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## ASSESSING THE UTILIZATION AND MARKETING OF *Moringa oleifera* LAM LEAF POWDER IN SELECTED MARKETS IN AKINYELE LOCAL GOVERNMENT AREA,

### OYO STATE

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### ABSTRACT

*Moringa oleifera* Lam is globally known for its medicinal values and varieties of uses for human and animal's consumptions, despite this, the utilization and marketing potential is very low among average Nigerians. In view of this, this study therefore assessed the utilization and marketing of *Moringa oleifera* powder in one of the major agro-based rural/peri-urban local government's area in Ibadan, the Oyo State capital. A well-structured questionnaire was administered to 150 respondents who are major marketers of Moringa powder in four (4) major markets in Akinyele local government area. Data obtained were subjected to descriptive statistics, Chi-square, and gross margin analysis. The results revealed that 79% of the respondents used *M. oleifera* for the treatment of fever, 90% for typhoid treatment, and 93% for hypertension treatment. The Chi square result showed a positive relationships between the utilization of *M. oleifera* and the variables used and were statistically significant at 1% respectively, while the percentage gross margin was over 20% in three (3) out of the four markets surveyed. It was also agreed among others that selling price was a major problem militating against the marketing of *M. oleifera* in the study. Scaling up of awareness programme on the importance of *M. oleifera* will help increase the marketing and utilization of Moringa powder given its nutritional and health benefits.

**Keywords:** *Moringa oleifera*, Akinyele Local Government, Utilization, Marketing

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### Introduction

*Moringa oleifera* Lam is a subtropical tree, native to the Indian subcontinent, where it was described as early as 2000 B.C. It is commonly called "Moringa" or "Drumstick", the latter referring to the shape of its pods (Ramachandran *et al.*, 1980 and Oluduro *et al.*, 2016). At times, it also goes by the name of "Horseradish tree" or "Ben oil tree" and in Senegal, the tree is called "Nebeday", probably derived from the English words "never die" (Fuglie, 2001). Throughout the years, it has spread to the rest of Asia, Africa and Latin America. Moringa is well-known as

the miracle tree, due to its high nutritional value, its many medicinal benefits, uses and its disease- and drought-tolerance (Foidl *et al.*, 2001; Oluduro *et al.*, 2016). The leaves, pods, seeds, flowers and roots can be consumed and the bark can be used for its fiber. Furthermore, studies have found that *M. oleifera* seeds can purify water (Anwar *et al.*, 2007) and it has a great potential to serve as a high-value food crop as well as fodder for animals, particularly in developing countries (Shahzad *et al.*, 2013). *M. oleifera* is mainly known for its medicinal use and also source of income for the people.



Marketing performance is the appraisal of the extent of interaction between buyers and sellers in a market. Market structure is a description of the number and nature of participants (sellers and buyers) in the market. *M. oleifera* has a diversity of values capable of enhancing economic development and the general wellbeing of people especially in Africa (Yisehak *et al.*, 2011). The awareness of the importance of *M. oleifera* had made the plant and its product to be highly demanded by its consumers whereby increasing its rate of consumption and marketing of the product (Nadeau and Zakaria, 2012). There is need to estimate the cost incurred in marketing of *M. oleifera* as this gives one an insight of the profitability of the trade. It also provides opportunity to some Nigerians to be self-employed as producers, traders, distributors, transporters etc. Although, Moringa tree is essentially not indigenous to Nigeria, however, reliable information regarding its utilization and marketing is crucial. *Moringa oleifera* products are now one of the common products seen in our markets today in Nigeria generally. There have been so much literatures on the constituents, nutritional, therapeutic and prophylactic properties of *Moringa oleifera* (Fahey, 2005) and also several scholar had work on similar research but little has been done on its utilization and marketing in Oyo State. Much is not known about the capital involved and how profitable the business of the marketing of the product. This study was therefore undertaken to extract detailed information from respondents on known uses as well as unknown uses of *M. oleifera* and its marketing pattern; assess the profitability and marketing of *M. oleifera*, chi square relationships on the utilization of *Moringa oleifera* and identify the problems militating against the utilization and marketing of *Moringa oleifera* in the study area.

