

“The hardest thing to see is what is in front of  
your eyes.”

- Goethe



These leaves could  
save millions of lives.

# The Moringa Tree

*Moringa oleifera*







# Varieties

Thirteen *Moringa* species are known:

*M. oleifera*

*M. arborea*

*M. borziana*

*M. concanensis*

*M. drouhardii*

*M. hildebrandtii*

*M. longituba*

*M. ovalifolia*

*M. peregrina*

*M. pygmaea*

*M. rivaie*

*M. ruspoliana*

*M. stenopetala*





# **Moringa Knowledge in the Ancient World**



# Ancient World Knowledge

# Scientific Knowledge





# Nutritional Value



=

Tiny leaves.

Enormous Benefits.

7 times the Vitamin C of Oranges



4 times the Vitamin A of Carrots



4 times the Calcium of Milk



3 times the Potassium of Bananas

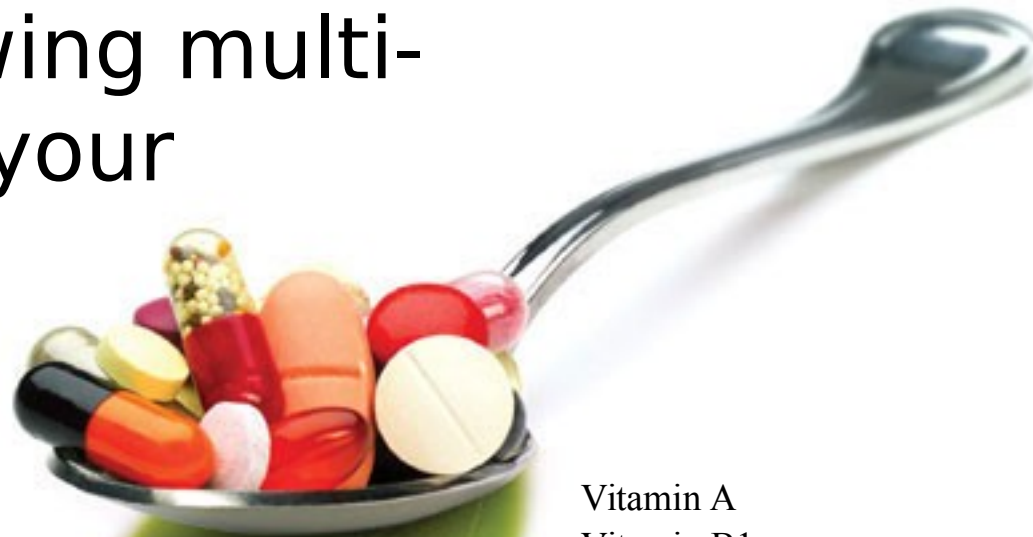


2 times the Protein of Yogurt





It's like growing multi-  
vitamins at your  
doorstep.



Vitamin A  
Vitamin B1

Vitamin B2

Vitamin B3

Vitamin C

Calcium

Chromium

Copper

Iron

Magnesium

Manganese

Phosphorus

Potassium

Protein

Zinc

Rare for a  
plant  
source,

Moringa  
leaves  
contain all  
the essential  
amino  
acids...



