



Sustainable Food Gardening



UF UNIVERSITY of FLORIDA
IFAS Extension

Dr. Laura A. Sanagorski
Environmental Horticulture Extension Faculty

UF / IFAS
Palm Beach County Cooperative Extension
lsanagorski@pbcgov.org
561.233.1748

Florida-Friendly Landscaping™ PROGRAM



Florida-Friendly™ Principles

1. Right Plant, Right Place
2. Water Efficiently
3. Fertilize Appropriately
4. Mulch
5. Attract Wildlife
6. Manage Yard Pests Responsibly
7. Recycle Yard Waste
8. Reduce Stormwater Runoff
9. Protect the Waterfront

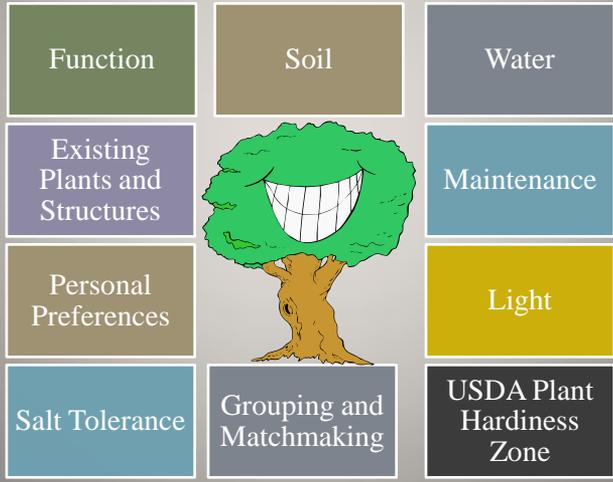


RUNOFF FROM THE LANDSCAPE → LAKE WORTH LAGOON WATERSHED

550 square miles
Three major canals
Earman River (C-17)
West Palm Beach (C-51)
Boynton (C-16)



Planning - Right Plant, Right Place



Keys to Success in Sustainable Food Gardening

- Good Soil!
- Water (soil only) in the morning
- Select appropriate plants
- Attract beneficial insects
- Plan to accept some losses
- Diversify
- Have fun!!



Soil Preparation

- Till / Double Dig to Loosen Soil
 - Allow tender new roots to establish
 - Provide oxygen
 - Ensure water percolation
 - No till method
- Introduce organic matter



Soil types

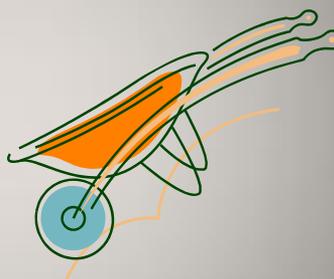
- Commercial garden soil
- Amended existing soil (compost, wood shavings, manures)
- Homemade mixtures (Sand + perlite or vermiculite)



Mustard Greens, planted from seed, 4 days

Container Options

- Raised beds – wood, brick, concrete
- Buckets
- Recycled finds
- 6" soil depth minimum
- Provide adequate drainage





Use of containers for urban vegetable gardening



Use of containers for urban vegetable gardening



Planting



- Direct sow leafy greens and root vegetables
- Soak seeds, especially for hard-to-germinate types
- Transplant fruit bearing vegetables
- Transplant any vegetable when time/space sharing requires
- Transplant also useful to get jump on season



Collard Green Seeds



Collard Greens, Planted from Seed, at 4 days

Staking

- Reasons to Stake
 - Support
 - Direct
 - Maximize space
- Plants to Stake
 - Tomatoes
 - Peppers
 - Eggplant
 - Beans
 - Cucumbers
 - Squash



Harvest

- Life stages: Sprout, Micro Green, Baby Green, Completion/Full Size
- When to harvest is based on personal tastes, however some things require full amount of time to acquire best flavor and sweetness.

| | |
|---|--|
| <u>Early harvest:</u> <ul style="list-style-type: none"> – Tomatoes – Leafy greens – Onions – Radishes – Carrots | <u>Micro Green:</u> <ul style="list-style-type: none"> - Amaryllidaceae - Chenopodiaceae - Cruciferae - Umbelliferae |
|---|--|
- Remember to clean thoroughly
- Best to harvest in the morning?
- Harvest as needed for best flavor



Water

- Vegetables cannot tolerate standing water
- Water ROOT ZONE in the morning 1/2" – 3/4"
- Feel moisture level not just surface, BEFORE watering
 - Observe plant's posture and coloring
 - Yellow has multiple meanings



Soil Testing

SL 136 Page 1 of 2

UF UNIVERSITY of
FLORIDA
IFAS Extension

IFAS Analytical Services Laboratories
Extension Soil Testing Laboratory
PO Box 110740 / Wallace Building 631, UF / Gainesville, FL 32611-0740
EMAIL: SOILSLAB@IFAS.UFL.EDU WEBSITE: SOILSLAB.IFAS.UFL.EDU

Landscape & Vegetable Garden Test Information Sheet

Note: This Lab Only Tests Samples from the State of Florida.

