

# Profitability of Watermelon to Farmers in Ibarapa Central Local Government Area of Oyo State

S. A. Amao<sup>1</sup>, B. O. Ajiboye<sup>2</sup>, T. A. Adeagbo<sup>1</sup> and O. A. Akinyemi

<sup>1</sup>(Department of Agricultural Technology, Oyo State College of Agriculture, Igboora, Oyo State, Nigeria.)

<sup>2</sup>(Department of Agricultural Economics, Ladoke Akintola University of Technology, Ogbomoso, Oyo State, Nigeria.)

## ABSTRACT

*The study analyzed the profitability of watermelon as an alternative crop to the melon the farmers in Ibarapa Central Local Government Area of Oyo state, Nigeria are used to grow traditionally. Unfortunately, melon had remained a poor marketing commodity over a long period of time due to price fluctuation. Data collected were analyzed using descriptive statistics and gross margin. Budgetary analysis revealed a profitability of watermelon with gross margin of ₦2.18 is realized for every ₦1 invest on watermelon per hectare. The result of the analysis also showed that total cost was ₦3254250 and the total revenue was ₦7109600. This gave a gross margin of ₦3855350 of watermelon produced it therefore recommended that the local government should acquire more tractors for hiring to the farmers while subsidy is required in other to reduce the cost of land clearing. Finally, government should as a matter of urgency make credit facilities and fertilizer available to farmer, grade and open up more road network that will facilitating easy transportation of farm produce and reduce cost of transportation*

**Keywords-** *Gross margin, Rate of return, Watermelon.*

Watermelon is thought to have been originated in Southern Africa, where it is found growing wild. Watermelon was grown by Native American in the 16th century. Early French explorers found the fruit, being cultivated in the Mississippi valley. Many sources list the watermelon as being introduced in Massachusetts as early as 1629. Today, 44 states in the US grow watermelon commercially. The result made available in 1954 shown that gray melon from Charleston is oblong in shape and hard rind made it easy to stack and ship. Its adaptability meant it could be grown over a wide geographical area. It produced high yield and was resistant to the most serious watermelon disease anthranose and fusarium wilt. In addition to its healthy properties and effect on Woman, Children, Men and pregnant Woman when it become clear to local farmers that watermelon is more than just a fruit, many have interest for more consumption to a commercial cultivation, as a lot of farmers have been engaged in its cultivation on full time bases. However, due to its multiple seeds, many have found the fruits not suitable for their use. But seeds are not necessarily, annoying in some nation of Asia, especially China, other region of Africa them to produced watermelon seed oil commonly used in making soup such as many new varieties of watermelons have been developed in recent years. . It is estimated that seedless Red and

## 1. INTRODUCTION

Profitability of Watermelon to Farmers in Ibarapa Central Local Government Area of Oyo State . A. S. A.

Yellow varieties that were virtually unknown ten years ago, and represent about 5% of the market today will increase their market share substantially in the near future. Seed of watermelon varieties may contain as many as 1,000 seeds and their presence throughout the flesh makes removal difficult.

The largest production of the crop comes from the northern part of Nigeria where suitable agro ecology is found (Adekunle *et al.*, 2007). Ibarapa Central Local Government Area of Oyo State is located in the humid area suited for watermelon cultivation. Watermelon is relished by many people across the world as a fresh fruit (Adekunle *et al.*, 2007). The fruit is 93% water, with small amounts of protein, fat, minerals, and vitamins (Namdari, Mohammedi, and Mobtaker, 2011). Watermelon is known to be low in calories, it contains Vitamins C and A which helps address night blindness, eye problems, dry skin, eczema and psoriasis (Bendich and Olson, 1989). It contains potassium which is believed to help in the control of blood pressure and possibly prevent stroke (Adekunle *et al.*, 2007).

Watermelon (*Citrullus lanatus L*) was chosen after considering several factors within the framework of the Profitability that must include relative advantage, compatibility, complexity, triability and observability (Rogers, 2003). The common shared problem, poor marketing and price fluctuation under the social system of diffusion (Rogers, 2003) was addressed as joint problems to be solved towards providing better marketing opportunities for an alternate crop in watermelon. In Nigeria, watermelon grows well both in the humid and drier savanna agro ecologies A long time, the watermelon have been taken for granted as a

sweet, tasty fruit for its sugary and water content, and nothing more over five past years, nutritionist medical professionals, scientists and researchers have taking on interest to find out more about watermelon's health benefits. Due to the recent observation, a lot of people are proud to say that watermelon is the leader of many fresh produce. The essence of this research work is to determine socio economic characteristics of the farmers, the profitability of watermelon production by the respondents and to determine the problem association with production of watermelon in the study area.

