

ASSESSMENT OF DRY SEASON GARDEN EGG PRODUCTION AMONG  
SMALL-SCALE FARMERS IN EDU LOCAL GOVERNMENT AREA OF  
KWARA STATE, NIGERIA

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**Abstract:** The study was carried out for the purpose of assessing dry season garden egg production among small-scale farmers in Edu Local Government Area of Kwara State. The study adopted a snowballing sampling technique to sample 120 small-scale garden egg farmers. Five research questions were formulated to achieve the objectives of this research work. Descriptive statistics, cost and return analysis and OLS regression were used to analyze data collected. Cost and return analysis shows that the total revenue generated from the sales of irrigated garden egg produce for a typical farmer was ₦ 36,596.5k while the total fixed cost (depreciated) and variable input cost amounted to 1,279.22K to give a net farm income (NFI) of ₦ 24,582.68k. The OLS regression results revealed that the coefficients of farm size and household size were positive and significant at the 1% and 10% levels of probability respectively. This implies that an increase in farm size by 1 ha will increase the production of dry season garden egg by 1 percent. While the results of stochastic production frontier estimate show that the parameters of labour, fertilizer and farm size were highly significant, chemical use was significant at 10% level. This result implies that the farmers were technically efficient in the use of labour, fertilizer, chemical and farm size. Therefore, it is recommended that farmers should be encouraged to form cooperative societies, whereby they can join their resources together to provide a cost-effective irrigation system. Also, government authorities and other non-governmental organizations are encouraged to give farmers fertilizers and other chemicals at subsidized rates. There is a need for revitalization of the marketing board in Nigeria to further strengthen the marketing of agricultural produce and reduce marketing, storage and transportation problems.

**Key words:** dry season, garden egg, small-scale farmers, Nigeria.

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## Introduction

Garden eggplants are fruit vegetables of some varieties which are white and shaped like chicken eggs, hence the name 'eggplants' (Chen et al., 2001). The fruits may be pear-shaped, round, long or cylindrical depending on the variety. The plant with the scientific name *Solanum* spp. is a vegetable with the increasing popularity in the world. It is an economic flowering plant belonging to the family *Solanaceae* and genus *Solanum*. It exists in about 1,400 species found around the world most especially in the temperate and tropical regions (Pessarakli et al., 2003). The genus *Solanum* comprises over 1,000 species with at least 100 indigenous African species (Grubben et al., 2004). Production of garden egg is highly concentrated with 85% of the output coming from five (5) countries of which China is the world largest producer (56% of garden egg output), followed by India (26%), Egypt, Turkey and Indonesia (FAO, 2008).

Four cultivar groups are recognized within the *Solanum* species, three of which are important for Africa (Plant Resources of Tropical Africa [PROTA], 2004). They are the Gilo, Kumba, Shum and Aculeatum groups. The first three are the most important in Africa; Gilo and Kumba groups are produced for their fruits, especially in the humid zone of West Africa while Shum is cultivated for its leaves in the savannah area. African garden egg is one of the most commonly consumed fruit vegetable in the tropical Africa, in quantity and value and probably, the third after tomato and onions and before okra. In Nigeria, different local species/varieties are in existence and are grown by different ethnic groups for local consumption and other uses. The fruits can be eaten raw as a vegetable. It could also be boiled, fried and stuffed before consumption (Rice et al., 1987).

Garden egg vegetables are mostly annual crops belonging to the group of plants called horticultural crops which are diverse in nature. However, vegetables can be grouped into fruit and leafy vegetables depending on the nature of their consumable products or parts. Fruit vegetables are those that produce fruit such as okra, tomato, garden egg, etc. On the other hand, leafy vegetables are those whose leaves are the desired parts e.g. lettuce, spinach, cabbage, cauliflower, parsley, etc. Thus, the cultivation of vegetable during the dry season with the aid of irrigation is termed dry season vegetable farming. Consuming high amounts of garden eggs has been found to be beneficial for people with glaucoma because it lowers the eye pressure (Harish et al., 2008; Ozobia et al., 2013).