Mailing Address (please print)

Name _____ Phone _____

Address _____

City _____ FL Zip _____

Date _____ E-Mail * _____

Direct any questions regarding this test or the interpretation of the results to your county Extension Agent.

*** In order to expedite reporting of results; please provide an e-mail address if possible.**

NOTE: * Consult an expert to determine if plant growth problems require soil testing.
* These samples will NOT be tested for nematodes, disease organisms or chemicals other than those listed on this form.
* Commercial producers should use the Producers Soil Test Information Sheet, SL-135.

| | |
|---|---|
| <p>Step 1. Collect samples from your landscape or garden. See the instructions at the bottom of this page.</p> <p>Step 2. Select EITHER Test A or B, but not both, for any sample.</p> <p>Test A. The pH and Lime Requirement Test will give you the following information.</p> <ul style="list-style-type: none"> • Soil pH • Lime Requirement <p>Test A is especially for you if you:</p> <ol style="list-style-type: none"> 1) use only complete fertilizers (such as 16-4-8). 2) follow the generic fertilizer recommendations in IFAS landscape and vegetable garden publications, or 3) need only the soil pH test. | <p>Test B. The Soil Fertility Test will give you these 6 analyses</p> <ul style="list-style-type: none"> <li style="margin-right: 20px;">• Soil pH <li style="margin-right: 20px;">• P <li style="margin-right: 20px;">• Ca <li style="margin-right: 20px;">• Lime Requirement <li style="margin-right: 20px;">• K • Mg <p>Test B will enable you to tailor your use of single-element fertilizers based on existing soil fertility status. However, if you use a complete fertilizer, such as 10-10-10, the extra tests for extra testing P, K, Mg, and Ca are of little value.</p> |
|---|---|

pH

- Best pH for vegetables: between 5.8 and 6.3
- Only adjust if pH is:
 - Below 5.5 → dolomitic limestone may be used at 2-3 lbs. per 100 square feet
 - Above 7.0 → acidic organic matter may be used to temporarily lower pH
- Containerized soilless mixes – dolomitic limestone

What is your soil pH?



Fertilizer

- Synthetic fertilizer may be needed if you are not adding lots of organic matter
- Soil test, especially to determine whether Phosphorus is needed

| Soil | Fertilizer Makeup | lb./100 sq. ft. | 10 ft/row, banded oz. |
|-----------------------------|-------------------|-----------------|-----------------------|
| Sand, rock, clay, marl | 4-2-4 | 4 | 6 |
| | 6-6-6 | 3 | 5 |
| | 8-10-10 | 2 | 4 |
| | 9-0-9 | 2 | 4 |
| Organic muck, peat, amended | 0-12-20 | 1-2 | 2 |

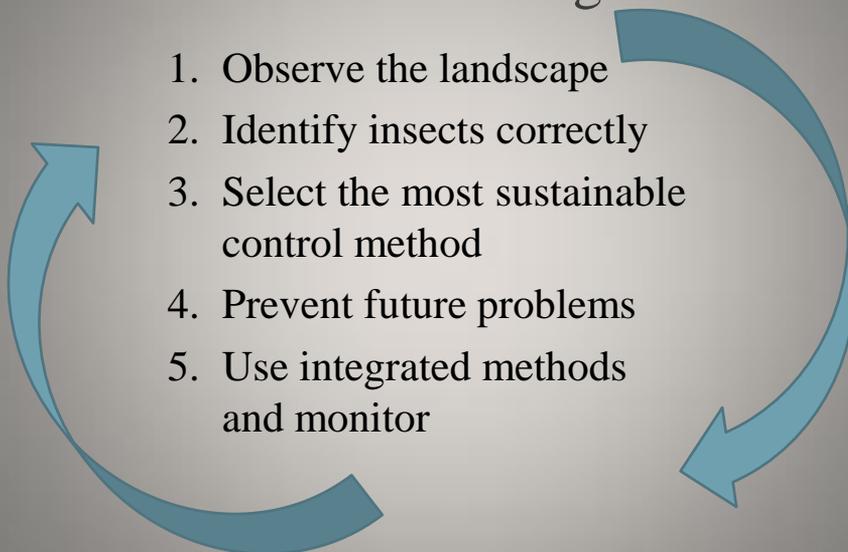
Composting

- Hot composting or worm composting
- Provides nutrients and organic matter to plants
- Improves your soil
- Recycles yard and food wastes naturally
- Reduces what goes into your garbage (20%)



