

Farmers' Perception on Commercial Cultivation of *Jatropha curcas* L.) in Odo-Otin Local Government Area, Osun State, Nigeria.

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Abstract

Jatropha plant (*Jatropha curcas*) is an economic tree that is highly beneficial to man. However, so many people especially in the rural setting have not been duly informed about its abundant uses. The study examined the perception of rural farmers on commercial cultivation of *Jatropha* plant in Odo-Otin local Government Area of Osun State, Nigeria. A random sampling technique was used to select 200 respondents which constitute about ten percent from the list of 1,957 contact farmers in Odo-Otin LGA. The result of the findings revealed that 50% of the respondents were within the age range of 41-50 years, 85% were married and 60.5% of the respondents had no formal education with farming experience of 11-15 years. Larger proportion (84.0%) of the respondents were not aware of commercial cultivation of *Jatropha* plant and a few (10.0%) of the respondents were not aware of its market linkage. Ninety percent of the respondents were not aware of the technical know-how on commercial cultivation of *Jatropha* and very few percentages (6.0%) were aware of some of its processing technology. None (0.0%) of the respondents sought information on awareness of commercial cultivation of *Jatropha* through extension agents and print media. Insignificant percentages (1.5%) had similar information on radio and 1.0% on television. Majority (95%) of the respondents' perceived *Jatropha* plant as local household medicine and that could still be used as homestead fence. But a little percentage (35%) of the respondents perceived *Jatropha* to be useful in the production of oil, soap and biofuel. Pearson correlation analysis showed a positive and significant relationship ($p < 0.05$) between age, educational level, farming experience, household size of the respondents and their perceived economic importance of *Jatropha* plant. The study however recommended that government at all levels should intensify enlightenment campaign through extension agents, radio and television on commercial cultivation and economic benefits of *Jatropha* plants.

Keywords: Perception, Rural Farmers, *Jatropha* Plant, Commercial and Cultivation

Introduction

Jatropha curcas L. also known as physic nut, is a tall bush or small tree (up to 4.5m high) of the Euphorbia family. It originated from the Caribbean and was first planted by Portuguese seafarers in the Cape Verde Islands and in Guinea Bissau (Becker and

Schmook, 1998). *Jatropha* has attracted much attention as it has been widely claimed to be the only early biofuel plant that is not a food crop. According to Pro Forest (2008), *Jatropha* grows on marginal lands and as such not competing with food production and even help in soil regeneration and

prevention of erosion. Becker and Schmook (1998) stressed the use of *Jatropha* by plant in Africa as a fence around homesteads, gardens and fields, because it is not browsed by animals. Its seeds can be used for producing oil, soap, candles, medicine and as bio-energy production.

It is note-worthy however that having realized the far flung significances of *Jatropha* plant, its plantation has greatly been harnessed in some parts of African countries like Tanzania and Mali. In relation to this, Roks and van Vlimmeren (2009) stated that a variety of projects and institutions use multi-function platforms (MPA) in sub-saharan Africa where *Jatropha* oil and its various by-products are used for the improvement of livelihoods and or income generating activities. Belewu et al (2010) also opined that *Jatropha curcas* plant found in Nigeria has the potential of boosting the economy in term of biodiesel e commercial cultivation of *Jatropha* plant in Osun state, Nigeria.

Objectives of the study

The main objective of this study is to examine the perception of rural farmer on the commercial cultivation of *Jatropha* plant in Odo-Otin Local Government Area of Osun state, Nigeria.

The specific objectives are to:

1. describe the socio-economic characteristics of respondents in the study area
2. examine the awareness level of respondents on the commercial cultivation of *Jatropha* plants
3. identify respondents' sources of information on the commercial cultivation of *Jatropha* plants.
4. determine the perceived economic importance of *Jatropha* plant by the respondents in the study area.

production. As revealed by Parsons (2005), *Jatropha* grows well on marginal lands with no more than 400-500mm rainfall per year coupled with the ability to withstand long drought periods, it follows therefore that Nigeria environmental condition is favourable for its cultivation.

However, it is worrisome that this all-important plant is yet to be cultivated on commercial basis particularly by the resource-poor farmers.

Going by the recent development in Nigeria's downstream oil sector in which about 2 trillion naira which was hitherto paid by the federal government to subsidize fuel consumption annually have been withdrawn, aggressive commercial cultivation of this very important non-food crop biofuel plant becomes indispensable. This research work therefore sought to examine the perception of rural farmers on th

Hypothesis of the Study

There is no significant relationship between some selected socio-economic characteristics (Age, Education, Farming Experience and Household size) of the respondents and their perceived economic importance of *Jatropha* plant.

Materials and Methods

Osun State ADP was visited to get the list of contact farmers in Odo-Otin Local Government Area of Osun State, Nigeria. From the list containing 1,957 farmers, random selection of 200 farmers constituting 10% of the population was made. Questionnaire was used to elicit information from the respondents with the assistance of field enumerators. Data collected was collated and subjected to descriptive (frequency counts and percentages) and inferential statistics (chi square) for the test of hypothesis.

Results and Discussion

Table 1: Socio Economic Characteristics of Respondents

Characteristics	Frequency	Percentage
Age		
<30	16	8.0
31-40	50	25.0
41-50	100	50.0
51-60	30	15.0
>61	4	2.0
Total	200	100
Marital Status		
Single	10	5.0
Married	170	85.0
Divorced	6	3.0
Widowed	10	5.0
Separated	4	2.0
Total	200	100
Household Size		
1-3	20	10.0
4-6	130	65.0
>7	50	25.0
Total	200	100
Level of Education		
No formal education	155	77.5
Quranic education	3	1.5
Adult education	15	7.5
Primary	10	5.0
Secondary education	12	6.0
Tertiary education	5	2.5
Total	200	100
Primary Occupation		
Farming	120	60.0
Artisan	60	30.0
Civil Servant	3	1.5
Trading	17	8.5
Total	200	100
Farming Experience		
< 5	5	2.5
6-10	70	35.0
11-15	100	50.0
>16	25	12.5
Total	200	100

Source: Field Survey, 2012

The results indicated that the respondents were within the age range of 41-50 years. Majority (85%) of the respondents were married with farming experience of 11-15 years. Most (77.5%) of the respondents had no formal education and were into farming with household size of 4-6 persons.

