

KNOWLEDGE AND ATTITUDE OF AGRICULTURE STUDENTS TOWARDS COMMERCIALIZATION OF DATE PALM IN UNIVERSITY OF ILORIN, NIGERIA

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ABSTRACT

In spite of the comparative advantages that Nigeria has in the production of date palm, its cultivation is largely limited to the homestead. This study assessed the knowledge and attitude of agriculture students of the University of Ilorin towards the commercialization of the plant. The study also investigated the relationship between attitude towards the commercialization of the date palm and some selected characteristics of the students. A total of 86 students were selected using a multi-stage sampling technique. Descriptive statistics and the correlation analysis were the tools used to analyze the data for the study. The study revealed that only 20.9% of the students had a high knowledge of date palm production. At $p < 0.05$ students' knowledge of date palm had a significant relationship with positive attitude towards the commercialization of the plant. In addition, students' interest in agriculture as a course of study ($p < 0.05$) and their interest in agriculture as a career ($p < 0.01$) were positively related to their attitude towards the commercialization of date palm. The study concluded that the level of knowledge and the attitude of agriculture students were generally poor. Increased awareness and knowledge of the agronomy and economics of the plant are therefore suggested among the students. Students who are studying agriculture because they could not secure admission in their courses of choice should be counseled on the potentials in agriculture as a career to enable them settle in and embrace agriculture. Lastly, the study recommends that entrepreneurship and enterprise development should be impressed upon agricultural students.

Keywords: Knowledge, Attitude, Commercialization and Date Palm

Running Title: Knowledge and Attitude towards Date Palm Commercialization

INTRODUCTION

Date palm, (*Phoenix dactylifera* L.) is a horticultural and economic plant which belongs to the family Palmae (Arecaceae). It is one of the oldest cultivated plants and it is believed to have originated from Africa and Asia (Zaid and Wet, 1999). The date palm is a

major agricultural crop in the Near East and North Africa, and it has historically been connected with sustaining human life in many of the hot and barren parts of the world. Thus, it has become an integral part of the culture and tradition of the people of these regions, such that it is regarded as a national heritage in these countries and in some cases,

a part of the national emblem (Sawaya, 2000). With thousands of cultivars, the plant produces date, a sweet tasting fruit which has a thick, wrinkled and usually brown shinning skin. The presence of many essential anti-inflammatory nutrients, high amount of fiber and its low cholesterol content make it a valuable dietary product (Movahed *et al.*, 2011). Although date palm is essentially cultivated for its edible fruits which are very nutritious and energy supplying, practically all parts of the date palm are important and useful (Al-hooti, *et al.*, 1997; Dada *et al.*, 2012). Secondary products from the date palm which include palm midrib, leaflets, spadix, stem and coir are sources of raw materials for artisans and some agro-allied industries such as paper making industries as well as in the manufacture of insulating materials (Khiari *et al.*, 2011; Agoudjila *et al.*, 2011). Dates also have some religious significance as evidenced by the increase in its consumption by Moslems during the month of Ramadan (fasting) as well as the use of its leaves during Easter celebrations by Christians. Ahmed and Ahmed (1995) enumerated the enormous medicinal benefits of the plant. According to Ikheloa *et al.*, (2002), it is a plant which possesses social, cultural, religious and medicinal significance. The date palm tree tolerates relatively harsh climatic and soil conditions under which many other crops will not give reasonable returns. It plays a big role in combating desertification because it can tolerate high levels of salinity, high temperature and less water. Okorley *et al.*, (2005) and Baloch *et al.*, (2014), reporting on the profitability of the cultivation of the crop, confirmed that date palm is one of the trees with the highest production per hectare. Khushk *et al.*, (2009) confirmed the suitability of date palm for both small and large scale farming. The combination of the above features makes date palm an excellent choice for farmers.

