



“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

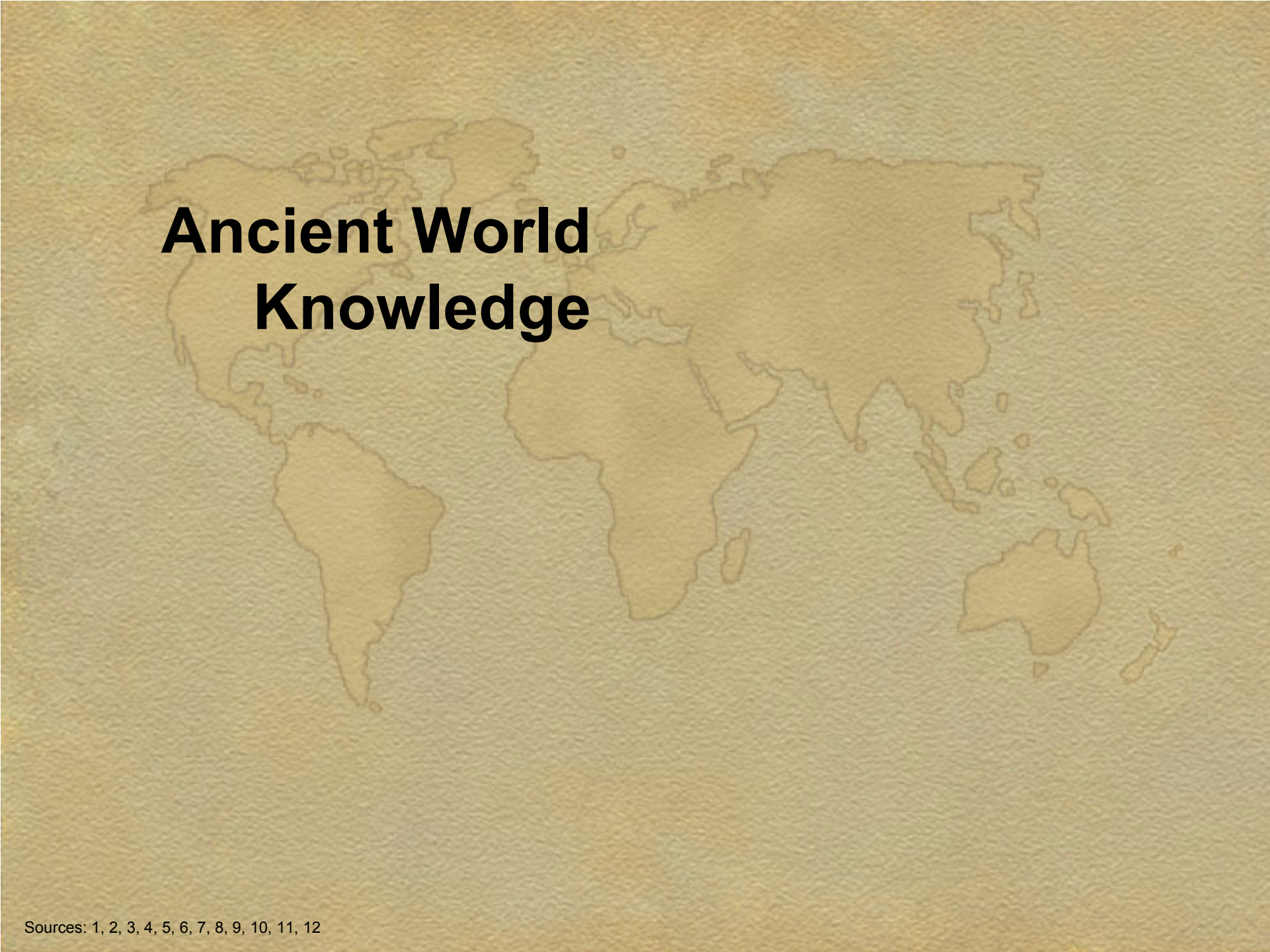
M. rivaie

M. ruspoliana

M. stenopetala



Moringa Knowledge in the Ancient World



Ancient World Knowledge

Sources: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

