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Muhammad-Lawal, A., Adenuga, A. H., Olatinwo, K. B. and **Saadu, T. A.** (Department of Agricultural Economics and Farm Management, University of Ilorin, P.M.B.1515, Ilorin, Nigeria)

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Author(s)

Muhammad-Lawal, A.,
Department of Agricultural Economics and Farm Management, University of Ilorin, P.M.B. 1515, Ilorin, Nigeria
Email:lawaz71@yahoo.com,
lawalazeez@unilorin.edu.ng

Adenuga, A. H.,
Olatinwo, K. B. and
Saadu, T. A.
Department of Agricultural Economics and Farm Management, University of Ilorin, P.M.B. 1515, Ilorin, Nigeria

Abstract

In spite of the substantial contribution of floriculture to the Nigerian economy, there is still a low level of awareness on the potential of the horticultural subsector of the Nigerian agricultural sector to generate employment and reduce poverty. This study therefore carried out an assessment of the economics of floricultural plants production in Kwara State, Nigeria. The study specifically estimated the returns to farmer's labour and management. It also assessed the determinants of returns to floricultural plant production in the state. Data used for the study were collected from the forty one registered floricultural plant producers in the study area using structured questionnaire. The farm budget and regression analyses were used for data analyses. The study revealed that returns to farmer's labour and management was ₦174, 974.7/ha on the average. Use of manure, labour, farm size, experience, educational level and age of the farmer were found to have significant influence on farmer's revenue. Inadequate capital to expand the scale of production was identified as the major constraints to floricultural plant production in the study area. The study therefore recommends that farmers be supported by making credit facilities available to them and that people be enlightened on the profitability potential of the enterprise.

Keywords: Floriculture, Farm Budget Analysis, Returns to Labour and Management

Introduction

Despite Nigeria's huge agricultural resources and oil wealth, unemployment and poverty still remain a major challenge. In Nigeria, the rate of unemployment has been on the increase. The national unemployment rate increased to 23.9% in 2011 compared to 21.1% in 2010 and 19.7% in 2009 (NBS, 2011). The case is getting worse by the day especially in the cities considering the continued migration of people to urban centres from rural areas in search of gainful employment. Okonkwo (2005) in his study of unemployment in Africa identified three causes of unemployment as the educational system, the choice of technology which can either be labour intensive or capital intensive and thirdly inadequate attention to agriculture. There is an increasing trend of disinterest in agriculture by the emerging younger generation preferring white collar jobs, resulting in many of them remaining in the labour market rather than take up jobs in the agricultural sector. This may however be connected to the fact that very little is known about the profitability potentials of some of the agricultural enterprises including floriculture that can be embarked upon in the cities.

Floriculture is a class of horticulture that deals with the science and practice of cultivating and arranging of ornamental flowering plants for aesthetic purpose (Acquaah, 2004). It is the science and practice of growing, harvesting, storing, designing and marketing of ornamental plants. It also involves the intensive production of flowers and ornamental shrubs (Muthoka and Muriithi, 2008). Hence floricultural plants are classified by the use of cut flowers, potted plants, foliage plants and bedding plants grown in a controlled environment (Barden et al,

1987). As a unit of the agricultural sector, it plays a very important role in income generation to the farmers (Nigeria Economic summit group, 2009). The industry has potentials for generating employment for both rural and urban dwellers directly or indirectly (Usman et al, 2002). The direct jobs include those for skilled labour like researchers, teachers, greenhouse managers and nursery managers among others, while the indirect jobs include those of factories that produce chemicals and machineries for the production and processing of floricultural produce (Acquaah, 2004). The aesthetic value of floriculture could be noticed in public places such as botanical gardens, aboreteum, and parks for public admiration (Hessayon, 1984). Socially, the pionsettias flowers are associated with Yule-tide period, rose are associated with valentine period and lillies are associated with Easter period (Acquaah, 2004). Its role in food and nutrition cannot be overemphasised. This is because floricultural plant such as cauliflower serves as food (Hacket, 1982).

In view of the increasing number of personal houses and corporate organisations' buildings in Nigeria, the investment in floricultural enterprisee has become quite relevant in today's business environment (Fagbayide and Jolasun, 2002). This is because floricultural plants have great role in enhancing the beauty and attractiveness of such buildings (Chukwuma, 2010). Floriculture has however remained a lowly recognized enterprise in Nigeria in spite of the inherent unique potentials of the industry in transforming a nation's economy. The industry has received very little attention in the nation's plan for agricultural development (Oseni, 2004). This may however be attributed to inadequate awareness of the profitability potential of the enterprise as well as insufficient knowledge of the most important issues that affect returns to floricultural plant production. This study was therefore undertaken to examine the economics of floricultural plant production and assess the determinants of returns to floricultural plant production in the study area.