## Methodology

The study was carried out in Akinyele Local Government, Ibadan Oyo State. Ibadan is situated within rain forest zone of Nigeria with a rainfall distribution between 1250mm and 1800mm. The temperature of Ibadan ranges between 27°C and 32°C with a relative humidity of about 75% to 90%. Ibadan lies between latitude 7°N and 9°N of the equator and longitude 3°E and 5°E of the Greenwich Meridian (Wikipedia, 2017). It has an estimated population of 1.4million (NPC, 2006). It is one of the 11 local governments that make up Ibadan metropolis. It occupies a land area of 464.892 Km<sup>2</sup> with a population density of 516 persons per square kilometer (Wikipedia, 2017). Akinyele LGA is subdivided into 12 wards namely: Ikereku, Olanla/Obada/Labode, Arulogun/Eniosa/Aroro, Olode/Amosun/Onidundu, Ojo emo/Moniya, Akinyele/Isabiyi/Irepodun, Iwotoko/Talonta/Idi-oro, Ojoo/Ajibode/Laniba, Ijaye/Ojedeji, Ajibade/Alabata/Elekuru, Olorisa oko/Okegbemimele and Iroko (Wikipedia, 2017).

## Sampling Techniques and Data Analysis

Four markets namely Akinyele, Alabata, Moniya, Ojoo and Ijaye Markets were purposively selected on the basis of their being the most popular Moringa markets in Akinyele LGA due to the presence of Moringa sellers and consumers. A total number of 150 copies of questionnaires were administered to the respondents and personal interview was also used for those that could read and write.

## Data Analysis

Descriptive statistics such as frequency distribution and percentage were applied to analyze the socioeconomic variables. Gross



Margin analysis was adopted to determine the marketing/ profitability of *M. Oleifera* among the respondents. Also chi- square was used for the socio economic characteristics of the respondents

$$\text{Profit} = \text{Total revenue} \text{ minus Total cost} \dots\dots\dots (1)$$

$$\text{Profit Margin\%} = \frac{\text{Profit}}{\text{CostPrice}} * 100 \dots\dots\dots (2)$$

$$\text{Profit Margin \%} = \frac{\text{Profit}}{\text{SellingPrice}} * 100 \dots\dots\dots (3)$$

$$\text{Gross Margin} = \text{Total Revenue} \text{ minus Total Variable Costs} \dots\dots (4)$$

$$\text{MarketingEfficiency} = \frac{\text{TotalRevenue}}{\text{TotalMarketingCost}} \dots\dots\dots (5)$$

**Results and Discussion**

Table 1 shown the socioeconomic characteristics of the respondents and it indicates that 36.1% of the respondents were male and 64.9% were female. This shows that more women are engaged in the marketing of *M. oleifera*, this may be as a result of the

socio-cultural factors which gives women in the study area equal or greater opportunity to practice *M. oleifera* marketing than their male counterparts. 20.7% of the respondents were aged between 20 and 30 years; 49.3% were within the age range of 31 to 40 year; 20.7 % fell within 41 to 50 years, while 9.3% of the respondent’s ages were above 51years. The respondents between the ages of 31 to 40years were more committed to the marketing business, this is because most of the respondents are in their active years and have the ability to carry on their business. Also, 19.3% of the respondents were single while 74.75% were married, 3.3% were divorced and 2.7% were widowed. This shows that majority of respondents were married and marital status was not a barrier in marketing business. In addition, about 90% of the respondents had educational level beyond primary school, while 20% of the respondents were civil servants, this implies that majority of the respondents are self-employed.

**Table 1:** Socio Economic Characteristics of Respondents

Variable	Frequency	Percentage (%)
<b>GENDER</b>		
Male	54	36.1
Female	96	63.9
Total	150	100.0
<b>AGE(Yrs.)</b>		
20-30	31	20.7
31-40	74	49.3
41-50	31	20.7
51 and Above	14	9.3
Total	150	100.0
<b>MARITAL STATUS</b>		
Single	29	19.3
Married	112	73.7
Divorced	5	3.3
Widowed	4	2.7
Total	150	100.0
<b>LEVEL OF EDUCATION</b>		
Primary	7	3.7



Secondary	47	31.3
Tertiary	86	57.3
No formal Education	10	6.7
Total	150	100.0
<b>OCCUPATION</b>		
Civil Servant	32	21.3
Farmer	10	6.7
Trader	101	67.3
Others	7	3.7
Total	150	100.0

Source: Field Survey, 2018

Table 2 revealed that 93.0% of the respondents agreed that *M. oleifera* cures Hypertension while 3.3% disagree and 3.7% are undecided. Also, 90.0 % agrees it cures Headache while 3.2 disagree and 6.8% are undecided. It was also seen that 86.7.0% of the respondents agreed that it cures Malaria, 3.2% of the respondents disagree that it does not cure malaria while 10.1% are undecided. 70.7% agrees that it cures Body Pain, 2.7% of the respondents disagree and 26.6 are undecided. It was also shown that 86.6%

agree that it cures Cholera, 3.3% disagree while 10.1% of the respondents are undecided. 79.0% of the respondents agree that it cures fever, while 21.0% are undecided. 83.8% respondents agreed that it cures Diarrhea, 3.4% of the respondents disagree that it does not cures diarrhea, while 12.8% are undecided. Finally the table shows that 90.0% of the respondents agreed that it cures Typhoid, 0.7% of the respondents disagree it cures Typhoid while 9.3% are undecided.

