



Low Input Gardening

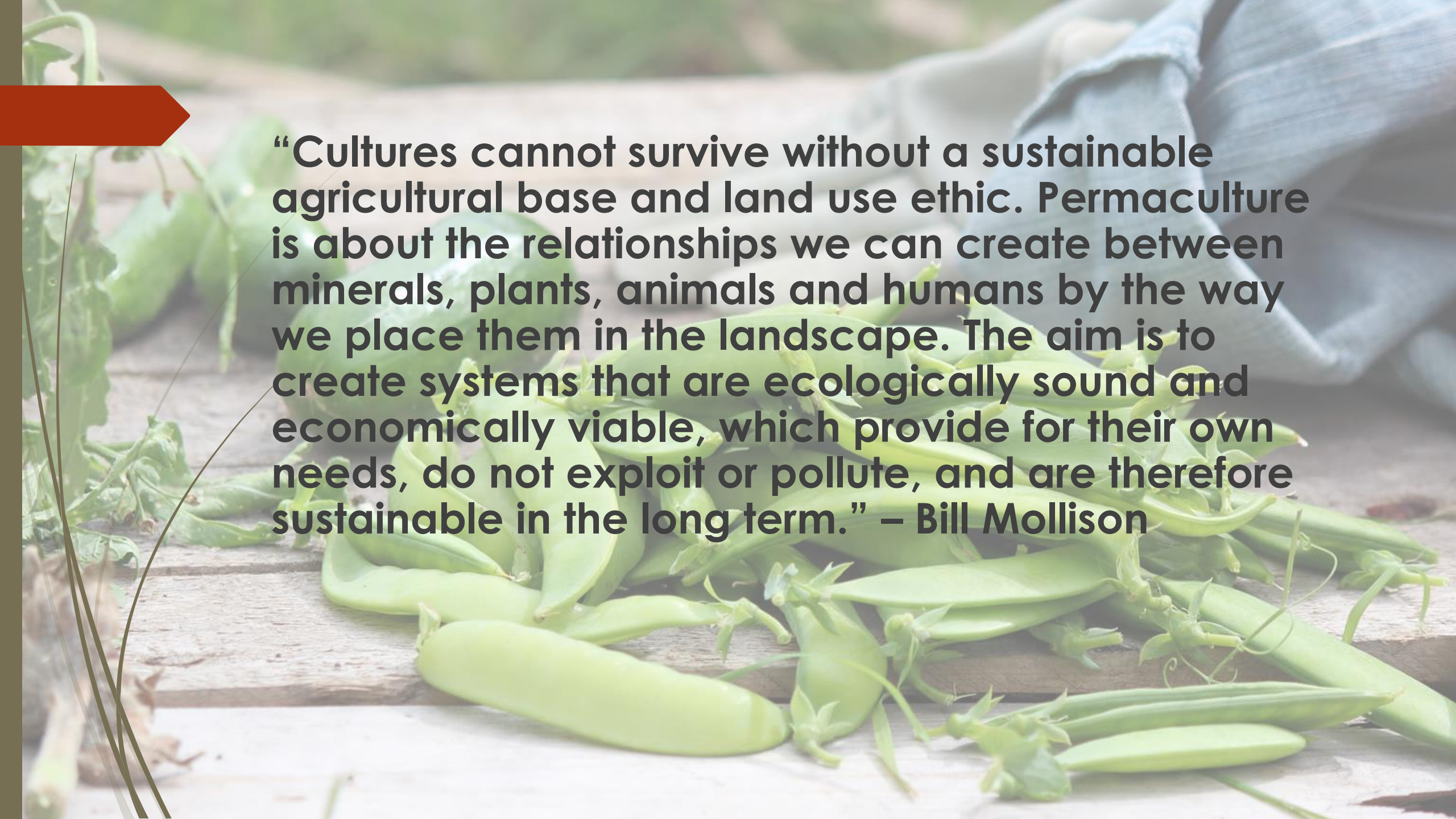
December 15, 2019



Introduction

- ▶ Plants for:
 - ▶ Food
 - ▶ Pollinators
 - ▶ Florida's ecosystems
 - ▶ Beneficial insects
- ▶ Composting
- ▶ Fertilizing
- ▶ Mulching





