



Daphne Richards
County Extension Agent—Horticulture
Texas A&M AgriLife Extension Service

Lawn Problems

an integrated pest management approach

Grow Green Landscape Professionals Training
June 23, 2015 Austin, TX

Integrated Pest Management

*Integrated pest management (IPM) is an **ecosystem-based** strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties.*

Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.

Pests and Pesticides

Pests include

insects, diseases, weeds, rodents, mites etc.

Pesticides include

insecticides, fungicides, herbicides, rodenticides, miticides, etc.

Lawn Problems

insects, diseases and weeds are the most common pests we must deal with in turf

Lawn Problems

Most lawn problems begin with **cultural issues**

water (too much/too little)

soil (texture, slope, compaction)

nutrient levels (too low/too high)

sunlight & humidity (sunny and dry/cloudy and humid)

temperature (too hot/too cold)

...so the first step in combatting them should involve cultural controls

Water

- Too little
 - Patches of dead turf
 - Dry/cracked areas
 - Soil compaction
 - Weed & insect infestation
 - Trouble recovering from other stresses
- Too much
 - Patches of dead turf
 - Disease issues
 - Algae and slime mold

Drought Stress



Lack of rainfall
Abrupt change in weather
Irrigation system issues



Shrinking Soil

Solutions:

core aeration
add compost



Weed Infestations

Solutions:
hand pull
spot treat



Algae and Moss

Solutions:

- correct drainage issues
- core aeration
- copper/iron sulfate
- lime



Soil

- Texture
 - Sand, silt, clay, organic matter (rocks!)
- Slope
- Compaction
 - Heavy traffic areas, tree roots, prolonged drought
 - Periodic aeration
- Thatch
 - Exacerbated by improper maintenance regimes
 - Periodic dethatching

Texture

Rocky soils
Clay soils

Solutions:

don't plant turf
build soil base



belladura

Slope

Solutions:
build barrier
compact soil



Compaction

Heavy traffic, prolonged drought, tree roots



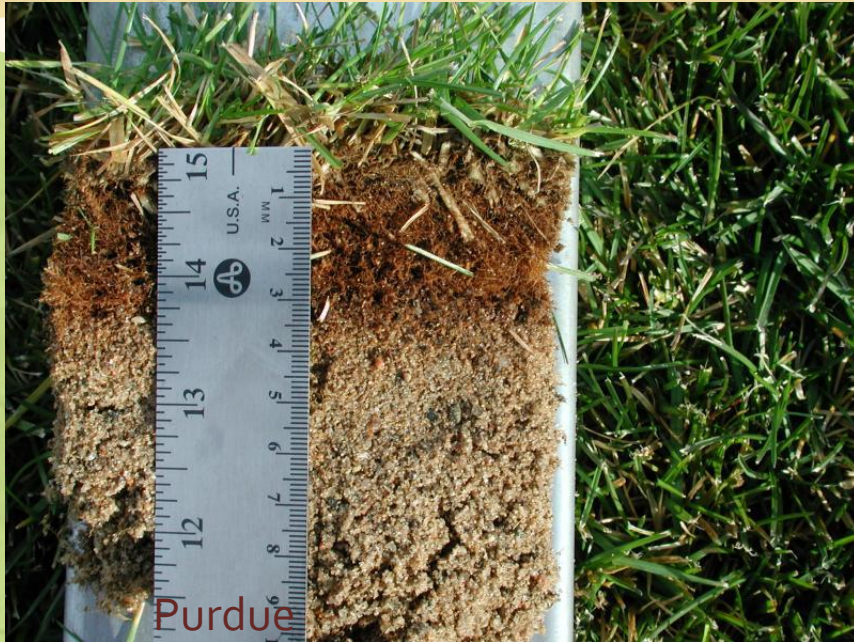
Solutions:

core aeration

topography correction



Thatch



Solutions:

- annual dethatch/core aeration
- decrease fertilizer
- decrease pesticide
- remove clippings
- vertical mowing/scalping