Sustainable Pest Management

1. Observe the landscape
2. Identify insects correctly
3. Select the most sustainable control method
4. Prevent future problems
5. Use integrated methods and monitor

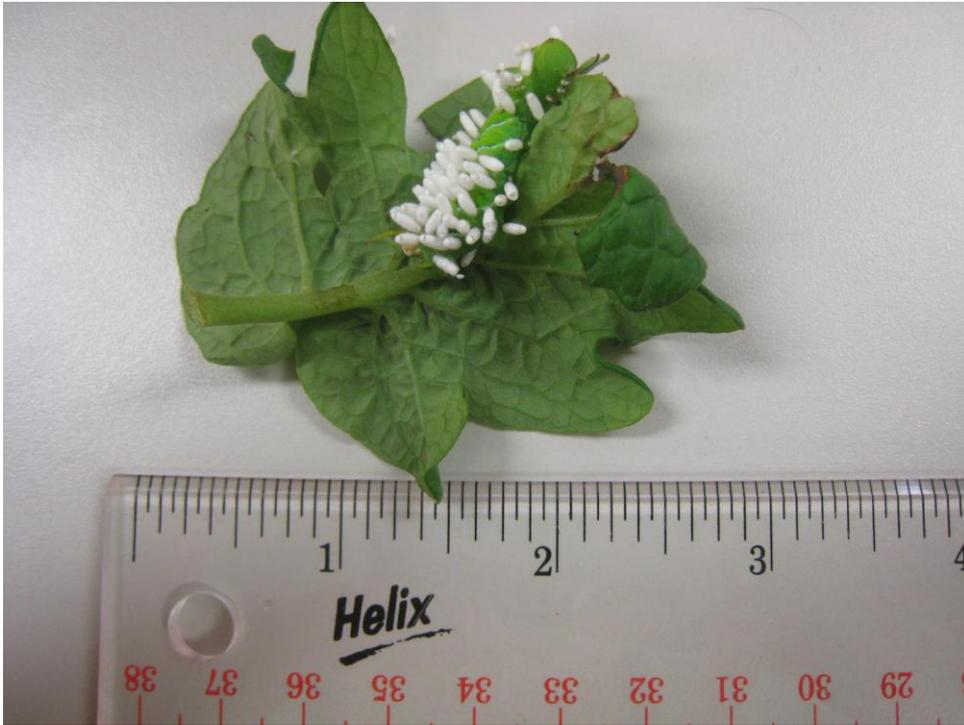


Identify Insects Correctly

- Spider Mites
- Mealybugs
- Scale
- Aphids
- Leaf Loopers
- Whiteflies
- Weevils







Sustainable Pest Management: Biological Control

- Uses the insect's natural enemies
- Predators & parasitoids
 - Beneficial nematodes
 - Beneficial Wasps
 - Ladybugs
 - Green Lacewings
 - Beneficial Mites
 - Predator Scents







