

# **MANAGEMENT STRATEGIES OF PERCEIVED RISKS ASSOCIATED WITH MORINGA PRODUCTS BY CONSUMERS IN ILORIN METROPOLIS, KWARA STATE, NIGERIA**

By

<sup>a</sup>Omotesho, K. F. , <sup>b</sup>Ayinde O.E., <sup>b</sup>Atanda O.A., and <sup>b</sup>Animashaun, J.

<sup>a</sup>Department of Agricultural Extension and Rural Development, University of Ilorin, Nigeria.

<sup>b</sup>Department of Agricultural Economics and Farm Management, University of Ilorin, Nigeria.

# PRESENTATION OUTLINE

- Introduction
  - Background
  - Statement of problem
  - Objectives of the study
- Methodology
- Results and Discussion
- Conclusion
- Recommendation

# INTRODUCTION

## Features of the Moringa Plant

- Perennial fast growing softwood tree
- Bi or tri pinnate, alternate and spirally arranged leaves
- Yellowish-white, bisexual flowers
- Pendulous 3 sided pods containing about 26 seeds
- Dark brown trigonous seeds with whitish papery wings
- Tuberous white tap root



## INTRODUCTION CONT'D

- Native to India who is the worlds largest producer (1.1-1.3M tons/ annum), it however grows on a wide variety of climates and soils
- Common names include ; horseradish , drumstick and miracle plant
- *Moringa oleifera* is the common specie of moringa in Nigeria
- Initially grown and consumed mainly in Northern Nigeria, awareness of the plant and its benefits are gradually spreading across the country.
- This is evidenced by increasing number of growers, processors and users.



## Scientifically proven benefits of the moringa plant include:

- Nutritional properties
- Pharmaceutical qualities
- Water purification
- Biomass
- Plant manure
- Cosmetics
- Ornamental
- Bio-pesticide
- Other industrial uses (gum, ropes, paper e.t.c)
- Economic efficiency of cultivation





# Statement of Problem

- Moringa production, processing , packaging and marketing in Kwara State is dominated by independent small- scale players who offer the product to consumers in various forms. (wet leaves, powdered, oil, dried seeds e.t.c)
- This is done without standardization or any form of regulation in most cases.
- The perceived possible risks associated with this situation alongside the socio-economic characteristics of the consumers may influence their consumption,



# Objectives of the Study

- **Main**

To analyze the management strategies of perceived risks associated with moringa products by consumers in Kwara State, Nigeria

## **Specific**

1. Highlight the perceived risks
2. Examine strategies employed to manage the risks
3. Examine socio-economic determinants of consumers' consumption pattern in relation to the perceived risks.

# METHODOLOGY

- Study Area – Ilorin metropolis, Kwara State, Nigeria
- Study population- Moringa consumers in the State
- Sampling Technique- snowball sampling
- Sample size- 116
- Source of Data- Structured questionnaire
- Data Analysis- Descriptive statistics and the Tobit regression model



# METHODOLOGY CONT'D

- The explicit form of the model is as follows,
- $Y^* = \beta x_1 + \beta x_2 + \beta x_3 + \beta x_4 + \beta x_5 + \beta x_6 + \beta x_7 + \beta x_8 + \beta x_9 + \beta d_1 + \beta d_2 + \beta d_3 + \beta d_4$
- Where Y = index of the difference in the quantity of Moringa consumed before and after risk perception.
- $\beta$  = Coefficients to be estimated
- $X_1$  = Sex
- $X_2$  = Age of respondents
- $X_3$  = Single (Yes=1, No=0)
- $X_4$  = Married (Yes=1, No=0)
- $X_5$  = Widowed (Yes=1, No=0)
- $X_6$  = Tertiary (Yes=1, No=0)
- $X_7$  = Income (Naira)
- $X_8$  = Public sector (Yes=1, No=0)
- $X_9$  = Private sector (Yes=1, No=0)
- $d_1$  = Awareness of risk associated (Yes=1, No=0)
- $d_2$  = consume moringa powder form (Yes=1, No=0)
- $d_3$  = Consume moringa Seed (Yes=1, No=0)
- $d_4$  = Consume moringa fresh leaf (Yes=1, No=0)