Date palm is believed to have been introduced into Nigeria in the early 17th century through the trans-Sahara trade route from North Africa by Moslems on pilgrimage to the Middle East (Omamor *et al.*, 2000). It is mostly grown in the arid region of Northern Nigeria around areas above latitude 10° N of the equator covering Kaduna, Katsina, Kano, Sokoto, Kebbi Jigawa, Yobe, Borno, Gombe, Bauchi and Adamawa States (Okolo, *et al.*, 2000). Omoti and Okolo (2000) also classified Plateau, Nasarawa, Niger, Kwara and Benue States as marginal areas for date palm cultivation in the country.

The world's total date production was 5.1 million MT in 2008 (FAO, 2009) with Egypt being the world's largest producer having an average production of 1.326 million MT. The report further gives the following production figures for the other major producers: Iran (1.000million MT), Saudi Arabia (0.982 million MT), Pakistan (0.680million MT) and Iraq (0.440million MT). Niger, the largest date palm producing country in West Africa contributed less than one percent of the world production of date in the year under report. Nigeria with estimated annual production of 21, 700 MT is however yet to be listed among the date palm producing countries in spite of the comparative advantages provided by the soil and climatic conditions of a considerable portion of its land area (Adesiji *et al.*, 2013). Date palm cultivation in Nigeria is still restricted to the homestead level with only a few orchards in the northern parts of the country. (AbdulQadir *et al.*, 2011). The consumption of date in Nigeria far outweighs its production thereby resulting in its importation. For Nigeria to reach its full potential in date palm production there is a need to move from the present predominantly home stead production to commercial production of date palm. This will not only reduce or eliminate

loss of foreign exchange; it also has the potential to generate same as excess production can be exported. In addition, commercialization of the Date palm in Nigeria has enormous potentials to create jobs all along its value chain. Aside from the need for farm labour, processing, distribution and marketing of the output will provide means of livelihood for several unemployed persons. This is of particular importance to the youths who appears to be the worst hit by the scourge of unemployment in the country. Dauda *et al.* (2009) remarked that the survival of Nigeria's agriculture rests on the youth who are the farmers and leaders of tomorrow. Miri, (1996) also linked the perception of the younger generation on agriculture to the future of the agriculture sector.

Jega, (2007) and Nweze, (2010) both opined that Universities play a strategic role as centers of creative undertakings, innovations and inventions in building up a country's capacity in various disciplines. Students and graduates of agriculture can take advantage of their awareness and knowledge of the cultivation and economic advantages of date palm in creating self employment by establishing plantations or engaging in other activities along the date palm value chain. This is very feasible in the case of students of

the University of Ilorin giving the fact that the University maintains a commercial date palm plantation which is also used for teaching and research purposes. In addition to knowledge, their attitude towards the commercialization of the plant is of importance in influencing decisions towards its favourable consideration. Therefore this study was carried out to assess the knowledge and attitude of students of agriculture towards commercialization of Date Palm in University of Ilorin as a case study. The specific objectives of the study were to:

- describe the socio-economic characteristics of students of agriculture in the University of Ilorin;
- determine their level of knowledge on date palm production and;
- examine their attitude towards date palm commercialization.

Stated in the null form, the hypotheses tested in the study are presented below;

HO₁: There is no significant relationship between the level of students' knowledge on date palm production and their attitude towards its commercialization.

HO₂: There is no significant relationship between socio-economic characteristics of agriculture students and their attitude towards the commercialization of date palm.