Sustainable Pest Management:
Pesticides

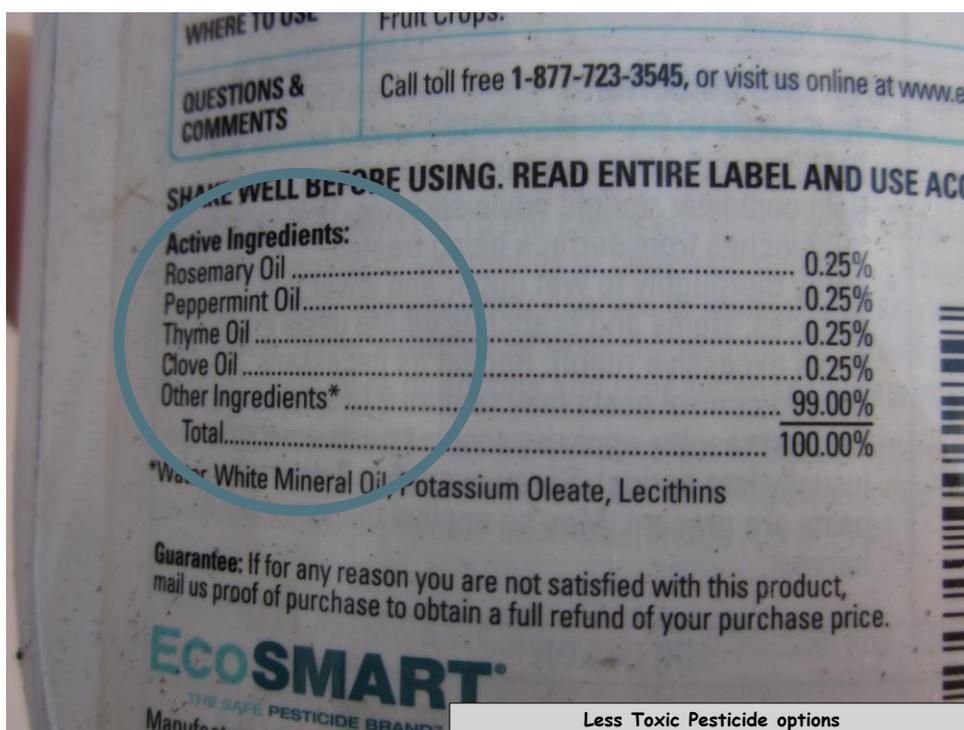


*Use the least toxic,
most sustainable
method first.*



Sustainable Pest Management: Insecticides

- Chemical
- Botanical
 - Neem, Pyrethrum, Rotenone, Sesame, Sabadilla, Limenene & Linalool, Nicotine
- Microbial
 - Spinosid, Bt: *Bacillus thuringiensis*, Diatomaceous earth
- Mineral
 - Bordeaux Mixture, Sulfur, Lime Sulfur
- Natural Solutions
 - Horticultural Oils, Insecticidal Soap



Less Toxic Pesticide options

Scouting

- Daily visits to the garden are necessary
- Look for plant posture, signs of disease and insect
- Where are the insects eating?
 - Reproductively and new growth
 - Old and dying leaves
- “The best fertilizer for the garden is the gardener’s shadow”

Season

- South Florida commercial farm growing season is from Sept – May.
- South Florida has 365 growing days!
- Diversified crops including hot weather sub-tropical varieties can be grown throughout the year.

Easy Vegetables for South Florida

| Fall, Winter, Spring | | | |
|-----------------------|-----------------|----------|----------------|
| Beans- (bush or pole) | Beets* | Broccoli | Cabbage* |
| Carrots | Chinese Cabbage | Chives | Collard Greens |
| Cucumbers | Eggplant | Escarole | Gourds |
| Kale | Leaf Lettuce | Melons | Mustard Greens |

* Salt Tolerant

Adapted from the Florida Vegetable Gardening Guide and Growing Vegetables in South Florida



Broccoli, Planted from Seedling



Romaine Lettuce, planted from seedling

Easy Vegetables for South Florida

Fall, Winter, Spring

| | | | |
|----------------|----------------------------------|---|----------|
| Okra | Onions (bulbs) | Onions (green or spring) | Peas |
| Peppers (bell) | Peppers (hot) | Radish | Spinach* |
| Squash* | Sweet potato (including boniato) | Tomato* (cherry, large, and plum) – VFN | Turnips |
| Watermelon | | Herbs | |

* Salt Tolerant

Adapted from the *Florida Vegetable Gardening Guide* and *Growing Vegetables in South Florida*



Heirloom Cherry Tomato



Green Onion



Basil



'African Blue' Basil



Cilantro



Parsley



Oregano and Thyme



Apple Mint



Onion Chives

Easy Vegetables for South Florida

Summer

| | | | |
|------------------------------|-----------------------------|---------------|----------------------------------|
| Bean (jack, lima, yard-long) | Calabaza | Cassava | Chayote |
| Collard Greens | Eggplant | Ginger | Spinach (New Zealand or Malabar) |
| Okra | Peas (Southern, black-eyed) | Peppers (hot) | Pigeon Peas |
| Seminole Pumpkin | Sweet potato and boniato | Turnip Greens | Herbs (Rosemary & Lemongrass) |

* Salt Tolerant

Adapted from the *Florida Vegetable Gardening Guide* and *Growing Vegetables in South Florida*



Pigeon Pea Seed



Pigeon Pea Seedling



Pigeon Pea Fruit & Flower



Lemon Grass



Black Pepper



Malabar Spinach



Malabar Spinach



Malabar Spinach



Malabar Spinach



Okra



Okra

Difficult Vegetables for South Florida

| Summer | | | |
|----------------------|----------------------|---------|-------------------------|
| Cucumbers | Melons | Peanuts | Squash |
| Fall, Winter, Spring | | | |
| Brussels sprouts | Cauliflower | Celery | Corn |
| Garlic | Lettuce (head types) | Potato | Tomato (heirloom types) |