Eggplant nutritious value is comparable to the values of other common vegetables. Its fresh weight is composed of 92.7% moisture, 1.4% protein, 1.3% fibre, 0.3% fat, 0.3% minerals, and the remaining 4% consists of various carbohydrates and vitamins (A and C). It also contains water (about 92.5%), protein (1%), fat (0.3%), and carbohydrates (6%). Similarly, eggplant contains nutrients such as dietary fiber, folate, ascorbic acid, vitamin K, niacin, vitamin

B6, pantothenic acid, potassium, iron, magnesium, manganese, phosphorus, and copper (USDA, 2009). The crop is usually intercropped with okra, tomato and hot pepper under rain-fed conditions and often results in reduction of yield of both component crops possibly due to similarity in the growth pattern and duration (Norman, 1974). Dry season vegetable farming has its origin in the northern region. It is a major economic activity during the dry season involving many youths (Iorkua et al., 2004).

Dry season vegetable production also called vegetable farming is the production of vegetable outside the normal growing season using certain infrastructures such as green houses, irrigation, watering can, etc. In most parts of Nigeria, there are two distinct seasons, the rainy season and the dry season. The rainy season is the regular cropping season and this starts in April and stops in October, while the dry season starts in November and ends in March. During the rainy season the production of vegetable is high resulting in the saturation of the market, but during the dry season there is usually the scarcity of this important farm product thereby leading to a high price due to short supply. Garden egg is cultivated all year round in different parts of Nigeria and West Africa and serves as the main source of income for many rural farmers and households. Production is however constrained by a wide range of pests and diseases reducing total production as well as production quality. A great variety of insect species from different orders and families have been recorded on the garden egg of which very few are of economic importance. According to Okito et al. (2004), eggplant is most popular in southern Nigeria particularly in Igbo land, because of both cultural and traditional importance. In Nigeria, though there are no official figures recorded for *Solanum gilo* production, the crop has a wide distribution as a garden crop (Dauda et al., 2005). In order to obtain high yield of this crop in Nigeria, there is a great need to augment the nutrient status of the soil to meet the crop needs (Dauda et al., 2005).

In Nigeria, the dietary importance of vegetables to human beings and its contribution to rural economy need not to be over emphasized. Farming has been the major occupation of people of Edu Local Government Area from time immemorial. They embark on the production of rainfed crops like rice, sorghum, maize, etc. However, during the dry season period, production of vegetable crops like amaranths, tomato, pepper, garden egg, watermelon through irrigation is almost exclusively in the hand of non-indigenes, particularly the Hausa who have a long history of irrigation agriculture. This scenario raises some concern. Why do the indigenes not practice irrigation farming? Do the non-indigenes (Hausa) realize a sustainable income from these irrigation farming practices during the dry season? Hence, the specific objectives of the study are to:

- estimate the costs and returns of dry season garden egg production in the study area;

- identify the determinants of dry season garden egg production in the study area;
- examine the production efficiency of dry season garden egg farming in the study area and
- describe the problem and constraints militating against dry season garden egg farmers in the study area.

## **Materials and Methods**

### **Study area**

This study was carried out in Edu Local Government Area of Kwara State, Nigeria. The Local Government comprises of Lafiagi, Shonga and Tsaragi districts. It is located at latitude 9<sup>0</sup> north and longitude 5<sup>0</sup> east with an altitude of 300m above sea level. It is in a derived savannah zone of Nigeria with an average annual rainfall of about 120mm. It has the boundary in the north, east and west by the river Niger, Patigi Local Government Area and Ifelodun Local Government Area. The people of the area are predominantly small-scale farmers characterized by the use of crude farm implements and a farm size of about 1.0 to 3.0 hectares. Crops mostly grown during the raining season are lowland rice, maize, sorghum, groundnut, melon, sugarcane and sweet potato. Vegetables like garden egg, onion, tomatoes, sweet pepper and okra are produced during the dry season. However, since the Local Government Area is surrounded by water (the River Niger), fishing forms an integral part of farming activities most especially in the dry season. There, few farmers own small units of poultry and some farmers also raise sheep and goat.