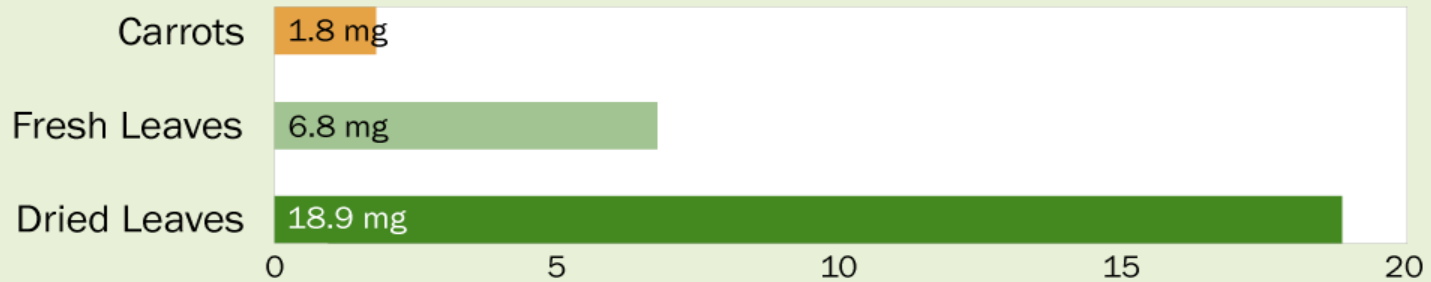
...to build  
strong, healthy bodies



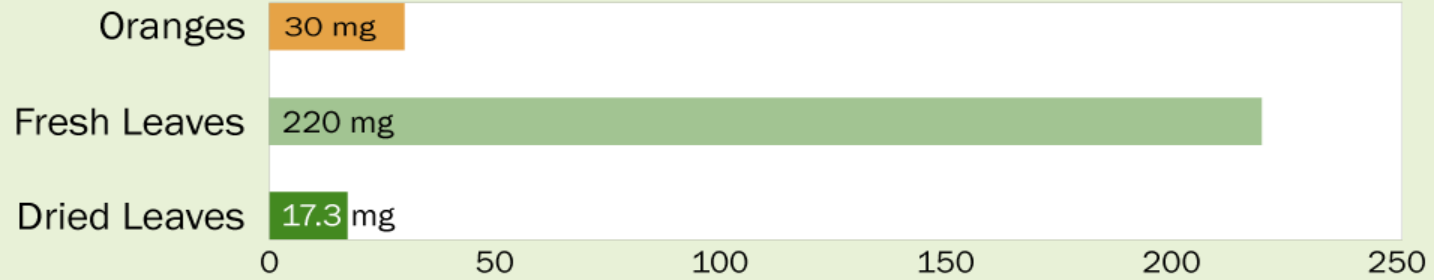


Moringa even contains *argenine* and *histidine*—two amino acids especially important for infants.