METHODOLOGY

Study Area

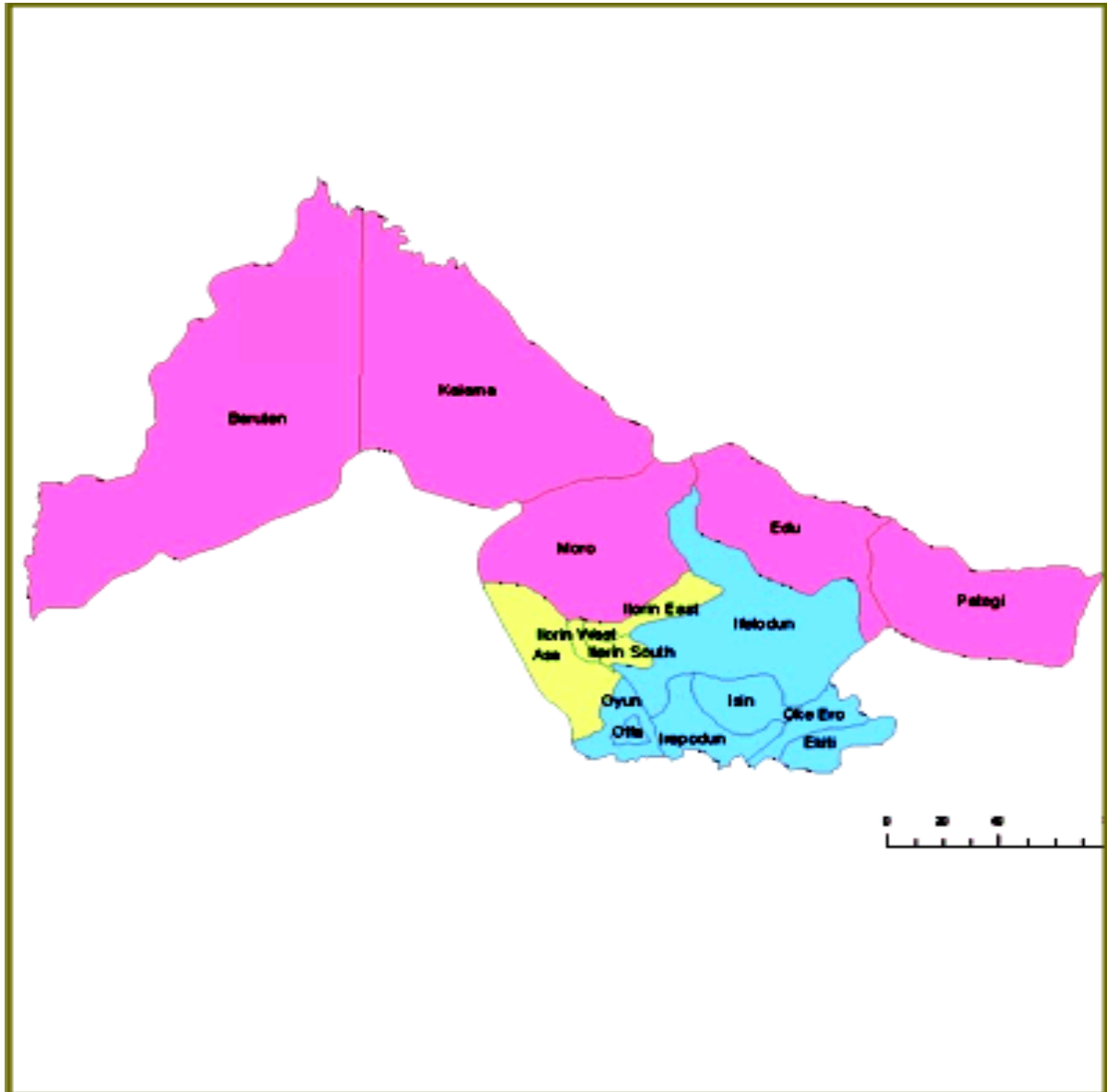


Figure 1: Map of Kwara State

The study was conducted in the Faculty of Agriculture, University of Ilorin, Kwara State, Nigeria. The University which is located within Ilorin South Local Government Area was established by a decree of the Federal Military Government in 1975 as a Federal Government

owned tertiary institution of education. The Faculty of Agriculture, University of Ilorin was established as the seventh faculty in the University during the 1982/83 Academic Session. The faculty is currently made up of seven Departments which are: Agricultural

Economics and Farm management; Agricultural Extension and Rural Development; Animal Production; Agronomy; Crop Protection; Home Economics and Food Science and; Forest Resources Management. The faculty runs a five year program leading to the award of a bachelor's degree to candidates who meet the entire requirements for the award of the degree. One of such requirements is a compulsory semester dedicated solely to farm practical training and in which students' practical skills are graded. The scores form a substantial part of their cumulative grade point average which ultimately determines the students' class of degree.