### **Data collection and sampling procedure**

There are three major rivers that flow through Edu Local Government Area, viz: the River Egwa, the River Tada and the River Belle. Based on this, data for this study was collected using a snowballing technique to identify the garden egg farmers along the bank of the rivers. This technique involves referral of respondents by previously identified garden egg farmers. Hence, 120 small-scale garden egg farmers were sampled to make a total of 120 respondents for the study.

### **Sources of data collection**

The study utilized primary data collected by personal interviews with the aid of a well-structured questionnaire. Data collected includes socioeconomic

characteristics of dry season garden egg farmers in the study area, the output, the cost and return of non-indigene farmers, problem of irrigation farming among others.

#### Methods of data analysis and model specification

Descriptive statistics such as frequency distribution and percentages were used to analyze the socioeconomic characteristics of the vegetable farmers. Gross margin analysis was used to estimate the costs and returns to dry season garden egg production, while ordinary least square regression (OLS) and the stochastic production frontier were used to identify the determinants of dry season garden egg production and examine the production efficiency of dry season garden egg farming, respectively. The ranking technique, 4-point Likert scale was used to describe the problem and constraints militating against dry season garden egg farmers.

#### Analytical techniques

##### Ordinary least square regression model

This was used to examine the determinant of garden egg production in the study area. The implicit form of the model is specified as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, U) \quad (1)$$

where: Y = Output (kg), X<sub>1</sub> = Age of respondent (years), X<sub>2</sub> = Education (years), X<sub>3</sub> = Size of the farm (ha), X<sub>4</sub> = Extension contact, X<sub>5</sub> = Quantity of water pumped (litres), X<sub>6</sub> = Quantity of fertilizer (kg), X<sub>7</sub> = Size of household, X<sub>8</sub> = Farming experience (years), U = Error term.

##### Gross margin analysis

This was used to analyze the costs and benefits of garden egg farming during the dry season in the study area. Gross margin is the difference between the gross farm income and the total variable cost. According to Abu et al. (2011), gross margin analysis is a model that is used to estimate the costs, returns, profitability or loss per hectare. This can be expressed as:

$$GM = TR - TVC \quad (2)$$

where: TR = Total revenue in Naira/ha, TC = Total cost in N/ha, GM = Gross margin (N/ha), TR = Total revenue (N/ha), TVC = Total variable costs (N/ha),

$$\text{and NFI} = GM - TFC \quad (3)$$

where: NFI = Net farm income (N/ha), TFC = Total fixed cost (N/ha).

The variable cost includes hired labour, land cost, empty basket, fertilizer and herbicide while the fixed cost includes depreciation of fixed assets computed using the straight-line method of depreciation (3 years).

#### Estimation of stochastic production frontier model

A stochastic production frontier model was used to estimate the result productivity and the efficiency of the farmers in the study area. The model specification for the production stochastic frontier is specified as:

$$\ln Y = B_0 + B_1 \ln X_1 + B_2 \ln X_2 + B_3 \ln X_3 + B_4 \ln X_4 + B_5 \ln X_5 + V_i - U_i \quad (4)$$

Thus, to estimate the Cobb-Douglas production function, all the input variable and output data were converted into natural log form before analysis (Coelli, 1995),

where:  $Y$  = Output of garden egg in the  $i^{\text{th}}$  farm (kg),  $X_i$  = Input vector used in the production,  $\beta_i$  = Unknown parameter vector,  $e_i = V_i - U_i$  (error term in composite form),  $V_i$  = Random parameter assumed to be identical, normally distributed with zero means and constant  $N(0, \sigma^2)$  which were assumed to be independent of the  $U_i$  that captured the stochastic effects beyond the farmer control (e.g. weather, natural disaster),  $U_i$  = Random variable of the technical inefficiency,  $X_1$  = Labour (man-day),  $X_2$  = Fertilizer quantity (kg),  $X_3$  = Chemical used (herbicides) in kg,  $X_4$  = Quantity of seed used (kg),  $X_5$  = Farm size (hectares of land).

