

ECONOMICS INDICATOR OF WATERMELON PRODUCTION IN IBARAPA CENTRAL LOCAL GOVERNMENT AREA

Oluwafemi Z. O., Adeagbo, T.A. and Amao S.A.

Department of Agricultural Extension and Management,
Oyo State College of Agriculture and Technology, Igboora, Nigeria
Correspondence author: femi504@yahoo.com, +2348169670096

Abstract

The study was carried out in Ibarapa Central local Government. Ibarapa Central. Primary data were collected from the selected watermelon farmers in the study area. Data collected were subjected to both descriptive and profitability analyses. The results of the statistical and economic analysis summarily revealed that watermelon farmers were relatively young with moderate family size, majority of them had formal education. Watermelon production was still at small scale but economically profitable.

Key words: Watermelon; economic; production and Ibarapa Local Government

Background of the study

Watermelon (*Citrullus lanatus*) is one of the most widely cultivated crops in the world at large. According to FAO (2011) statistics, China is the world's leading producer of watermelon. The top twenty leading producers of watermelon produced a collective volume of approximately 92.7 million metric tonnes in 2011, of which China produced 75% in 2011 This Day Live, (2014). Watermelon is a tender, warm season vegetable belonging to the family *Cucurbitaceae*. It is enjoyed by many people across the world as fresh fruit. It is highly nutritious and contains vitamins C and A (De Lannoy, 2001). Watermelon seeds are excellent sources of protein (both essential and non-essential amino acids) and oil. In Nigeria, largest production of the crop comes from the northern part where suitable agro-ecology is found (Amaza, 2000). However, farmers in Ibarapa Central area also produce water melon in large quantities although it might not be as much as the ones from the Northern part of the country. The potentials of watermelon as a cash-producing crop are enormous for farmers, especially those residing near the urban areas (Amaza, P.S., 2000).

Literatures indicated that exotic fruits such as watermelon production generate higher profit and provide more employment and income to the farmers than those of indigenous vegetables (Anselm, and Ubokudom, 2010). However, shortages in supply of horticultural crops especially fruits are often very acute because of low levels of technology in production, harvesting and storage as well as increasingly high demand for fruits arising from rapidly improving standard of living (Ndubizu, 2008).

Production of fruit crops such as watermelon has been low despite its nutritional and commercial value (Anselm, and Ubokudom, 2010). This low production of watermelon calls for a close examination of what could be its constraints and profitability level would be used as economic indicator of this crucial crop. The following research questions would serve as guide to this research: What are the socio-economic characteristics of watermelon farmers in the study area? What are the costs and returns in watermelon production? While the objectives of this study are; to describe the socio-economic characteristics of watermelon farmers in the study area and estimate the gross margin of watermelon production

Methodology

The study area

The study was carried out in Ibarapa Central local Government. Ibarapa Central that falls within latitude 70.15°N and 70.55°N; and Longitude 30°E and 30.30°E.

Sampling techniques

A Simple randomized sampling technique was used to obtain a sample of 120 watermelon farmers.

Method of data collection

Primary data were collected from the selected watermelon farmers in the three villages located in the local government area, using structured questionnaires designed in English and orally administered to the farmers in their local language. The questionnaires sought the input-output data of the

farmers for both descriptive and profitability function analyses.

Results and discussion

Socio-economic characteristics of the respondents

The general socio-economic characteristics of the watermelon farmers such as age, level of education, experience in watermelon farming, household size, etc. were analyzed and the results presented in Table 1 and the results revealed thus. About 12.5% of farmers were less than 30 years of age, about 23.3% of them were between 30 – 39 years, about 32.5%, were between 40 – 49 years, close to 25.0% were between 50 – 59 years while not less 6.7% were 60 years and above. The mean age of the farmers was 43 years with standard deviation of 6 years. This shows that, the farmers were young, strong and agile and would be more efficient than the aged farmers in watermelon production. This is in support of the findings of Maurice (2004) and Yusuf (2005) that, age of farmers can influence the adoption of improved agricultural practices, which can equally influence a high level of watermelon productivity.