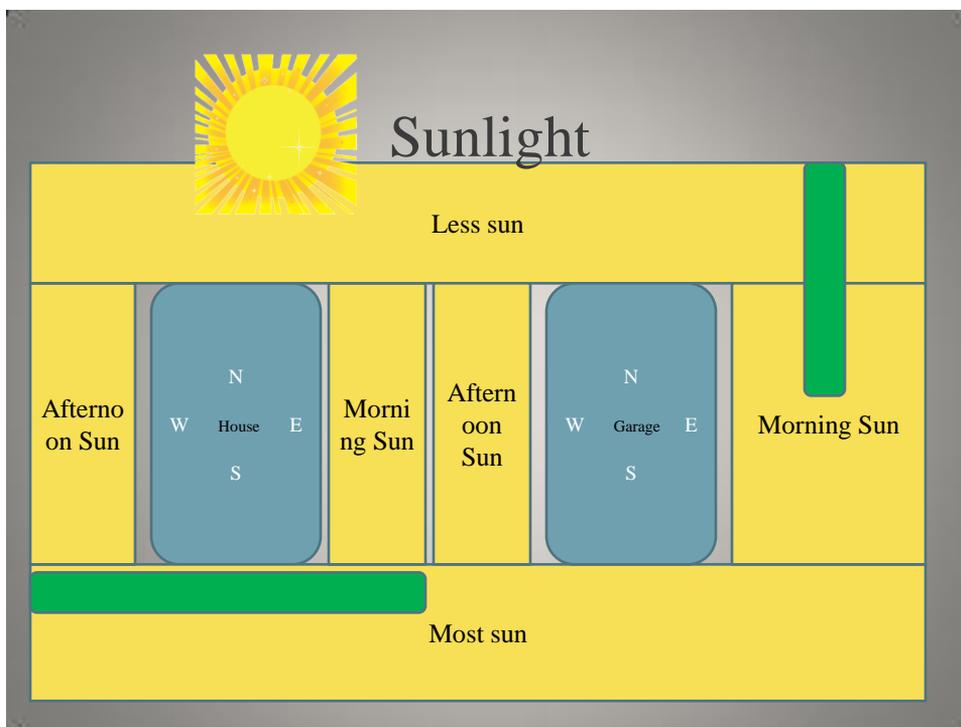
* Salt Tolerant

Adapted from the *Florida Vegetable Gardening Guide* and *Growing Vegetables in South Florida*

Sunlight

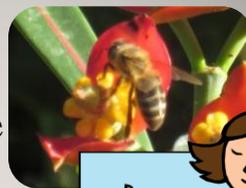
- Vegetables that bear fruit require 8+ hours of sunlight
- Root vegetables requirements are less than fruit bearing
- Leafy vegetables can get by with even less, approx. 6 hours
- Avoid planting on north side of structure if possible
- Plant tallest plants on north side of other veggies





Keys to Success in Sustainable Vegetable Gardening

- Good Soil!
- Water (soil only) in the morning
- Select appropriate plants
- Attract beneficial insects
- Plan to accept some losses
- Diversify
- Have fun!!



Tropical Fruit for the Home Landscape

| Species | Size | Space required | Cold Tolerance | Harvest Season | Notes |
|---------------------|--------------|----------------|----------------|-----------------------------|-------------------|
| Atemoya | Medium | 20+ Feet | < / = 32 (°F) | Aug. – Oct. and Dec. – Jan. | |
| Avocado | Large | 25 – 30 Feet | 26 – 30 (°F) | Late June - March | |
| Banana | Small | 12 – 15 Feet | < / = 28 (°F) | Year Round | |
| Carambola | Medium | 15 – 20 Feet | 27 – 32 (°F) | July – Oct. and Nov. – Feb. | |
| Canistel | Large | 23 – 30 Feet | 26 – 32 (°F) | Nov. - March | Irregular harvest |
| Citrus | Small | 12 – 15 Feet | Varies | Varies | |
| Dragon Fruit | Small - Vine | 5 – 10 Feet | < 32 (°F) | June – Nov. | |

Adapted from *Tropical and Subtropical Fruit for the Home Landscape: Alternatives to Citrus*