Methodology

The study was conducted in Kwara state, Nigeria. According to the 2006 census reports, the population of Kwara state stood at 2.37million consisting mainly of Yoruba, Nupe, and Baruba ethnic groups(NPC, 2007). More than 90% of the rural populace are involved in farming (Kwara state diary, 2004). The state has a land area of about 32,300 square kilometers extending from latitude $7^0 15^0 N$ on its Southern hemisphere and longitude $6^0 18^0 E$ on the Southern Eastern reach. The state has two climatic seasons, the wet and dry season. The natural vegetation of the state comprises wooded and rainforest savanna. Major land forms in the state are plains, undulating hills, and valleys with annual rainfall ranging between 900mm to 1600mm while the average temperature lies between $30^0 C$ and $35^0 C$.

Agriculture is the main productive economic activity in Kwara state. Production of varieties of cash and food crops as well as floricultural plants especially in the urban areas constitutes the major agricultural activities in the state.

Sampling techniques
The target population were the farm household operating floricultural plant nursery in the metropolitan areas of Kwara state, Nigeria. Due to the fact that floricultural plants production are restricted to the urban centers (Abegunde et al 2009). The sampling technique involved the selection of the forty one registered floricultural plants nursery operators

Data analysis
Descriptive statistics such as frequency counts mean and percentages were employed to describe socio-economic characteristic of the floricultural nursery farm households and marketing strategies used by the floricultural plant producers. Farm budget and the Ordinary Least Square (OLS) regression analyses were used to assess the costs and returns to floricultural plant production and the determinants of returns to the enterprise respectively.

Farm budget analysis
The farm budget analysis was used to assess the costs and returns to floricultural plants production in the study area. The returns to farmer's labour and management is expressed in Naira per hectare (₦/ha). Costs comprise both fixed and variable cost.

Fixed Cost (FC) includes cost of land rent, labour and depreciation charges on simple farm tools and production. Variable Cost (VC) include: cost of fertilizer, seed, agro-chemical, hiring cost, repair, maintenance and transportation. Returns are revenue that accrue from the sale of produce

GM = TR – TVC
GM – TFC = NFI
NFI =R LM = GM – TFC
Where
TR = Total Revenue
TVC = Total Variable Cost (₦)
TFC = Total Fixed Cost (₦)
GM = Gross Margin (₦/Plot)
NFI = Net Farm Income (₦)
RLM = Return to Farmer Labour and Management [₦]

Regression analysis
This tool was used to measure the amount of variability of the dependent variable that can be explained by the independent variables. The variable regression co-efficient indicate the amount of change that will be observed in the value of dependent variable when the independent variables are altered.

The explicit form of the model is given as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + u$$

Where Y = Total revenue (₦)
   a = constant
   bi where i = $_{1,2...8}$ - are the regression co-efficient
   X_1 = Age (Years)
   X_2 = Experience (years)
   X_3 = Household size
   X_4 = Farm size (Ha)
   X_5 = fertilizer used (kg)
   X_6 = Manure used (kg)
   X_7 = Labour employed (Man day)
   X_8 = Educational level (number of years spent in school)
   U = factors that are not adequately accounted for but contributes to total revenue i.e. random term.

Ordinary least square regression, semi-log, exponential log and double log regression were separately estimated.

Results and Discussion

Socio-Economic characteristics of the respondents
The socio-economic characteristics of the floricultural plant producers are shown in Table 1.

Table 1: Socio economic characteristics of the respondents (n=41)

Characteristics	Frequency	Percentage
Age (in years)		
≥ 25	2	4.9
26 – 40	20	48.8
41 – 60	16	39
Above 60	3	7.3
Household size		
1 – 6	23	56.1
7 - 12	18	43.9
Years of Experience		
1 – 5	8	19.5
6 – 10	17	41.5
11 – 20	5	12.2
Above 20	5	12.2
Educational Level		
Tertiary	35	85.4
Secondary	5	12.2
Quranic Education	1	2.1
Management Practices		
Use of Organic Manure	41	100

Use chemical Fertilizer	23	56.1
Type of Labour		
Hired and Family	32	78.1
Family	12	29.3
Communal	3	7.3
Land Acquisition		
Rented	21	51.3
Purchased	12	29.3
Communal	2	4.9
Lease	6	14.5

Field Survey, 2011

From Table 1, it can be observed that most of the respondents were within the age range of 26-40,which implies that floricultural plant production in the study Area are mainly in the hands of youth. The table also revealed that majority of the respondents had family size of between 1-6 members. Almost all the respondents had tertiary education indicating that floricultural plant producers in the study area are educated. The average years of experience of the respondents was found to be 11.1 years. Majority of the respondents acquire their land through rent and all the respondents made use of organic manure in their production process. The use of compost, animal dung, and poultry droppings dominates. Also, some of the respondents used chemical fertilizer in addition to organic manure. Most of the floricultural plant producers made use of hired and family labour.