Table 2: Awareness on the Commercial Cultivation of Jatropha Plant

Variable	Awareness	Frequency	Percentage
Technical Skills on cultivation	Aware	20	10.0
	Not aware	180	90.0
Processing Technology	Aware	12	6.0
	Not aware	188	94.0
Up to date relevant information on Jatropha Cultivation	Aware	32	16.0
	Not aware	168	84.0
Market opportunity	Aware	10	5.0
	Not aware	190	95.0
Total		200	100

Source: Field Survey, 2012

The results in table 2 revealed that the majority (84.0%) of the respondents were not aware of up to date relevant information about commercial cultivation of Jatropha plant. Respondents were also not aware of the technical know-how required of commercial cultivation of Jatropha. This implies that the respondents have not been trained on the cultivation of Jatropha at all. On the processing technology of Jatropha plant, only smaller proportions (6.0%) of the respondents were aware of this technology which seems not available to them. A few (10.0%) of the respondents were aware of Jatropha market opportunity in the study area while significant percentage (95.0%) were not aware.

Table 3: Source of Information on Awareness of Jatropha Plant Cultivation

Variables	Source	Frequency	Percentage
Extension contact	Yes	0	0.0
	No	200	100
Radio	Yes	3	1.5
	No	197	
Television	Yes	2	1.0
	No	198	99.0
Print Media	Yes	0	0.0
	No	200	100
Neighbouring Farmers	Yes	1	0.5
	No	199	99.5
Total		200	100

Source: Field Survey, 2012

Table 3 showed that none (0.0%) of the respondents sought information on commercial cultivation of Jatropha through extension agents and Print media. Insignificant percentage (1.5%) of the respondents had similar information through radio, (1.0%) through television while (0.5%) had their information through neighbouring farmers. This is an indication that the respondents were very far from information on commercial cultivation of jatropha plant.

Table 4: Respondents' Perceived Economic Importance of Jatropha Plant

Economic Importance	Aware (%)	Undecided (%)	Not aware (%)	Total %
Local household medicine	190(95.0)	00(0.0)	10(5.0)	200 (100%)
Farm asset / boundary demarcation	150(75.0)	20 (10.0)	30(15.0)	200 (100%)
Homestead Fencing	190(95.0)	3(1.5)	7(3.5)	200 (100%)
Oil /Soap making	70(35.0)	50 (25.0)	80(40.0)	200 (100%)
Bio diesel/ Energy	70(35.0)	60 (30.0)	70(35.0)	200 (100%)
Wind breakers	50(25.0)	30 (15.0)	120(60.0)	200 (100%)
Erosion control	150(75.0)	20 (10.0)	30 (15.0)	200 (100%)

Source: Field Survey, 2012

Table 4 showed that 95% of the respondents were aware that Jatropha plant is used as local household medicine. This may be an indication that the Jatropha plant is one of the age long local trees that is perceived to be an alternative medicine in the local communities. However, 95% of the respondents were also aware that Jatropha plant is being used for homestead fence. This also might be connected with their resilience and drought resistance property which the plant is known for. Little percentage (35%) of the respondents perceived the use of Jatropha plant for oil, soap making and biofuel. This may also be an indication that the respondents do not have access to relevant information on Jatropha plant and their awareness on their economic importance is very low. Most (75%) of the respondents further perceived Jatropha plant to be a good material which could be used to control soil erosion while 60% of the respondents were not aware of its importance as a wind breaker. This also might be true since it is not the tall type of trees that do break the wind.

Table 5: Correlation Analysis of some selected Socio-economic Characteristics of Respondents and Perceived Economic Importance of Jatropha Plant

Variables	r –value	Decision
Age	0.0235	Significant
Educational level	0.0368	Significant
Farming experience	0.0246	Significant
Household Size	0.0412	Significant

P- Value = 0.05 (Significance level)

Source: Field Survey, 2012.

Table 5 revealed a significant and positive relationship between age, educational level, farming experience, household size of the respondents and their perceived economic importance of Jatropha plant. The results indicated that the r values are less than the p value in all the cases, therefore, there exist a strong relationship at 5% significance level. Then, the null hypothesis which states that there is no significant relationship between socio-economic characteristics of the respondents and their perceived economic importance of jatropha plant is rejected.

Summary/Conclusion

The findings showed that most of the respondents were within the age range of 41-50 years, with farming experience of 11-15 years. Most of the respondents had no formal education; they were married and had household size of 4-6 members. Respondents were not aware of relevant information about commercial cultivation of Jatropha plant. They were also not aware of the technical know-how on Jatropha processing technology and only few of the respondents were aware of its market opportunities. No respondent sought information on commercial cultivation of Jatropha through extension agents and the print media. Smaller proportion of the respondents had the information on radio and television. Respondents agreed on the use of Jatropha

plant as alternative medicine in the local communities and that it could be used as homestead fence. They also perceived Jatropha to be a good material for the control of soil erosion and disagreed on its uses as a wind breaker. In conclusion, the local farmers in the study area have been cultivating Jatropha plant over years but not for commercial purposes. The study therefore recommended that government at all levels through extension agents, radio and television should intensify enlightenment campaign on commercial cultivation of Jatropha plant and the abundance benefits it off

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