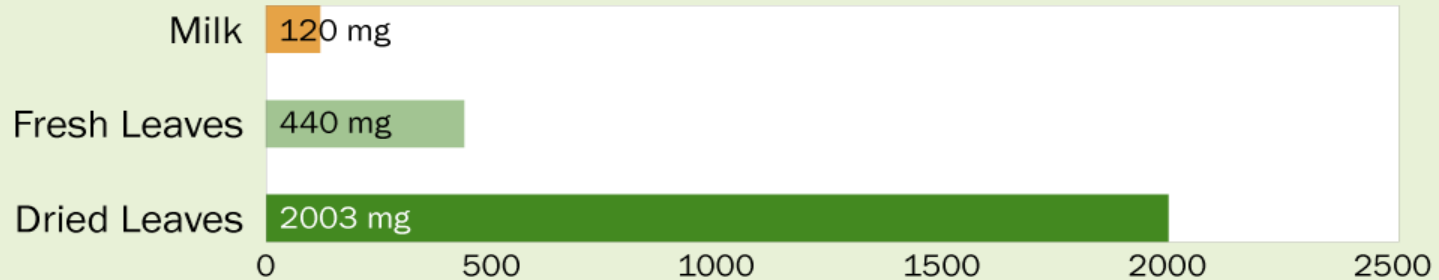
## Vitamin A



## Vitamin C

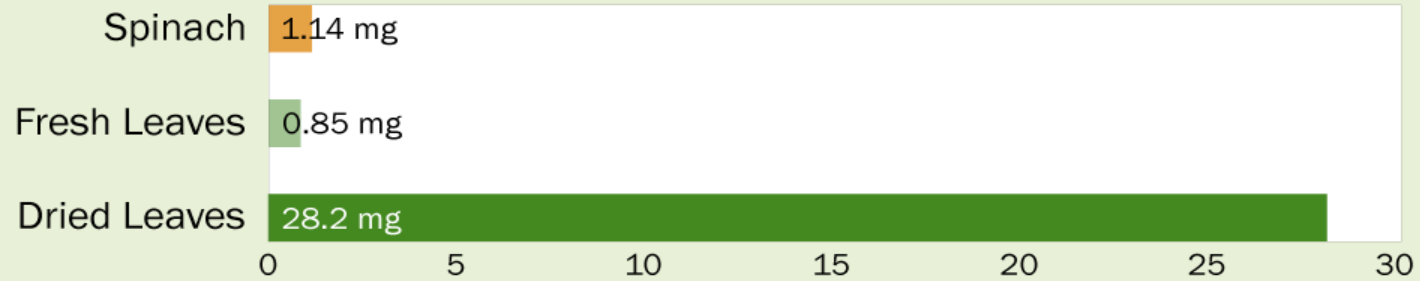


## Calcium



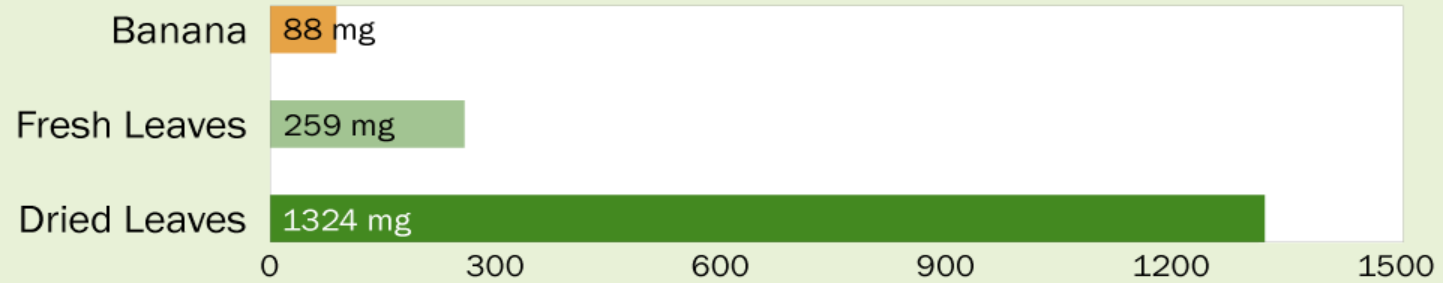


## Iron

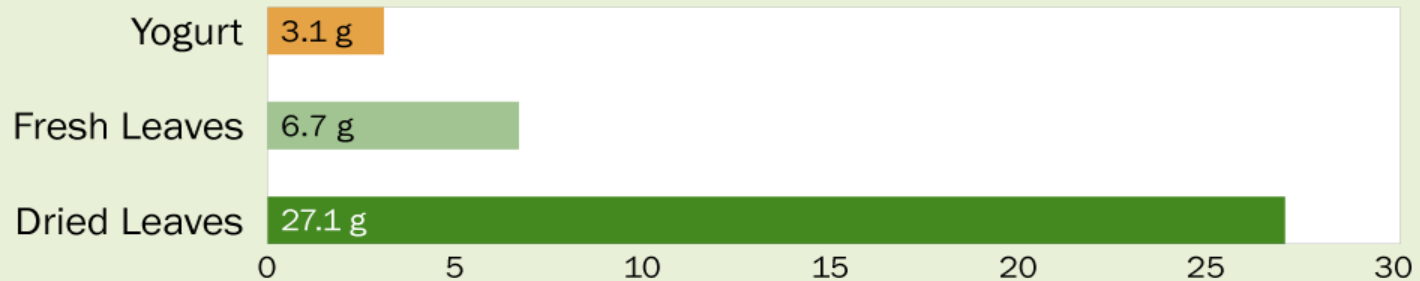


**Note:** Iron from plants, including spinach and Moringa, is generally difficult for the body to absorb.

## Potassium



## Protein



# Common Names for Moringa

(See more at: [treesforlife.org/moringa/names](https://treesforlife.org/moringa/names))