#### Likert scale analysis

A four-point Likert type scale was used to measure the constraints to garden egg production in the study area. Clason et al. (1994) identified the Likert type scale as comprising single unrelated and independent questions whose responses cannot be combined into a composite scale as in the case of the Likert scale.

The scale used was as follows:

- 3 = Very severe;
- 2 = Severe;
- 1 = Undecided;
- 0 = Not severe.

## Results and Discussion

This section presents the results of the various analyses carried out on the data.

The socioeconomic characteristics of the vegetable farmers in terms of sex, age, household size among others are presented in Table 1. Statistics of the data reported in Table 1 revealed that dry season farmers in the study area were male-dominated (100%).

Table 1. Socioeconomic characteristics (N=120).

Characteristics	Category	Frequency	Percentage
Gender	Male	120	100
	Female	0	0
Age bracket	≤20	13	10.8
	21–25	11	9.2
	26–30	30	25
	31–35	34	28.4
	36–40	22	18.3
	>40	10	8.3
Marital status	Married	96	80
	Single	24	20
Religion	Islam	110	91.7
	Christianity	10	8.3
Educational level	No formal education	18	15
	<i>Quaranic</i> education	38	31.7
	Primary education	28	23.3
	Secondary education	26	21.7
	Tertiary education	10	8.3
Farming experience (years)	≤5	21	17.5
	6–10	56	46.7
	11–15	14	11.6
	>15	29	24.2
Household size	1–4	7	5.83
	5–9	4	3.33
	10–14	38	3.17
	15–20	41	34.17
	>20	30	25
Farm size (ha)	≤0.5	47	47
	0.51–1.0	65	65
	1.01–1.50	18	18
Minor occupation	Farming	92	76.6
	Trading	17	14.2
	Livestock farmers	11	9.2
Income from major occupation (Naira)	>10,000	62	51.7
	11,000–20,000	9	7.5
	21,000–30,000	26	21.6
	31,000–40,000	14	11.7
	>40000	9	7.5
Income from minor occupation (Naira)	<5,000	82	69.3
	11,000–15,000	28	23.3
	<15,000	10	8.3
Extension contacts	Yes	97	80.8
	No	23	19.2

Source: Field survey, 2015.

There were no females that engaged themselves in dry season agricultural practices of garden egg in the study area. This may be due to the nature of rigorous processes and activities related to dry season garden egg irrigation farming in the study area. Findings also revealed that only 10.8% of the respondents were below 20 years of age, while majority of them were at the age of 32.55 (mean age) and the modal age group was between 31 and 35 years. However, based on the educational level of the studied population, larger percentage had 'Quranic' education (31.7%), while 23.3% and 21.7% had primary and secondary school education respectively. Few of the respondents had a higher level of education. Meanwhile, the modal age experience was between 6 and 10 years at 46.7% with the least experience of 11.6%. This indicates that the respondents were active, young and agile. It also implies that majority of the garden egg dry season farmers were experienced in garden egg farming.

Other minor occupations of the farmers included 76.6% farmers, 14.2% and 9.2% traders and livestock farmers respectively. The average monthly incomes from the major occupation differed among farmers on the basis of size of land cultivated and their respective contribution to dry season farming in the study area. Moreover, about 51.7% of the farmers earned at least ₦ 10,000 per month. Also, those in the minor occupation categories earned average monthly income of at least ₦ 5,000. The nature of extension visit or contact varied among the respondents. Only 19.2% of the respondents had no access to extension services.

Table 2 shows the cost and returns of dry season garden egg vegetable production under irrigation.

Table 2. Cost and return analysis of dry season garden egg production/ha.

