1

TRAINING OBJECTIVES

UF | IFAS Extension
UNIVERSITY of FLORIDA

At the end of this module, you will be able to:

1. Describe the components of a Fertilizer Management Plan.
2. Describe how turfgrass reduces effects of urban nonpoint source pollution.
3. Name four common lawn grasses used in Florida.
4. Describe how environmental stresses affect plant health and how they can be managed.
5. List four landscape best management practices to protect water resources.

Florida-Friendly Landscaping™ PROGRAM

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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LAWN AND LANDSCAPE NUTRIENT BMPS

Fertilize lawn and landscape plants appropriately.

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WHY FERTILIZE?

To supply nutrients to achieve a defined objective or response such as:

1. Increasing growth
2. Enhancing appearance
3. Correcting or preventing nutrient deficiencies

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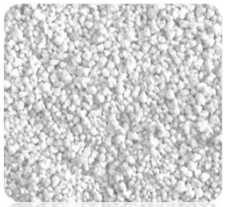
FERTILIZER DEFINED

Any substance that:

- Contains one or more recognized plant nutrients
- Promotes plant growth
- Controls soil acidity or alkalinity
- Provides other soil enrichment
- Provides other corrective measures to the soil



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RECOGNIZE NUTRIENT DEFICIENCIES

- Plants that have chronic deficiencies may not be suitable for the site
- Test soil pH
- Select plants better adapted to the site conditions

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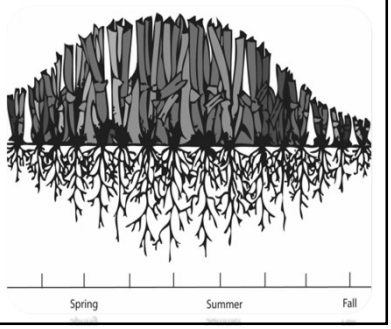
WHEN TO FERTILIZE

Maximize Plant Use

- **Fertilize when plants are actively growing**

Minimize Adverse Environmental Impacts

- **Do not fertilize dormant turfgrass**



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NEWLY PLANTED SOD AND SPRIGS

WHEN TO FERTILIZE?

- **After the turf has established a root system**
- **Typically, 30-60 days**
- **Applying fertilizer too early will result in high leaching potential, meaning the plants do not uptake the nutrients. This wastes money and damages our water.**

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Irrigating Newly Installed SOD

- Schedule is different from established grass
- Establishment irrigation is typically achieved in 30 days
- After 30 days, follow recommendations for established grass
- Assist your clients with programming irrigation controllers

Time	Frequency	Duration
First 7-10 days	2-3 times daily	Short (5-10 mins)-try to keep plant material from drying out
7-10 days after planting	Once a day	Apply ~¼" water-more will be wasted due to short roots
Next 7-10 days	Every other day	Apply ~¼" to ½" of water
3-4 weeks after planting	1-2 times weekly	Apply ~½" water

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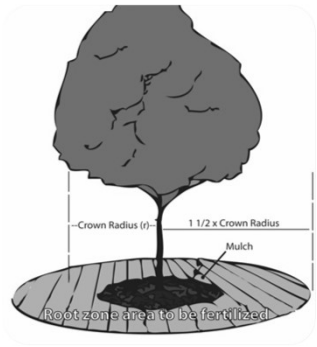
WHEN AND WHERE TO FERTILIZE

TREES AND SHRUBS

- Nutrients applied to lawn may meet the needs of shrubs and trees.
- Adding fertilizer to healthy mature trees may not accomplish anything.
- When mature trees have matured green foliage, little reason to add fertilizer.
- Palms have special nutritional needs.



(E.F.Gilman https://hort.ifas.ufl.edu/woody/fertilizing.shtml)

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FERTILIZER MAY NOT BE REQUIRED

- If appearance is that of a healthy specimen
- If plants are established
- If plants are flowering & fruiting
- For trees, unless nutrient deficiencies exist.