Can be healthy



Oregon state

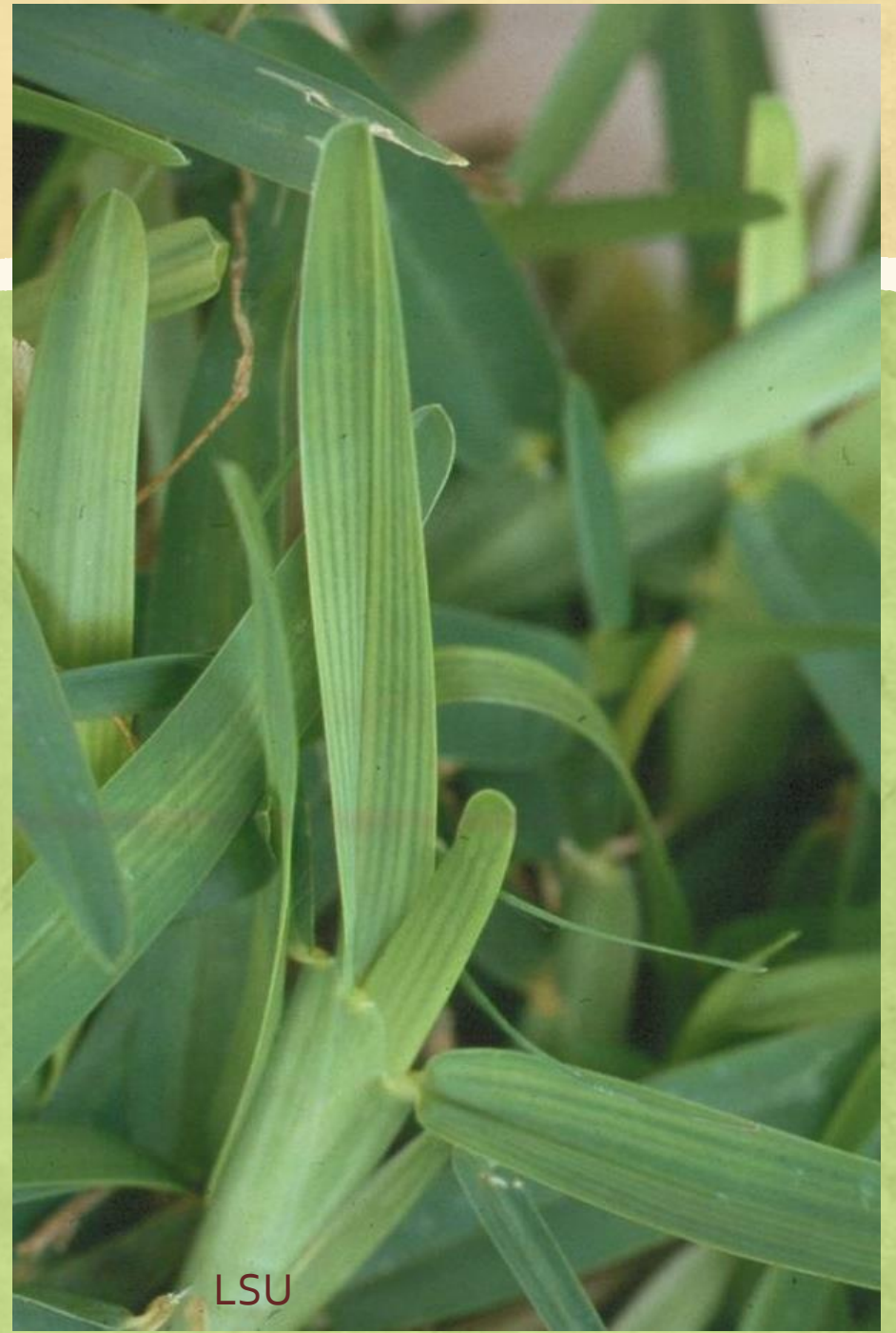
Nutrient Levels

- Under/over-fertilization
 - Amount applied
 - Timing of application
- Wrong nutrients applied
 - Soil test
- Micronutrients
 - Iron chlorosis
- Lawn clippings