## 2. METHODOLOGY

The study was carried out at Ibarapa central local government area of Oyo state. Ibarapa central consist of two towns Igboora and Idere. The study area shares boundary with Ayete (Ibarapa north), Abeokuta (Ogun state) in south, Ibarapa east and Republic of Benin in the west. The rainfall pattern in the area follow a tropical type with an average annual rainfall pattern of 300mm and fairly high temperature. This also gives the area the opportunity to have two main planting seasons. The early season usually beginning from March and end toward end of June, and the late season planting ends around December. There also exist two raining season, the raining season occurring between March to October, and the dry season occurring between November and February. The vegetation of the area is largely rainforest and savannah and this make it possible to cultivate a wide array of crops ranging from tree crops and arable crops. The common crops grown in the area include Cocoa, Oil palm and Cashew while the arable crops include Cassava, Maize, Yam and other vegetables. The area is 116,809 according to (NPC, 2006) and has land mass of

408,424sq/km. Multi stage random sampling technique was used in selecting the respondents from the study area. The local government was politically divided into ten wards. The two major town Igboora and Idere were selected. Watermelon farmers were purposively grouped together according to their communities. 100 respondents were selected using Simple random sampling. Interview schedule was use to collect data from the respondents and this serve as primary source of data .Questionnaire was also used to collect data from the respondents in the study area Data collected were analyzed using descriptive statistics which include frequency counts, percentage and means scores. Farm Budgets analysis was used to estimate the cost of production, total revenue and gross margin for farmers. The gross margin total cost and Net income were calculated using the following formula

Gross Margin and Net Return Analysis:

The Gross Marginal Analysis and the Net profit were used as specified below.

$$\text{Gross Margin} = \text{Total Revenue} - \text{Total Variable Cost} \tag{1}$$

$$\text{Net Farm Income} = \text{Gross Margin} - \text{Total fixed Cost} \tag{2}$$

Where TFC = Total Fixed Cost derive from depreciating fixed asset

$$\begin{aligned} &\text{Rate of Returns (ROR)} \\ &= \frac{TR}{TC} .100 \end{aligned} \tag{3}$$

$$\begin{aligned} &\text{Rate on Investments} \\ &= \frac{TR - TC}{TC} .100 \end{aligned} \tag{4}$$

Returns from production were based on all the crops combination in each farm. The average was used in the computation of this analysis.

### 3. RESULTS AND DISCUSSION

#### 3.1 SOCIO-ECONOMIC CHARACTERISTICS OF THE RESPONDENTS

The socio-economic characteristics of the respondents in table 1. The highest percentage (32%) of the respondents fall within age bracket 29-39years while the least percentage(9%) are more than 60years. The mean age is39.1years which implies that they are in their productive years. About 63.4% of the respondents are male members in their household. The average household size is 4 members. The table also shows that a higher percentage of the farmers had one form of education or the other while 19.8% have no formal education .The mean years of experience was found to be 15.6years. This shows that respondents are more knowledgeable about maize production and thereby will be willing to pay for fertilizer in the study area. The mean farm size was 3.8 ha. This implies that majority of the farmers are small scale maize farmers.

**Table 1: Distribution of respondents according to socio –economic characteristics**

Socio Economic Characteristics	Frequency	Percentage
<b>Age (years)</b>		
18 – 28	23	23.0
29 - 39	32	32.0
40 – 50	24	24.0
>60	9	9
Mean = 39.06 years		

<b>Sex</b>		
Male	64	63.4
Female	36	36.6
<b>Marital status</b>		
Married	54	53.5
Single	27	26.7
Widow/widower	11	10.9
Divorce/separated	8	7.9
<b>Household size</b>		
≤ 4	88	88.0
5-9	9	9
11-18	3	3
<b>Level of educationa</b>		
No Formal Education	20	19.8
Primary	37	36.6
Secondary	31	30.7
Tertiary	12	11.9
<b>Farming experience (years)</b>		
1 – 5	48	48
6 – 10	33	33
11 – 15	33	33
16 – 20	6	6
>20	15	15
Mean = 9.27		
<b>Farm size (Acre)</b>		
1 – 3	46	46
4 – 6	43	43
7 – 10	11	11
<b>Extension visit</b>		
No visit	40	39.6
Visit	60	59.4
<b>Loan accessibility</b>		
Access to loan	30	30
No access to loan	70	70

Field survey, 2013.

Profitability Estimates:

Gross Margin = N3855350

Net Farm Income = Gross Margin –  
Total Fixed Cost

= N3055350

$$\text{Rate of Returns (ROR)} = \frac{TR}{TC} = \text{N} 2.18.$$

$$\text{Rate on Investments} = \frac{TR - TC}{TC} = \text{N}1.18$$

The rate of returns (ROR) equals 2.18 and if converted to percentage it is 218 percentage.

This means that for each 1 naira spent in watermelon production, ₦ 2.18 is realized by a farmer. The rate on investment equals 1.18 and 118 percent. This also means that for each 1 naira spent in watermelon production ₦ 1.18 is realized by a farmer as profit.

#### 4. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The study analyzed the profitability of watermelon as an alternative crop to the melon among farmers in Ibarapa Central Local Government Area of Oyo state, Nigeria are used to grow traditionally. Data collected were analyzed using descriptive statistics and farm budgetary analysis which revealed profitability of watermelon with gross margin of ₦2.18 is realized for every ₦1 invest on watermelon per hectare. The result of the analysis also showed that total cost was ₦3254250 and the total revenue was ₦7109600. This gave a gross margin of ₦3855350 of watermelon produced.

##### 4.1 RECOMMENDATIONS

Farmers are faced with various problems which include high cost of input, poor road network to market and market outlet, shortage of labour and storage and processing problem, cost of transportation is high. The major problem of the farmers is that of inadequate funds from the government and financial institutions. Suggested solutions to the problems include government providing funds to the farmers and creating a repayment method that is convenient for the farmers to pay back. Also, farmers can form cooperative groups in which they supply themselves with input at a subsidized rate and loans to be paid back at a convenient period.

Since most of the farmers are small-scale farmers, a sustainable and adequate system to provide financial support for the farmers must be in place by government and other non-governmental organizations. If given adequate attention and support could serve as a tool for agricultural transformations and poverty alleviation among others.

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