# Malnutrition

## Moringa



Leaves:  
Nutrition  
Medicine



Trees:  
Alley Cropping  
Erosion Control



Flowers:  
Medicine



Pods:  
Nutrition  
Medicine



**Consider the Possibilities**  
Nutrition • Disease Prevention • Ointment • Alley Cropping  
shade • Wind Barrier • Cane Juice Clarifier • Honey Production  
Congestion • Cholera • Colitis • Conjunctivitis • Cough • Diabetes  
Examples • Pregnancy • Psoriasis • Respiratory disorders • Skin



Roots:  
Medicine



Seeds:  
Water Purification  
Medicine  
Oil



Gum:  
Medicine



Bark:  
Medicine





Moringa's Potential

- Human Health
- Livestock Fodder
- Plant Growth Enhancer
- Biogas



# Human Health

# Test in Senegal

Conducted by:

- **Mr. Lowell Fuglie**,  
Church World Service in  
Dakar
- **AGADA**  
(Alternative Action for  
African Development)





# Test in Senegal

## Results:

- **Children** maintained or increased weight and improved health.
- **Pregnant women** recovered from anemia and had babies with higher birth weights.



# Research in Nicaragua

**Nikolaus Foidl**

**Leonardo Mayorga**





**Dr. Nadir Reyes Sánchez**



# Intensive Cultivation





















# Livestock Fodder



Increases daily  
weight gain  
up to **32%**

Increases milk  
production  
**43%** to **65%**





# Plant Growth Enhancer

# Plant Growth Spray

- Extract juice from green matter
- Dilute with 36 parts water
- Spray 25ml on each plant