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



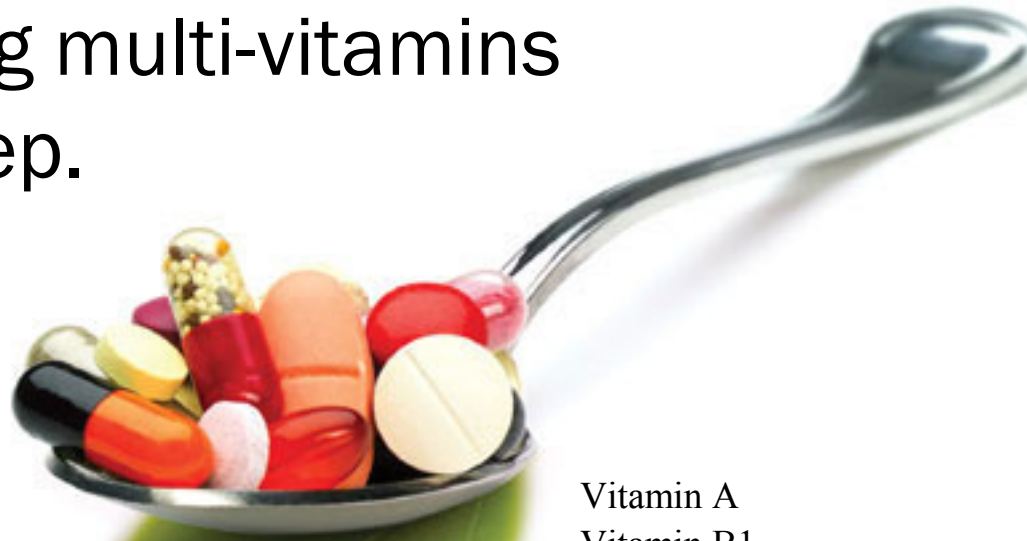
3 times the Potassium of Bananas



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...

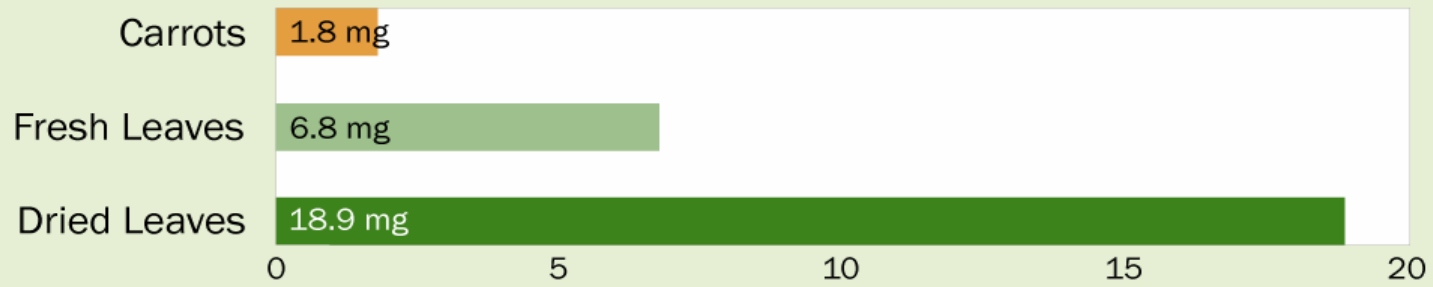


...to build
strong, healthy bodies.