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NUTRIENT ANALYSIS

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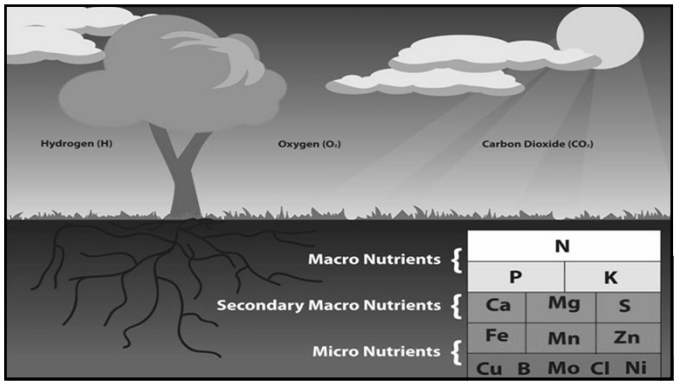

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BASIC SOIL TESTING

DETERMINING A FERTILITY PROGRAM

Soil Test

- **pH**
- **Phosphorus**
- **Potassium**
- **Magnesium**
- **Calcium**
- **Sulfur**
- **Lime and fertility requirements**

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TISSUE TESTING

- **Nitrogen**
- **Phosphorus**
- **Potassium**
- **Calcium**
- **Magnesium**
- **Iron**
- **Copper**
- **Manganese**
- **Zinc**
- **Boron**

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Turfgrass Characteristics and Culture

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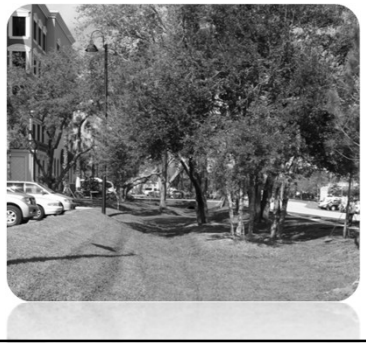
BENEFITS OF FUNCTIONAL TURFGRASS

Healthy turfgrass:

- Slows stormwater from moving to water bodies
- Filters and removes contaminants
- Reduces leaching
- Reduces erosion
- Protects groundwater



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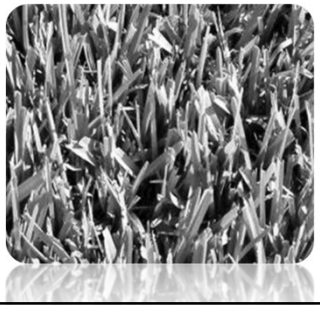
ST. AUGUSTINEGRASS

Advantages:

- Good shade tolerance (relative)
- Good salt tolerance (coastal areas, reclaimed water)
- Tolerant to wide range of soil pH
- Establishes quickly from sod
- Grows vigorously under many conditions

Optimal Mowing Height (inches)

- Cultivar Dependent: 3.5" – 4.0"
- Dwarf Cultivars: 2.0" – 2.5"



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ST. AUGUSTINEGRASS

Disadvantages:

- May require supplemental water
- Poor wear tolerance
- Forms excessive thatch
- For most cultivars, chinch bugs are difficult to control
- Lack of herbicides for grassy weed control

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St. Augustinegrass Varieties

Variety	Year	Attributes
Bitter Blue	**1930s**	**Old cultivar;** Good cold and shade tolerance
Floratam	**1973**	**Most widely produced;** Poor cold tolerance
Palmetto	**1980s**	**Semi dwarf;** Will grow in partial shade
Seville	**1990s**	**Dwarf;** Good shade tolerance
ProVista	**2010s**	**Slow growing;** Glyphosate tolerance
Citra Blue	**2018**	**Blue-green color;** Good shade and disease tolerance
Cobalt	**2023**	**Drought Resistant;** Good shade and disease tolerance

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ZOYSIA JAPONICA
COURSE LEAF TYPE

Advantages:

- Can be maintained with less nitrogen than St. Augustine
- Dense growth habit
- Low mowing height
- Rotary mower
- Moderate shade tolerance
- Faster establishment than previously available types

Optimal Mowing Height (inches)

- Cultivar Dependent: 1.5" – 2.5"

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ZOYSIA JAPONICA
COURSE LEAF TYPE

Disadvantages:

- Same water requirements as St. Augustinegrass
- Hunting billbug pests
- Susceptible to large patch disease
- Thatch forming

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Zoysia Japonica Varieties

Variety	Texture	Attributes
Empire	**Coarse**	**Most widely available;** Susceptible to large patch disease
JaMur	**Medium-Coarse**	**Good shade tolerance;** Susceptible to large patch disease
Palisades	**Coarse**	**Good shade tolerance**
El Toro	**Coarse**	**Good cool season;** Color and drought tolerance, Susceptible to large patch disease
CitraZoy (Hybrid)	**Medium-fine**	**Best winter color retention;** Good shade tolerance

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BAHIAGRASS

Advantages:

- Good ability to survive drought
- Resumes green growth when watered
- Lower fertility/maintenance requirements
- Low maintenance
- Tolerant of sandy, infertile soils
- Establishment: seed, sod

Optimal Mowing Height (inches)

- 3.0" – 4.0"

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BAHIAGRASS

Disadvantages:

- Produces abundance of seedheads during summer
- Open growth habit encourages weed competition
- Susceptible to mole crickets
- Coarse stems wear out mower blades
- Not wear tolerant

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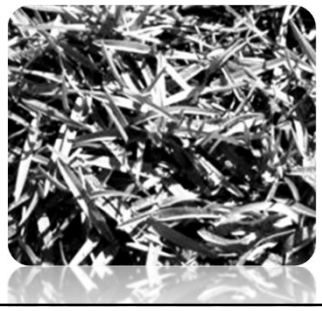
CENTIPEDEGRASS

Advantages:

- Low fertility and water requirement
- Grows well in acidic/infertile soils
- Fewer insect and disease problems
- Slow growing above ground stems
- Survives drought by going dormant

Optimal Mowing Height (inches)

- 1.5" – 2.5"



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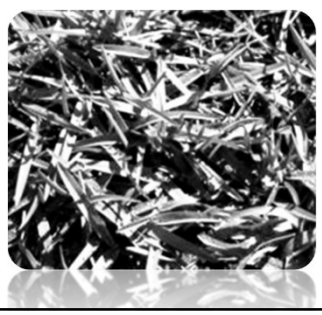
CENTIPEDEGRASS

Disadvantages:

- Susceptible to nematodes and ground pearls
- Naturally pale yellow - green color
- Does not perform well in alkaline and saline soils
- Prone to Centipedegrass decline (TAR)
- Low wear tolerance



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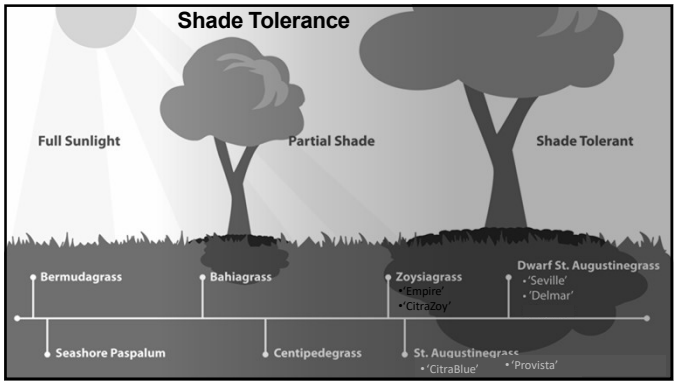
Shade Tolerance
Full Sunlight
Partial Shade
Shade Tolerant
Bermudagrass
Bahiagrass
Zoysiagrass
•'Empire'
•'CitraZoy'
Dwarf St. Augustinegrass
•'Seville'
•'Delmar'
Seashore Paspalum
Centipedegrass
St. Augustinegrass
•'CitraBlue'
•'Provista'