Nutrient Deficiencies

Iron Chlorosis common
yellow blade/green veins

Nitrogen deficiency
overall less green
acceptable for low-input lawns



Sunlight & Humidity

- Shade
 - St. Augustine
 - Zoysia
- Sun
 - Bermuda
 - Zoysia
 - Buffalo (buffalo mixes)
- Heavy shade vs. bright shade
- Humidity & evaporation (prolonged clouds or sun)

Excessive Sun/Heat

Shade-loving turf in full sun
Turf close to sidewalk or street



AgriLife Extension

Heavy Shade

Difficult to reestablish
Sun-loving turf in shade



Temperature

- Extreme heat
- Extreme cold
- Planting times
- Prepping for winter dormancy/spring growth
- Nearby hardscapes

Extreme Heat/Cold



Solutions:

irrigation/remove turf
rake out dead areas



Miscellaneous Issues

- Leaf litter
- Lawn clippings
- Mowing heights
- Weed and Feed products
- Annual top-dressing

Leaf Litter

Solution:
rake leaves



Lawn Clippings



University of Florida

Identify the Issue

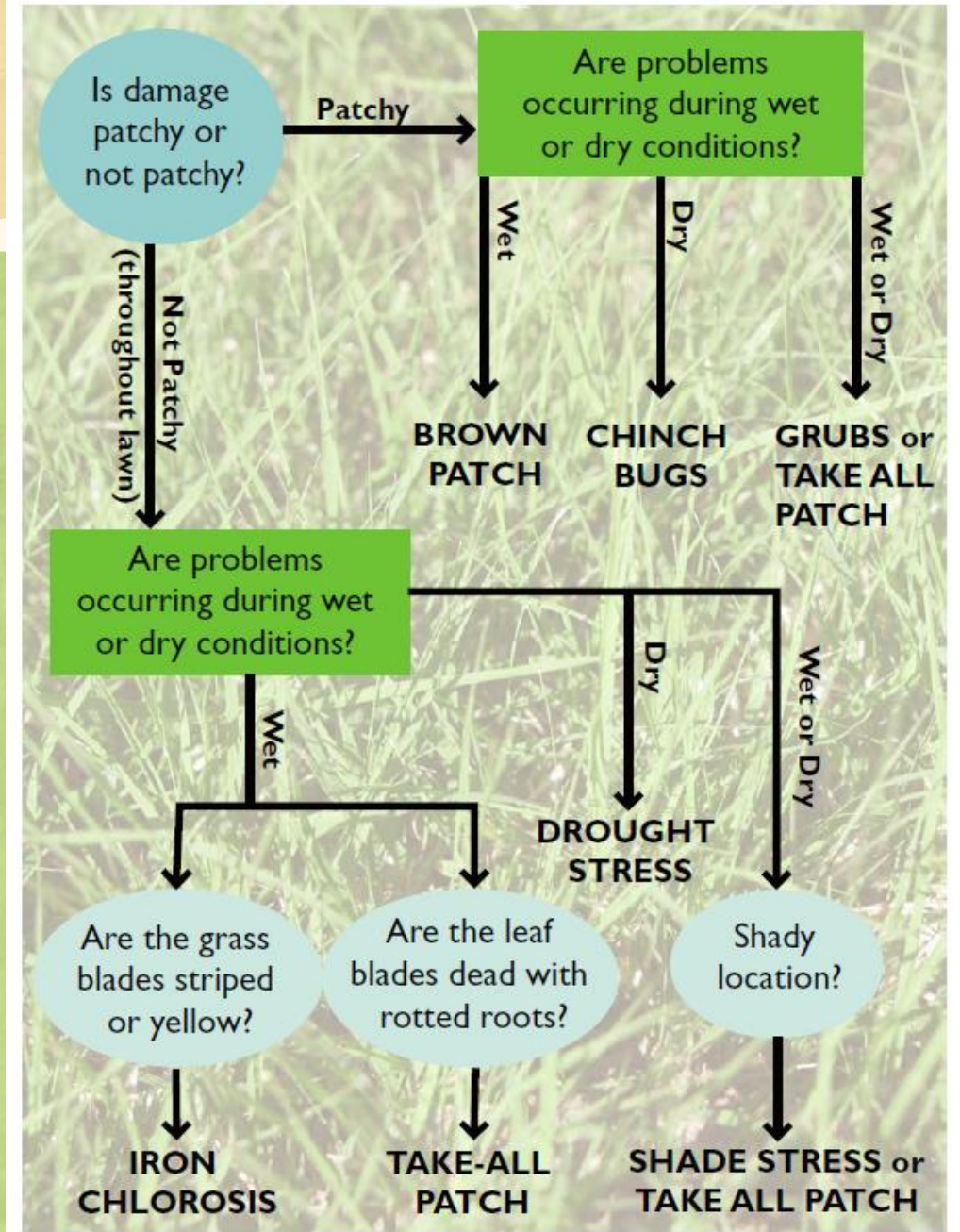


earth-wise guide to

Lawn Problems

in this fact sheet:

- Chinch bugs
- Grubs
- Brown Patch
- Take All Patch
- Drought Stress
- Iron Chlorosis
- Shade Stress



Damage Patterns

Brown patch



Chinch bugs



NCSU

Solutions

- Chinch bugs
 - Irrigate efficiently
 - Remove turf near hardscaping
 - Preserve beneficial insect populations
 - Manage fertility and thatch
 - Use insecticide when damage is excessive (cyfluthrin, bifenthrin, pyrethroids)
- Brown Patch
 - Core aeration/increased drainage
 - Irrigate early morning
 - Decrease fertilization/don't fertilize affected area
 - Decrease irrigation
 - Use fungicide at first sign of damage

Damage Patterns

Pet urine

Solutions:

- rake out dead grass
- irrigate heavily
- isolate pet



Damage Patterns