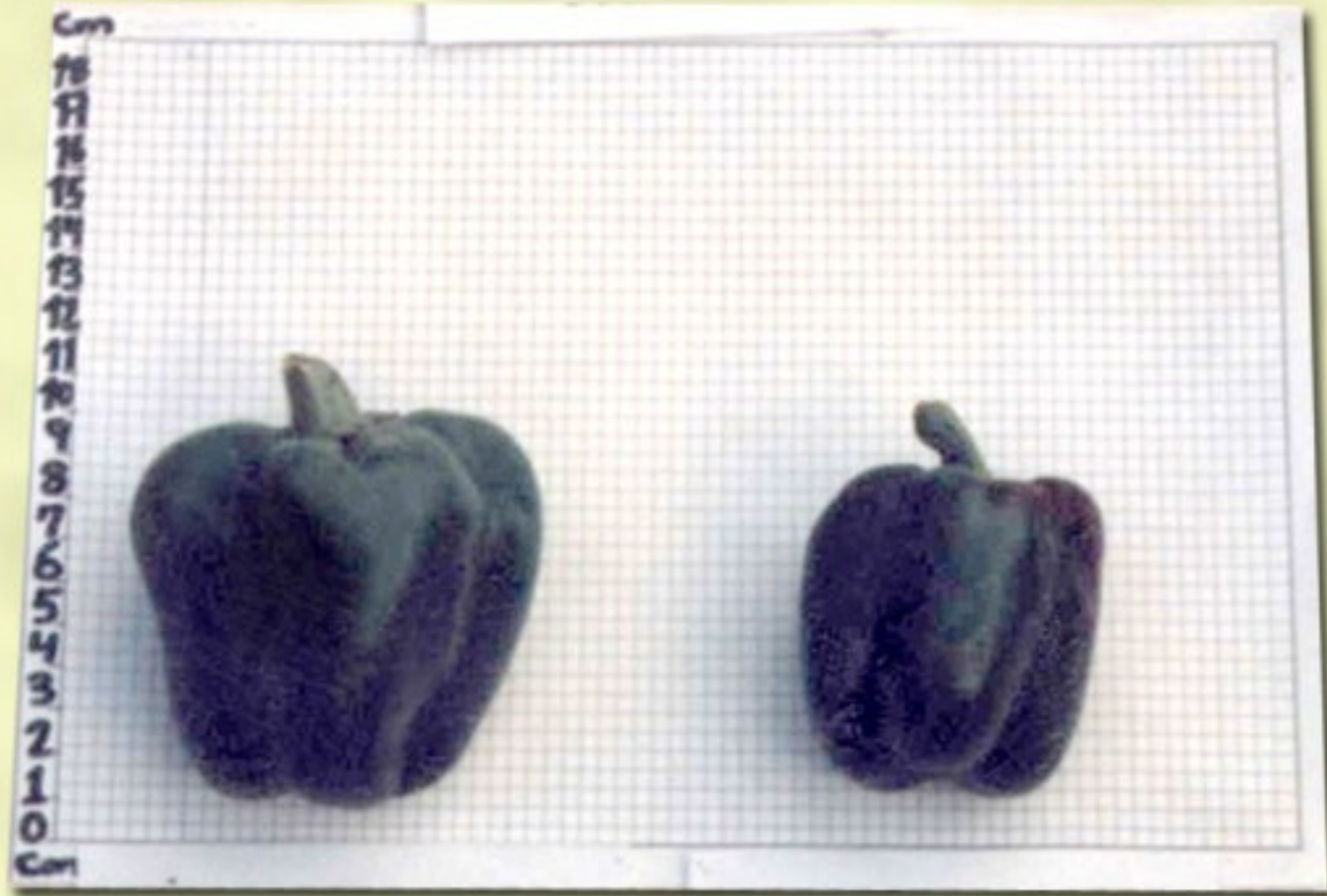


# Effects of Spray

- Accelerates growth of young plants
- Plants are firmer, more resistant to pests and disease
- Longer life-span
- Heavier roots, stems and leaves
- Produce more fruit
- Larger fruit
- Increase in yield 20-35%



# Bell Pepper



Spray

Control

# Sugar Cane Roots



Spray



Control



# Sorghum



Spray

Control

# Turnips



Freeze Dried  
Spray

Control

Spray



Biogas





# Need for Studies

- **Human Health**
- **Livestock Fodder**
- **Plant Growth Enhancer**
- **Biogas**

# How to Help

- **Share this information with key decision-makers in your country.**
- **Promote field studies and clinical studies in your country.**
- **Share your findings with the rest of the world.**



# Trees for Life Journal

Share your findings with the world at:

[www.TFLJournal.org](http://www.TFLJournal.org)

The screenshot shows the homepage of the Trees for Life Journal. At the top, the title "TREES FOR LIFE JOURNAL" is displayed in green, with the subtitle "a forum on beneficial trees and plants" below it. A navigation menu includes links for "About", "Support", "News", "Contact Us", "Help", and "Editorial Board".

On the left side, there is a sidebar with various links: "Login", "Open Forum", "Current Articles", "Archive", "Studies in Progress", "Moringa Gateway", "Discussion Forum", "Content Alerts", "Author Info", "Submit Article", "Member Info", and "Call for Studies". Below these links is a small red apple logo with the text "Trees for Life".

The main content area is divided into several sections:

- About Trees for Life Journal:** A link to "Click here to find out more about Trees for Life Journal".
- New Article:** A link to "Sign up for content alerts via e-mail." followed by a featured article: "Can Fresh Vegetable Sprouts be Produced for Human Consumption in Areas With Poor Water Quality? (A Pilot Study) (more)".
- Latest Discussion:** A link to "Open Forum".
- What's New:** Links to "Latest News" (Upcoming International Conference (more)) and "Moringa Gateway" (Moringa Oleifera and Cratylia argentea: potential fodder species for ruminants in Nicaragua (more)).
- Table of Contents:** A vertical list of links: "Table of Contents", "Editorials", "Essays", "Traditional Uses", "Reviews", and "Research Articles".
- Search:** A search box with a "GO" button and a link to "Advanced Search".
- Call to Action Buttons:** A vertical stack of green buttons: "Invitation for Articles", "Content Alerts", "Call for Studies", and "Why Publish".
- Article Highlights:** A yellow box containing "Research Articles" (Social Marketing: A Baseline Survey Report of District Ilargari, Ossa (more)), "Plant Foods as Sources of Pro-Vitamin A: Application of a Stable Isotope Approach to Determine Vitamin A Activity (more)", and "Traditional Uses" (Old Wives' Tales: Modern Medicines (more)).

At the bottom, there is a "Top Three Articles" section with three featured articles, each with a small image and author information:

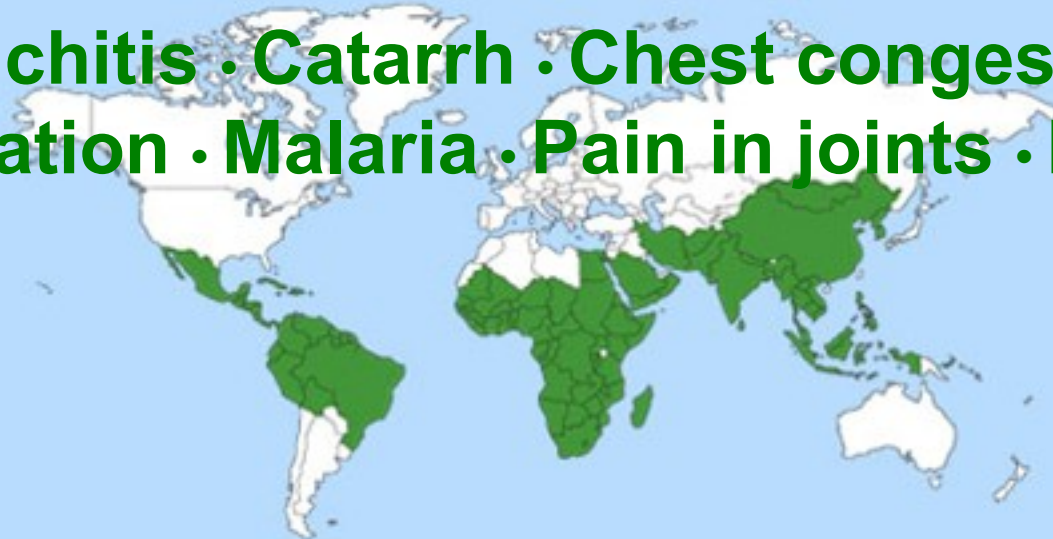
- Moringa oleifera: A Review of the Medical Evidence for its Nutritional, Therapeutic, and Prophylactic Properties. Part 1.** by Ted W. Falley, Sc.D.
- Trees for Life Journal: A Bridge Between Science and Traditional Knowledge** by Balbir S. Nattar
- Trees for Life Journal: A New Adventure in Service** by Jeffrey Fass

The footer contains navigation links: "Home | About | Support | News | Contact Us | Privacy Policy | Help | License | Editorial Board". It also includes a note: "This site best viewed with Internet Explorer 6.0 or later, or Firefox 1.0 or later." and copyright information: "Copyright © 2007 Trees for Life Journal. All trademarks and copyrights on this page are owned by their respective owners." On the right side of the footer, it says "Powered by Geeking".