# RESULTS AND DISCUSSION

## TABLE 1: Perceived Risk

Perceived Risk	Agree (%)	Neutral(%)	Disagree (%)
Nutritional loss through processing	30.9	4.3	60.6
Contamination during processing	25.8	7.7	66.3
Hypotension	3.4	6.8	88.7
Bleeding	0.8	6.8	26.6
Dry mouth	16.3	8.6	82.6
Loss of appetite	6.8	4.3	89.7
Drowsiness	6.8	5.1	87.8
Dizziness	5.9	6.0	87.0
Depresssion	0.8	5.1	93.9

CONT'D

**TABLE 1: Perceived Risk cont'd**

<b>Perceived Risk</b>	<b>Agree (%)</b>	<b>Neutral(%)</b>	<b>Disagree (%)</b>
Itching	0.8	5.1	93.9
Constipation	10.2	6.8	82.7
Anxiety	0	3.4	96.5
Allergic reaction	4.2	4.3	81.3
Stomach ache	12.8	6.8	80.1
Change in weight	4.2	4.3	91.3
Vomiting	3.3	3.4	93.0
Miscarriage	0	2.5	97.4

Source: Field survey, 2013

## Table 2: Management Strategies in use by Respondents

Management Strategies	Percentage (%)
Do nothing	43.3
Reduce quantity taken	22.4
Reduce frequency of consumption	21.0
Take other supplements	10.4
Stop consumption	2.9

Source: Field survey, 2013

**Table 3: Results of Tobit Analysis**  
**Socio-economic Determinants of Consumer Behavior**  
**in Relation to Risk**

Predictor variables	Coefficient	Std error	t-value	P value
Male	-3.74	3.46	-1.08	0.283
Age	-0.02	0.30	-0.08	0.938
Single	5.67	12.47	0.45	0.650
Married	-2.88	11.58	-0.25	0.804
Widowed	7.46	12.20	0.61	0.542
Tertiary	5.83	6.10	0.96	0.341
Public sector	4.77	5.50	0.87	0.388
Private sector	5.33	5.76	0.93	0.356
Income	-5.58e-06	0.00	-0.10	0.917

**CONT'D**

**Table 3: Result of Tobit Regression Analysis  
Socio-economic Determinants of Consumer Behavior  
in Relation to Risk Cont'd**

Predictor variables	Coefficient	Std error	t-value	P value
Awareness of risk (Yes)	16.86	5.17	3.26	0.002**
Powder (Yes)	13.22	5.20	2.54	0.013**
Seed	2.37	4.03	0.59	0.559
Fresh leaf(consume)	2.77	3.25	0.85	0.396
Constant	-39.48	19.49	-2.03	0.046
Sigma	8.3	1.72		

**Log likelihood = -72.05**

**LR chi<sup>2</sup> (17) =44.32**

**Prob > chi<sup>2</sup> = 0.0003**

# CONCLUSION

- Fifteen perceived risks associated with moringa consumption were identified in the study.
- The most prominent risks perceived were related to the post harvest handling of the plant
- Strategies adopted to manage the perceived risks also raises the question of appropriate quantity and recommended frequency of consumption.
- Majority of the respondents do nothing to mitigate the risks
- Only two of the predictor variables (awareness of risk and the consumption of moringa in powdered form) were significant in determining consumer behavior in relation to the perceived risks.



# RECOMMENDATIONS

- There is the need for standard scientifically generated manuals of procedure for the post harvest handling of the plant that ensures conservation of essential nutrient elements
- Appropriate organizations should regulate the activities of the local processors in the area of quality control and hygiene to safeguard the consumers
- Medical experts should come up with appropriate recommended dosages of the different forms in which moringa is presented to consumers.
- Results of further research on the plant should be made available to processors, the consumers and non consumers to create further awareness and there by maximize the potentials of the moringa plant.