“Cultures cannot survive without a sustainable agricultural base and land use ethic. Permaculture is about the relationships we can create between minerals, plants, animals and humans by the way we place them in the landscape. The aim is to create systems that are ecologically sound and economically viable, which provide for their own needs, do not exploit or pollute, and are therefore sustainable in the long term.” – Bill Mollison

What plants should I grow?

- ▶ Don't depend on stores to tell you what grows well here and what is in season
- ▶ Zones 10b and 11



How much space do I have?

How much sun do I get?

What kind of soil do I have?

How much time do I have?

How easy is it to get water to my garden location?

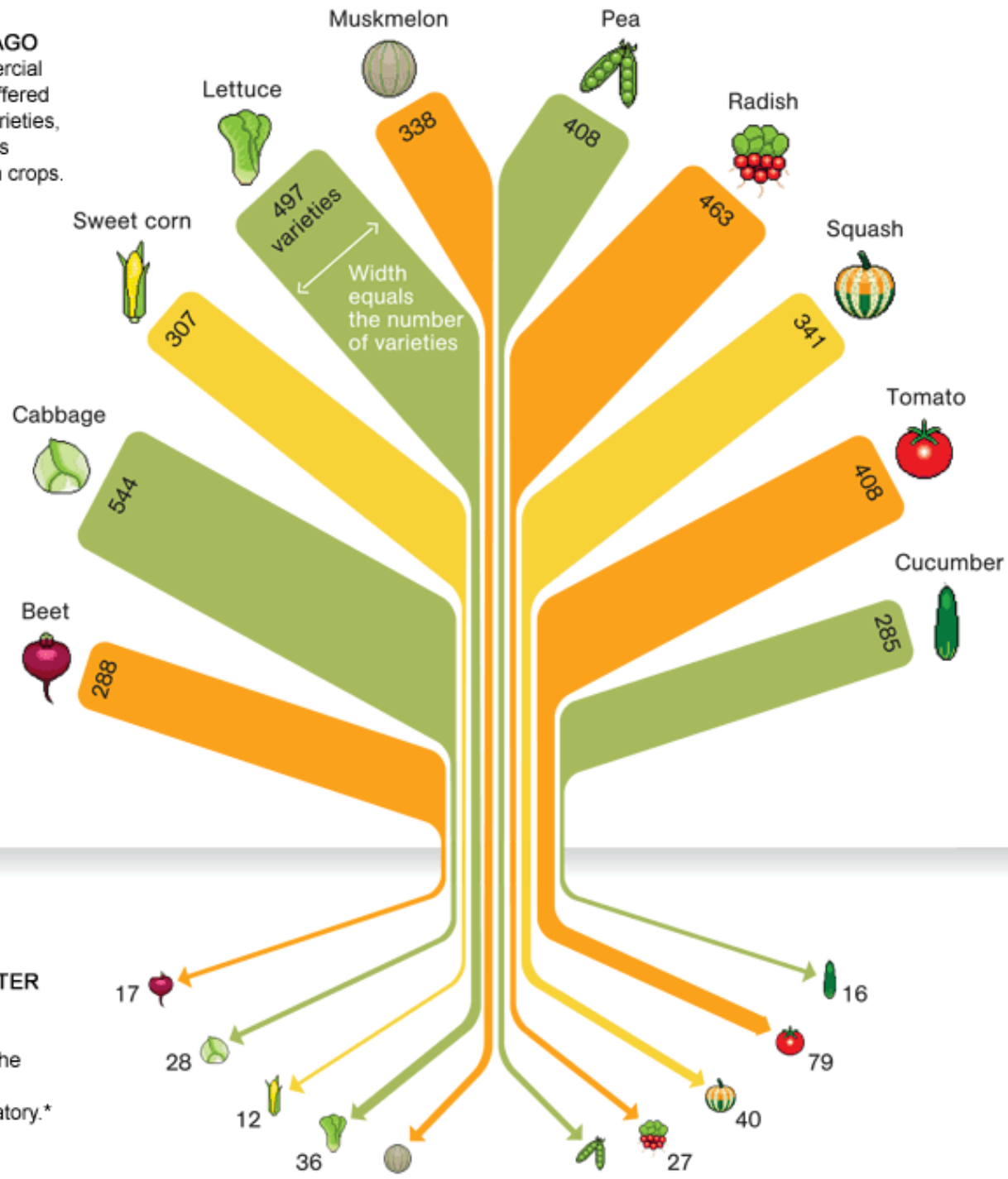


Questions to ask before starting a garden

The Power of Heirlooms

- Selecting varieties which are drought-resistant, heat-resistant, or certain pest-resistant through cross breeding can reduce the inputs you have to use
- Promoting genetic diversity and respecting biodiversity of our food crops

A CENTURY AGO
In 1903 commercial seed houses offered hundreds of varieties, as shown in this sampling of ten crops.



80 YEARS LATER
By 1983 few of those varieties were found in the National Seed Storage Laboratory.*



Container Gardening

- ▶ Why?
- ▶ Selecting compact crops
- ▶ Indeterminate vs determinate tomatoes
- ▶ Choosing the right size containers
- ▶ Intercropping in containers



My favorite varieties for container gardening

- **Sugar Anne Dwarf Sugar Snap Peas**
- **Royalty Purple Pod Bush Beans**
- **Happy Rich Sweet Broccolini**
- **Cosmic Purple Carrots**
- **All Purple Sweet Potatoes**
- **French Breakfast Radishes**
- **Green Glaze Collards**
- **Red Russian Kale**
- **Perpetual Chard**
- **Shishito Peppers**
- **Suyo Long Cucumbers (I can't help myself)**
