Home Gardens:

Cultivating Staple Crops for the Future

by

Bob Freedman

Home Gardens

A Global Agricultural Resource

Home Garden Guantanamo Province - Cuba

Home Garden - Cuba

Home Gardens

for Food Security

Home Gardens for Preserving Agrobiodiversity

Home Gardens and Wild Food Plants for Health

Why?

!Micronutrients!

Traditional diets have been replaced by highly-refined, Western fast/convenience foods

Causing an epidemic of dietary-related non-communicable diseases

Iodine deficiency

→Goiter, Cretinism,
→Mental Retardation
->Poor School Performance

Vitamin A deficiency

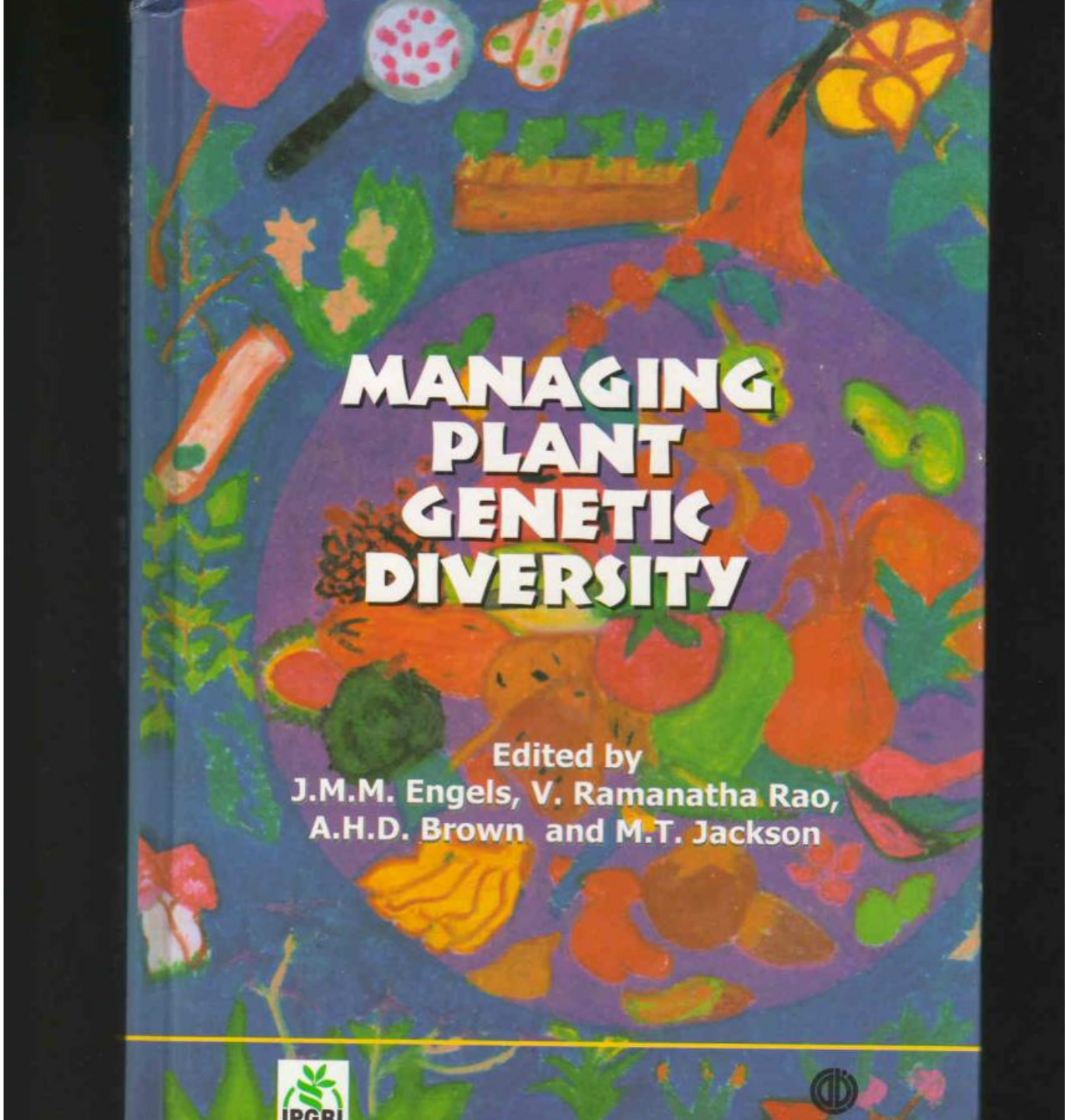
-->Infant and childhood blindness

Vitamins and minerals can be added back into contemporary diets through the use of micronutrient-rich NUS