Sampling Technique and Sample Size

The population for the study comprised of all students of the Faculty of Agriculture, University of Ilorin during the 2013/2014 academic session. A two-stage sampling technique was used to select the respondents for the study. The first stage was the purposive selection of the 400 level (fourth year) students because they had spent close to four years on the program and were therefore expected to have gained a reasonable level of exposure to all fields in agriculture. In addition, the survey was carried out during the mandatory farm practical training exercise of the student during which they were exposed to practical farm work. The second stage was the random selection of eighty six students representing 50 percent of the entire class of 172 students.

Data Collection and Analysis

The instrument used for data collection was a well structured Questionnaire. Data were collected on the socio-economic characteristics of the students, their level of knowledge on date palm and their attitude towards date palm commercialization. The statistical tools used in analyzing data collected were descriptive statistical tools

including frequency counts and percentages, the Teacher made test, Likert scale, and Correlation Analysis.

Knowledge of the students on date palm was measured using a "Teacher-Made Test" or knowledge test (Meena et al., 2012). This involves the development of a comprehensive list of items (statements or questions) which when pulled together, depicts knowledge on date palm. These items covered the origin, distribution, agronomy, characteristics, uses, economics etc of the plant. The questions were dichotomous to facilitate easy scoring. The scoring guide was 1 score for each correct answer and 0 score otherwise. A score of 12 out of 16 (75%) was adopted as cut-off point for the possession of a high level of knowledge on date palm. Scores of between 8 and 11 (50-69%) was categorized as medium while any score below 8 (<50%) was categorized as low.

Students' Attitude towards date palm commercialization was measured using a 5 point Likert scale. A set of statements which when put together, depicts attitude towards the commercialization of date palm were posed at the respondents and they were requested to indicate the extent to which they agreed or disagreed with the statements. The scale was graduated as follows;

Strongly disagree=5, Disagree=4. Undecided=3, Agree=2 and Strongly agree=1

Some of the likert statements were presented in negative form so as to stimulate and ascertain the attention of the respondents. For such statements the scoring pattern was reversed. These scores were aggregated and converted to means for individual respondents. The means score were adopted as a measure of the respondents' positive attitude towards date palm cultivation.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Respondents

The socio-economic characteristics of the respondents of interest in the study were; age, gender, religion, financial status, Interest in agriculture as course of study, preferred field of agriculture, environmental

background, prior farming experience and interest in agriculture as a career. Table 1 presents the socio-economic characteristics of the respondents.

Table 1: Distribution of Respondents by Socio- economic Characteristics n=86

Socio-economic Characteristic	Frequency	Percentage
Age		
16- 20	27	31.4
21 -25	45	52.3
26 -30	9	10.5
>30	5	5.8
Sex		
Male	47	54.7
Female	39	45.3
Religion		
Islam	35	40.7
Christianity	49	57.0
Others	2	2.3
Financial Status		
Affluent	30	34.7
Middle Class	56	65.2
Choice to study Agriculture		
Yes	39	45.5
No	47	54.7
Best Department		
Agricultural Economics	20	23.3
Crop Protection	17	19.8
Agricultural Extension	24	27.9
Animal Production	15	17.4
Agronomy	5	5.8
Home Economics	4	4.7
None	1	1.2
Prior Farming Experience		
Yes	27	31.4
No	59	68.6
Family Background		
Urban	60	69.8
Rural	26	30.2
Choice of Agriculture as a Profession		
Yes	78	90.7
No	8	9.3