- **Black Cherry or Everglades Tomatoes (Also can't help myself)**

Growing Seedlings for Transplant

- ▶ Make small pots out of newspaper
 - ▶ newspaper
 - ▶ Cylinder with straight sides, 2-2.5in diameter



A photograph of a garden with various plants, including a thatched-roof structure in the background. The garden is filled with green foliage, and the scene is brightly lit. A semi-transparent text box is overlaid on the left side of the image.

Companion Planting

- Friends and foes in the garden
 - alter the soil
 - attract or repel insects
 - alter the microclimate

Sun and Shade

- Integrate fruit trees, native trees and shrubs
- 6 hours of sun = full sun



Native Plants



Marberry
hedge/screen
good for wildlife



Beautyberry
edible fruit
good for wildlife



Fiddlewood
good for wildlife



Seagrape
edible fruit
good for wildlife

Buttonwood
good for wildlife



Coontie
host plant for
atala butterfly

Pollinator Plants (also native!)



Amaranth –
edible leaves



Butterflyweed



Blanket flower





Not all bugs are pests

Some bugs depredate pests





Plants that Attract Beneficial Insects

- Dill
- Coriander (cilantro)
- Fennel
- Dandelion
- Lemon balm
- Bergamot
- Mint varieties
- Coreopsis
- Buckwheat
- Sunflowers
- Cosmos
- Alyssum
- Black-Eyed Susans

Composting



Your Kitchen as a Garden Tool

- Reduce your food waste
 - Approximately 50% of typical municipal garbage put out to the curb is compostable
- Composting helps build the topsoil back on Earth
- Compost cultivates healthy plants and reduces our dependence on chemical fertilizers





The Many Shades of Compost

- **Three Compartment Composting**
- **Heap Composting**
- **Worm Composting**
- **Tumbler Compost**
- **Bunker Spawn**

Heap Compost

- 3ft x 3ft x 3ft



Three Compartment Composting



Building Compost



Who does the work?

