Preference of Three Leaf Yam *(Discorea Dumentorum*) to Other Types Of Yam Among Farmers in Ibarapa Central Local Government

Amao S.A.[1], Adeagbo T.A.[2], Omotoso B.A.[1], Adelayo O.[1], Adebayo O. A.[1], Oyeleye A. A.[2] and Adisa J. O.[2]

[1]Department of Agricultural Technology, Oyo State College of Agriculture Technology,

PMB 10 Igboora .

and

[2]Department of Agricultural Extension and Management, Oyo State College of Agriculture Technology,

PMB 10 Igboora .

ABSTRACT

The performance of three leaf yam to other yams has greatly influence on the choice of production and the size of land allotted to it. This study was carried out in Ibarapa central local Government Area of Oyo state with a population sample size of eighty (80) respondents. The data were handled with descriptive statistics such as frequency counts, percentages and probit regression analysis.

The result of the farmers' socioeconomic characteristics showed that 47.06% of the respondents were male while 47.06% were female. The mean age of the farmers was 59 years while the household size was five - the mean of farming experience was approximately 16 years.

The result of probit regression analysis showed that Age, sex, and farmsize are all significant at 1% level while household size was significant at 10%.

In conclusion, removing the disparity between the gender and age difference will promote production of three leaf yam in Nigeria as a whole and study area in particular.

Keywords: Discorea domentorum, Probit Regression Analysis

INTRODUCTION

Yam (Discorea spp) is an annual tuber and monocotyledonous crop. The plant genus comprises of over 600 species with only ten (10) species producing edible tuber. Six of these edible species are cultivated in Africa and only 3 of them are available in Nigeria. In Nigeria, the primary species cultivated are the white yam (Discorea rotundata), yellow yam (Discorea cayensis) and water yam (Discorea alata) (Amusa, 2000).

According to Food and Agricultural Organization (2001), Nigeria accounted for about 71% (26,000,000 tones) of the total world production of yam harvested from 2,760ha. Yam production in Nigeria has more than tripled over the past 45 years from 8.7,000,000 tons in 1961 to 31.3 million tons I. 2006. This increase in output is attributed more to the large area of land planted to yam than to other crop which eventually increase the productivity. (Lzekor and Olumese, 2010).

The place of yam in the diet of Nigerians cannot be over emphasized. It contributes more than 200 dietary calories daily for more than 150 million people in the West African as well as serving as an important source of income (Babaleye, 2003).

Several Nigeria tribes often play key role in religious ceremonies due to importance attached to yam many communities in Nigeria celebrate the new yam festival (Amusa, 2000).

Yam (Discorea spp) is a food with economic and socio- cultural importance in many tropical countries (Jovaet al, 2005). Bitter yam (Discorea dumentorum) belongs to the genus Discorea and family Discoreacae (Bai and Ekanayake, 1998) in Egbuonu et al (2014). Other common names of bitter yam include Africa bitter yam wild yellow yam, trifoliate (three-leaved) yam and cluster yam. Bitter is known as "Esuru" in south western Nigeria and it is regarded as food for the adult. It is used as herbs to treat various ailments such as diabetic Malaria (Dike *et al*, 2012).

The problem of in adequate food supply in sub-Sahara and attendant malnutrition problem (Musieba et al.,2013) necessitated the need to investigate less and underutilized, food sources.

The main problem presently facing yam production most especially three leaf yam is low yield per hectare, long growing season and for water yam is low yield per hectare long growing season and low demand for yam as a result of its taste and function. Low income is considered to be the major problem of residents in the community, the cost of production are high and low patronage has made three leaf yam is losing ground to cassava. As a result majority of potential farmers tend to shrift their ground to other yam species as a result of low patronage.

The following serves the objectives of the study: determine the socio- economic characteristics to the respondents, to determine the preference of three leaf yam to other species in Ibarapa Central Local Government Area of Oyo State.

METHODOLOGY

The study was carried out in Ibarapa Central Local Government Area of Oyo state. The study area comprises of two major towns which area (Igboora and Idere). The land mass is about 480.424sq km with the population of 116,809 according to National Population Census (NPC, 2006). The area is bounded in the North and East by Ayete (Ibarapa North) and Eruwa (Ibarapa East) and share boundary with Abeokuta in Ogun state of Nigeria. The rainfall pattern in the area follow a tropical type with average annual rainfall ranging from 100mm to 1430mm and a temperature of 27°c to 32°c.

The population of the study comprise yam farmers under All farmers Association of Nigeria (AFAN) Ibarapa branch. Primary data through questionnaire and interview schedule were used to elicit responses from the respondents. Simple random techniques were used from eighty active members (30 from Idere and 50 from Igboora). This group of farmers split into 10 political wards in Ibarapa central local government area. The questionnaire was administered to eighty (80) Members of the association.