Source: Field Survey, 2014

Table 1 reveals that the modal age group among the student was 21 to 25 years with more than half of them having ages within this limit. Only 16.3 % of the students were above 25 years of age. The table also reveals a slightly higher percentage of male students (54.7) than their female counterparts. The findings on age and gender distribution among the respondents support the findings of Omotesho *et al.*, (2013) in which a modal age group of 21-25 was reported among agriculture students in two Nigerian Universities with 53.3% male. More than half of the respondents were Christians with 2.3% of them not belonging to neither of the two prominent religions in the study area. About a third of the students indicated their financial status as affluent. Agriculture was not the preferred choice of course of study for more than half of the students (54.7%) as at point

of entry into the University however, over 90 % expressed desire for a career in agriculture. Agricultural extension and agricultural economics with 27.9 % and 23.3 % were the Departments in which the students had the most interests, while they showed the least interest in Home economics (4.7%) and agronomy (5.8%). Majority of the students (close to 70%) had urban backgrounds and lacked prior practical farming experiences.

Respondents' Knowledge on Date Palm

This section presents the results of investigation into the respondents' knowledge about different features of the plant. Table 2 shows the distribution of the respondents by their individual scores on all the knowledge items while Table 3 shows the average scores of all the respondents on the different knowledge items.

Table 2: Distribution of Respondents by Level of Knowledge on Date Palm

S/No	Level of knowledge	Frequency	Percentage
1	Low	47	54.7
2	Medium	21	24.4
3	High	18	20.9

Source: Field Survey, 2014

The study reveals that 54.7 percent of the students had low level of knowledge of the date palm plant followed by 24.4 percent in

the medium category. Only 20.9 percent of the students demonstrated a high level of knowledge of the plant.

Table 3 Respondents Knowledge on Date palm

S/N	Knowledge Item	Knowledge (%)
1	Origin of date palm	42.33
2	Introduction of date palm to Nigeria	12.79
3	Best propagation method(s)	28.33
4	Maturity of date palm	27.76
5	Production levels of Date palm in Nigeria	17.43
6	Nature of date palm fruit	68.00
7	Taste of the date fruit	58.78
8	Effect (if any) of date palm on desert encroachment	40.67
9	Date as an ornamental plant	47.11
10	Potentials for export in Nigeria	40.54

11	Consumption to production levels in Nigeria	45.20
12	Climatic requirement for date palm	48.09
13	Soil quality requirements of date palm	36.34
14	Uses of Date palm	70.33
15	Diseases and pests of date palm	31.96
16	Potential effect of commercialization on economy	51.18

Source: Field Survey, 2014

As shown in Table 3, the average score on the knowledge items was generally low. Going by the threshold adopted for the study, none of the knowledge items was scored high ($\geq 75\%$). The item for which the respondents had the highest mean was the uses of date palm (70.33%) meaning that students were most knowledgeable on the uses of the date palm plant. This was followed by knowledge of the

nature of the date palm fruit (68%) and the taste of the fruit (58.78%). The table however reveals a poor level of knowledge on the agronomy of date palm.

Distribution of Respondents by attitude towards Date Palm Commercialization

Table 4 presents a summary of the responses on attitude of the students to date palm commercialization.

Table 4: Distribution of Respondents by Attitude towards Date Palm Commercialization

Likert Statements	SA	A	U	D	SD
The University of Ilorin date palm plantation is a waste of arable land.	18(20.9)	17(19.8)	3(3.5)	29(33.7)	19(22.1)
The date palm plantation has aesthetic value.	14(16.3)	42(48.8)	15(17.2)	11(12.8)	4(4.7)
The resources used on the date palm plantation could have been used for arable crop production.	17(19.8)	18(20.9)	26(30.2)	21(24.4)	4(4.7)
The University date palm plantation has not enhanced teaching and research.	17(19.8)	21(24.4)	17(19.8)	25(29.1)	6(7.0)
Date plant plantation is not a viable enterprise in Ilorin.	11(12.8)	22(25.6)	21(24.4)	26(30.2)	6(7.0)
I could consider owning a date palm plantation in the future.	11(12.8)	33(38.4)	12(14.0)	22(25.6)	8(9.3)
The importance attached to the date palm plantation is justifiable.	16(10.5)	22(24.4)	18(20.9)	21(24.4)	9(10.5)
The plantation has generated employment for people.	21(24.4)	30(34.9)	15(17.4)	8(9.3)	12(14.0)
The plantation will be a good source of internally generated revenue for the university.	17(19.8)	38(44.2)	8(9.3)	13(15.1)	10(11.6)
Expanding the plantation will be of futuristic benefit to the university.	25(29.1)	43(50.0)	12(14.0)	2(2.3)	4(4.7)