## Consider the Possibilities

Malnutrition · Disease Prevention · Ointment · Alley Cropping  
Shade · Wind Barrier · Cane Juice Clarifier · Honey Production  
Pressure · Bronchitis · Catarrh · Chest congestion · Cholera  
Scundice · Lactation · Malaria · Pain in joints · Pimples · Pre



# References

1. Gopalan, C., B.V. Rama Sastri, and S.C. Balasubramanian. *Nutritive value of Indian foods*. Hyderabad, India: (National Institute of Nutrition), 1971 (revised and updated by B.S. Narasinga Rao, Y.G. Deosthale, and K.C. Pant, 1989).
2. Fuglie, Lowell J., ed. *The Miracle Tree—Moringa oleifera: Natural Nutrition for the Tropics. Training Manual*. 2001. Church World Service, Dakar, Senegal. May 2002.
3. Price, Martin L. "The Moringa Tree." *Educational Concerns for Hunger Organization (ECHO) Technical Note*. 1985 (revised 2002). May 2002. <[www.echotech.org/technical/technotes/moringabiomasa.pdf](http://www.echotech.org/technical/technotes/moringabiomasa.pdf)>.
4. Saint Sauveur (de), Armelle. "Moringa exploitation in the world: State of knowledge and challenges." Development Potential for Moringa Products. International Workshop, Dar es Salaam, Tanzania, 29 Oct. - 2 Nov. 2001.
5. Morton, Julia F. "The Horseradish Tree, *Moringa pterygosperma* (Moringaceae)—A Boon to Arid Lands?" *Economic Botany*. 45 (3), (1991): 318-333.
6. IndianGyan: The Source for Alternative Medicines and Holistic Health. Home Remedies for Common Ailments. May 2002. <[www.indiangyan.com/books/healthbooks/remedies/cataract.shtml](http://www.indiangyan.com/books/healthbooks/remedies/cataract.shtml)>.
7. Bakhru, H.K. *Foods That heal: The Natural Way to Good Health*. South Asia Books, 1995.
8. New Crop Resource Online Program (NewCROP). "*Moringa Oleifera* Lam." 7 Jan.1998. Purdue U. Jan. 2005. <[www.hort.purdue.edu/newcrop/duke\\_energy/Moringa\\_oleifera.html](http://www.hort.purdue.edu/newcrop/duke_energy/Moringa_oleifera.html)>.
9. Sairam, T.V. *Home remedies, Vol II: A Handbook of Herbal Cures for Commons Ailments*. New Delhi, India: Penguin, 1999.
10. M.S. Swaminathan Research Foundation. *Moringa oleifera* Lam, Moringaceae. May 2002. <[www.mssrf.org/fris9809/fris1157.html](http://www.mssrf.org/fris9809/fris1157.html)>.
11. Participatory Development Resource Centre for Africa (PDRCA) Page. United Nations Volunteers. Aug. 2000. <[www.unv.org/projects/pdrca/pdrca22.htm](http://www.unv.org/projects/pdrca/pdrca22.htm)>.
12. Home Truths Page. Morepen Laboratories. March 2002. <[www.morepen.com/morepen/newsletter/hometruths.htm](http://www.morepen.com/morepen/newsletter/hometruths.htm)>.
13. United Nations World Food Programme. *Interactive Hunger Map*. 2004. December 2004. <[www.wfp.org/country\\_brief/hunger\\_map/map/hungermap\\_popup/map\\_popup.html](http://www.wfp.org/country_brief/hunger_map/map/hungermap_popup/map_popup.html)>.
14. Foidl, N., Makkar, H.P.S. and Becker, K. The potential of *Moringa oleifera* for agricultural and industrial uses. In: L.J. Fuglie (Ed.), *The Miracle Tree: The Multiple Attributes of Moringa* (pp. 45-76). Dakar, Senegal: Church World Service, 2001.
15. Fuglie, L. New Uses of Moringa Studied in Nicaragua. *ECHO Development Notes #68*, June, 2000. <<http://www.echotech.org/network/modules.php?name=News&file=article&sid=194>>.
16. Reyes, S.N. *Moringa oleifera* and *Cratylia argentea*: potential fodder species for ruminants in Nicaragua. Doctoral thesis, Swedish University of Agricultural Sciences, Uppsala. 2006.