Sometimes you can do it, sometimes a machine will do it, and sometimes you can have help



CAN BE COMPOSTED

- Small pieces of uncoated cardboard (brown)
- Shredded newspaper (brown)
- Hay and straw (brown)
- Sawdust and wood chips (brown)
- Fireplace ashes (brown, from natural wood only)
- Coffee grounds and filters (green)
- Eggshells (green)
- Hair and pet fur (green)
- Fresh grass clippings and weeds (green)
- Most kitchen scraps (green)

CAN'T BE COMPOSTED

- Large wood pieces
- Waxed cardboard
- Grease, oil, or fat
- Meat
- Bones
- Pet waste
- Dairy products
- Whole eggs
- Colored newspaper
- Plant waste treated with pesticides
- Plastic
- Coal or charcoal ash

To keep your compost odor-free, aim for a ratio of about two parts brown material to one-part green, with the occasional sprinkle of soil for beneficial organisms.



What can I compost?

Low-input can also be low consumption

- ▶ Use natural materials that are available to you
- ▶ Re-use things to create borders
- ▶ Scavenge what you need for backyard projects



But...Compost takes time

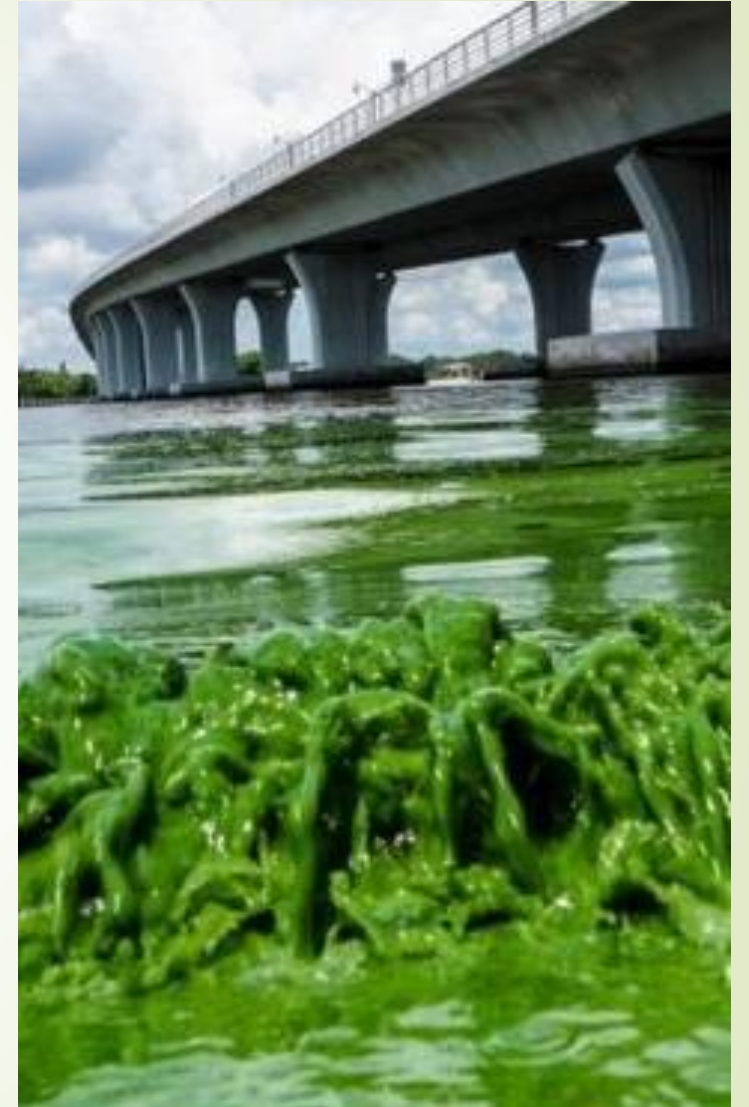
- ▶ In between now and when you have mature compost ready for your gardening, follow our steps next to ensure you're fertilizing properly

A vibrant garden scene featuring a variety of plants. In the foreground, there are large green leafy plants, possibly squash or zucchini. A white watering can sits on a wooden table in the middle ground. In the background, a wooden table with ornate legs is visible, surrounded by more greenery and some purple flowers. The overall atmosphere is bright and healthy.

