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GENDER FACTORS IN PRODUCTION OF AFRICAN EGGPLANT (*Solanum gilo*) IN ABIA STATE NIGERIA: IMPLICATION FOR EXTENSION EDUCATION

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Abstract

This study on gender factors in the production of African eggplant (Solanum gilo) was conducted in Abia State, Nigeria. Multi-stage random sampling technique was used to select 120 farmers (60 male and 60 female African eggplant farmers) on who structured questionnaire was administered in two of the three agricultural zones of the State. Data were presented and discussed using both descriptive and inferential statistical approaches in percentages, frequencies, tables and t-test analyses. The result showed that relatively more males (58.3%) than females (50%) had contact with and reported to extension agents by GSM calls/phone calls, more males (86.67%) than females (59%) had larger farmland, and received more production instructions on practices in form of advice from the extension agents. The study further revealed that extension agents procured and gave more production inputs (credit/grant, agrochemical and others) to male farmers than to the female farmers. Thus the mean output (10739.03tons/ha) of male African eggplant farmers appeared greater than that of the females (8300tons/ha) but there was no significant difference in output by the sexes. Availability of improved electricity supply and extension education was needful in the communities. It was recommended that extension agent's capacity building and land reform policies should be sensitive on gender lines in the study area.

Key words**:** *African eggplant, extension education, gender, production*

INTRODUCTION

The need for increased food production within a rapidly growing population in Sub-Saharan African countries has been of great concern to the national leaders and scientists. Perhaps, this is because very significant as most of the countries of the Sub-Saharan Africa are constantly threatened by to desertification and prolonged periods of drought (Onunka *et al*, 2008) [12], coupled with protracted socio-economic and political upheavals (Ochu, 2007) [7]. There is no gain-saying the fact that, presently millions of Nigerian households are low income earners and peasant farmers who suffer from hunger, poverty and acute food insecurity.

Nigeria's food problem obviously requires drastic agricultural transformation stimulate investments for the future. This will gear towards increased and sustainable food production through gender mainstreaming. Gender studies define the technologies meant for male and female farmers. It also examines and conceptualizes farming activities in terms of men and women with regard to responsibilities which determine labour allocation for increased yields (Onunka and Onunka, 2008) [12]. Increased food production and poverty eradication can be gotten not only through the farming of crops such as vegetables (African eggplant) but also the extent to which agricultural extension education is made gender sensitive and the way forward.

Vegetable production in Nigeria constituted about 4.64% of the total staple food production between 1970 and 2003 (CBN, 2004). Vegetable that have such potentials and commonly produce include African

eggplant, which is consumed raw as snacks and recommended to patients with bad sight, high blood pressure, stomach disorder and over weight (FAO, 1990) [4]. It is also a delicacy used to entertain visitors a long side with *Cola accumilata* (Kola) in the homes and at ceremonies in Igboland of south eastern Nigeria (Okafor, 1993) [8].

Gender in the context is not mere biological or sex difference (man and woman) but word used to describe the roles, activities contributions, responsibilities, needs and problems of males and females in relation to their importance in agricultural production processes (Onunka, 2011) [11]. It is therefore expedient to understand the contributions or role of extension services to male and female African eggplants farmers for an increase food production and improved income, thereby reducing poverty. This is necessary as Okoye *et al,* (2009) [9] noted that farm household out comes have yielded evidence of inefficient allocation of resources along gender lines, and to the detriment of women. This situation according to Balakrishan (2004) [1] has been attributed to gender insensitivity of technology development and transfer systems. Ewuziem *et al* (2010) [3] showed that women in Sub-Saharan African, including Nigeria, are responsible for the production of 70% of total food supply, yet they least benefit from agricultural extension education and technologies that would improve their production. The specific objectives of the study were to:

(i)examine agricultural extension contact by the male and female African eggplant farmers in the study area;

(ii)estimate the respondent's farm size by gender and extension advice;

(iii)examine the extension contact to male and female respondents to production practices;

(iv)determine differences in the mean output of African eggplant farmers by gender.