Note: SA (Strongly agree), A (Agree), U (Undecided), D (Disagree), SD (Strongly Disagree). Percentages in parentheses (Source: Field Survey, 2014)

As shown in Table 4, over 71 % of the respondents agreed that the date palm plantation held futuristic benefits for the University of Ilorin. About 65% agreed that the plantation had both aesthetic and economic value. Furthermore, 59.3 % opined that the plantation had generated employment opportunities. However, only 51.2 % of the respondents agreed that they

could consider owning date palm plantations in the future.

As high as 40.7 percent agreed that the land used for the date palm plantation by the University could have been used for arable crop production while 44.2 percent did not agree that the plantation had enhanced teaching and research work in the University.

Table 5: Result of the Correlation Analysis between Respondents' Knowledge level and Attitude to Date Palm Commercialization

	Knowledge Level	Attitude
Knowledge Level	1	0.172*
Attitude	0.172*	1

*Correlation is significant by Pearson correlation analysis at 0.05 levels (2-tailed). The result of the correlation analysis presented in Table 5 shows the existence of a correlation between student's level of knowledge about the date palm and their attitude towards its commercialization based on the table of Guildford Rule of Thumb. The positive coefficient reveals the direct nature of the relationship. Therefore, positive

attitude increased with increased level of knowledge hence; the more knowledgeable a student is about date palm, the more positive his/her attitude towards its commercialization. In a similar study involving farmers, Khan *et al.* (2009) also reported the existence of a direct relationship between education and attitude towards date palm commercialization.

Table 6: Result of the Correlation Analysis between Respondents' Socio-economic Characteristics and Attitude towards Date palm Commercialization

S/N	Socio-economic Characteristics	Correlation Coefficient 'r' Values
1	Age	0.1160
2	Gender	-0.0822
3	Religion	0.1410
4	Financial Status	0.1055
5	Personal choice to study agriculture	0.3630**
6	Choice of department	0.0240
7	Prior farming experience	0.0533
8	Family background	-0.0878
9	Choice of agriculture as a profession	0.3200***

Source: Field Survey, 2014. (**P<0.01, ***P<0.05)

Table 6 reveals that two of the socio-economic variables of interest in the study had significant relationships with the attitude

of the respondents. Students whose choice it was to study agriculture showed a higher positive attitude towards date palm

commercialization. Students who opted to read agriculture because they could not secure admission in their initial courses of interest therefore showed a lower positive attitude. This may be as a result of their lack of interest in agriculture as a course of study. Also, at one percent level of significance, a positive correlation was observed between the students' choice of agriculture as a profession and their attitude towards the commercialization of date palm. This finding suggests a link between students' level of interest in agriculture and their attitude.

CONCLUSION AND RECOMMENDATIONS

The study investigated the knowledge and attitude of students of agriculture towards the commercialization of date palm. The study concluded that the students' level of knowledge of the crop as well as their attitude towards its commercialization were poor. A significant and positive relationship was however observed between the students' knowledge and attitude at $P < 0.05$. Students' choices of agriculture as course of study and as profession were also related to their attitudes at $p < 0.05$ and $P < 0.01$ respectively. Based on these findings, the study suggests the need to lay emphasis on the agronomy of the crop at the classroom level as well as create more awareness of its economic importance among the students. Students accepting the offer of admission to study agriculture against their desired choice of course should receive counseling to enable them settle in and properly embrace agriculture as a profitable career. Finally, Entrepreneurship and enterprise development on date palm production should be stressed and impressed on agricultural students.

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