Type of floricultural plants

Table 2: Types of floricultural plants produced in the study area

Common	**Botanical name**	**Frequency**	**Percentage**
Hedges			
Yellow bush	Duranta repens	41	100
Green bush	Dranta green	41	100
Croton	Cadiacum veriegatus	41	100
Ixora	Ixora spp	41	100
Trees			
masquerade	Siracca longifera	38	92.7
Ficus	Ficus spp	41	100
Yellow ficus	Ficus benjamia	41	100
Christmass tree	Thuja	23	56.1
queen of night	Cestrum noctrunum	28	68.3
Palms			
Royal palms	Roystonea regia	41	100
kings palms	Archonthphonix SPP	41	100
Grasses			
Bahama		24	58.5

Sources: field survey, 2011

Table 2 showed that Hedges, trees, palms, grasses are the predominant type of floricultural plants produce in the study area. The cultivation of these plants is possible due to the nature of the plants which are resistance to drought, easy germination as well as their popular demands for boundary demarcation and source of shade.

Table 3: Marketing of floricultural plants

Marketing channel	Frequency	Percentage
Direct sales	14	34.2
Contract and direct sale	27	65.8
Total	41	100

Source: Field Survey, 2011

The table reveals that the Gardeners either sell to consumer directly or on contract basis. This is an indication that there is a ready market for floriculture products.

Cost and returns analysis

This analysis was conducted to determine the contribution of floriculture to the livelihood of the respondents. The total revenue was determined from the annual volume sales, while the total variable cost (TVC) was determined by summing up the cost of all purchased inputs and hired labour. The gross margin (GM) less rent on land, depreciation on mechanical tools and imputed cost of family labour gave the returns to Farmers Labour and Management.

Table 4: Summary of cost and returns to floricultural plant production

Items	Average/ha(₦)
Gross Revenue (GR)	**312,887.2**
Less	
Total variable cost (TVC)	**93,291.9**
(Seeding seeds, fertilizer, hired labour, herbicide and others) Equals	
Gross margin (GM)	**219,595.4**
Less	
Rent on land	21,312.5
Less	
Depreciation on tools and equipment	12,633.2
Less	
imputed cost of family labour	10,675
Returns to farmers' Labour and Management (RLM)	**174,974.7**

Source: Field survey, 2011

Table 4 reveals the cost and returns to floricultural plant production in the study area. The estimated average variable costs of production incurred by all respondents was ₦ 93, 291.9, overall, the average Gross revenue recorded in the study area was ₦312,887.2, while the average Gross margin was ₦ 219,595.4. Hence the returns to farmers labour and management was estimated to be ₦174,974.7/ha which means that on the average, floricultural plant production is profitable in the study area.

Regression Estimate

Regression estimate was carried out to determine the factors influencing revenue generation in floricultural plant production in the study area.

Table 5: Summary of regression of analysis

Determinants	Beta	Standard error	t-value	R^2	F-Value
Constants	9684557.003	24253867	3.993*		
Age	-1.068	0.126	-4.936*		
Experience	0.905	0.153	4.841*		
Household size	0.096	1.426	0.627		
Farm size	0.524	0.136	3.858*	0.916	21.372
Fertilizer used	-0.434	0.126	-3.446*		
Manure used	0.860	0.118	7.284*		
Labour man-day	0.211	0.059	3.591*		
Education level	0.311	0.0906	3.431*		

Significant at 5% level of significance

Computer printout, 2011

The result in table 8 shows the level of variation in the total revenue explained by the eight explanatory variables as earlier stated. The semi-log function was chosen as the lead equation as it has the highest adjusted R^2 – value and all the variables were significant except for the household size. This result shows that as the farmer gets older the total revenue decrease. This could be due to the fact that as the farmer grow in age, their ability to do more farm work reduces and consequently the total

Also, as the amount of the fertilizer usage increases, the total revenue drops. This may be due to the fact that excess fertilizer application becomes toxic to plant (Acquaah, 2004) and thus reduces productivity of the plant and consequently the total revenue. However these factors accounted for about 91.66% of the total variation in the total revenue that is other factors contributes less than 10% to the variation in total revenue.

Table 6: Problems facing floriculture

Problem	Frequency	Percentage
Inadequate capital	32	78.1
Water shortage	12	29.3
Low demand	10	24.4
Pest and diseases	5	12.2

Field survey, 2011

The table revealed that the major striking problem confronting floriculture is inadequate capital to expand scale of production.

Conclusion and Recommendations

Floriculture is a very lucrative and profitable enterprise hence, offers great opportunity for people to be gainfully employed in the face of rising unemployment challenges. In order to improve the state of production, there is a need to address the major issues affecting the industry as such would go a long way in improving the nation's economy.

Based on the findings in this study, it is recommended that, loan be made available to farmers by financial institutions to enable the floriculturist increases their scale of production. People should be enlightened on the profitability potential of the enterprise in order to encourage young school leavers to go into the business and consequently contribute to reduction in youth unemployment currently experienced in the country. The populace should also be stimulated to increase their

flower consumption pattern through proper awareness.

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