Banana



Carambola



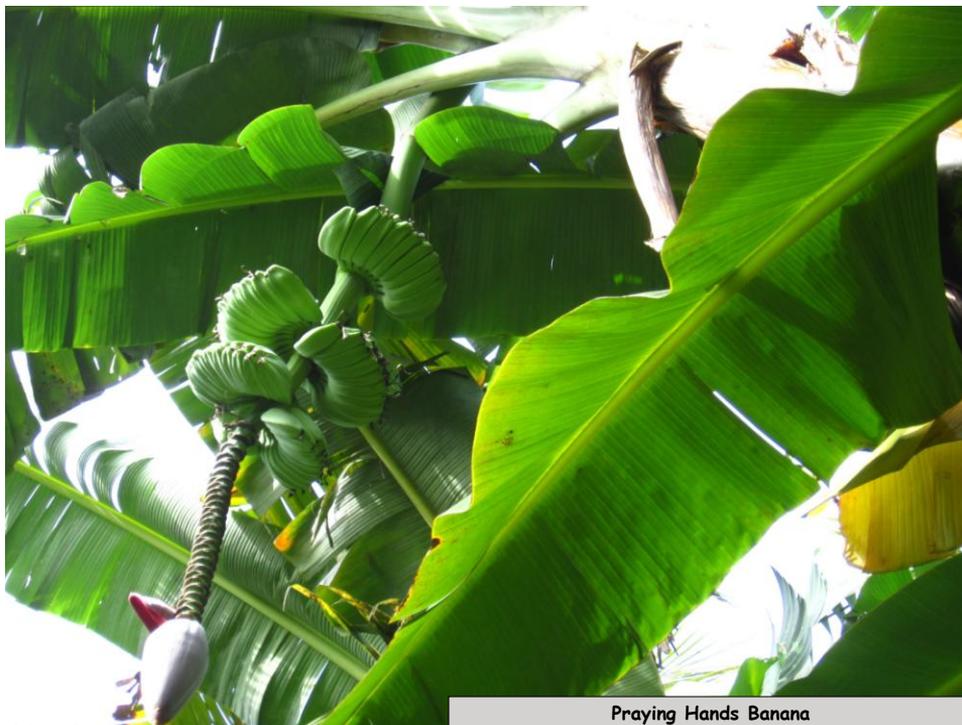
Carambola



Ortanique Orange



Calamondin



Praying Hands Banana

Tropical Fruit for the Home Landscape

| Species | Size | Space required | Cold Tolerance | Harvest Season | Notes |
|---------------------|--------|----------------|----------------|---------------------|-----------------|
| Jaboticaba | Medium | 15 - 20 Feet | < / = 29 (°F) | Year Round | |
| Jackfruit | Large | 23 – 30 Feet | < / = 32 (°F) | Spring through fall | Some Year Round |
| Longan | Large | 23 – 30 Feet | 28 – 30 (°F) | July – early Aug. | |
| Lychee | Large | 23 – 30 Feet | 28 – 32 (°F) | June, early July | |
| Mamey Sapote | Large | 23 – 30 Feet | 28 – 32 (°F) | Jan. – Sept. | Some Year Round |
| Jaboticaba | Medium | 15 – 20 Feet | < / = 29 (°F) | Year Round | |

Adapted from *Tropical and Subtropical Fruit for the Home Landscape: Alternatives to Citrus*



