

Comparison of nutrient content of local foods and imported foods (100 grams or ~ ½ cup* edible portions)

Food item	Energy Kcal	Fiber g	Calcium mg	Iron mg	Zinc mg	Provitamin A beta-carotene equivalents	Vitamin B ² Riboflavin mg	Vitamin B ³ Niacin mg	Vitamin C mg
LOCAL FOODS									
Banana, white-fleshed ripe, raw	103	0.8	11	0.6	0.2	46	0.08	0.7	17.3
Banana, white-fleshed, green, boiled	111	1.2	5	0.5	0.2	116	0.04	0.5	9.0
Banana, yellow-fleshed, <i>Karat</i> , raw	na	na	68.6	na	na	2473	14.3	22.6	na
Breadfruit, unseeded, mature, boiled	75	2.5	18	0.2	0.1	30	0.05	0.7	22
Breadfruit, seeded, ripe, boiled	na	na	na	na	na	939	na	na	na
Taro, common taro, white, boiled	99	0.8	34	1.0	0.8	38	0.03	0.6	5
Taro, giant swamp taro, unspecified, boiled	72	2.5	165	0.6	1.9	27	0.01	0.3	7.9
Taro, giant swamp taro, yellow-fleshed, boiled	na	na	305	0.8	7.0	4486	na	na	na
Pandanus, yellow-fleshed, fresh	86	3.5	88	0.4	0.3	941	0.02	0.9	5.2
Garlic pear fruit (apuch), yellow-fleshed, raw	58	1.5	11.3	0.6	na	1080	0.04	0.5	45.3
IMPORTED FOODS									
Apple, raw	54	2	5	0.2	0.1	10	0.01	0.1	5
Biscuit, plain sweet	451	2	31	1.1	0.4	6	0.02	1.6	0
Rice, white, boiled	123	0.8	4	0.3	0.6	0	0.01	0.6	0

Sources: Dignan et al., Pacific Island Food Composition Tables 2nd Ed, 2004; Englberger et al. 2003, 2006, 2008. na: not available

* For comparison of other local or imported foods, see Dignan et al. 2004 and scientific papers.

** Approximate weights of some common items are: one *Karat* banana ~100 to ~300 g, one apple ~130 g, one sweet biscuit ~7 g.Notes on scientific names of local foods: banana-*Musa sp.*; breadfruit-*Artocarpus sp.*; common taro-*Colocasia esculenta*;giant swamp taro-*Cyrtosperma merkusii*; pandanus-*Pandanus tectorius*; garlic pear-*Crataeva speciosa*.

Note: Traditional dietary patterns included a consumption of up to 4 cups of starchy staples per day or 1000 grams (Malolo et al 1999).

Annex 2 Samples of “Let’s go local” materials

ORGANIZATION LOGO

The IFCP logo presents a symbolic plate of local foods: giant swamp taro (left), banana (right), breadfruit and coconut (center), green leaf (vegetable symbol, lower right), and fish. The foods are placed on a traditional Pohnpei woven eating plate made from a coconut frond.



GO LOCAL BILLBOARD

The “Go Local” Billboard presents a symbolic presentation of local foods and a family. The father is planting local foods and teaching his child, while the mother is preparing the family meal. IFCP’s logo is in the lower right corner. Three billboards were constructed and placed in strategic spots in Pohnpei, including at the Pohnpei State Hospital.



GO LOCAL T-SHIRT

The IFCP t-shirt has our slogan “Let’s Go Local” on the front and IFCP logo on the back. The colors are: yellow, orange, and green. The first two colors represent yellow and orange-fleshed carotenoid-rich varieties and provide an opportunity to discuss these varieties and their health benefits. The green color represents growth, plants and agriculture.

The t-shirt text can be varied. For example, we have a “Let’s Go Local” High School Club” for one version. The Pohnpei Diabetes Control Project name was included on the back with the IFCP name for a project with that group.

As an affiliate of IFCP, the newly formed Island Food Community of Kosrae adopted the same design, but used its own name on the back.



LET’S GO LOCAL SONG

IFCP’s theme song is “Let’s Go Local”. This song focuses on physical activity (planting) and dietary improvement (promoting local food, particularly, the yellow-fleshed varieties, which help protect against 1) non-communicable diseases, such as cancer, diabetes, heart disease and 2) micronutrient deficiencies (such as vitamin A deficiency and anemia). Handouts of the song are printed on yellow paper to strengthen the “Yellow Varieties Message”. Local food educators wear their “Let’s Go Local” t-shirts when teaching the song.

Go Local Song
“Let’s Go Local”
Composed by: Gibson Santos

LET’S GO LOCAL
LET’S GROW LOCAL
LET’S EAT LOCAL
LET’S STAY LOCAL

VITAMIN A
GOOD FOR EYESIGHT
NO HEART PROBLEMS
DIABETES

YELLOW VARIETIES
COMES FROM LOCAL
KARAT BANANA
AND MANY OTHERS MORE

Annex 2 Samples of “Let’s go local” materials

“CHEEF” BENEFITS OF LOCAL FOOD SONG

This song teaches the “CHEEF” benefits of local food: Culture, Health, Environment, Economy, and Food security. As the shift to rice as a daily food is a major dietary problem, one verse suggests to not eat rice as it has no beta-carotene or provitamin A, which helps protect against vitamin A deficiency, certain cancers, heart disease, and diabetes. Handouts of the song are printed on green paper to represent plants and growing food.



GOING YELLOW DVD

This DVD presents a humorous family drama, along with a wealth of information on health and nutrition. The story tells about a wacky family which receives the name of “the yellow family” as they learn about the benefits of *Karat* and other yellow-fleshed nutritious varieties and other local food. The DVD is available both in English and Pohnpeian. There is a Teachers Manual with questions and answers to provide further guidance to those using the DVD.



TRADITIONAL FOOD OF POHNPEI DVD

This DVD is one product of the Pohnpei case study in the global health study led by the Centre for Indigenous Peoples' Nutrition and Environment (CINE). The script focuses on the rapid shifts in lifestyle and the adverse effects on dietary quality and health. The film presents both the “old” and the “new” along with discussions about the importance of local foods and varieties and efforts to promote them.



POSTERS AND PRINT MATERIAL

Pohnpei Bananas: Carotenoid-rich Varieties Poster

This poster presents photographs of 15 yellow-fleshed carotenoid-rich Pohnpei bananas varieties, information on classification, carotenoid content, and a message explaining the health benefits of growing and eating carotenoid-rich banana varieties. This includes protection against cancer, diabetes, heart disease, vitamin A deficiency and anemia (weak blood). This poster focuses on carotenoid-rich and rare varieties, whereas a more total collection of photos and information is presented in the Pohnpei Bananas booklet. Varieties are ranked according to their beta-carotene content, starting at the top left-hand corner for the variety having the most.



Annex 2 Samples of “Let’s go local” materials

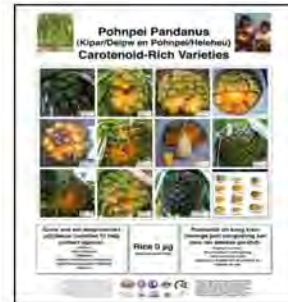
Pohnpei Carotenoid-Rich Foods Poster

This poster focuses on the “Yellow Varieties Message” for banana, giant swamp taro, breadfruit and pandanus. It shows that the varieties with deeper color have higher beta-carotene content. The poster is designed to also show that the white-fleshed Utin Menihle is still better than the common imported food of rice, as it contains at least some beta-carotene but rice contains none at all. Information on varieties of giant swamp taro, breadfruit, and pandanus is also presented.



Pohnpei Pandanus: Carotenoid Rich Varieties Poster

This poster presents photographs of 11 carotenoid-rich Pohnpei pandanus varieties, information on carotenoid content, and health benefits. Nine of the varieties were taken from Mwoakilloa Atoll and two were taken from Kapingamarangi Atoll. The poster again presents the message that rice contains no beta-carotene at all, whereas pandanus varieties do. The poster also helps the Pohnpei community learn about the different varieties, for the first time presented visually as a poster.



Pohnpei Bananas: Carotenoid-rich Varieties Booklet

This booklet presents information on Pohnpei bananas, including photographs of 31 varieties. The names of all Pohnpei banana varieties (over 50) is presented, as agreed upon at a farmers workshop in 2003. Primary identifying characteristics of the varieties are listed in a preliminary table, and the health benefits of yellow-fleshed carotenoid-rich bananas are explained, along with flesh colors and relationship to carotenoid content. The varieties having the richest concentrations of presented first. Three banana recipes are shared at the end of the booklet.



This is the fourth poster in a global series by FAO, CINE and CRDI. The poster focuses on banana, breadfruit, taro, fish, coconut, green leafy vegetables, and pandanus and presents issues of biodiversity, nutrition/health, taste, economics, and availability. Data are presented on the number of species and varieties estimated for the Pacific Islands and ranges of nutrient content of the species and varieties presented. IFCP was involved in the collection of information and development of this poster as a part of the project on traditional food systems led by CINE.



Annex 2 Samples of “Let’s go local” materials

IFCP Brochure

This double fold brochure presents overall information on IFCP, including its vision, mission, contact details, a recipe and other information on local food and health issues. The brochure is available both in Pohnpeian and English. Photographs are presented for some of the staple foods of Pohnpei, including banana (Karat), breadfruit, and giant swamp taro. A recipe is given for banana (Daiwang) pancakes. Both outer folds present the IFCP logo.



FSM Telephone Directory Entry for IFCP

A colourful two-page entry in the FSM Telephone Directories since 2007 provides information on the Island Food Community of Pohnpei, including background, vision and main areas of focus. These are awareness, conservation of rare varieties, small-scale processing of local foods and research.

The photos include the Go Local billboard (see first item in this appendix), *Karat* phone card, an end scene in the *Going Yellow* film (above), students in Let’s Go Local t-shirts (below) learning about Pohnpei bananas, and container gardening in the Traditional Food for Health case study in Pohnpei, part of the CINE global health project. The Pohnpei Bananas poster is featured in two photos.



IFCP Newsletter

The *LOCAL FOOD TRENDS* is a four-page newsletter, presenting a summary of activities for the year. Most articles are taken from articles prepared for the bi-weekly Kaselehlie Press newspaper. This issue presented items on the completion of the Island Food Multipurpose Building, the Let’s Go Local High School club as they sing food promotion songs, research on resistant starch in Pohnpei banana varieties, a display of IFCP awareness materials, recipe, workshop on the health values of eating fish, the charcoal oven, the rising prices workshop, World Food Day, and the 2009 summer team of 11 visiting researchers, interns and staff.



Annex 2 Samples of “Let’s go local” materials

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OTHER ITEMS

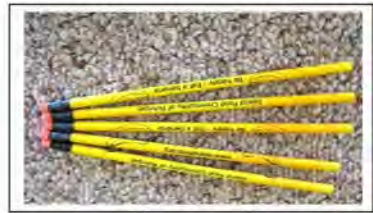
IFCP Promotional Pens

The yellow IFCP pen presents IFCP’s website www.islandfood.org, and the message “Grow and Eat Yellow Varieties.” The bright yellow color represents yellow-fleshed varieties, such as *Karat*. The red IFCP pen presents IFCP’s slogan “Let’s Go Local”. The red color signifies warning, and relays the message of the present health crisis related to diet and lifestyles.



IFCP “Be Happy- Eat a Banana” Pencil

This presents the name and website of IFCP and this message: “Be Happy- Eat a Banana”. The pencil attracts interest as it changes color from orange to yellow (after rubbing it, or if placed in a warm place). Bananas contain tryptophan, which is converted to a mood-enhancer in the body, and are known as a “good mood food”, the message taught here.



IFCP *Karat* Sticker

This presents a *Karat* banana bunch drawing and the message: “Grow and Eat *Karat*, Pohnpei State Banana.” The Pohnpei governor proclaimed *Karat* as the state banana in 2005, due to its cultural importance and rich nutrient content. The IFCP logo is on the lower right corner. The sticker can be used for car bumpers or other places.



FSM Telephone Card

This card was developed as another tool to promote *Karat*. It presents a mother feeding *Karat* to her child, showing the peeled banana and its deep yellow orange color. The message is “Promote *Karat*: the State Banana of Pohnpei”. The \$5 denomination was selected as it is commonly used.



Annex 2 Samples of “Let’s go local” materials

POSTAL STAMPS

Karat Stamp Series

The *Karat* stamp series is a four stamp set of commemorative stamps, produced with the FSM Philatelic Bureau. There are four denominations, 4, 10, 22, and 37 cents. The message is: “*Karat* has a very unusual texture. It is very smooth and thus perfect for babies as their first food to complement breastmilk at around 6 months.” The photos include a mother feeding *Karat* to her infant, a harvested bunch, the bunch still on the plant with its erect growth, and the peeled fruit showing the yellow coloration compared with another variety.



Micronesian Banana Series

The FSM Micronesian Banana stamps are a Definitive Series of eight stamps, with one Pohnpei banana variety featured per stamp along with the name of the variety. All these eight varieties are among the yellow-fleshed carotenoid-rich varieties. They are all particularly valuable for their health benefits. Most are rare. The *Daiwang* banana is included as it is carotenoid-rich and very tasty, but has been considered by many as a low status banana, due to particular perceptions.



IFCP *Karat* Necklace Ivory Nut Carving, made locally



IFCP “Let’s Go Local” Cloth Bag Pohnpei Bananas (e.g. *Karat*)



Annex 2 Samples of “Let’s go local” materials

POSTCARDS

Karat Postcard

This presents a mother feeding her baby Karat, a banana with deep yellow flesh, quite different from most banana varieties. The message says: “Karat is rich in carotenoids and has important health benefits. Karat has a very unusual texture for a banana. It has smooth and thus perfect for babies as their first food to complement breastmilk, at around six months.”



Giant Swamp Taro Postcard

This postcard presents different parts of the giant swamp taro plant: flower, the stem showing varietal differences by stem color, whole plant and the corm. The message states: “Giant swamp taro..., is an important staple food for Pohnpei. The corm... is rich in essential minerals, vitamins, carotenoids and fiber, all important for health.”



Pandanus Postcard

This postcard presents a pandanus variety photo. The message on the back states: “Pandanus fruit is an important food for Pohnpei, especially the outer islands. There are many varieties, including this one called Majak. The deep orange-fleshed varieties are rich in provitamin A carotenoids. They have important health benefits....”



Fishing Postcard

This postcard promotes fish and fishing, a good physical activity which has health benefits. The message is: “Setting a net to catch reef fish. Fish is an excellent source of protein, several vitamins and minerals, and omega-3 fatty acids, which promote health benefits.” The card also presents an idyllic view of the ocean and island life.



Annex 2 Samples of “Let’s go local” materials

CHARCOAL OVEN

The development of the portable charcoal oven has been one of the popular projects the Let’s Go Local campaign. It provides an alternative to cooking with kerosene, making use of available coconut shells for making the charcoal. It promotes baking, which is a healthier way of cooking than frying, which has become popular in recent years in Pohnpei. It is more convenient than the earth oven, is energy-efficient and reduces emissions to the environment due to open fire cooking. The charcoal oven can be built locally and a design is available and list of materials needed. The photo shows that there are two shelves. The hot charcoal is in the tray at the bottom.



LAMINATED NAME CARDS

Laminated name cards for the rare banana varieties are useful for displays to help people to learn the varieties and the spellings. Laminated cards may be used many times, reducing preparation time for displays. These were made on yellow paper to strengthen the “Yellow Varieties Message”.



RECIPE COLLECTIONS

The Women of Mand Recipe Collection presents recipes and photos of the women of Mand Community in Madolenihmw with their cooked products. These were collected in the documentation of the Traditional Food System of Pohnpei as part of the CINE-led global health project. The recipes include those on breadfruit, banana, taro, and coconut, and snack foods and drinks (hibiscus tea).



IFCP CALENDARS:

One calendar focused on one variety of banana for each month, and another calendar focused on one variety of pandanus (from the outer atoll of Mwoakilloa) for each month.



Annex 3 Sample survey tool for evaluation purposes

Community _____ Date _____

Name _____ Interviewed by _____

Thank you for participating in this community project for improving agriculture and health. This information will be kept confidential and will be used to help you and the community to improve your food production and health and to serve as a baseline for this project.

Have you eaten (name the item) in the past 7 days? If no, mark 0 and go to next question. If yes, ask how many days that the person ate that food item. To help explain what that food item includes, read off the individual items and circle any that they ate.

Food Item	# days /week
Rice in any form: cooked alone, in soup or in any dish	
Any kind of flour-based food: bread, ramen, doughnut, cake/cooky, cracker, other	
Any kind of local food: banana (uht), breadfruit (mei), taro (sawa), giant swamp taro (mwahng), Hawaii taro (sawahn awai), yam (kehp), cassava, sweet potato	
Any kind of local fruit: raw banana, papaya, pineapple, pandanus, mango, local apple (apel in pohnpei), rose apple (apel in wai), guava, citrus-karer,	
Banana, non-yellow fleshed: Utin Menihle, Utin Ruk, Inahsio, Utin Pihsi, Kaimana, Preisihl, other	
Banana, yellow-fleshed: Utin lap, Utimwas, Karat, Akadahn, Daiwang, Ihpali, Mangat, Karat en lap, Utin Kerenis, lemwahn, Utiak, Peleu, Utin Rais/Kudud, other	
Any kind of imported fresh fruit: apple, orange, grapes, other	
Any kind of local vegetable: cabbage, cucumber, eggplant, pumpkin, banana flower, chaya, pele, sweet potato tops, kangkong, spinach, pepper leaves, tomato, beans, bell pepper, squash, tomato, other	
Any kind of imported vegetable: corn, tomato, carrot, cabbage, frozen vegetables, tomato ketchup	
Any kind of fish chicken meat (sali) or egg, milk	

We would like to talk with you about your farm and involvement in this project. We are focusing on banana and tree crops and would like to know about the varieties that you grow. Can you tell us what varieties you are growing of the following?

Banana Variety	Breadfruit Variety
1.	1.
2.	2.
3...	3...

Annex 3 Sample survey tool for evaluation purposes

Coconut Variety	Citrus Variety
1.	1.
2.	2.
3...	3...
<u>Other</u> Guava	Chestnut
Soursop	Papaya (list varieties)

What do you need for improving your farm (in reference to the above crops)?

- Technical advice
- Planting materials
- Other _____

Have you heard about the health benefits of the yellow- and orange-fleshed banana varieties rich in beta-carotene?

- Yes
- No

What disease or diseases do they help protect against?

- a) Cancer b) Diabetes c) Both d) Neither e) Don't know

Which banana variety has the most beta-carotene? _____

What is the most important recommendation for preventing those cancers related to food, nutrition and physical activity?

- a) Eat local foods b) Eat healthy c) Keep a healthy weight d) Don't know

Waist circumference _____ Cut-offs: men-37 inches women-32 inches

Do you smoke or chew betel nut:

- Yes
- No

Thank you!

Annex 3 Sample survey tool for evaluation purposes

Sample Tabulation Form for Selected Survey Results

Sample presentation for 7-day food frequency results for food consumed

Name of Project _____ Date _____

Name of Community _____ Number of households _____

(Data represents the number of households consuming that food item; percentages can also be calculated)

Rice	Flour	Local Food									
0 days n	1-2 days n	3-6 days n	7days n	0 days n	1-2 days n	3-6 days n	7 days n	0 days n	1-2 days n	3-6 days n	7days n

Local Fruit	Local Vegetable						
0 day	1-2 days	3-6 days	7 days	0 days	1-2 days	3-6 days	7days

Non-yellow Fleshed Banana	Yellow Fleshed Banana						
0 days	1-2 days	3-6 days	7days	0 days	1-2 days	3-6 days	7days

Sample data presentation for banana varieties (or other crop) grown

(Data represents the number of households growing that number of varieties of bananas)

0 Varieties	1-2 Varieties	3-4 Varieties	5-6 Varieties	7-8 Varieties	9-10 Varieties	11-12 Varieties	13-14 Varieties	15-16 Varieties

Annex 4 FSM National Government Proclamation on Food Security Issue,
June 7, 2010



The President
Palikir, Pohnpei
Federated States of Micronesia

PROCLAMATION

TO ENCOURAGE AWARENESS ON FOOD SECURITY ISSUE IN THE FEDERATED STATES OF MICRONESIA

WHEREAS, the Government recognizes the importance of food security as an issue that must be addressed in the Federated States of Micronesia, due to the growing trends of shifting from a traditional diet, based mainly on starchy fruits and root crops, coconut, fish and other seafood, rich in nutrients and fiber, to imported foods that contain less nutrients and have excessive levels of fat, salt, sugar and those with artificial preservatives that have detrimental effect on the health and wellbeing of the people; and

WHEREAS, one way to address food security concerns is to ensure that all the people have physical, social and economic access to sufficient, safe and nutritional food supply that meets sustainable dietary needs consistent with a healthy life; and

WHEREAS, the FSM Strategic Development Plan sets a goal towards food security, enhanced cash incomes, healthy livelihoods, and opportunities for domestic and export markets, that at the same time promotes environmentally sustainable food production through a meaningful and achievable policy framework; and

WHEREAS, the Government must take the initiative in introducing innovative efforts that sustain the Micronesian culture, given the Nation's resources and potential.

NOW THEREFORE, I proclaim that the National Government of the Federated States of Micronesia is committed to a policy that encourages enhanced local food production, consumption of local produce and import substitution to the fullest extent possible, and practices based upon sustainable use of food resources. In all government events and festivities and official ceremonies, utilization of local food is encouraged to create people's awareness on the continuing need to adopt a healthy and balanced lifestyle. All the departments and agencies in the National Government are to give effect to this mandate.

Issued on this 7th day of June, 2010 at Palikir, Pohnpei.

Manny Mori
Manny Mori
President



Over the past decades, food and dietary patterns in Pacific Island Countries have undergone significant changes. Traditional diets consisting of fresh fish, root crops, breadfruit and local fruits and vegetables have been increasingly replaced by imported, often highly processed foods such as white rice, flour, instant noodles, canned foods, fatty low grade meats and soft drinks with a high sugar content. At the same time, a more sedentary lifestyle is becoming common among many Pacific Islanders

As a result, Pacific Island Countries now face a wave of dietary and lifestyle-related health problems. Chronic non-communicable diseases including diabetes, heart disease and cancer are now the main causes of death, illness and disability among adults in the Pacific Island Countries. Furthermore, countries are burdened by micro-nutrient deficiencies related to a lack of essential vitamins and minerals in the diet, such as vitamin A deficiency and anaemia.

There is evidence that the traditional diet, lifestyles and food systems of the Pacific protected people in the past against these health problems while also conserving the environment and preserving traditional customs and culture. Food composition data provides scientific evidence of the rich nutrient content and health benefits of the traditional foods, including breadfruit, banana, taro, yam, cassava and sweet potato, as well as coconut, fish and seafood, and various fruits and vegetables.

This booklet written by Dr. Lois Englberger is based on the “go local” concept developed by the Island Food Community of Pohnpei. The guidelines suggest how people and groups in other countries or regions can adapt this approach to suit their situations in order to promote the sustainable production and consumption of nutritious local foods.