Total income		₦ 36,596.5k
Less: Variable cost		
	Planting material	₦ 514.25k
	Fertilizer	₦ 1123.903k
	Herbicide	₦ 862.93k
	Labour	₦ 2850.87k
	Land rent	₦ 5351.97k
	Basket	₦ 30.70k
	Total variable cost	₦ 10,734.6k
Gross revenue		₦ 25,861.9k
Less: Fixed cost (depreciation)		
	Farm implement (hoe, cutlass, watering can)	₦ 164.46k
	Pumping machine	₦ 1,114.76k
	Total depreciation	₦ 1,279.22K
Net farm income (NFI = TR – TC)		₦ 24,582.68k

Source: Field survey, 2015.



The total revenue generated from the sales of irrigated garden egg produce for a typical farmer was ₦ 36,596.5k/ha while the total fixed cost (depreciated) and variable input cost amounted to ₦ 1,279.22k/ha to give a net farm income (NFI) of ₦ 24,582.68k/ha. This shows that the dry season garden egg farmers under irrigation practices actually yielded a total amount of ₦ 24,582.68k profit per hectare. Moreover, the production cycle was from November to March, which is 5 months. A large proportion of the variable costs were attributable to the labour and land rent, which accounted for more than 50%. This shows that farmers spent more on inputs such as labour and rent in operating an irrigated dry season farm in the study area. This situation is not unexpected, since all farm operations including land clearing, leveling, channel construction, planting, weeding, watering, and harvesting were accomplished through labour. The costs of planting material (basket) were relatively low. The cost of labour was, however, dominated by the imputed cost of unpaid family labour. Moreover, if most of the farmers choose not to engage in dry season farming, they may be redundant and jobless during the dry season since they are not likely to secure any other profitable employment.

The results in Table 3 reveal that the coefficients of farm size and household size were positive and significant at 1% and 10% levels of probability respectively. This implies that an increase in farm size by 1 ha increased the production of dry season garden egg by 1,507 kg. Hence, an increase in the size of land cultivated will lead to an increase in production output. Also, household size was positively significant (10%). This implies that a unit increase in the household size will lead to an increase in the dry season garden egg production by 205 kg. This suggests that the increase in the household size, which consequently leads to an increase in labour, will result in an increase in production. The quantity of fertilizer used was also significant. This implies that a unit increase in the quantity of fertilizer use will increase garden egg production by 226 kg.

Table 3. OLS regression analysis of determinants of dry season garden egg production in the study area.

Variable	Coefficient	Standard error	t-values
Constant	-462.562	5599.91	-0.83
Age	-79.999	74.48	-1.075
Educational level	288.961	553.572	0.522
Farm size	1,506.797***	514.862	2.927
Extension contact	424.034	1,678.42	0.253
Cost of a pumping machine	-1,465.103***	463.141	-3.163
Fertilizer quantity	226.495*	309.972	1.683
Quantity of labour	133.216	343.56	0.388
Household size	205.495*	118.443	1.735
Experience	73.737	101.532	0.472
R <sup>2</sup>		43.7	
F – Statistics		2.856	

\*\*\*Significant at 1%, \*\*Significant at 5%, \*Significant at 10%. Source: Field survey, 2015.

The results are in line with the results of Ahmed et al. (2003), who applied a Cobb-Douglas production function to quantify the contribution of various factors in muskmelon production. They discovered that variables such as family size, use of fertilizer and interaction of variety with pesticide sprays were highly significant for muskmelon productivity. The results are consistent with the findings of Okoye et al. (2008) and Ukoha et al. (2010). Based on the magnitude of the marginal effect of the explanatory variables, the findings reveal that household size, farm size and farming experience were major incentives available to regulate the total factor productivity among garden egg farmers in the study area.

The results of the estimate in Table 4 show that the parameters of labour, fertilizer, farm size and chemical were positively significant. These results imply that the farmers were technically efficient in the use of labour, fertilizer, chemical and farm size. The results also show that seed use was not significant and the negative value indicated that increasing the seed would not have any positive impact on the output. This suggests that the farmers may have easy access to garden egg seeds and the availability of these seeds may not affect the efficiency of production. This also suggests that since they are small-scale farmers constrained by the size of the farm and availability of labour, the availability of more seed may not have any effect on efficiency. However, the result on gamma square was significant and the value of 72.5% indicated that there were differences among production units considered in this study. This also implies that 27.5% of variations in output were largely due to weather conditions, errors in data collection and managerial differences among production units.