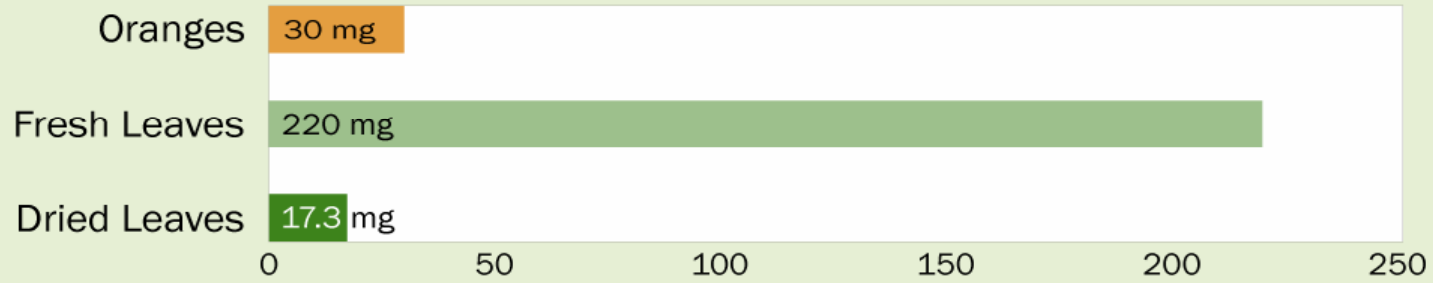


Moringa even contains *argenine* and *histidine*—two amino acids especially important for infants.