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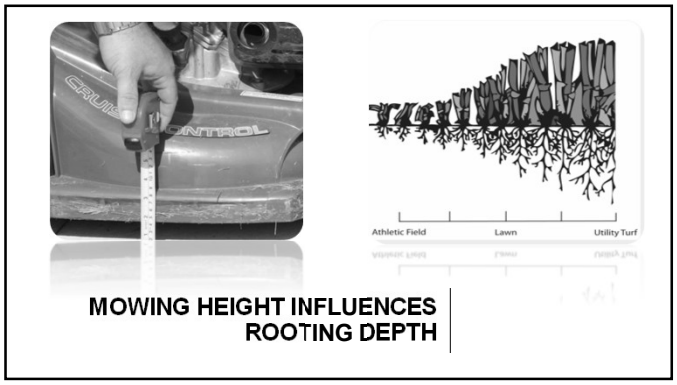
Athletic Field
Lawn
Utility Turf
MOWING HEIGHT INFLUENCES ROOTING DEPTH

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SCALPING
Causes plant injury
Reduces stress tolerance of the root growth
Indirectly results in weak rooting and soil loss

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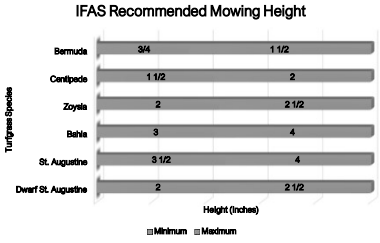
MOWING CULTURAL PRACTICES

- Pick up stones, sticks, and other debris before mowing to avoid damaging the mower or injuries.
- Mow at highest recommended height for species.
- Don't remove more than 1/3 of the leaf blade at any one time.
- Leave clippings.



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MOWING CULTURAL PRACTICES

- Keep mower blades sharp!
- Don't mow grass when wet
- Blow/remove clippings and weed seeds from mowers between properties
- Use Protective Safety Equipment

Tips of grass blades ripped by dull mower blade

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MOWING: Never leave clippings on impervious surfaces | **BMP**

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DIRECT ENVIRONMENTAL CONSEQUENCES
INAPPROPRIATE CULTURAL PRACTICES

Excessive nutrient loading may harm aquatic life:

- Lower oxygen levels
- Clogs gills
- Disruption of food chain
- Increased turbidity
- Blocks sunlight

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INDIRECT ENVIRONMENTAL CONSEQUENCES
INAPPROPRIATE CULTURAL PRACTICES

Loss of vegetative cover results in:

- Erosion and sediment buildup
- Increased pests
- Wasted water and nutrients
- Reduced water quality

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MOWING BMP VIDEO

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ENVIRONMENTAL TURFGRASS STRESS

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Modify cultural practices during extended periods of drought

BMP

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Increase mowing height in shaded areas to avoid thinning | **BMP**

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OVERCOMING SHADE

- **Allow more light**
- **Use shade-tolerant groundcover or mulch bed**
- **Reduce traffic**
- **Reduce irrigation**
- **Reduce nitrogen**

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MORE INFORMATION

THIS CONCLUDES THE TURFGRASS CULTURE AND SPECIES SECTION

HTTPS://EDIS.IFAS.UFL.EDU/TOPICS/LAWNS

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PLANT SELECTION CRITERIA: RIGHT PLANT, RIGHT PLACE

Based on characteristics of planting site:

- Soil texture
- Soil pH
- Maintenance
- Space for mature plant
- Possible pest pressures and environmental stress
- Water supply