Table 4. Maximum likelihood estimate (MLE) of the Cobb-Douglas production functions based on stochastic production frontier function for dry season garden egg farming.

Variable	Coefficient	Standard error	t-ratio
X <sub>0</sub> (constant)	-0.677	0.863	-0.784
X <sub>1</sub> (labour)	0.581***	0.091	6.387
X <sub>2</sub> (fertilizer)	0.193***	0.072	2.65
X <sub>3</sub> (chemical)	0.129*	0.068	1.89
X <sub>4</sub> (seed)	-0.021	0.034	-0.608
X <sub>5</sub> (farm size)	0.451***	0.073	6.15
Diagnostic statistics			
$\delta^2$	0.213***	0.053	4.01

Source: Field survey, 2015. \*\*\*Significant at 1%, \*Significant at 10%.

### Constraints militating against dry season garden egg irrigation farming

A ranking technique was used to rank the various pre-determined constraints of dry season irrigation farming of garden egg. The constraints were analyzed using ordinal scale of measurement such as: very severe (VS), less severe (LS), undecided (U), disagree (D) and not severe at all (NSA). The perception of the respondents towards these constraints is given in Table 5.

Table 5. The result of Likert type scale analysis of constraints militating against dry season garden egg production.

Constraints	Very severe	Less severe	Undecided	Not severe	Total	Mean score	Rank
Inadequate supply of irrigation water	56	35	8	21	246	2.05	3 <sup>rd</sup>
Pest and disease problems	63	33	6	18	261	2.18	1 <sup>st</sup>
Insufficient demand of garden egg	57	32	8	23	243	2.03	4 <sup>th</sup>
Inadequate land for dry season farming	48	30	11	31	215	1.79	6 <sup>th</sup>
Lack of sufficient garden egg seedling	41	37	13	29	210	1.75	8 <sup>th</sup>
Land dispute	39	31	32	18	211	1.76	7 <sup>th</sup>
Lack of storage facility	46	37	16	21	228	1.9	5 <sup>th</sup>
Insufficient capital for dry season farming	20	38	25	83	161	1.34	11 <sup>th</sup>
Insufficient market place for garden egg	39	38	17	27	210	1.74	9 <sup>th</sup>
Unavailability of labour use	21	43	30	26	179	1.49	10 <sup>th</sup>
High cost of transportation	60	32	8	20	252	2.1	2 <sup>nd</sup>

Source: Field survey, 2015.

Table 5 shows the results of ranking among the identified constraints. According to the results, constraints related to pests and diseases were ranked 1<sup>st</sup>. This indicates that the constraints were the main factors discouraging the dry season garden egg farmers to effectively produce at maximum rate. Constraints related to the high cost of transportation ranked 2<sup>nd</sup> and this suggests that some of the respondents did not have quick access to affordable means of transporting their farm produce to the market place. The farmers were also not satisfied with the rate of water availability for dry season garden egg farming in the study area.

This was ranked 3<sup>rd</sup> in the constraint categories. This is an indication that the water availability was not sufficient enough for the farmers to irrigate and might have limited their effort to produce more of the produce. Therefore, the problem of insufficient demand for the garden egg vegetable in the production area was also identified but rated 4<sup>th</sup> in that category. The lack of storage facility was ranked 5<sup>th</sup>. This implies that the farmers had no adequate storage facilities to store their farm produce. This may however lead to post-harvest losses. Also, insufficient availability of farmland was identified as one of the limiting factors of production in the area and it was rated 6<sup>th</sup>. Other constraints including: land dispute issues, lack of sufficient garden egg seedling, insufficient market places for the garden egg, unavailability of labour used, insufficient capital for dry season irrigation farming of garden egg were ranked 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup> and 11<sup>th</sup> respectively. In addition, all these afore-mentioned constraints severely influenced the respondents negatively in practicing dry season garden egg production in the study area.