by transplanting them
from their wild habitats
into home gardens

This will offset malnutrition in the family and also provide a source of income through selling them in local markets

The next crucial Crops for the Future research task is compositional analysis of NUS to identify candidate species for breeding trials and domestication


MANAGING
PLANT
GENETIC
DIVERSITY
Edited by
J.M.M. Engels, V. Ramanatha Rao,
A.H.D. Brown and M.T. Jackson
IPGRI

Abutilon avicennae, Gaertn.
Seeds

Protein = 17.4%

Agave parryi, Engelmn.

Arizona Pima core eaten

Amaranthus viridis, **L.**

Leaf protein/amino acids =
WHO standard
High in EFAs

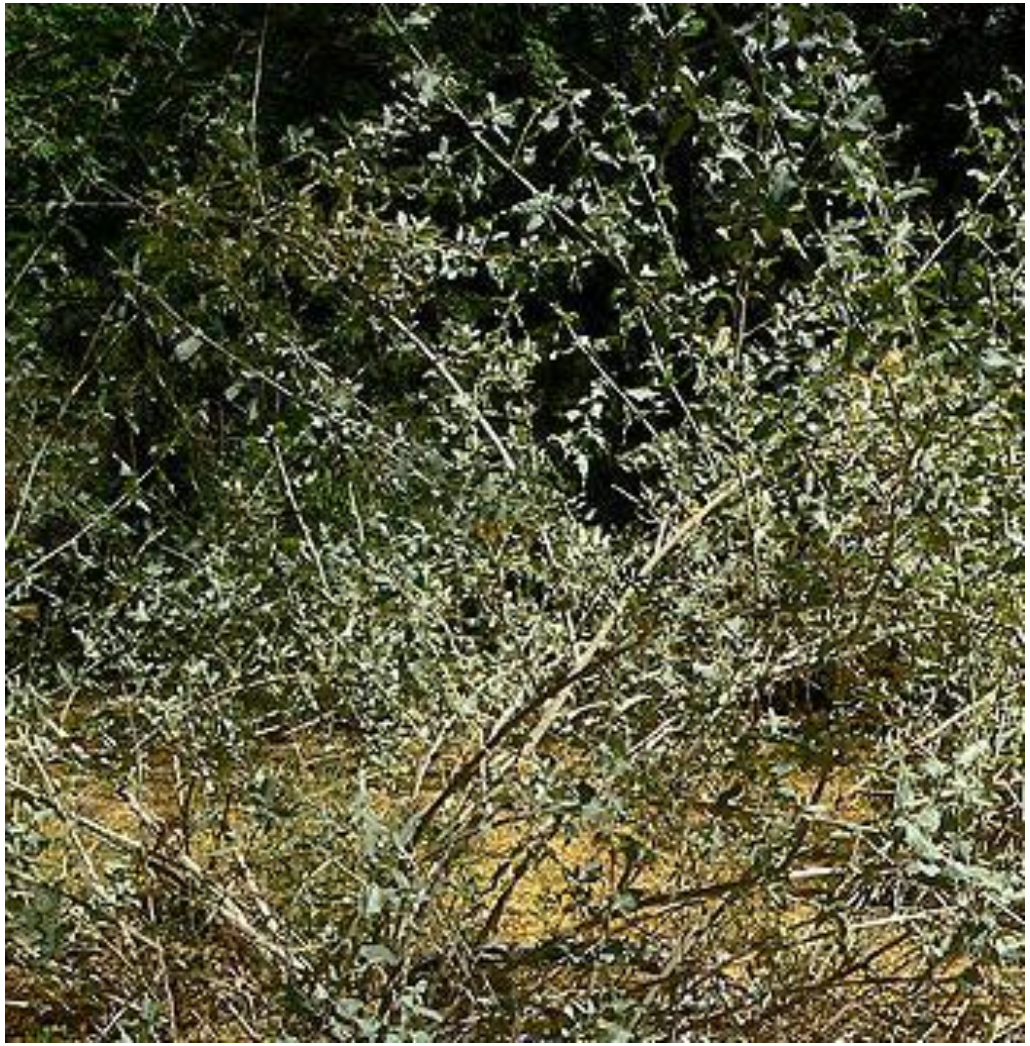
Niger

Atractylodes lanceata (Thunb.) DC

Very high value for Vitamin A

China

Atriplex lentiformis, (Torr.) Wats.



Arizona Pima
Seeds eaten

Atriplex lentiformis, (Torr.) Wats.

Seed protein may = ca. 16%

Bambusa spp.

Seeds have high value for lysine; and high net protein utilization and growth promoting effect = that of milk

Thailand

Boscia senegalensis, Hochst. ex Walp; Pers; Lam. ex Poir.

Sudan

Boscia senegalensis
Fruit

Seed protein = 250g per kg

Bromelia laciniosa, Matt. ex Schult.f

Calcium =

15X milk in bulbs

Brazil

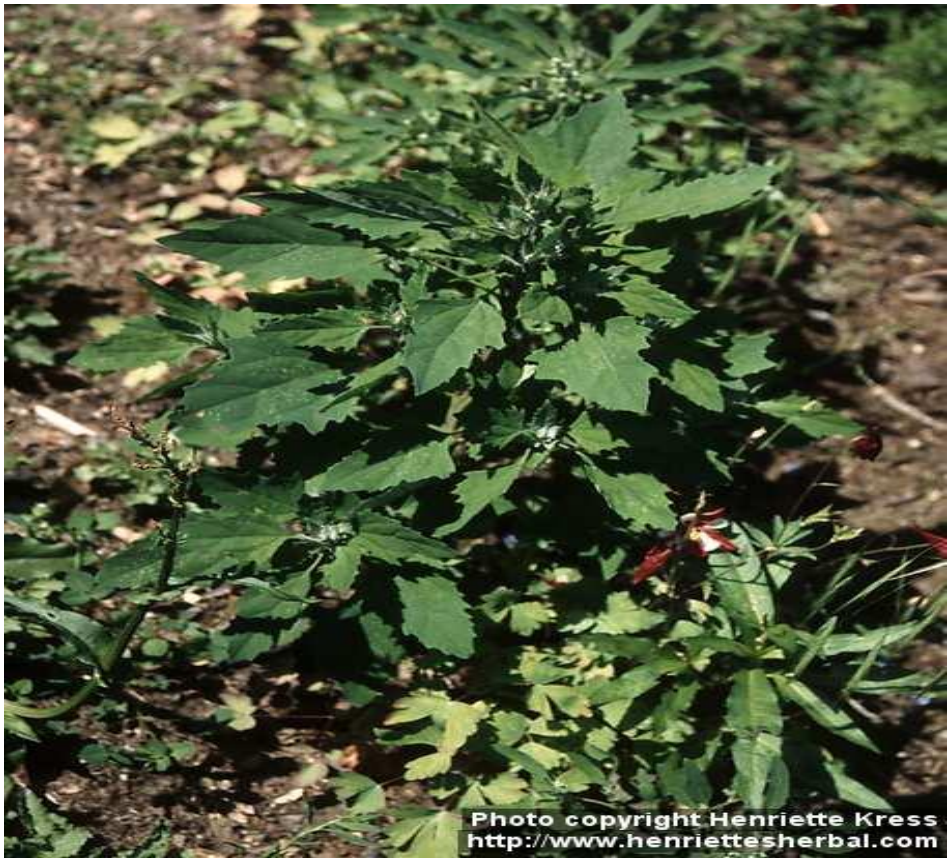
Capsella bursa-pastoris, Moench.