Fertilizing Properly

Why?

- ▶ Our actions have consequences.





N-P-K



Nitrogen is responsible for the above-ground vegetative growth of plants, and for the overall size and vigor of plants



Phosphorus promotes healthy growth, strong roots, fruit and flower development and greater resistance to disease



Potassium (aka potash) helps plants resist diseases



Other goodies may include:

Mycorrhizae (beneficial fungus)

Beneficial bacteria

Trace minerals



Don't Fertilize During the Wet Season

The City of Hallandale Beach has a number of Ordinances that restrict the application of fertilizer:

Fertilizer Free Zones within 3 feet of water bodies

No fertilizing during flood/tropical storm/hurricane watch/warning

No fertilizing saturated soil

No fertilizing during the wet season (May 15-October 15)

No fertilizing during periods of predicted heavy rain

Fertilizing Your Lawn

- Always buy “slow-release”
- Do a soil test to find out what N-P-K is best for your garden/lawn

Table 1. Fertilization Guidelines for Established Turfgrass Lawns in Three Regions of Florida

Species	Nitrogen recommendations (lbs N/1000 ft ² /year)*		
	North	Central	South
Bahiagrass	2-3	2-4	2-4
Bermudagrass	3-5	4-6	5-7
Centipedegrass	1-2	2-3	2-3
St. Augustinegrass	2-4	2-5	4-6
Zoysiagrass	3-5	3-6	4-6

* Homeowner preferences for lawn quality and maintenance will vary, so we recommend a range of fertility rates for each grass species and location. Also, effects within a localized region (for instance, shade, drought, soil conditions and irrigation) will require using a range of fertility rates. These recommendations assume that grass clippings are recycled.

Table 3. Fertilization Guidelines for Established Landscape Plants

Level of Maintenance	Amount of Nitrogen (lbs N/1000 ft²/year)
Basic	0-2 lbs
Moderate	2-4 lbs
High	4-6 lbs