Longan



Longan

Tropical Fruit for the Home Landscape

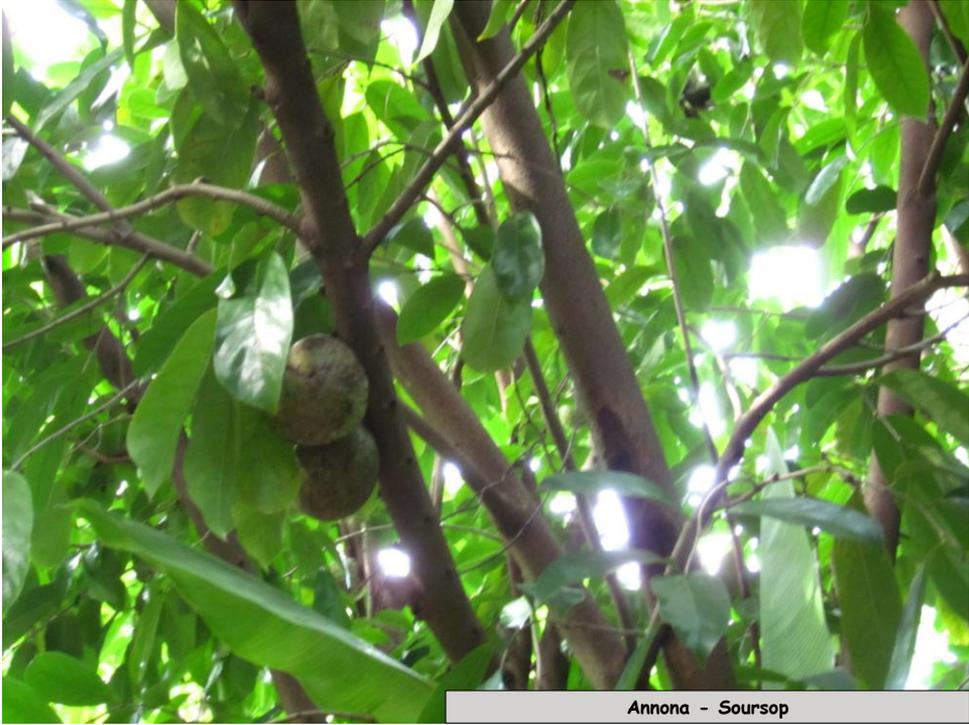
| Species | Size | Space required | Cold Tolerance | Harvest Season | Notes |
|---------------------|--------------|----------------|----------------|---------------------------------|-------|
| Mango | Large | 23 – 30 Feet | 28 – 30 (°F) | May – Oct. | |
| Papaya | Small | 6 – 15 Feet | < / = 30 (°F) | Year Round | |
| Passionfruit | Small – Vine | 12 – 20 Feet | < / = 32 (°F) | June – Dec. | |
| Star Apple | Large | 23 – 30 Feet | 29 - 31 (°F) | Feb. – June | |
| Sugar Apple | Small | 15 – 20 Feet | 28 – 32 (°F) | July – Sept. and Nov. – Jan. | |
| Tamarind | Large | 25 – 30 Feet | 28 – 32 (°F) | April - June | |

Not recommended: Guava and Sapodillo

Adapted from *Tropical and Subtropical Fruit for the Home Landscape: Alternatives to Citrus*



Black Sapote



Annona - Soursop

RESOURCES

EDIS - Electronic Data Information Source - UF/IFAS Extension - Windows Internet Explorer

http://edis.ifas.ufl.edu/ tomatoes in the florida garden

University of Florida IFAS Extension Solutions for Your Life

EDIS

Home FAQs & Help Local Offices IFAS Bookstore Advanced Search Search 60

- ▼ Topics
 - Agriculture
 - Community Development
 - Environment
 - Families & Consumers
 - 4H Youth Development
 - Lawn & Garden
- ▼ Feature Pages
 - Handbooks
 - Series
 - Curricula
- Departments & Programs
- Authors
- Faculty & Staff Resources

New and Revised Publications

Enfermedades Exóticas De Los Citricos (PP296)
 Este documento es una hoja de dos páginas ilustrativas para la identificación de las enfermedades exóticas de los cítricos. This 2-page fact sheet was written by M. M. Dewdney, J. D. Burrow, M.E. Rogers, and T. M. Spann, and published by the UF Department of Plant Pathology, August 2012.
<http://edis.ifas.ufl.edu/pp296>

Living with Diabetes (FCS8706/FY334)
 Diabetes is a disease that affects more than 26 million Americans. Although there is no cure for type 1 or type 2 diabetes, diabetes can be managed with the proper care. If you have diabetes, the best way to live well is to learn about the disease and work with your doctor to develop a healthy living plan that is right for you. This 4-page fact sheet was written by Nancy J. Gal and Linda B. Bobroff, and published by the UF Department of Family Youth and Community Sciences, July 2012.
<http://edis.ifas.ufl.edu/fy334>

Enfermedades fungicas foliares de los citricos para los patios y zonas residenciales (PP297)

What is EDIS?
 EDIS is the Electronic Data Information Source of UF/IFAS Extension, a collection of information on topics relevant to you. More...

Faculty & Staff
 Order Print copies
 EDIS Routing System
 EDIS Staff Bios
 More...

Additional IFAS Sites
 College of Agricultural

http://edis.ifas.ufl.edu/pdf/files/SS/SS18700.pdf - Windows Internet Explorer

http://edis.ifas.ufl.edu/pdf/files/SS/SS18700.pdf tomatoes in the florida garden

SL 136 Page 1 of 2

UF UNIVERSITY of FLORIDA IFAS Extension

**IFAS Analytical Services Laboratories
 Extension Soil Testing Laboratory**
 PO Box 110740 / Wallace Building 631, UF / Gainesville, FL 32611-0740
 EMAIL: SOILSLAB@IFAS.UFL.EDU WEBSITE: SOILSLAB.IFAS.UFL.EDU

Landscape & Vegetable Garden Test Information Sheet

Note: This Lab Only Tests Samples from the State of Florida.