Table 2: Utilization of *M. oleifera* in the study area.

Variable	Frequency	Percentage
<b>HYPERTENSION</b>		
Agree	141	93.0
Undecided	7	3.7
Disagree	2	3.3
<b>TOTAL</b>	150	100.0
<b>HEADACHE</b>		
Agree	135	90.0
Undecided	10	6.8
Disagree	5	3.2
<b>TOTAL</b>	150	100.0
<b>MALARIA</b>		
Agree	103	86.7
Undecided	15	10.1
Disagree	2	3.2
<b>TOTAL</b>	150	100.0
<b>BODY PAIN</b>		
Agree	121	70.7



Undecided	21	26.6
Disagree	8	2.7
<b>TOTAL</b>	<b>150</b>	<b>100.0</b>
<b>CHOLERA</b>		
Agree	130	86.6
Undecided	15	10.1
Disagree	5	3.3
<b>TOTAL</b>	<b>150</b>	<b>100.0</b>
<b>FEVER</b>		
Agree	130	79.0
Undecided	30	21.0
Disagree	-	0.00
<b>TOTAL</b>	<b>150</b>	<b>100.0</b>
<b>DIARRHEA</b>		
Agree	125	83.8
Undecided	19	12.8
Disagree	6	3.4
<b>TOTAL</b>	<b>150</b>	<b>100.0</b>
<b>TYPHOID</b>		
Agree	135	90.0
Undecided	14	9.3
Disagree	1	0.7
<b>TOTAL</b>	<b>150</b>	<b>100.0</b>

Field Survey, 2018

The table 3 explains the relationship between the variable used on the utilization of *M. oleifera*, it was however revealed that there was a positive and significant relationships between the utilization of *M. oleifera* and its uses for hypertension, headache, malaria,

body pain, cholera, fever diarrhea and typhoid. However, they were all significant at 0.05% level of probability. This therefore revealed that there was high awareness and utilization of *M. oleifera* in the study area.

Table 3. Chi-square relationships on the utilization of *M. oleifera* in the study area

Variables	Chi-Square	Degree of freedom	Asymptotic Significant
Hypertension	208.347	3	0.000*
Headache	203.467	4	0.000*
Malaria	138.373	3	0.000*
Body pain	130.367	4	0.000*
Cholera	153.600	4	0.000*
Fever	31.360	2	0.000*
Diarrhea	100.933	3	0.000*
Typhoid	193.587	3	0.000*

Note: \*Significant at 0.05% level of probability



Table 4 shows that profit margin for Akinyele, Onidundu, Moniya and Ojoo were 27.78%, 23.42%, 8.40% and 35.71 % respectively. Since marketing efficiency was

higher than 1% this indicates that Marketing of *M. oleifera* was a profitable agribusiness in the study area.

Table 4: Computation for profit margin of Moringa oleifera per pack in the study area

Market	Cost (=N=)	Price Selling Price (=N=)	Profit (#)	Profit (%)	Profit Margin (%)
Akinyele	396,500	549,000	152,500	38.46	27.78
Alabata	59,500	77,700	18,200	30.59	23.42
Moniya	42,000	45,850	3,850	9.17	8.40
Ojoo	18,000	28,000	10,000	55.56	35.71

Source Field Survey, 2018

Table 5 shows that 18.0% of respondents agreed government policy is a problem to Moringa marketing, 18.7% are not sure that government policy was the problem while 63.3% disagreed. It was also revealed that 16.7% of the respondents agreed that excessive tax can also be a problem while 16.7 % of the respondents were not sure while 66.7% strongly disagreed. 8.0% of the respondents strongly agreed that fuel subsidy can be problem, 19.3% were not sure while 72.7 % disagreed. Finally, the table shows

that 80.7% of the respondents agreed that selling price of the Moringa product was a problem, 9.3% of the respondents were not sure while 10.0% disagreed. However, in view of the problems militating against the market of *M. oleifera* leaf powder, this study shows that government policy, excessive tax and fuel subsidy does not affect the marketing of *M. oleifera*, but 80.7% of the respondents agreed that selling price was a major problem militating against the marketing of *M. oleifera* in the study area.

