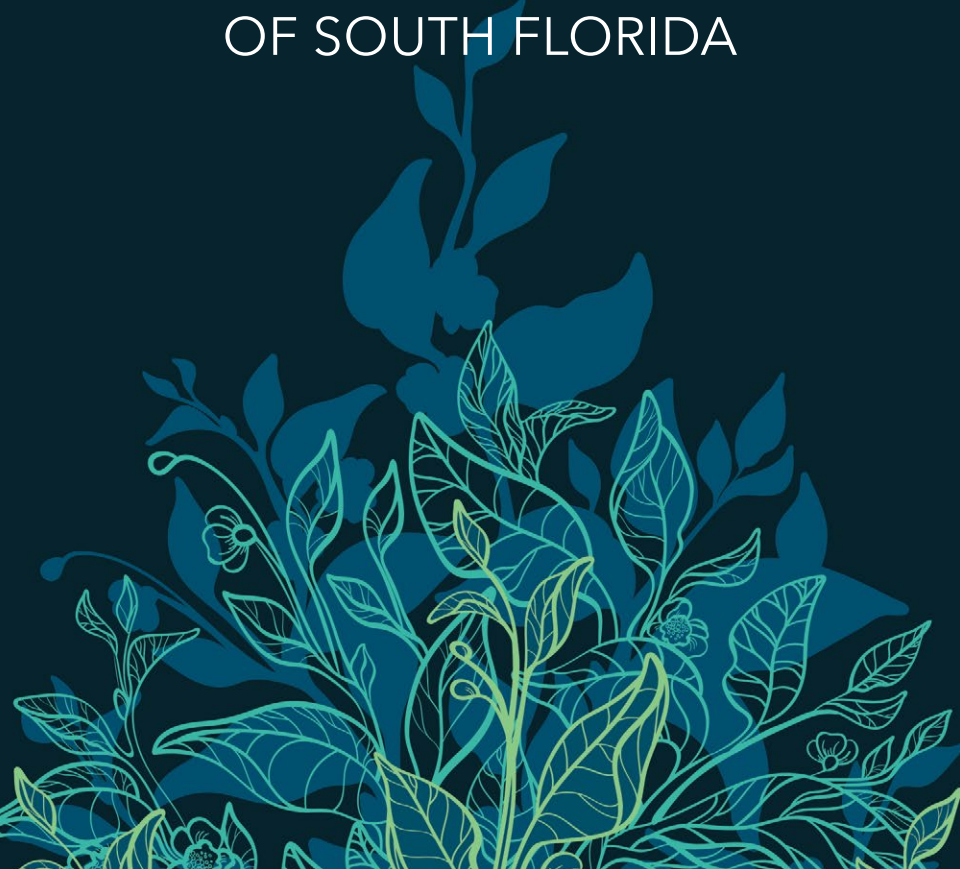


# COMMON TROPICAL FOOD FOREST PLANTS OF SOUTH FLORIDA





# INTRODUCTION

The modern-day food forest is derived from biodiverse, indigenous agroecosystems, dating back millennia. The ecological design of the food forest is rooted in the structure and diversity of natural systems, mimicking high diversity levels, nutrient cycling, root support, and multiple canopy layers (creating a “closed” system). In recent years, urban food forests have been highlighted as food security projects. These small food forests can also substantially increase other important ecosystem services (e.g., carbon storage, watershed protection, and cooling from increased shade).

This booklet provides a resource for the support of food forest development in urban South Florida. It is the result of student internships by Laura McCoy, Alex Crow, Jennifer Perez, and Érika Rocha Guimarães with The Education Fund Food Forests for Schools program, as part of the FIU Institute of Environment’s Tropical Conservation Internship Program and Agroecology Program. The interns were supervised by Dr. Cara Rockwell, FIU Institute of Environment.

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# GROUNDCOVER LAYER

*Student laying in a bed of Longevity  
Spinach at Phyllis Ruth Miller Elementary*



## GROUNDCOVER LAYER



### SISSOO SPINACH

*Alternanthera 'Sisso'* (Amaranthaceae)



Perennial herb that grows as an extensive groundcover. The crinkled, arrow-shaped leaves are bright green and waxy. The stem is light green, thick, and has small nodes which can form new roots.



Primarily used as a vegetable for its edible leaves, either consumed raw or cooked. It has a crunchy texture and can be slightly bitter.



Great source of thiamin, niacin, vitamin C, calcium, magnesium, zinc, and oxalic acid.



Best in well-drained soil.



Full sun but tolerates shade.



### PERENNIAL PEANUT

*Arachis glabrata* (Fabaceae)



Perennial herb that grows rapidly along ground surface and to one foot tall. The compound leaves have four to six rounded leaflets in pairs. Bright yellow flowers occur throughout the year.



Flowers are can be eaten cooked, adding a nutty flavor. Flowers and leaves can be used for salads and garnish. Enhances soil with nitrogen-fixing root associations.



High protein content.



Best in well-drained soil.



Full sun but tolerates partial shade.





## MALABAR SPINACH

*Basella alba* (Basellaceae)



Perennial vine that can grow to 33 feet long. Some varieties have thick, soft red stem. Leaves are vivid green and heart shaped; flowers are globe shaped, white/green and pink tipped; the fruit is small and violet resembling round berries.



The leaves and the tips of stems can be consumed raw or cooked. Malabar spinach is a common ingredient in Asian dishes like dumplings, curries, and stews.



Contains protein, carbohydrates, fiber, calcium, iron, magnesium, potassium, sodium, vitamins A and C.



Best in moist soil.



Full sun.



## GOTU KOLA,

*Centella asiatica* (Apiaceae)



Leafy perennial with tight bunches of tiny leaves with circular white centers. Flowers are small, white/violet, and form cluster.



Leaves and flowers are edible. Used for gastrointestinal ulcers, depressions, fatigue, circulatory complications, and epilepsy. Commonly consumed in juices and fine powders or applied topically to treat wounds.



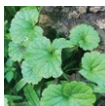
Contains vitamin C, protein, fiber, and iron.



Best in moist soil.



Full sun to partial shade.





## GROUNDCOVER LAYER



### SWEET POTATO

*Ipomoea batatas* (Convolvulaceae)



Perennial vine that grows several feet in length. Leaves are green, heart shaped and roughly three inches long. The roots are oblong and their exterior and interior color depends on the variety. The flowers have fused petals that vary in color, from purple to pink to white.



The roots and leaves can be consumed once cooked. Some varieties are also used to treat blood related issues as well as diabetes.



The leaves are a good source of complex carbohydrates, fiber, vitamins A, C and E.



Best in well-drained soil.



Full sun.

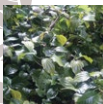


### THAI PEPPER LEAF

*Piper sarmentosum* (Piperaceae)



Perennial herb characterized by an extensive rhizome network. Heart-shaped leaves have a strong peppery taste and are a true green color with a glossy coat. Flowers are white and are arranged in spikes.



The leaves can be consumed raw or cooked; typically used to enhance the taste of soups or added to salads and sandwiches. Used for its antifungal, antihypertension, antibacterial and antioxidant properties.



Contains vitamins A and B.



Best in moist to well-drained soil.



Full sun to partial shade.



# VERTICAL LAYER

*Passion Vine growing at the entrance to the  
Joella C. Good elementary school garden*



## VERTICAL LAYER



### BUTTERFLY PEA

*Clitoria ternatea* (Fabaceae)



Perennial vine that grows up to 10 feet long. It has compound leaves with three to five leaflets. The showy flowers are indigo-purple and up to two inches long. The fruit is a flattened pod.



Tea from the flowers is used in Ayurvedic medicine to treat stress and enhance memory. Flowers are used as food coloring and as garnish. Enhances soil with nitrogen-fixing root associations.



Contains antioxidants, peptides, and sodium.



Prefers sandy soil.



Full sun.



### SEMINOLE PUMPKIN

*Cucurbita moschata* (Cucurbitaceae)



Traditionally grown by native people in Florida, this perennial vine has round leaves, sometimes lobed, that can grow up to a foot long. The yellow flowers are funnel-shaped, with five lobes. The fruit is variable in size and form, usually yellow with pale spots or orange streaks.



The fruit can be consumed raw, cooked, or pickled. The flowers, leaves, and young stems are eaten raw or cooked, often added to soups.



Rich source of vitamins A and C and copper.



Prefers nutrient-rich, well-drained, alkaline soils.



Full sun to partial shade.



## CREEPING CUCUMBER

*Melothria pendula* (Cucurbitaceae)



Perennial vine that has slender stems. The leaves are dark green with three to five lobes that grow up to three inches long. The small yellow flowers have five petals. The fruit resembles a tiny watermelon.



The unripe berries are edible raw and added to salads. CAUTION: Ripe fruit should not be consumed as it is a powerful laxative.



Rich in protein, fiber and carbohydrates.



Requires moist soils.



Full sun to partial shade.



## PASSION FRUIT

*Passiflora edulis* (Passifloraceae)



Perennial vine that produces beautiful round flowers that vary in color. Leaves are glossy, green, and lobed. Round, smooth fruit grow up to three inches in diameter and become wrinkled when mature. Exterior color of the fruit vary; the pulp is always yellow, gelatinous and contains many small seeds.



The pulp is consumed raw or cooked. The leaves, flowers, and fruit can be used medicinally to reduce inflammation or treat bronchitis.



Fruit offers vitamins A and C, riboflavin, magnesium, potassium, copper, and protein.



Best in moist soil.



Full sun.



### WINGED BEAN

*Psophocarpus tetragonolobus* (Fabaceae)



Herbaceous perennial that can grow up to 13 feet long. The compound leaves usually have three leaflets each that are three to six inches long. The inch-long flowers are pale blue/light purple. The beautiful, winged pods are six to eight inches long and will turn ash-brown when fully ripe.



The entire plant is edible. The roots are eaten cooked or raw. The leaves can be added to salads and are eaten like spinach, the periwinkle flowers are sweet and edible, and the bean is edible raw or cooked as a green pod, or cooked as a shelled bean.



Contains vitamin A, C, calcium, iron, and a high content of protein.



Prefers well-drained soils.



Full sun.



### CHAYOTE

*Sechium edule* (Cucurbitaceae)



Perennial vine that can grow up to 40 feet long. The leaves are heart-shaped and can be up to 10 inches long. The fruit is green, pear-like, with coarse wrinkles.



The fruit is eaten cooked, typically with seasoning since it has a mild flavor. The root is eaten cooked like a yam. Tea from the leaves is used to treat arteriosclerosis, hypertension, and to dissolve kidney stones.



The fruit is rich in amino acids.



Well-drained loam soil.



Full sun to partial shade.



# SMALL SHRUB / HERBACEOUS LAYER

*Student proudly showing off plants at Gertrude  
K. Edelman Sabal Palm Elementary School*



## SMALL SHRUB / HERBACEOUS LAYER



### TOOTHACHE PLANT

*Acmella oleracea* (Asteraceae)



This annual herb grows up to 15 inches tall. Its oval-shaped leaves are two inches long, opposite, with softly waved edges. The flowers are composed of both tiny yellow flowers and central tiny red flowers in stalked heads.



Commonly used to treat toothaches and mouth inflammation. It can also be used to treat dermatitis, dry mouth and gastric ulcers. It is also a diuretic. The leaves are used cooked in soups or stews such as tacacá of the Amazon region.



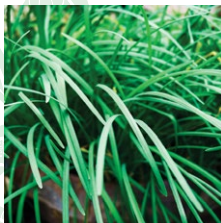
Rich in flavonoids and high content of the bioactive fatty acid Spilanthol.



Best in well-drained soils.



Full to partial sun.



### GARLIC CHIVES

*Allium tuberosum* (Alliaceae)



Perennial herb up to two feet tall, with a flat, grass-like leaf, not a hollow one as in onion chives. Small, white flowers grow in stalks that can grow up to two feet tall.



The leaves can be consumed cooked, typically added to stir-fry. The flowers can be eaten or dried and made into floral arrangements.



Rich in iron, potassium, thiamin, riboflavin, beta carotenes and vitamins A and C.

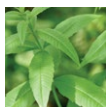


Well drained, nutrient rich soil.








Full sun.

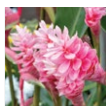




## LEMON VERBENA






*Aloysia citrodora* (Verbenaceae)

-  Perennial woody shrub with a strong lemon fragrance. It has long curved pointed green leaves, and an array of tiny flowers that are white to purple.
-  The leaves are commonly used to flavor chicken and fish dishes, salad dressings, and beverages. Young tender leaves are eaten in salads and stir fries. Used for its anti-inflammatory, antioxidant, and anti-tumor benefits.
-  Contains many active chemical compounds such as terpenoids, volatile oils, and phenolic acid.
-  Best in moist, well-drained soil.
-  Full sun to partial shade.



## GALANGAL

*Alpinia galanga* (Zingiberaceae)

-  Perennial herb that resembles the appearance and scent of ginger (*Zingiber officinalis*). Galangal has a thick rootstock mostly whitish/yellow in color with red and green accents. This plant sprouts tubular and aromatic multicolor flowers, typically white combined with yellow/red or violet.
-  The rhizome, flowers and young shoots are used in Asian cuisine to flavor curries and stir-fry. The rhizome is used medicinally in teas to treat sore throats, nausea and diabetes.
-  Contains tannins, flavonoids, phenols and carbohydrates.
-  Best in well-drained soil.
-  Full sun to partial shade.



## BOK CHOY

*Brassica rapa subsp. chinensis* (Brassicaceae)



Biennial with a white root that sprouts dark green leaves with prominent white veins on thick white stems. Creates small yellow flowers that grow in clusters.



Leaves and stems are edible, raw or cooked. Bok choy is a favorite in Asian cuisine.



Contains protein, fiber, vitamins A and C, iron, and zinc.



Best in well-drained soil.



Full sun or partial shade.



## EDDO

*Colocasia antiquorum* (Araceae)



Perennial evergreen that grows up to six feet long. The small, heart-shaped leaves are typically purple or green and grow in clusters. The corms are hairy and have slippery white flesh.



The roots, young leaves and stems are edible once cooked. It is used to treat stomach problems and hypertension. Contains calcium oxalate crystals - may be an irritant.



Good source of starch, potassium and fiber.



Best in moist soil.





Full sun.




## CORIANDER (CILANTRO)

*Coriandrum sativum* (Apiaceae)

 Small herbaceous annual herb with a thin vibrant green stem from which narrow green leaves emanate. The flowers are small, white, and form an umbel. The fruit is green and resembles tiny brown round balls when dried, known as coriander seeds. The roots are off-white, tubular, and long.

 The entire plant is edible, raw or cooked. The leaves and stems can be used in curries, stir-fries, sauces, and guacamole. The seeds can be grounded to fine powder as a form of seasoning.

 Contains fiber, thiamine, vitamins C and E, calcium, iron, manganese, and zinc.


 Best in well-drained soil.


 Full sun to partial shade.





## TURMERIC


*Curcuma longa* (Zingiberaceae)

 Perennial evergreen shrub typically growing up to five feet long. Abundant rhizomes have brown skin and bright orange flesh.

 The roots are used as yellow dye as well as a spice in many Asian dishes. Fruit is dried and eaten like a raisin. The rhizome has antibacterial and anti-inflammatory effects, and it is used to treat fevers.

 Contains protein, carbohydrates, phosphorous and iron.


 Best in moist to well-drained soil.


 Full sun to partial shade.





## LEMONGRASS


*Cymbopogon citratus* (Poaceae)

 Perennial grass with long, fragrant green leaves and stalks. Leaves clump in the stem and droop towards the ground. The stalk becomes lighter near the ground, resulting in an off-white/light brown color.

 The stalk can be eaten as a vegetable when cooked, and the leaves may be used to make medicinal tea and add flavor to a dish. Oil can be extracted from leaves as insect repellent or as a fragrance in soaps/perfumes.

 Contains compounds such as aldehydes, terpenes, alkaloids, and flavonoids.


 Best in moist, well-drained soil.


 Full sun.





## CARDAMOM

*Elettaria cardamomum*, (Zingiberaceae)

 Perennial herb that grows on cane-like stems to 15 inches tall. It has fleshy rhizomes and sword shaped leaves. The flowers are white with hints of pink, with some varieties carrying reddish brown seeds.

 Fruits and seeds are used as a food seasoning and flavoring agent in Indian rice, tea, and baked sweets. Utilized as natural medicine to improve digestion and respiratory ailments.

 Contains antioxidants, carbohydrates, calcium, and potassium.

 Best in medium moisture to wet soil.

 Partial shade.



## ARUGULA

*Eruca sativa* (Brassicaceae)



Annual herb with leaves that have deep indentations. Flowers are characterized by white petals with purple veins. Provides small, green-shelled seed pods containing tiny round brown seeds.



Leaves can be eaten raw or cooked, typically on pizza or salads. The flowers can be eaten raw, but seedpods must be cooked before eating.



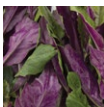
High in nitrate, vitamin C, and potassium.



Best in rich moist soil.



Full sun to partial shade.



## OKINAWA SPINACH

*Gynura bicolor* (Asteraceae)



Perennial spreading shrub that can grow up to 3 feet in height. The green and dark purple leaves are narrow and shaped like a rigid arrow, and the stem is green and fibrous.



The young leaves can be eaten raw. The older leaves are typically steamed, stir-fried, or added to soups.



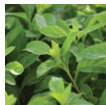
Powered with iron, potassium and vitamin A.



Best in moist soil.








Full sun to partial or complete shade.



## LONGEVITY SPINACH






*Gynura procumbens* (Asteraceae)

-  Leafy perennial vegetable providing excellent ground canopy. Produces continuous stems reaching 18-20 feet long. The leaves are bright green and pointed with small ripples on each side. The yellow flowers form loose clusters.
-  Popularly consumed in smoothies, salads, soups, and teas. Used to lower cholesterol, treat liver complication and as an antiviral.
-  Contains protein, alkaloids and volatile oils.
-  Best in well-drained soil.
-  Full sun to partial shade.



## OAXACAN LEMON BALM (BUSHY MATGRASS)

*Lippia alba* (Verbenaceae)

-  A vigorous perennial herb that can grow up to six feet tall. The branches spread and can develop roots when they touch the soil. The serrate leaves are oblong to oval, hairy and green. The inflorescence is white to violet along upper leaf axils.
-  The leaves can be consumed when steeped in teas made for fever, respiratory issues, intestinal problems, tachycardia, and menstrual colic.
-  The oil extract contains various chemical constituents including camphor, limonene, pinene and linalool.
-  Best in well-drained soil.
-  Full sun.



## YUCA, CASSAVA

*Manihot esculenta* (Euphorbiaceae)



Leaves are deeply-lobed, appearing almost palmately-compound, generally with seven lance-shaped blades and a long pink-tinted petiole. The beige stems are covered with characteristic knobby leaf scars. Both leaves and stems often emit a milky latex.



The tubers can be consumed boiled or made into a flour or tapioca, as a gluten free alternative to wheat. Leaves are used to treat hypertension, headaches and pain. Caution: roots and leaves must be properly prepared and cooked as they contain toxic cyanide compounds.



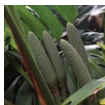
Great source of fiber, vitamin C, thiamine, riboflavin, and niacin.



Best in well-drained, sandy soil.



Full sun- very sensitive to shade.



## MONSTERA

*Monstera deliciosa* (Araceae)



Perennial vine with large, green, fan-shaped leaves that typically have lobes. The leaves grow up to 35 inches long and 30 inches in width. The fruit has a rough exterior similar to scales and is oblong in shape.



The leaves are commonly used as ornamentals. However, the fruit can be consumed raw when ripe or cooked. Fruit contains oxalic acid and over consumption may have a laxative effect.



Contains protein, carbohydrates, calcium, thiamin, phosphorous, fiber, and vitamin C.



Best in wet or moist soil.



Full sun to partial shade or complete shade.



## AFRICAN BLUE BASIL

*Ocimum kilimandscharicum* (Lamiaceae)



Perennial herb with many purple stems, the leaves are green, veiny, and highly aromatic. Produces a long stalk with purple flowers and small black seeds.



Consumed raw and cooked or used topically, can be used in foods, as pest control, or medicine. Used for its antibacterial, antifungal and antioxidant properties.



High amounts of essential oils which contains upwards of 200 compounds, including eugenol, citronellol, lomonene, limalool, and citriol.



Best in well-drained soil.



Full sun.



## CUBAN OREGANO

*Plectranthus amboinicus* (Lamiaceae)



Evergreen perennial with oregano-scented, thick, succulent, sprawling stems and fleshy leaves. It can grow to three feet long. Flowers are pale-purple and grow in densely velvety spikes.



Leaves can be consumed raw or cooked. Used to reduce inflammation, and for its antibacterial and antiseptic properties. Fresh leaves are used to treat burns, sores, ulcers and insect bites.



Contains arvacrol, codeine, flavones, phenols, tannins and aromatic acids.



Best in well-drained soils.



Full sun or shade; though it prefers partial shade.





## MEXICAN OREGANO

*Poliomintha longiflora* (Lamiaceae)



A perennial herb that produces fragrant, tubular purple flowers on a bushy vine with many short arrow-shaped green leaves.



Commonly used to flavor dishes, the leaves serve as a replacement for common oregano (*Origanum vulgare*). Mexican oregano is a bit sweeter and has a stronger flavor than regular oregano.



Great source of antioxidants, quercetin, catechin, cirsmaritin, naringenin, and anti-lipogenic enzymes.



Best in moist, well-drained soil.



Full sun to partial shade; performs best in cooler areas.



## GOOSEBERRY

*Ribes uva-crispa* (Grossulariaceae)



Perennial thorny shrub that can grow up to four feet tall. The leaves are simple, green, with lobes. Flowers are hermaphrodites, rosy yellow and come in clusters. Fruits resemble hairy grapes and are edible when green and tart or red-pink when they are sweeter.



Fruits are laxative but can be sparingly eaten raw or used to make pies and jams. Young leaves can be eaten raw but in small quantities.



Excellent source of vitamin C.



Medium moisture, well-drained soil.



Full sun to partial shade.

## SMALL SHRUB / HERBACEOUS LAYER



### SUGAR CANE

*Saccharum officinarum* (Poaceae)



Perennial grass grown for the thick stem. The stem is divided into nodes and internodes, the leaves are green, long, thin, and upright.



The stem can be consumed raw or cooked. Juice can be extracted by milling the stem and is typically mixed with lemon juice. Processing of the juice result in refined sugar. Has medicinal properties used to prevent cancer and to remedy the common cold.



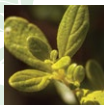
Rich in calcium, magnesium, potassium, iron.



Best in moist to wet soil.



Full sun.



### COSTA RICAN MINT (JAMAICAN MINT),

*Satureja viminea* (Lamiaceae)



Perennial small bush that can grow up to five feet tall and contains many small green leaves. The leaves are narrow, veiny, and round at the ends, sprouting out of thin green stems. During the summer, small white round flowers bloom.



The leaves are primarily used to season meats and soups in Trinidad. When fresh, the leaves can be used to flavor salads and teas, or used in smoothies and lemonades. Used medicinally for its antifungal and antiseptic properties.



Contains compounds such as carvacrol and thymol.



Best in well-drained soil.



Full sun to partial shade.



## STEVIA

*Stevia rebaudiana* (Asteraceae)



A perennial bushy herb with oblong, small green leaves with opposite arrangement. The small and tubular flowers with five white petals occur in clusters.



Leaves can be used fresh, steeped or dried as a sweetener and medicine. The leaves are used for their anti-diabetic, anti-glycemic, non-caloric, and anti-caries properties.



Leaves present high concentration of stevioside and rebaudioside, which are sweeter than cane sugar.



Best in rich, well-drained soil.



Full sun.



## NEW ZEALAND SPINACH

*Tetragonia tetragonioides* (Aizoaceae)



Annual or perennial bush with fuzzy triangular leaves. The leaves are bright green in color, with small yellow flowers along the stems.



Leaves can be eaten raw or cooked. Younger leaves are commonly consumed raw, older leaves are typically cooked to reduce bitterness.



Contains protein, carbohydrates, fiber, calcium, phosphorous and vitamins A and C.



Best in moist, well-drained soil.



Full sun.

## SMALL SHRUB / HERBACEOUS LAYER



### MALANGA

*Xanthosoma sagittifolium* (Araceae)



Perennial herb with large arrow-shaped leaves, around four feet. Its petiole can grow up to nine feet high and is attached at the base of the 'V' of the leaf. The rhizomes are tuberous and have dark brown rough skin. It has the typical inflorescence of the family, a green/yellow/white spathe with an off-white spadix.



The root can be eaten after boiling or as flour, and the young leaves are edible once cooked. The plant is grown as an ornamental and used medicinally for treatment of burns.



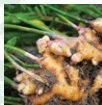
All parts of the plant contain calcium oxalate crystals—may be an irritant. Root is high in fiber and starch.



Better in moist soil.



Partial to full shade.



### GINGER

*Zingiber officinale* (Zingiberaceae)



Herbaceous perennial that grows to three feet tall. The leaves are narrow and long. It has abundant small yellow flowers. The root is usually light brown and aromatic; it is mainly tubular and grows other small finger-like tubes as extensions.



The rhizomes are commonly used in Asian cuisine as a spice to savory dishes or for tea. The leaves and root are used as a medicine to treat inflammation or motion sickness.



Contains cineol, citral, zingiberene, linalool, and geraniol.



Best in well-drained soil.

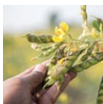


Full sun to partial shade, prefers shade.




# LARGE SHRUB/ MID-CANOPY LAYER


*Students at Gratigny Elementary showing off harvested Chaya*





## PIGEON PEA


*Cajanus cajan* (Fabaceae)

 Perennial woody shrub that can grow up to 13 feet. Most commonly grown in the subtropics and the tropics. A short-lived plant that has deep roots, thin green leaves, yellow flowers, and green fruit pods.

 The seeds, seedpods, young shoots, and leaves are edible. Plant has been used for medicinal purposes including to soothe coughs, sores and wounds among other ailments. Nitrogen fixer used to amend soil.

 Contains high amounts of protein, starch, calcium and other minerals.


 Best in moist soil.


 Full sun.





## PAPAYA


*Carica papaya* (Caricaceae)

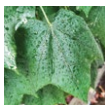
 Short-lived semi-woody perennial with lobed, green leaves that grow in a cluster. The large ellipsoid fruits grow in clusters near the top of stems, turning from green to orange as they ripen. The flesh of the papaya fruit is orange, with small round black seeds in the center.

 The ripe fruit can be consumed raw or cooked to make jams and desserts. The unripe fruit can be eaten in salads or soups. The leaves and seeds aid in digestion.

 Contains vitamin A, fiber, magnesium, calcium, potassium, sodium, antioxidants, copper, and many other nutrients.

 Best in moist soil.

 Full sun.



## CHAYA (TREE SPINACH)

*Cnidoscolus aconitifolius* (Euphorbiaceae)



Perennial shrub that can grow up to 10 feet tall. The twigs sprout large green leaves, with varieties resembling either papaya or hibiscus leaves.



**CAUTION:** Chaya should NOT be planted where people are not familiar with the plant. Leaves must be boiled for at least 20 minutes to remove toxins. Used in teas, soups, and stir-fry.



High in protein, calcium, potassium, iron, vitamin C, and fiber.



Best in moist soil.



Full sun to partial shade.



## GRUMICHAMA CHERRY

*Eugenia brasiliensis* (Myrtaceae)



Perennial, short trunked tree that usually grows to 25-35 feet tall. Tree has an abundance of oblong-oval leaves that are green and waxy. Produces small white flowers with a brown center. The fruit resembles a dark red-purple cherry with small petals sticking out from the bottom.



The ripe fruit is eaten raw, half-ripe fruits are sometimes made into pies or jams. The bark and leaves are used medicinally as treatment for rheumatism.



The fruits contains ascorbic acid, phosphorus, thiamine, niacin and riboflavin.



Best in well-drained soil.



Full sun to partial shade.



### CRANBERRY HIBISCUS

*Hibiscus acetosella* (Malvaceae)



Perennial/annual found in the tropics and subtropics that grows rapidly up to six feet. The leaves are a deep violet and have consistent indentations on the edges, the flowers have five petals and are pink in color.



Edible flower and leaves are eaten either raw or cooked. Commonly used in salads and teas or as a decorative plant.



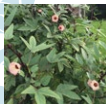
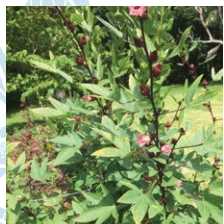
Contains many nutrients such as vitamins B3, B2, A, and C. Also high in protein and antioxidants.



Best in well-drained soil.



Full sun to partial shade.



### ROSELLE

*Hibiscus sabdariffa* (Malvaceae)



Annual shrub that grows up to eight feet tall, with red stems and green leaves with red veins and short petioles. The white or pale yellow flowers are up to four inches in diameter, with red highlights.



Flower, leaves and calyx can be eaten raw in salads or cooked in jam, juice, syrup, sauce, and tea. Used medicinally to thin blood and lower blood pressure.



It is high in fatty acids, calcium, and vitamins A and C.

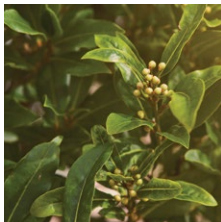


Best in moist soil.



Full sun.





## BAY LEAF

*Laurus nobilis* (Lauraceae)



Slow growing tree that can reach up to 59 feet. It smooth, shiny leaves and small, yellow flowers that appear in the spring; these mature over the summer and develop into purple-blackish berries in the fall which contain one seed.



Leaves are used for seasoning and to add robust flavor to soups. CAUTION: some members of the Lauraceae family with similar characteristics are poisonous. Only consume when certain of the species



The leaves contain essential oils, terpenes, linalool, geraniol, terpineol, and contain lauric acid also.



Prefers well-drained soils.



Full sun.



## BARBADOS CHERRY (ACEROLA)

*Malpighia emarginata* (Malpighiaceae)



Perennial shrub that can grow up to 15 feet. The stem, bark, and branches are woody. Young leaves and branches present hairs that can cause mild skin irritation. The flowers have five distinct petals, whose coloration varies from white to pink. Fruits are bright red fleshy drupes when ripe.



Fruits can be consumed raw or cooked.



Contains an abundance of vitamin C and pro-vitamin A. It also contains thiamine, niacin, riboflavin, and phosphorus.



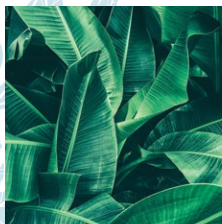
Best in well-drained soil.



Full sun.



## LARGE SHRUB/MID-CANOPY LAYER



### BANANA

*Musa spp.* (Musaceae)



Perennial fleshy plant with large green leaves often having a hint of purple and red. The plant creates one tear shaped inflorescence that hangs at the end of which sprout green stubby bananas that grow in length and turn yellow once mature.



The fruit is peeled and eaten raw or cooked. The peel of the fruit is used as fodder due to its high levels of fiber and carbohydrates. The flower can be consumed for treatment of diabetes, and leaves are used to dress wounds.



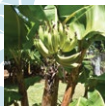
Fruit is a good source of potassium, vitamin A, vitamin C, fiber, and antioxidants.



Best in medium moisture, well-drained soil.



Full sun.



### PLANTAIN

*Musa paradisiaca* (Musaceae)



Perennial fleshy plant that resembles a banana plant, but they are wider and longer. The plantain's skin is tough; when it is green, it is difficult to remove, but when ripe and yellow, the skin can be taken off with ease.



In Latin and Caribbean cuisine, the fruit is fried or boiled. The flower can be consumed for treatment of diabetes, and leaves are used to dress wounds.



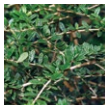
Great source of carbohydrates, proteins, vitamins C, B6, and A, potassium, magnesium, fiber, and iron.



Best in moist soil.



Full sun.



## MOUJEAN TEA

*Nashia inaguensis* (Verbenaceae)



Perennial shrub that grows up to eight feet, with numerous thin branches. The leaves are very small and rough. The small white flowers grow together in clusters. The fruit is tiny, round, and orange.



Leaves are commonly used for teas or dried and ground and used as a spice.



The tea is commonly used as a relaxant.



Best in well-drained soil.



Full sun.



## KATUK

*Sauropus androgynus* (Phyllanthaceae)



Multi-stem shrub that can reach upwards of 15 feet. It has compound, dark green and oval leaves. The flowers are small and red. The fruits are small and purple.



Leaves, fruits, and flowers are edible. Leaves and young shoots can be eaten raw in salads or cooked in stews. The fruits can be candied and eaten. CAUTION: consume in moderation as it is potentially toxic in high amounts.



High content of protein, fiber, vitamins A, B and C, calcium, magnesium and phosphorous.



Best in well-drained soil.



Full to partial shade.



## LARGE SHRUB/MID-CANOPY LAYER



### JUNE PLUM

*Spondias dulcis* (Anacardiaceae)



Perennial deciduous tree that grows up to 60 feet. Compound leaves are composed of around 20 pairs of yellow and green leaflets. Flowers are small and white. Fruits are oblong to oval and become yellow when ripe.



Fruit can be eaten unripe or ripe, raw or cooked. Young leaves can be eaten raw, cooked in soups, or used medicinally for sore throats and inflammation.



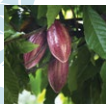
The fruit is a good source of pectin, iron, and vitamin C, among other nutrients.



Best in well-drained soil.



Full sun.



### CACAO

*Theobroma cacao* (Malvaceae)



Perennial tree with simple, lanceolate leaves that grow up to 24 inches long. The old leaves are light green and the young ones are pinkish-red. The flowers are small, white, with five petals, hermaphroditic and arise directly from twigs and trunk. The fruits are around 10 inches long, with cylindrical shape, and they are green when immature and yellow or red when ripe.



The pulpy aril which covers the seeds is edible raw. The seeds can be consumed dried, roasted, in powder processed as chocolate or medicinally as a poultice.



Great source of flavonoids, potassium, copper, iron, calcium, and magnesium.



Best in well-drained soil.



Full sun.



# CANOPY LAYER

*Student smelling Moringa Flowers at Royal Palm Elementary*



### SOURSOP (GUANABANA)

*Annona muricata* (Annonaceae)



Perennial tree that grows up to 23 feet tall. It has thick, shiny and narrow long leaves with yellow/greenish flowers that produces a green and soft spikey skinned fruit with black seeds encapsulated by its white pulp.



The fruit can be eaten raw or cooked. The leaves, seeds, flowers, and fruit contain medicinal properties including antimicrobial, anticancer, and immunomodulatory.



High in carbohydrates, fiber, ascorbic acid, and tannins.



Best in moist soil.



Full to partial sun.



### CUSTARD APPLE (SUGAR APPLE)

*Annona squamosa* (Annonaceae)



Perennial tree that rarely exceed 15 feet tall. Its leaves are lanceolate, around four inches long, and light green. Its flowers present three greenish-yellow petals. The fruit is heart-shaped with rounded protuberances resembling snake scales; they are up to five inches of diameter, green or purple depending on the variety.



Fruit can be eaten raw or in ice creams and smoothies. Leaves are used to lower uric acid levels in the blood. Seed oil is used as a lice treatment and the bark is used as a tonic.



Fruit provides amino acids, carotene, ascorbic acid, and other nutrients.



Best in moist to well-drained soil.





Full sun.





## BREADFRUIT


*Artocarpus altilis* (Moraceae)

 Perennial tree that contains a latex milk sap and grows up to 50 feet tall. Leaves are pinnately lobed, glossy, dark green, and large. It has both male and female flowers that are light purple. The fruit is green, rounded or oblong, and about eight inches in diameter.

 The fruit can be eaten raw, fermented into a cheese-like food, and baked (sweet potato-like flavor). Flour can be made from mature fruits, after being dried and ground. Seeds are edible when cooked.

 Fruits are a good source of protein, iron, calcium and riboflavin. Seeds are a good source of minerals and niacin.


 Best in moist, well-drained soil.


 Full sun to partial shade.





## JACKFRUIT


*Artocarpus heterophyllus* (Moraceae)

 Perennial evergreen tree that grows up to 40 feet tall. Leaves are alternate, oval shaped and dark green. It has both male and female flowers. Produces multiple rough-skinned fruits, around 40 pounds each. Fruits are green when immature and pale yellow to orange when mature.

 Immature fruit pulp can be cooked as a vegetable. Ripe pulp can be eaten fresh, dried and preserved. Seeds can be eaten after cooked or roasted. Root, latex, leaves, and bark are used medicinally.

 The pulp is a good source of potassium, phosphorus, magnesium, and vitamin C.

 Best in well-drained soil.

 Full sun.



### BILIMBI

*Averrhoa bilimbi* (Oxalidaceae)



Perennial tree that grows to 30 feet tall. Long, compound leaves have alternate leaflets with a rounded base and pointed tip. The small flowers are attached to the trunk or to old branches. Fruits are small, bright green when unripe and nearly white when ripe.



Fruits are used to make jam or pickled. The fruit juice can be used to remove rust from white cloth and stains from the hands. In the Philippines, the leaves are used as a poultice.



Fruits are rich in vitamin C, phosphorus and calcium. Excessive consumption of the fruit should be avoided due to its high concentration of oxalic acid.



Best in rich, moist and well-drained soil.



Full sun.



### STAR FRUIT

*Averrhoa carambola* (Oxalidaceae)



Perennial tree with drooping branches, often gathered in a cluster, producing a bushy shape that results in a rounded crown. The leaves are soft and spirally arranged around the branches. The flowers are pink and arranged in clusters. The five-lobed star-shaped fruit has a thin skin and is green when unripe and yellow/light green when mature.



The fruit can be eaten raw or cooked. Fruit and leaves are used medicinally for fevers, hemorrhages, and headaches.



Star fruit is rich in fiber, vitamins A and C, phosphorus, and potassium.



Best in moist soil.




Full sun.







## NEEM


*Azadirachta indica* (Meliaceae)

 Perennial evergreen tree growing up to 50 feet tall. Are composed of small leaflets. The flowers are small, white and grow in clusters. The fruits are small, and they vary from yellow to brown.

 The ripe fruits are edible raw or cooked. Young leaves are eaten raw, fried or used medicinally for ulcers and malaria. Flowers are preferred cooked, reducing the bitterness. From the seed, the neem oil is extracted and used as an insect repellent.

 Leaves are high in protein, flavonoids and tannins. The seeds contain high amount of fixed oil.


 Best in well-drained soil.


 Full sun.





## ACKEE


*Blighia sapida* (Sapindaceae)

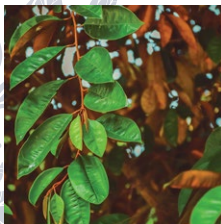
 Perennial evergreen tree that grows to 50 feet tall. Trunks of mature trees are gray and leaves are compound. Flowers are greenish-white and present five petals each. Fruits are red/orange to pastel yellow, pear-shaped, three-chambered capsules.

 CAUTION: Ackee should NOT be planted where people are not familiar with the plant. The arils around the seeds are ONLY edible cooked, when the fruit is ripe (newly and completely opened). The pink raphe that attaches the aril to the seed MUST be completely removed due to its toxicity.

 Rich in fat, calcium, phosphorus, and iron. Unripe arils and very mature ones are poisonous (hypoglycine A).

 Best in moist soil but tolerates drought.

 Full sun.



### CAIMITO (STAR APPLE)

*Chrysophyllum cainito* (Sapotaceae)



Perennial tree that can grow up to 80 feet tall. Leaves have a shiny, green surface and a golden/brown underside. Flowers are tubular, vary from purplish-white to greenish-yellow, and grow in clusters. Fruits are around three inches in diameter, green or purple, depending on the variety.



Fruits are edible raw when the skin turns opaque and fruit becomes soft. Latex of fruit is used for abscesses, seeds are used as a tonic for fever, and dried leaves are used as insect repellent.



Fruits present moderate amounts of antioxidants, vitamin C, calcium, and phosphorus.



Best in well-drained soil.



Full sun.

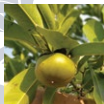


### BLACK SAPOTE

*Diospyros digyna* (Ebenaceae)



Perennial tree growing to 50 feet tall with a dark black trunk and glossy dark green leaves. Flowers are white, tubular and can be hermaphroditic or male. Its fruits are hard flattened globose and up to six inches in diameter; they are dark olive-green, but when ripe, they turn dull in color and become soft to the touch.



Ripe fruits can be eaten raw and the immature ones can be eaten as a vegetable after cooking. Leaves and bark can be used in the treatment of skin problems and fever.



Fruits are rich in vitamin C, calcium and phosphorus.



Best in moist and well-drained soil.





Full sun to partial shade.




## LOQUAT


*Eriobotrya japonica* (Rosaceae)

 Perennial evergreen tree that grows to 25 feet tall, with a dense canopy. Leaves are alternate, simple and dark green when mature, and whitish underneath. Flowers are small, white, in clusters at the end of the branches. Fruits are oval, around two inches long, orange-yellow and have hairs on skin.

 Ripe fruits can be consumed fresh or cooked. The leaves, flowers, and fruits are used medicinally for their anti-inflammatory properties.

 Fruits are a good source of carbohydrates, carotenoids, phosphorous, and vitamin A.


 Best in well-drained soil.


 Full sun.




## ICE CREAM BEAN TREE


*Inga edulis* (Fabaceae)

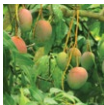
 A tropical leguminous tree that has been cultivated for millennia, capable of reaching 90 feet tall. Although the species is typically evergreen, it has been known to be deciduous in colder climates. Leaves are pinnately compound, characterized by 4-6 pairs of opposite oval-shaped leaflets.

 Its bean-like pods taste similar to vanilla ice cream and are eaten raw. It is also used for its nitrogen fixing abilities and drought resistance.

 Antioxidants, vitamins A, B, and C, and fiber.

 Well-drained soil.

 Full sun.



## MANGO

*Mangifera indica* (Anacardiaceae)



Perennial evergreen that grows up to 100 feet tall. Leaves are alternate, lanceolate, and are dark green when mature and red/pink when young. Flowers are small pinkish-white and grow at end of shoots, in clusters. The fruit varies in shape, size, color, and taste depending on the variety. In general, the skin is leathery, and contains a large seed in the center.



Fruit can be consumed raw when ripe or unripe; raw or cooked. The leaves are used to manage diabetes, for their anti-inflammatory properties and to improve hair and skin.



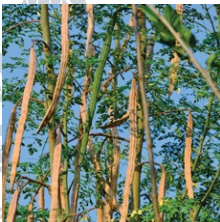
Fruits are a good source of vitamins A, C, B-6, and E.



Best in well-drained soil.



Full sun.



## MORINGA

*Moringa oleifera* (Moringaceae)



Perennial tree with thin upright branches that begin to slant towards the ground once mature. Compound leaves have many rounded pale-green leaflets. Small white flowers grow in clusters, and long seed pods are green when young and brown when mature. The bark is soft and light gray in color, while the stems are thin and flexible.



The roots, bark, leaves, flowers, and seedpods of this tree are edible. The leaves are ground to fine powder to incorporate in soups or smoothies. The seeds, roots, bark, leaves, and flowers are used to reduce inflammation and lowering cholesterol.



Rich in zinc, vitamin C, calcium, and protein.



Best in well-drained soil.



Full sun.



## MULBERRY

*Morus nigra* (Moraceae)



Perennial tree that can grow to 50 feet tall, at a slow rate. Branches tend to grow in an upright manner with vibrant green leaves. The flowers are green and crowded with flimsy spikes, and the tree produces both male and female flowers. The berries are deep violet/red when ripe.



Fruit can be eaten raw or cooked to make preserves. The leaves are used to treat the common cold, eye infections, and nosebleeds. The bark of the tree can be used to relieve toothaches while the berry itself provides a tonic effect on the kidney.



Contains nutrients like vitamins C and K, iron, calcium, fiber, and riboflavin.



Prefers well-drained soil.



Full sunlight to partial shade.



## CURRY LEAF TREE

*Murraya koenigii* (Rutaceae)



Perennial broadleaf evergreen that grows up to 15 feet tall. Compound leaves have many leaflets that are thin and range from dark to light green. The flowers are white and aromatic, and the fruit is black once mature. Typically grows in subtropical and tropical regions.



Leaves are used in vegetable dishes such as curries and are also used medicinally. The fruits are also edible, and the flowers are used to enhance gardens due to fragrance.



Fruit contains high amount of vitamin C and the leaves have high levels of antioxidants.



Best in well-drained to moist soil.



Full sun to partial shade.





### ALLSPICE

*Pimenta dioica* (Myrtaceae)



Perennial tree that grows up to 40 feet tall. It has a whitish trunk and dark green leaves. Flowers have five white petals and numerous stamens. Sometimes cultivated as an indoor plant.



Allspice leaves are used as a spice either raw or dried, in perfumery and as a medicine. The leaves and bark are used to smoke meats. Used for its anti-inflammatory properties and to relieve gas.



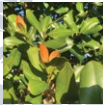
Contains potassium, manganese, iron, copper, selenium, magnesium, vitamin B-6 (pyridoxine), riboflavin, niacin, and vitamin C.



Best in well-drained soil.



Full sun to partial shade.



### BAY RUM

*Pimenta racemosa* (Myrtaceae)



Perennial tree that grows slowly but can reach 40 feet. Trunk is straight and crown is leafy. Aromatic leaves are dark green with the upper face shiny and lower face dull. Flowers have five white petals and numerous stamens.



Bay rum leaves are used as a spice either raw or dried, in perfumery and as a medicine. Used to reduce bad cholesterol and triglycerides from the blood.



Essential oil is rich in eugenol, myrcene, and chavicol.



Best in well-drained soil.





Full sun to partial shade.




## CANISTEL (YELLOW SAPOTE)


*Pouteria campechiana* (Sapotaceae)

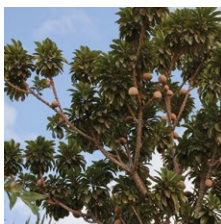
 Perennial small evergreen that normally reaches up to 25 feet tall. Leaves are large with orange hairs. Flowers are small, white and sometimes born in clusters. Fruits vary in shape and size but are typically yellow or bright orange when ripe, with one to several brown shiny seeds.

 Fruits can be eaten fresh, in milkshakes, cakes, pies and ice creams. Bark is used medicinally in a decoction for fever, and seeds are used to treat ulcers.

 The fruits is high in potassium, calcium and amino acids.


 Best in well-drained soil.


 Full sun.





## MAMEY


*Pouteria sapota* (Sapotaceae)

 Perennial tree that grows up to 40 feet tall. The large leaves occur in clusters at the end of the branches, with a light green surface and yellow/brown underside. Flowers are small, white and appear in clusters. The fruits are ovoid to ellipsoid, varying sizes, with woody skin, salmon colored pulp, and an elliptical shiny dark brown seed in the center.

 The fruit can be eaten raw or cooked. The seed, sap, bark, and fruit are used medicinally for ailments such as warts, kidney stones, or heart afflictions.

 The fruits contains calcium, potassium, amino acids, and many other nutrients.


 Best in moist soil.


 Full sun.




## WAX JAMBU (JAVA APPLE)


*Syzygium samarangense* (Myrtaceae)

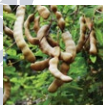
 Perennial, semi-deciduous tree that can reach 50 feet tall. It has yellowish-green leaves and a white/yellowish flower that has many stamens. The fruits are bell-shaped and have thin skin that can vary in color from crimson to white, with crisp white flesh.

 Fruit is used medicinally due to its antimicrobial, antiscorbutic, carminative, diuretic, or astringent properties. The fruits, leaves and seeds are used to reduce fever while the roots are diuretic, and it quenches thirst but also hydrates the body.

 Rich in vitamins A and C, calcium, magnesium, sulfur, and potassium.


 Best in wet or moist soil.


 Full sun to partial shade.





## TAMARIND


*Tamarindus indica* (Fabaceae)

 Perennial tree that can sprout to 80 feet tall. It offers extensive canopy because of its large spreading branches. The flowers are red/orange/white and produce an oblong light brown seedpod that protect the seeds, which are small and round covered in a sticky brown coating.

 The fruit pulp is used for tarts, drinks, candies, and jams.

 Great source of carbohydrates, selenium, potassium, vitamins B, A, and C, and calcium.

 Best in moist to well-drained soil.

 Full sun.



Established in 2015, The International Center for Tropical Botany at The Kampong (ICTB) is a collaboration between the National Tropical Botanic Garden and Florida International University (FIU). As part of FIU's Institute of Environment, ICTB is dedicated to developing research, education and outreach programs inspired by a faculty with global presence in tropical regions. Building on the legacy of Dr. David Fairchild, our headquarters at The Kampong features a demonstration food forest (in progress) where many of the plants in this booklet can be found, as part of our Regenerative Gardening Initiative. FIU's ICTB has partnered with The Education Fund's Food Forest for Schools Program to measure environmental services provided by the food forest gardens in Miami Dade County Public Schools. Results from this collaboration will contribute directly to ongoing teacher workshops and improvement of students' knowledge of pesticide-free food production systems in this subtropical climate.

Established in 1985 by a Ford Foundation seed grant, The Education Fund is a non-profit organization in Miami-Dade County that pioneered the use of food forests in schools in 2015. The current model, created in partnership with Miami Dade Public Schools' Department of Food & Nutrition, provides harvests for homebound use and meals at school, as well as hands-on lessons for all elementary grades. The Education Fund's Food Forests for Schools program received NBCUniversal's 21st Century Solutions Challenge Grant award, Florida Blue's Sapphire Award, and was named the #1 Obesity Prevention Program by USF College of Public Health. The program, originally seeded by the Health Foundation of South Florida, is a grant awardee of both the US Environmental Protection Agency and the US Department of Agriculture to provide environmental and agricultural education, while conducting research in collaboration with FIU.