Damage Patterns

Herbicide damage



Solution:
read product label

Damage Patterns

Take-all patch



Solutions:

- decrease irrigation
- increase drainage
- decrease fertilization
- decrease herbicide use
- top-dress with peat moss

Damage Patterns

Michigan State



Grub worms

Damage Patterns

Gray leaf spot

Solutions:

- decrease humidity
- decrease fertilizer
- dethatch
- apply fungicide



Damage Patterns

Scalping



Photo credit: Bob Mugaas, U of MN

Damage Patterns



Fertilizer misapplication

Miscellaneous

- Always start with cultural controls
- With all diseases, avoid mowing and remove grass clippings
- Read labels
 - right pest/right plant
 - “Southern” lawns
- Identify pest
- Annual vs. perennial weeds
- Broadleaf vs grassy weeds
- Preventive treatment may be necessary

Turf Resources

Aggie Turf website <https://aggieturf.tamu.edu/>

Annual turf field days

Annual Turfgrass Ecology & Management Short Course

Annual Water Star conference

Texas Plant Disease Diagnostic Lab

TAMU soil testing lab

Extension publications

Texas A&M AgriLife Extension Service Publications

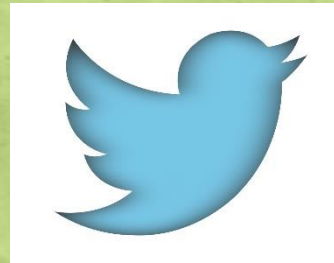
- Thatch Management for Home Lawns
- Turfgrass Establishment for Texas
- Turfgrass Selection for Texas
- Lawn Fertilization for Texas Warm Season Grasses
- Maintaining Bermudagrass Lawns
- Maintaining St. Augustinegrass Lawns
- Texas Plant Disease Handbook

Program Announcements:
centraltexashorticulture.blogspot.com

**Questions?
Contact Extension for
more information**



@daphneinaustin



@DaphneRichards



Daphne Richards



Horticulturist Daphne Richards

Daphne Richards, County Extension Agent—Horticulture
Texas A&M AgriLife Extension Service, Travis County
drichards@ag.tamu.edu
512.854.9600