The data were analyzed using descriptive statistics to describe the socioeconomic characteristics while Probit regression was used to determine factors that responsible for farmers preference of three leaf yam in the study area.

Theoretical Background

Probit regression is a special type of lowraleased linear model (GLM). Here, the bivanate outcome Y has a Bernoulli distribution with parameter P (success probability P E (0, 1)

Probit link function

$$\text{Probit}(EY) = \phi^{-1}(p[= \phi^{-1}(p(Y)=]) \quad \ldots\ldots\ldots\ldots(1)$$

This is used to transform the expectation of this 0/1 dependent variable. Than the theory of the mean is modeled as a linear combination of the covariates (repressors) X, I.e we have a linear predictor.

$$\text{Probit}(EY) = X\beta, \quad \ldots\ldots\ldots\ldots..(2)$$

Where β is a vector of unknown parameter the maximum likelihood based approach is used for the parameter estimate.

Results and Discussions

The result of socioeconomic characteristics showed that the average mean age of the farmers is 59 years indicating that three leaf yam farmers in the study area are ageing people and this may be due to traditional coffamity attachment to three leaf yams. This clearly suggests the reason why there was low production.

Male are more into production of three leaf year with 52.94% while the remaining 47.06% responsible for the female. This may be due to the labor intensive nature of yam production hence female farmers may prefer to grow other crop with lesser labor requirements.

The household size showed that majority about 54.42% of the respondent range between 4-6 household size while the least (1.27%) are greater than 9 household. A good member of farmers has no formal education (38.75%) this may affect the adoption of three leaf yam production in the study area.

The year of farming experience showed that (16years) farmers are not novice in production of the three leaf year and food member of them must have gather experience that translate to productivity.

Furthermore, the result of socioeconomic distribution of three leaf yam Farmers were in conformeter with work of Izekor and Elumese (2010) on yam production & profitability in Edo state, Nigeria.

Table1 :Socio Economic characteristics

Variables	**Frequency**	**Percentage**	**Mean**
Age (Years)			
30 – 39	9	11.25	
40 – 49	13	16.25	
50 – 59	18	22.5	59.2
60 – 69	17	21.25	
70 – 79	5	6.25	
>79	18	22.5	
Marital status			
Single	2	28.3	
Married	7	89.87	
Divorced	3	3.30	
Separated	3	3.30	
Sex			
Male	58	52.94	
Female	22	47.06	

Household size					
1 – 3	16		20.26		
4 – 6	43		54.42		5.17
7 – 9	19		24.05		
> 9	1		1.27		
Educational Level					
No education	31		38.75		
Primary		19		23.75	
Secondary	16		20.00		
Tertiary	8		10.00		
Years of Experience					
1 – 10	44		55.00		15.6
11 – 16		16		20.00	
20 – 30		8		10.00	
> 30	12		15.00		
Loan Access					
No	35		44.30		
Yes	40		55.70		

Field survey: 2015

Probit Regression Analysis

The coefficient of age is positively significant at 1% level. This implies that as the farmer grows older the more they have interest in the planting of three leaf yam to other species.

Sex is also positively significant at 1% level which implies that male farmers have interest in the planting of three leaf yam to other species. Long growing season and low demand problem of three leaf yam may be attributed to the lack or low interest of female farmers in its planting.

Household size was significant at 10% level which implies that the larger the household size the more the farmer develop / have interest in planting of three leaf yam. The larger household size provide additional labour.

Farm size was also significant at 1% level which implies that the larger areas of land owned or cultivated in a year the more interest the farmer had in planting of three leaf yam.

Despite its long growing season, the available / sufficient land for cultivation motivate the farmer to plant the three leaf yam.

Table 2: Probit Regression Analysis

Variables	Coef	Std Err	t-value
Age (x_1)	.0139593	.0015935	8.76***
Sex (x_2)	.1423554	.0374837	3.79***
Household (x_3)	.1645867	.0850869	1.93*
Farm size (x_4)	.0964123	.020418	4.71***
Constant (b_0)	-6693104	1.37733	-0.49
Chi^2	55.21***		
Pseudo R^2	0.7987		
Loglikehood	= -44.568768		

*,*** is significant at 10% and 1%

Source: Field survey, 2016

Conclusion

The result of the finding shown that Age, Sex, and size of the farm are all significant at 1% and are positive. This demonstrates that as farmer grows older the more interest they developed and prefer three leaf yam to other yams. Also sex play a significant role in three leaf yam production, male tends to pick interest in the production when compare with their female counterpart and is significant at 1% level.

In the same vain, the size of farm also playssignificant roles in the bitter yam production and therefore necessitates the preference to other yams. The size of household also suggests that additional labor requirement will be solve by large household size.

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