High values for

arginine, aspartic acid cysteine and ascorbic acid in leaves & seeds

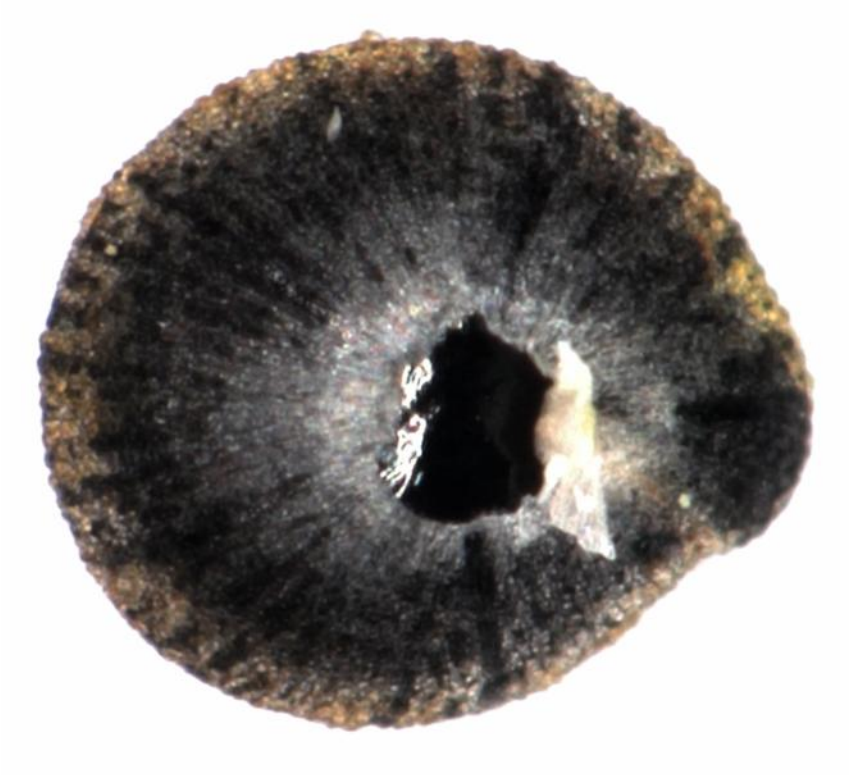
China

Chenopodium album, L.



China

Chenopodium album, L
Seeds



Protein value = 16%

Citrullus lanatus (Thunb.) Matsum. & Nakai

Sudan

Citrullus lanatus
Seeds

Protein = 23%
high value for
methionine

Coix lachryma-jobi, L.

China

Coix lachryma-jobi, L.
Seeds

18.7% Protein

Cynara cardunculus, L.

31% seed protein with **high values for phenylalanine and valine in leaf ribs & flowers**

Tunisia

Dactyloctenium aegyptium (L.) Beauv. Willd.

Protein = 13.1%

Sudan

Dobera roxburghii, **Planch.**

Seed protein = 19%

Sudan

Indigofera cordifolia, **Heyne ex Roth**.

Seed protein = 24-35%

India

Indigofera glandulosa, J.C. Wendl.

India

Indigofera glandulosa Seeds

Protein = 26.1%
High values for lysine and arginine

Ipomoea aquatica, Forsk

Leaf protein = 14.2%

India, Sudan

Perilla frutescens, (L.) Britton.

China

Perilla frutescens
Seeds

Seed protein = 21.5%

Prosopis glandulosa, Torr.

Prosopis glandulosa, Torr.

Seed protein = 31%

Xanthium strumarium, L.

High values for Glutamic Acid and Phenylalanine in seeds

China

Ziziphus mauritania, Lam.

Niger

Ziziphus mauritania
Leaves

High values for linoleic acid, iron,Calcium and magnesium

Xanthium strumarium, L.

High values for Glutamic Acid and Phenylalanine in seeds

China

Ziziphus mauritania, Lam.