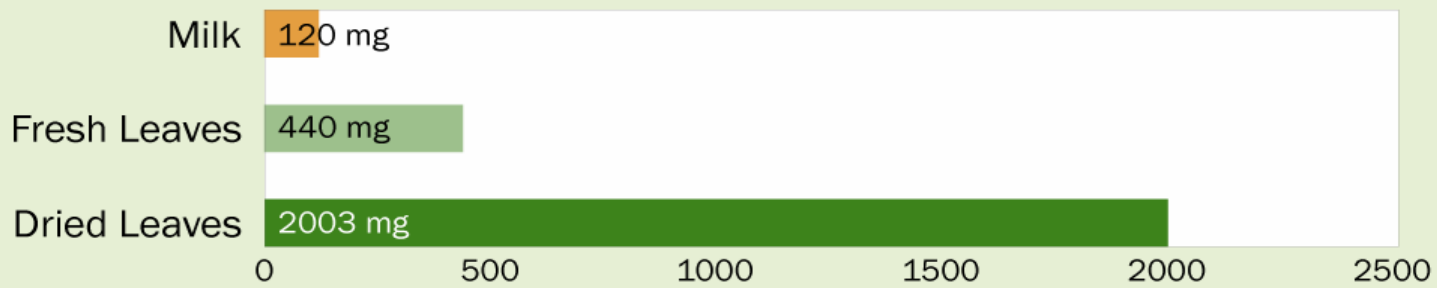
Vitamin A



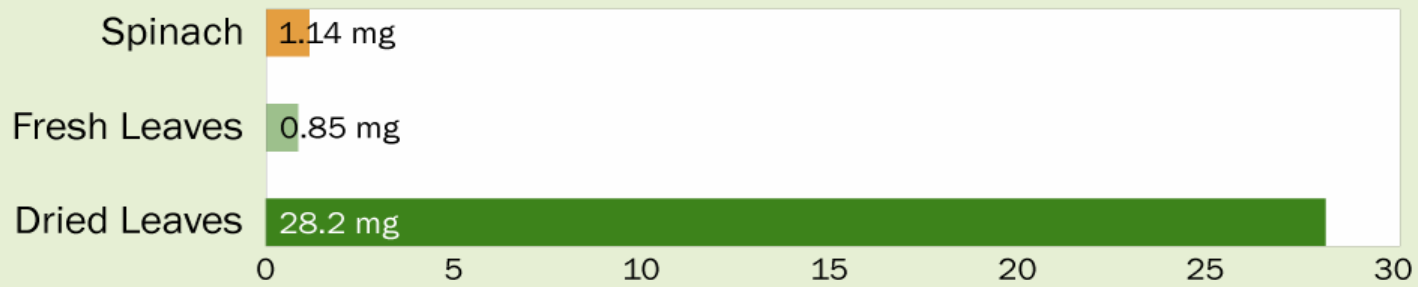
Vitamin C



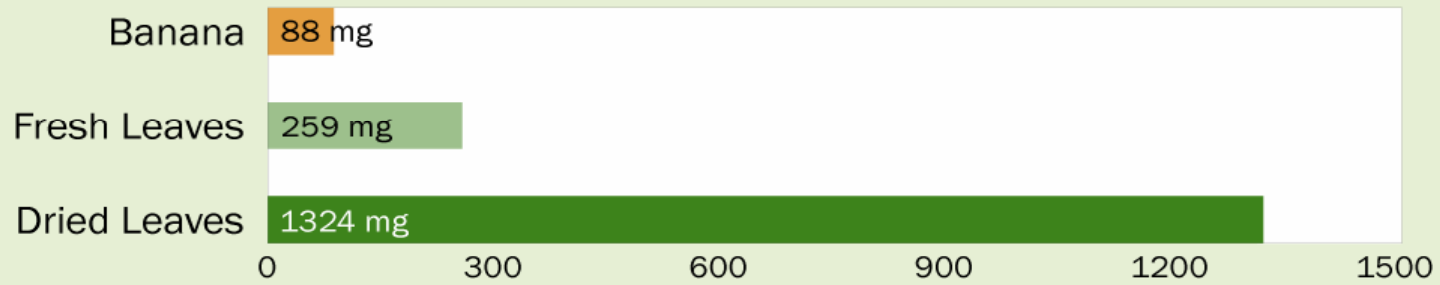
Calcium



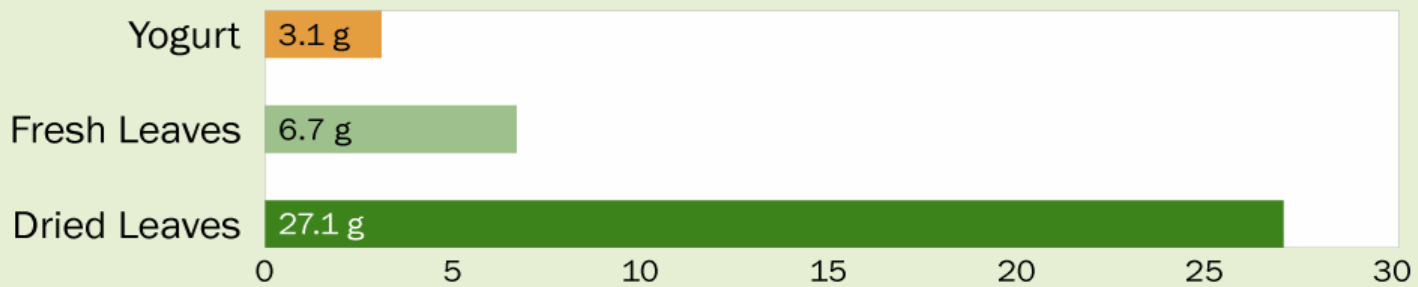
Iron



Potassium



Protein



Common Names for Moringa

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



Malnutrition

Moringa

Leaves:
Nutrition
Medicine



Trees:
Alley Cropping
Erosion Control



Flowers:
Medicine



Pods:
Nutrition
Medicine



Consider the Possibilities



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.
- **Breast-feeding women** increased milk production.

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

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 a "Login" section and a list of site features: "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 this 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." and a featured article titled "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)).
- Featured Article:** A blue box highlights the article "Using Science to Help the Poor: Low-Budget Research Ideas. Part I: From Biochemist to Advocate for the Underserved" by Sally S. Hatcher. It includes a "Table of Contents" with links to "Editorials", "Essays", "Traditional Uses", "Reviews", and "Research Articles".
- Search:** A search bar with a "GO" button and a link to "Advanced Search".
- Call to Action:** Four 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 Bargarh, Orissa (more)) and "Traditional Uses" (Plant Foods as Sources of Pro-Vitamin A: Application of a Stable Isotope Approach to Determine Vitamin A Activity (more)) and (Old Wives' Tales: Modern Meades (more)).

At the bottom, a "Top Three Articles" section features three article cards with author photos and names:

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

The footer contains a navigation menu: "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 a copyright notice: "Copyright © 2007 Trees for Life Journal. All trademarks and copyrights on this page are owned by their respective owners." The page is powered by "Cinetlog".



Consider the Possibilities



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>.
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>.
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>.
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>.
11. Participatory Development Resource Centre for Africa (PDRCA) Page. United Nations Volunteers. Aug. 2000. <www.unv.org/projects/pdrca/pdrca22.htm>.
12. Home Truths Page. Morepen Laboratories. March 2002. <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>.
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.