The results of the analysis in the Table 1 also show that 40.83% of the farmers had household size of between 1 – 2 persons, 32.5% had between 3 – 4 persons, 20 % had between 5 – 6 persons and 6.67 % had above 6 persons in their households. The average household size was 6 persons, with standard deviation of 2 persons. This shows that water melon farmers do keep moderate family size which could contribute to appreciable source of family labour. According to the report of Bayacag (2001), there is a positive and significant relationship between household size and farmer' economic status. Since the production of the crop is not mechanized, farmers depend solely on human labour which is an important variable in agricultural production. The household size determines the available labour force to be employed in carrying out production activities.

The important of education could not undermine in any human activities and therefore the level of education of water melon was put into consideration and the result shows that majority of the farmers had

formal education; primary (54.2%), secondary (11.7%) and post-secondary education (2.5%), while 31% of them had no formal education. As reported by Amaza (2000), education has positive and significant impact on farmers' level of farm production. This literacy level will greatly influence the decision making and adoption of innovation by farmers, which may bring about increase in production of the crop.

The farming experience of the farmers shows that the majority (42.5%) had farming experience of 2 – 9, about 29.17% had 10 – 14 years of experience, 10.83% had 15 - 19 years of experience, 13.33% had 20 – 26 years of experience while 4.17% of the farmers had between 25 years and above, years of experience of watermelon production. The mean years of farming experience was 11 years with standard deviation of 3 years. This is an indication that more farmers are embracing production of the crop due to its profit advantage. Moreover, production of watermelon in the study area is carried out predominantly by small-scale farmers. The size of farm holdings of the respondents shown that close to 44.17% of the farmers had between 0.1 – 4.9 hectares of land, about 28.33% had 5.0 – 9.0 hectares, 24.17% had between 10 – 14 hectares and 3.33% had 15.0 hectares and above. The average farm size is 6.1 hectares with standard deviation of 2.24 hectares This implies that the production of watermelon in the study area is carried out predominantly by small-scale farmers.

Table 1: Distribution of respondents by their socio-economic characteristics

Socioeconomic variables	Frequency	Percentage
Age		
<30	15	12.50
30-39	28	23.30
40-49	39	32.50
50-59	30	25.50
>60	8	6.70
Household size		
1-2	49	40.83

3-4	39	32.50
5-6	24	20.00
>6	8	6.67
Educational status		
No formal education	38	31.70
Primary education	65	54.20
Secondary education	14	11.70
Tertiary education	3	3.50
Experience (years)		
1-9	51	42.50
10-14	35	29.17
15-19	13	10.83
20-24	16	13.33
>24	5	4.17
Farm size (ha)		
1-4	53	44.17
5-9	34	28.33
10-14	29	24.17
>14	4	3.33

Economic analysis of water melon production

The economic analysis of water melon production was performed based on the available data on some key variables relating to input and cost employed by the respondents. The main variables inputs commonly used in the study area include water melon seed, labour for planting, weeding and harvesting, agrochemicals (herbicides and pesticides) and transportation. The results in table 2 show on average, the total variable cost per hectare of watermelon in the

study area was found to be ₦99020. While the mean value of total revenue accruable to a typical watermelon farmer was ₦137,500. This shows that ceteris paribus, an average farmer in this locality would have gross margin of about ₦38, 480 on one hectare of watermelon cultivated. Summarily, the result from data provided by the farmers indicated that watermelon production was economically viable and profitable in Ibarapa central local government.

Table 2: Cost and return of one hectare of watermelon production

Inputs	Cost (₦)
Seed	15000
Planting	10,000
Weeding	31250
Land cultivation	18470
Agrochemicals	13000
Transportation	11300
Total variable cost	99020
Total Revenue	137500
Gross margin	38 480

Conclusion and Recommendation

Conclusion

The results of the statistical and economic analysis of the data obtained from watermelon in the study area summarily revealed that watermelon farmers were relatively young with moderate family size, majority of the them had formal education. Watermelon

production in there was still at small scale but economically profitable.

Recommendation

Based on the empirical findings from statistical and economic considerations of the results obtained from the study area, the following recommendations are put forward; facilities necessary to increase watermelon

scale of production should be made available by the stakeholders and more young graduates should be encouraged to take economic advantage of watermelon production and profitability.

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