Mailing Address (please print)

Name _____ Phone _____

Address _____

City _____ FL Zip _____

Date _____ E-Mail * _____

Direct any questions regarding this test or the interpretation of the results to your county Extension Agent.

* In order to expedite reporting of results; please provide an e-mail address if possible.
NOTE: * Consult an expert to determine if plant growth problems require soil testing.
 * These samples will NOT be tested for nematodes, disease organisms or chemicals other than those listed on this form.
 * Commercial producers should use the Producers Soil Test Information Sheet, SL-135.

Step 1. Collect samples from your landscape or garden. See the instructions at the bottom of this page.

Step 2. Select EITHER Test A or B, but not both, for any sample.

| | |
|---|--|
| <p>Test A. The pH and Lime Requirement Test will give you the following information.</p> <ul style="list-style-type: none"> • Soil pH • Lime Requirement | <p>Test B. The Soil Fertility Test will give you these 6 analyses</p> <ul style="list-style-type: none"> • Soil pH • P • Ca • K • Mg |
|---|--|

Test A is especially for you if you: _____
 Test B is especially for you if you: _____

Resources

- **UF / IFAS Palm Beach County Extension:** pbcgov.com/coextension
- **EDIS:** edis.ifas.ufl.edu
- **Extension Soil Testing Laboratory:**
<http://edis.ifas.ufl.edu/pdffiles/SS/SS18700.pdf>
- **Florida Vegetable Gardening Guide:** <http://edis.ifas.ufl.edu/vh021>
- **Growing Vegetables in South Florida:** http://miami-dade.ifas.ufl.edu/pdfs/urban_hort/Easy%20to%20grow%20vegetables.pdf
- **Tropical and Subtropical Fruit Crops for the Home Landscape: Alternatives to Citrus:** <https://edis.ifas.ufl.edu/mg373>
- **Producing Garden Vegetables with Organic Soil Amendments:**
<http://edis.ifas.ufl.edu/mg323>
- **Natural Products for Insect Pest Management:**
<http://edis.ifas.ufl.edu/in197>
- **Tomatoes in the Florida Garden:** <http://edis.ifas.ufl.edu/vh028>
- **Minigardening (Growing Vegetables in Containers):**
<http://edis.ifas.ufl.edu/vh032>

Palm Beach County
The Best of Everything.

Advanced Search
Search Site...
Search Tips

Cooperative Extension Service | Agriculture | Environmental Horticulture | Family & Consumer Sciences | 4-H Youth Programs | Mounts Botanical Garden | Educational Opportunities

You are here: Palm Beach County » Coextension » Horticulture » Residential Horticulture

Hotline

Master Gardener Hotline
561-233-1750
South County
561-276-1260

Environmental Horticulture

- o About Us
- o Commercial Horticulture
- o Upcoming Classes and CEU Opportunities for Landscape Professionals
- o Pest, Disease, and Landscape Topics
- o Nursery
- o Residential Horticulture
- o Florida-Friendly Landscaping Resources for

Residential Horticulture



Gardening is one of the most rewarding hobbies we know of. Did you know that the average food gardener spends 5 hours per week in the garden and can expect a return of over \$500 annually, according to the National Gardening Association? Gardening and home landscaping can reduce stress, save money, and provide hours of enjoyment.

As the local branch of the University of Florida Palm Beach County Extension has access to the latest research and technology on many topics, **The University's expertise is available** to small business owners, farmers, professional horticulturists, pest control operators, arborists, and the general public.

Florida Yards & Neighborhoods

Do you have a landscape question and need an answer? Our Master Gardeners are available Monday - Friday to answer questions, either in-person, by phone, or by email. Call the hotline at 561.233.1750; visit the help desk at 531 N. Military Trail, West Palm Beach, FL 33415; or **e-mail your question to our Master Gardeners.**

See below for some of our most popular publications and resources for homeowners!

Homeowner Horticulture Resources

Diagnostic Tests and

- o UF Extension Plant Diagnostic Form

Thank you!



Dr. Laura A. Sanagorski
Environmental Horticulture Extension Faculty

UF / IFAS
Palm Beach County Cooperative Extension
lsanagorski@pbcgov.org
561.233.1748