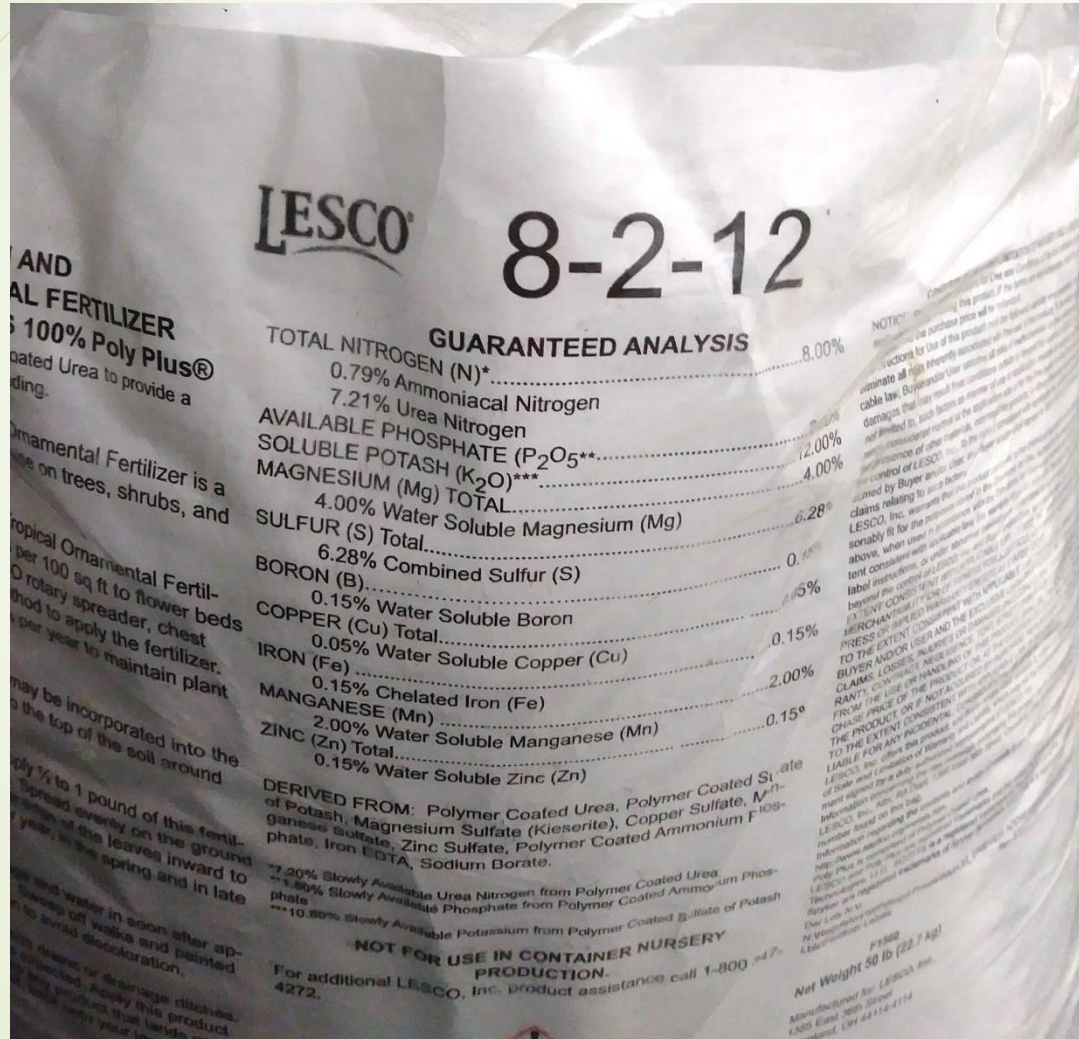
Fertilizing Established Ornamental Landscape Plants



Fertilizing Palms

- ▶ Palms have different nutritional requirements than other landscape plants.
- ▶ Fertilize landscaped areas within 30 feet of large established palms with 4-1-6-2 Mg ratio fertilizer.
- ▶ Palms need micronutrients too, so whatever fertilizer you use should contain 1%-2% iron and manganese, plus trace zinc, copper, and boron.

Fertilizing Palms





Fertilizing Vegetables

Dry Fertilizer

- ▶ Mix fertilizer into growing area before planting and then side dress plants with dry fertilizer.
- ▶ For containers apply ~1/4 to 1/2 cup (depending on the crop) per 5 gallons of pot
 - ▶ Tomatoes, peppers, herbs need more nutrients

Liquid Fertilizer

- ▶ Water the diluted fertilizer or do foliar feeding (spraying on leaves)
- ▶ Foliar feeding can be much more effective in terms of nutrient uptake

Let's go
outside for a
moment

Let's have some hands-
on experience fertilizing a
tree

A photograph showing a wheelbarrow filled with dark brown mulch. To the right of the wheelbarrow, a green pitchfork and a shovel are standing upright. In the background, there is a large pile of mulch. The scene is set outdoors on a light-colored surface, possibly a driveway or sidewalk. The word "Mulching" is written in white text on a dark red arrow-shaped graphic in the upper left corner.

Mulching

Mulch

- Conserves moisture
- Hinders weeds
- Protects the soil
- Prevents soil erosion
- Mediates temperature
- Provides some nutrients as it breaks down
- Improves appearance



Mulch



Questions?



Container Garden Giveaways

- ▶ Felt 5 gallon pots from recycled material
- ▶ Companion vegetable and flower seeds
- ▶ Fertilizer to start, until you get your compost going 😊

