

S.O.G. 307
Turf ID / Turfgrasses
Handout

Ole Miss is in climate zone 7a (80-95 degrees), so we can use warm season varieties of turf such as Bermuda and Zoysia. St. Augustine is not usually found in this zone, but is used experimentally in a few places on campus.

BERMUDA TURF:

1. A vigorous and dense turf that quickly establishes itself.
2. Best in high traffic areas because it recovers quickly.
3. Propagates by stolons.
4. The best hybrids are: Tifway, Tifgreen, and Tifdwarf.
5. It is the most common turf at Ole Miss.
6. Can be seeded or sodded.

ZOYSIA TURF:

1. A high density and tight sod with thick stolons and rhizomes that make it harder to mow and may give it a thatch problem.
2. It recovers slowly and grows slowly.
3. It has good wear tolerance, good draught tolerance, good shade tolerance (only needs 25% sunlight).
4. Can be sodded or plugged.

ST. AUGUSTINE TURF:

1. A dense turf that does not tolerate wear well.
2. Good shade tolerance (needs about 30% sunlight).
3. Tolerates soils with a pH of about 5.5.
4. Responds well to a high dose of nitrogen once from April to September.
5. Can be sodded or plugged.

DEFINITIONS:

1. TURF/SOD: A ground cover of compact grass with a dense root and rhizome layer which is tolerant of a close clipping; can be cut up into squares or rolled up.
 - LEAVES: 85% water, 8-13% carbon, 2-7% misc.
 - ROOTS: extensive and deep.
 - High water requirement
 - Best SOIL: 40% sand and loam / 20% clay / 1% organics / pH 6-7
2. STOLONS: above ground spreading runner which produces a new plant at the tip.
3. RIZOMES: modified plant stem running just underground. New plants sprout at different points along it.
4. SWARD: the grassy surface itself.
5. THATCH: spongy layer of dead roots and rhizomes. When it accumulates faster than decomposition and is over an inch thick, de-thatch it because it will interfere with water absorption and harbors pests and diseases.

BENEFITS OF TURF:

1. Cooling effect through transpiration, plus 50% of the heat striking turf is dissipated. Turf areas are much cooler than asphalt or concrete.
2. Noise damper.
3. Traps carbon dioxide, nitrate gases, ozone and microscopic particulates.
4. Enhances ground water recharging.

MOWING TURF:

1. Do not let the turf grow so high that you have to remove more than 1/3 of the leaf area. In shady areas, cut the turf ½ inch higher. Leave the clippings to provide slow release of nutrients (unless infested with fungi)
2. The mower height is determined by the type of turf and the time of season.

AERATION OF TURF:

1. Mechanically removing plugs of turf, thatch and soil.
2. Improves water absorption.
3. Reduces compaction.
4. Reduces thatch.

PLANTING TURF: No seeds, use vegetative plugs.

1. Plant Bermuda and St. Augustine from mid-May to mid-July
2. Plant Zoysia from May 1 to Aug 1. HERBICIDES for WEEDS: Use pre-emergent from February to March for summer weeds, and the last two weeks in August for winter weeds.

FERTILIZING TURF:

1. Use "4-1-2" (nitrogen/phosphate/potassium) typical proportions found in plant tissue. As a general rule we use a balanced triple 17-17-17 fertilizer or a slow release 32-2-10 fertilizer to maximize turf health and growth.

DISEASES/PESTS IN TURF:

1. FUNGI:
 - A. Bermuda Grass Decline: root fungus, stresses turf for water and nutrients; has round/oblong brown to purple spots parallel to the leaf blade, which shades the turf blade causing it to die out in patches.
 - B. Spring Dead Spot (all turf): fungus. 3 inches to 3 foot spots. A pathogen attacking the roots in spring, and in winter causes root decay and cold-injury, which shows up as spots the next spring. To combat, reduce compaction, improve drainage, and de-thatch.
 - C. Brown Patch (all turf): fungus; brown to gray round patches, several inches to several feet. