ). These findings match those of Yahaya (2002) where sex, marital status, educational status and religion are constraints to farming activities of farmers in North-eastern Nigeria.

## Conclusions and Recommendations

Pineapple farmers' information sources and usage were the focus of this study. Demographic frequencies show that pineapple farmers are mostly males (60%), aged between 28 – 37 years (36%), married (66%) having farms averaging about 1.82 ha and with farming experience ranging between 1 and 16 years. Pineapple farmers therefore are active and middle aged. They are aware of most pineapple production information except for processing technique information. It is suggested that processing technique information is made available to the farmers. This suggestion is predicated on the fact that adding value to pineapple products through processing may earn them more income and therefore improve their standard of living.

Pineapple farmers obtain information daily from radio, television and neighbors and less often (weekly/monthly) from newspapers and extension agents. Consequently, extension agencies and related organizations should ensure that more information is disseminated through these channels to pineapple farmers.

Usage of available information among respondent is frequent, except for treatment of planting material

with benomyl fungicide. Contact farmers are the main intermediaries between pineapple farmers and extension agents. It is suggested that more extension agents are trained to reinforce information obtained from mass media sources.

The study has shown that four demographic characteristics (age, gender, marital status and education) influence pineapple farmers' sources of information. While gender is significantly related to agricultural information usage, education and farming experience are associated with pineapple farmer's contact with extension agents. These findings suggest that as farmers' education level improves, they are more likely to source and use information. Constraint improving the knowledge base of farmers allows them to share information with other farmers. The challenge is for future research to develop content both of radio programs and newspapers to help expand farmers' knowledge base and practical skills in order to improve pineapple production in Nigeria. To do less is to ignore the warning from Ryan-Harshman (1999). Finally, the constraints these farmers experience are significantly related to their gender, marital status, religion, education and farming experience.

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