Agricultural extension education is carried out by the extension agents who are technically trained (change agents) and link the farmers with scientific findings by dissemination of useful and practical information relating to agriculture and home economics. Onunka (2005) [10] indicated that the use of new and improved technologies in agriculture was correlated with access to extension agents. It is therefore necessary to find out how this (extension education) affected male and female African eggplant farmers in the production of this crop and to propose ways of improving the situation in the study area.

MATERIALS AND METHODS

The study was conducted in Abia State of Nigeria. Two zones were purposively selected because they produce large quantities of African eggplant (Onunka, 2011) [11]. These zones were Abia South and Abia Central. It occupies about 2/3 (two thirds) of the total land area (5,084.8 sq km) of the State, lie within the humid tropical rainforest zone and majority of people are small scale farmers who use traditional method of farming. One extension block was randomly selected from each zone and six (6) circles from each block. Twenty African eggplant farmers (10 males and 10 females) were randomly selected from each of the circles to give a total of 120 farmers (60 males, 60 females). They were interviewed with two (2) sets of structured questionnaires and necessary information were elucidated. Data obtained were analyzed using descriptive statistics and t-test.

The t-test is given by

$$\text{t-cal.} = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}}$$

at n1 + n2 -2 degrees of freedom

Where: X_1 = mean output of the male African eggplant farmers

X_2 = mean output of the female African eggplant farmers

S_1^2 = variable of the output of the males

S_2^2 = variable of the output of the females

n_1 = number of the male African eggplant farmers

n_2 = number of the female African eggplant farmers

df = degrees of freedom

Decision rule: Reject the null hypothesis if the t-cal > t-tab, implying a significant difference between the mean output of the male and female African eggplant farmers.

RESULTS AND DISCUSSIONS

Table 1 showed that a good proportion of African eggplant male farmers (58.3%) than the females (50%) had contact with extension agents by GSM and more male farmers (63.4%) than the females (41.7%) had feedback contact with the extension agents. This result agrees with a prior expectation and the findings of Onunka (2005 and 2011) [10, 11] that majority (68.8%) of sweet potato farmers had contact with the extension personnel in Abia State. This implied that more female African eggplants farmers than males got information from extension agent through GSM calls/phone calls and more males than females also reported or feedback to extension agents on GSM calls/phone. The result also agreed with the findings of Ironkwe and Asumugha (2007) [5] who reported that majority (78% of the male and 82% of the female) of the cassava farmers had contact with agents and sent their feedback by face to face in Enugu State.

Table 1. Distribution of Respondents by Gender and ways of Extension Contact and feedback

Ways of contact and feedback	Extension Contact		Extension Feedback	
	Males *Freq.	Females *Freq.	Males *Freq.	Females *Freq.
Radio/TV	0	0	0	0
GSM calls/phone calls	35 (58.3)	30 (50.0)	38 (63.4)	25 (41.7)
Visits (face to face)	20 (33.3)	4 (45.0)	20 (4.7)	12 (20.0)
Others (other farmers, Friends use of letters)	05 (8.3)	03 (5.0)	05 (8.3)	10 (16.6)
Total	60 (100.0)	60 (100.0)	60 (100.0)	60 (100.0)

Source: Field Survey, 2014. Note: *figures in brackets are percentages.

Table 2 revealed that a greater percentage (58.33%) of the males and 65.66% of the females of African eggplant farmers had farm size of less than 1.20 hectares while smaller proportion (41.67% and 34.34%) respectively had farm size of less than 1.20 hectares. The result also showed that more males (86.67%) than females (59%) had farm size of more than 1.20 hectares. This implied that the farm size for African eggplant production is generally, small, especially the female's folk. Nwaru (2004) [6] noted that farm size in Nigeria are generally small and hence recommended that there is need for urgent land reform policies and programmes that would give farmers access to more land holdings for increased production.

Table 2. Distribution of Respondents according to farm size(ha).

Gender	Males		Females	
Farm size (ha)	Freq.	Percentage	Freq.	Percentage
0.01-0.40	6	10.0	14	20.66
0.41-0.80	8	13.33	10	16.67
0.81-1.20	21	35.0	17	28.33
1.21-1.60	9	15.0	10	16.67
1.61-2.00	7	11.67	8	13.33
2.01-2.40	9	15.0	1	1.67
Total	60	100	60	100

Source: Field Survey data, 2014.