Table 5: The problems militating against the marketing of *M. oleifera* in the study area

Variables	Frequency	Percentage (%)
<b>Government Policy</b>		
Agree	27	18.0
Undecided	28	18.7
Disagree	95	63.3
<b>Total</b>	150	100.0
<b>Excessive Tax</b>		
Agree	25	16.7
Undecided	25	16.7
Disagree	100	66.7
<b>Total</b>	150	100.0
<b>Fuel Subsidy</b>		
Agree	12	8.0
Undecided	29	19.3
Disagree	28	72.7
<b>Total</b>	150	100.0





### Price of the Product

Agree	121	80.7
Undecided	14	9.3
Disagree	15	10.0
<b>Total</b>	<b>150</b>	<b>100.0</b>

Source: Field Survey 2018

### Conclusion

The study revealed that *M. oleifera* was majorly used for curing the following diseases: hypertension, malaria, body pain, cholera, fever, diarrhea and typhoid, this suggests that the usage of *M. oleifera* is high. From the result through gross margin analysis, since the market efficiency is higher than 1, thus it makes Marketing of *M. oleifera* profitable in the study area. It was seen that the major problem militating against the marketing of *M. oleifera* in the study area is price discrimination.

### Recommendations

It was therefore recommended that more awareness programme, such as symposium, seminar and workshop should be conducted regularly on the importance of *M. oleifera*; interested individual should also go into marketing of *M. oleifera* as this will ease unemployment and serves as source of income since it is a profitable business, also inclusion of *M. oleifera* in human's diet so as to maintain a healthy living should be encouraged, *M. oleifera* sellers should create an association which will help to unify and could regulate the price of the product so as to avoid price discrimination which is the major factor affecting *M. oleifera* marketing in the study area.

### References

Anwar, F., Latif, S., Ashraf, M., and Gilani, A. H. (2007). Moringa oleifera: a food plant with

multiple bio-chemical and medicinal uses – a review. *Phytother. Res.* 21:17-25

Fahey J.W. (2005): Moringa oleifera: A Review of the Medicinal Evidence for its Nutritional, Therapeutic and Prophylactic Properties. Part 1: Trees for Life Journal, 1<sup>st</sup> edition (5). <http://www.tfljournal.org/article.php/20051201124931586> (accessed September21, 2009).

Foidl N., Makkar H. P. S. and Becker K. (2001). The Potential of Moringa oleifera in agricultural and industrial uses, in: Proceedings of International Workshop “What Development Potential Moringa Products?” Dar-es-Salaam, Tanzania, 20pp.

Fuglie, L.J (2001): The Miracle Tree: Moringa Oleifera, Natural Nutrition for the tropics, (church World Service, Dakar, 1999). Pp: 68. Revised in 2001.

Mekonnen, Y. (2002). The multi-purpose Moringa tree: Ethiopia. Examples of the Development of Pharmaceutical Products from Medical Plants, 10, 111–118.

Nadeau, E and Zakaria, M (2012): The Sahel's Tree of Life: The Story of CLUSA's Moringa VC Project in Niger. Working paper prepared for the National Cooperative Business Association (NCBA) and the cooperative League of the USA (CLUSA). Assessed on [http://www.huffingtonpost.com/annettefro-st/moringa-the-tree-of-life\\_b\\_1645858.html](http://www.huffingtonpost.com/annettefro-st/moringa-the-tree-of-life_b_1645858.html) on 24 Aug, 2012

National Population Commission (NPC) (2010): Oyo state Population.



- Oluduro, A. O., Ambrose, D. C. P., Abiodun, O., & Daunty, A. L. (2016). Moringa. In D.C.P. Ambrose et al. (Ed.), *Leafy Medicinal Herbs: Botany, Chemistry, Postharvest Technology and Uses* (pp. 163-169). Wallingford: CAB International.
- Ramachandran, C., Peter, K. V., & Gopalakrishnan, P. K. (1980). Drumstick (*Moringa oleifera*): A multipurpose Indian vegetable. *Economic Botany*, 34(3), 276-283.
- Shahzad, U., Khan, M.A., Jaskani, M.J., Khan, I.A. and Korban, S.S. 2013. Genetic diversity and population structure of *Moringa oleifera*. *Conservation Genetics* 14:1161-1172.
- Tee N T., Ancha P.U and Verinumber L. (2002): Structure, conduct and performance of vegetable market in Markudi, Benue State, Nigeria proceeding of the 28<sup>th</sup> annual conference forestry Association of Nigeria. Pg. 149-159.
- Yisehak K, Solomon M and Tadelles M. (2011): Contribution of Moringa, a highly Nutritious Vegetable Tree, For Food Security in South Ethiopia: A Review Paper in *Asian Journal of Applied Sciences*, Vol 4, Pg 477-488
- Wikipedia (2017): <https://en.m.wikipedia.org/wiki/Akinyele>