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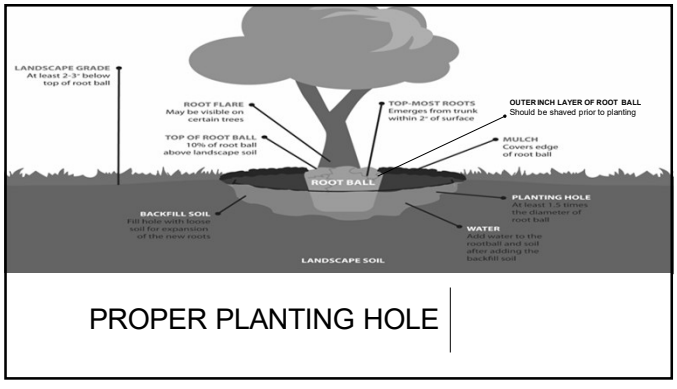

PROPER PLANTING HOLE

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Establishment: The time it takes to regenerate enough roots to stay alive without irrigation

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Mulching: Reduces off-site transport of sediment, nutrients, and pesticides to surface water or ground water

BMP

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Mulching

Maintain a 2- to 3-inch-thick layer of mulch (after settling)

1-inch maximum layer of mulch over the root ball of trees

Avoid direct contact to trunk or base

BMP

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Mulching Adds Protection

Turf and weeds rob moisture and nutrients

Lawn equipment damages trunk

BMP

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Improper Mulching (volcano-like manner)

Causes trunk rot

Cuts off oxygen to roots, causing stem girdling

BMP

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PRUNING

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PRUNING

Steps of the 3-cut method

DO- LEAVE A COLLAR WHEN REMOVING A TREE BRANCH

DON'T- FLUSH CUT!

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PRUNING

NEVER TOP TREES

AVOID OVER-ELEVATING THE CANOPY

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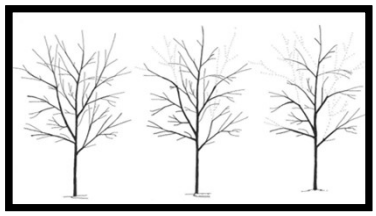

Pruning For A Strong Single Trunk

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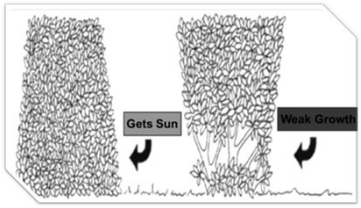
Pruning Landscape Shrubs:

- Trim wider at the bottom than the top
- Clipped while new growth is green



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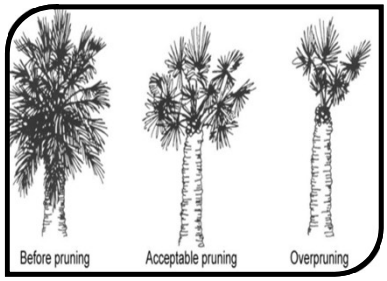
Avoid removing green leaves from palms. If needed, use the 9 and 3 rule.

Effects of over pruning landscape palms:

- Slower growth
- More susceptible to pests & diseases



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Avoid removing green leaves from palms. If needed, use the 9 and 3 rule.

ACCEPTABLE PRUNING (9:00-3:00)

Never Hurricane Prune Palms

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MORE INFORMATION

EDIS CIR. 853 PRUNING LANDSCAPE TREES AND SHRUBS

HTTPS://HORT.IFAS.UFL.EDU/WOODY/PRUNING.SHTML

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MANGROVES

The 1996 Mangrove Trimming and Preservation Act states that:

- There is a difference between trimming & alteration
- Height must be above 6 feet from substrate
- A professional mangrove trimmer must be employed (under certain conditions)
- Dead mangroves are protected the same as living trees
- Contact area Florida DEP office for more information

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REVIEW TRAINING OBJECTIVES

1. Describe the components of a Fertilizer Management Plan.
2. Describe how turfgrass reduces effects of urban nonpoint source pollution.
3. Describe how environmental stresses affect turfgrass health and how it can be managed.
4. Describe four common lawn grasses used in Florida.
5. Describe four landscape best management practices to protect water resources.

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FFL Plant Selection App

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Thank You

This program is funded in part by Florida DEP with a Section 319 Nonpoint Source Management Program Grant from the U.S. Environmental Protection Agency.

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