Table 3 revealed that more male African eggplant farmers (86.6%) than females (66.6%) received advice on pesticide spraying technology, 76.6 % males and 50 % females on fertilizer application, 66.6 % males and 53.3 % on nursery technology and others.

Table 3. Distribution of Respondents by gender and type of production practice advice received from extension agents.

Type of production advice received	Males		Females	
	*freq.	Percentage (%)	*freq.	Percentage
Land clearing	27	45.0	24	40.0
Land preparation	28	46.0	22	33.6
Planting methods/season	32	53.3	25	41.7
Nursery technology	40	66.6	32	53.3
Weeding technology	20	33.3	15	24.9
Fertilizer application tech.	46	76.6	30	50.0
Pesticide spraying tech.	52	86.6	40	66.6
Harvesting	30	50.6	20	33.3
Grading/sorting	20	33.3	10	16.6
Marketing/distribution	35	58.5	19	31.6
Control of expenditure	15	24.9	10	16.6

Source: Field Survey data, 2014. *Multiple responses recorded

This result is in consonance with a priori expectation that more male eggplant farmers received more advice on production practices

than their female counterpart.

Table 4 indicated that even though majority of both farmers (males and females) got their inputs from extension agents, more male farmers received credit/grants than females (83.6% males and 41.7%females) and agro-chemicals (83.6% males and 75% females), improved seeds/seedlings (66.6% males and 58.7% females) and labour management (58.3% males and 50% females). This implied that more male than female African eggplant farmers sourced their farm inputs from the extension agents. This result explained that more males than females were interested and serious with the extension agents on useful inputs that will increase their yield and output.

Table 4. Distribution of Respondents by gender according to farm inputs (credit, agrochemical) from extension agents.

Sources of inputs by gender	Males		Females	
	*Frequency	Percentage	*Frequency	Percentage
Credit/grants	50	83.6	25	41.7
Improved seeds/seedlings	40	66.6	35	58.7
Labour management	35	58.3	30	50.0
Land acquisition	10	16.6	12	20.0
Agro-chemicals	50	83.6	45	75.0

Source: Field Survey data, 2014. *Multiple responses recorded

Table 5 indicated that the male farmers had a mean output of 1,073.03 tonnes per hectare and females had a mean output of 8,300.00 tonnes per hectare while the mean difference was 2,437.07 tonnes of African eggplant but t-calculated 1.063 was less than t-tabulated (2.0663). However, the result showed that males produced greater output than the female African eggplant farmers even though it was not significant in the study area. Therefore, the null hypothesis (Ho_2) was thereby, accepted. The implication of the result might be that more male than female African eggplant farmers were taught by the extension agents on how to source and get their production inputs. Another reason for this result might be that more males than females had more farmland. This agrees with the saying that the more the production input the more the yield or output all things being equal.

Table 5. Comparison of mean output of respondents by gender in the study area.

Variable	Observation	Mean	Mean deviation	Standard deviation	T-cal	T-tab
Male	60	10,739.03	2,437	5914077	1.063	2.0663
Female	60	8,300		39.39		

Source: Field Survey data, 2014.

CONCLUSIONS

The result of this study revealed that both males and females produced African eggplant in the study area, but more males than females had extension contact and received more extension feedback by GSM calls on the production techniques. The more males than females that had personal contact with extension agents received more advice and more education on production practices; farm input and had relatively greater output. This suggests that when female African eggplant farmers, receive equal opportunity (ownership of farmland) like their male folks, they will perform better in increasing their output.

Therefore, extension programmes and land reform policies that address gender issues especially gender differences and preferences (gender sensitivity) will go a long way increasing agricultural production including African eggplant production in the study area. Further, availability of improved electricity supply to rural communities is needful to both extension agents and farmers' (males and females) for more effective use of mobile phones for contact purposes. Equally, for increased technical know-how among extension workers, there is need for capacity building to enable them be gender sensitive in educating farmers (male and female farmers) in the study area.

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