Lawn Problems
an integrated pest management approach
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
Slope

Solutions:
- build barrier
- compact soil
Compaction

Heavy traffic, prolonged drought, tree roots

Solutions:
core aeration
topography correction
Thatch

Can be healthy

Solutions:
- annual dethatch/core aeration
- decrease fertilizer
- decrease pesticide
- remove clippings
- vertical mowing/scalping
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
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
Identify the Issue

grow green
earth-wise guide to
Lawn Problems

in this fact sheet:
- Chinch bugs
- Grubs
- Brown Patch
- Take All Patch
- Drought Stress
- Iron Chlorosis
- Shade Stress

Are problems occurring during wet or dry conditions?

Patchy

- BROWN PATCH
- CHINCH BUGS
- GRUBS or TAKE ALL PATCH

- Wet
- Dry
- Wet or Dry

- Not Patchy (throughout lawn)

- Are the grass blades striped or yellow?
- Are the leaf blades dead with rotted roots?
- Shady location?

- IRON CHLOROSIS
- TAKE-ALL PATCH
- SHADE STRESS or TAKE ALL PATCH
Damage Patterns

Brown patch

Chinch bugs
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

Sunset
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

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
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
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Questions?
Contact Extension for more information

Program Announcements:
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