Niger

Ziziphus mauritania
Leaves

High values for linoleic acid, iron,Calcium and magnesium

Scientists must standardize methods and techniques for compositional analysis to guarantee consistent, reliable results

Food composition data

PRODUCTION, MANAGEMENT AND USE

H. Greenfield and
D.A.T. Southgate

Second edition

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Original Article

The nutritional composition of African wild food plants: from compilation to utilization ☆

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Abstract

The nutritional value of wild food plants is of interest to ethnobotanists, clinicians, chemists, nutritionists and anthropologists. There is no definitive resource available containing this information for African wild food plants. The aim of the study was to develop a methodology for compiling quantitative information from the literature. Taxonomy and nomenclature for 20 species of interest were checked using the recent Flora treatments and the International Plant Names Index (IPNI). Boolean strings incorporating accepted scientific name, scientific synonyms and available English vernacular names were used to search citation indices. Titles, keywords and abstracts were scanned by eye and articles relevant to nutrition selected. Citations with sufficient information for inclusion into a nutrient database were prepared for data entry. There were over 120 scientific names for the 20 species selected. Of 17 700 citations downloaded only 540 of these pertained to nutrition. Ninety-four references were prepared for inclusion into the database. Inaccurate data compilation (recycling) was found for the species *Moringa oleifera* Lam. Twenty-one different bases for expressing nutritional values were found in papers for final inspection. It is recommended that the literature be reviewed fully prior to any investigation into the nutritional value of an African wild food plant. Data recycling, if incorrect, can have major implications on research and operations. The multidisciplinary nature of investigating wild food plants should be taken into consideration when undertaking this type of work and all nutritional information should be in a standardized format.

Keywords: Methodology; Botany; Famine food; Ethiopia; Food composition

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Promoting the transplanting of micronutrient rich NUS

A workshop for rural women agriculturalists/homemakers

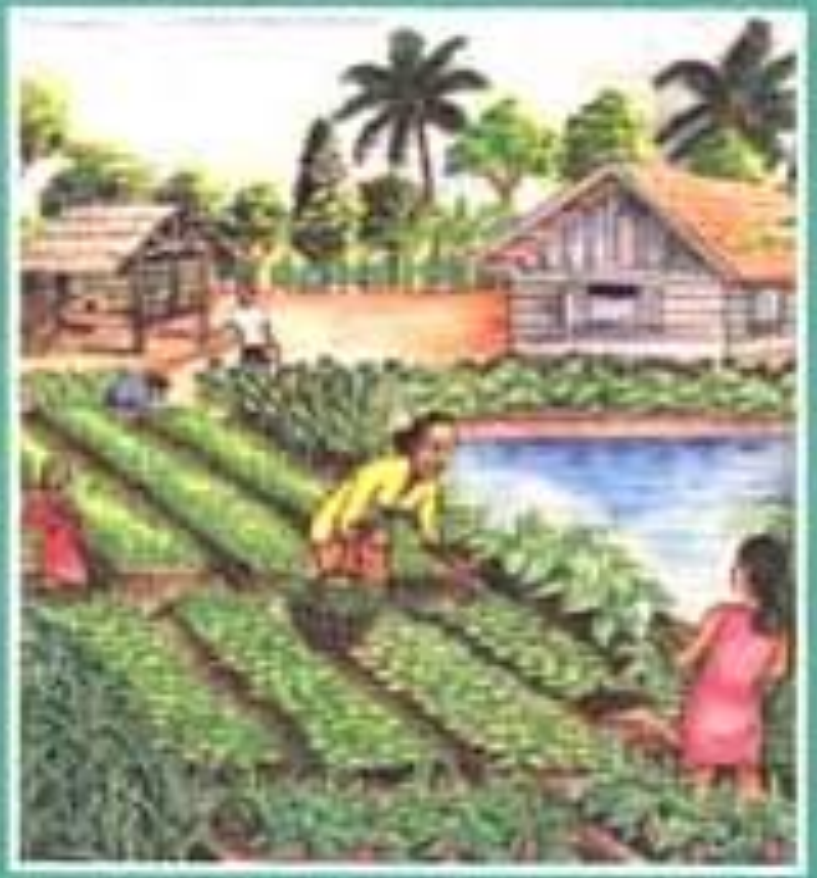
The workshop has 3 topics

1. Nutrition education: explaining why micronutrients are important

Resources FAO Improving Nutrition Through Home Gardening & Healthy Harvest

Improving nutrition through home gardening

A training package for preparing field workers in Southeast Asia



Healthy Harvest

A training manual for community workers in good nutrition and the growing, preparing, and processing of healthy food