### **Conclusion**

From the foregoing research, dry season garden egg farming may be considered as profitable business venture dominated by male farmers who are in the active age range regarding agricultural production. The quantity of fertilizer use, household size and farm size were the determinants of production. Labour, fertilizer use, chemical use and farm size affected the efficiency of production. Furthermore, farmers were mainly constrained by the availability and cost of water for irrigation, pests and diseases, high costs of transportation and inadequate storage facilities.

Hence, based on the findings of the research, it was recommended that government at all levels should assist dry season farmers through policy reform. This can be done through the construction of dams and other irrigation facilities. Also, there is a need for these farmers to formulate modality that will assist them to benefit from off-season irrigation farming and to sustain food production in the area. For instance, farmers should be encouraged to form groups and cooperatives, where they can pull their resources together to construct cost effective irrigation systems. Government authorities and other non-governmental organizations are encouraged to give farmers fertilizer and other chemicals at subsidized rates. They should also make these inputs accessible to the farmers. The government should also review the land tenure system so as to make farmers accessible to large areas of land. There is a need for revitalization of the marketing board in Nigeria to further strengthen the marketing of agricultural produce and reduce marketing, storage and transportation problems.

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PROCENA PROIZVODNJE PLAVOG PATLIDŽANA TOKOM SUŠNE  
SEZONE MEĐU MALIM POLJOPRIVREDNIM PROIZVOĐAČIMA U  
LOKALNOJ OBLASTI EDU U DRŽAVI KVARA U NIGERIJ

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R e z i m e

Istraživanje je sprovedeno u cilju ocenjivanja proizvodnje plavog patlidžana tokom sušne sezone među malim poljoprivrednim proizvođačima u lokalnoj oblasti Edu države Kvara. U istraživanju je za uzorkovanje korišćena tehnika 'snežne grudve' kako bi se uzorkovalo 120 malih poljoprivrednih proizvođača plavog patlidžana. Formulirano je pet istraživačkih pitanja, kako bi se postigli ciljevi ovog istraživačkog rada. Deskriptivna statistika, analiza troškova i prihoda i OLS regresija korišćene su za analizu prikupljenih podataka. Analiza troškova i prihoda pokazuje da je ukupan prihod od prodaje navodnjavanog plavog patlidžana za tipičnog poljoprivrednog proizvođača iznosio ₦ 36.596,5k, dok su ukupni fiksni troškovi (amortizovan) i varijabilni trošak inputa iznosili 1.279,22k da bi se dobio neto prihod gazdinstva od ₦ 24.582,68k. Rezultati OLS regresije su pokazali da su koeficijenti veličine gazdinstva i veličine domaćinstva pozitivni i značajni pri nivoima verovatnoće od 1% odnosno 10%. Ovo implicira da će povećanje veličine gazdinstva od 1 ha povećati proizvodnju plavog patlidžana tokom suve sezone za 1%. Dok rezultati procene stohastičke granice proizvodnje pokazuju da su parametri rada, đubriva i veličine gazdinstva veoma značajni, upotreba hemikalija je značajna pri nivou od 10%. Ovakav rezultat implicitno pokazuje da su poljoprivredni proizvođači efikasni prilikom korišćenja rada, đubriva, hemikalija i veličine gazdinstva. Stoga se preporučuje da se poljoprivrednici ohrabre kako bi formirali zadruge, pri čemu mogu da udruže svoje resurse da bi obezbedili isplativ sistem za navodnjavanje. Pored toga, državni organi i druge nevladine organizacije se ohrabruju da daju poljoprivrednicima đubriva i druge hemikalije po subvencionisanim cenama. Postoji potreba za revitalizacijom tržišne organizacije u Nigeriji za dalje jačanje prodaje poljoprivrednih proizvoda i smanjenje problema u vezi sa prodajom, skladištenjem i transportom.

**Ključne reči:** sušna sezona, plavi patlidžan, mali poljoprivredni proizvođači, Nigerija.

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