2. Guidelines for establising small businesses to sell micronutrient rich NUS in local markets

with a focus on recordkeeping

Resource: Eligia Murcia

Record Keeping for Small Rural Businesses

Handbook on Small Enterprises for Hill Tribe People in Thailand

Credit Union League of Thailand Limited

And

Micro Economic Development Project

Support by

Food and Agriculture Organization of the United Nations

2003

3. Possible sources for funding these new businesses

Resource:

Premchander & Polman

Promoting Rural Women's Cooperative Businesses in Thailand & Handbook on Small Enterprises for Hill Tribe People in Thailand

Promoting rural women's cooperative businesses in Thailand

A training kit

TECHNICAL NOTE NO. 26

RECORD KEEPING FOR SMALL RURAL BUSINESSES

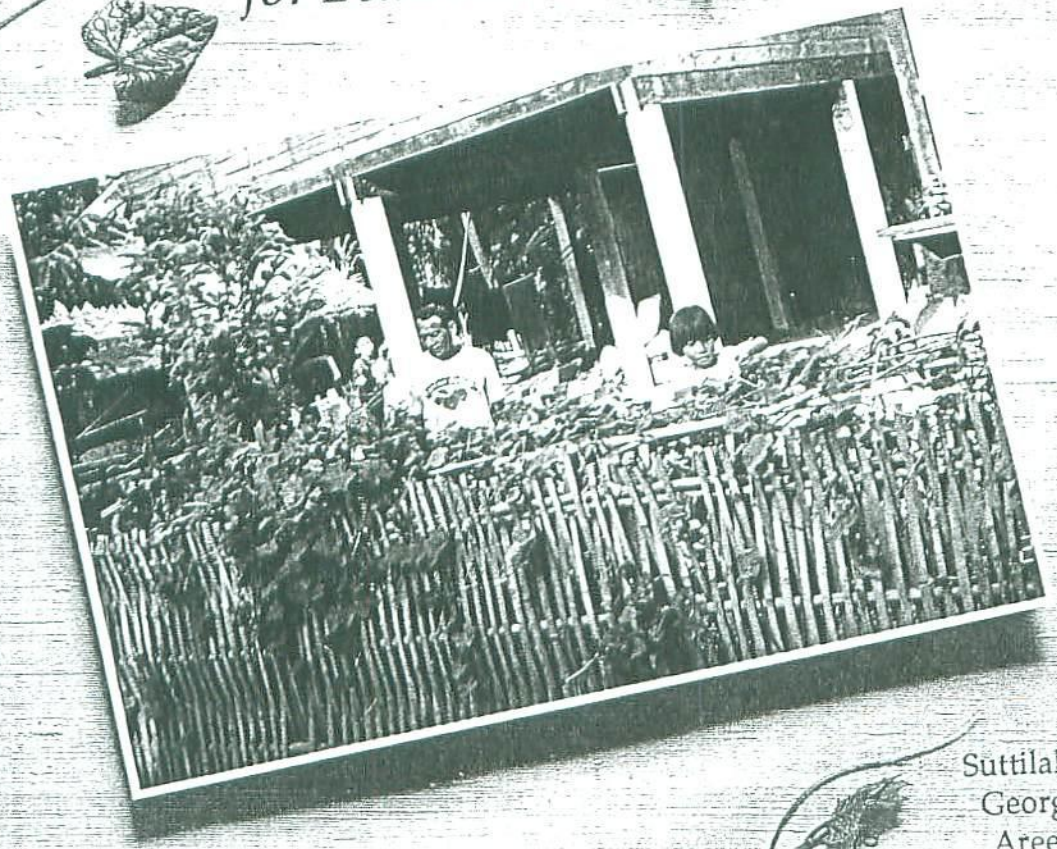
Eligia Murcia

Successfully implementing the practice of transplanting and cultivating micronutrient rich NUS requires a proven model

Such a model has been developed by two of Thailand's most distinguished scientists Aree Valyasevi, M.D. and Sutilak Smitasiri, Ph.D.

VITAMIN A-RICH FOODS IN THAILAND

A Model Nutrition Communication for Behavior Change Process



Suttilak Smitasiri
George A. Attig
Aree Valyasevi
Sakorn Dhanamitta
Kraisid Tontisirin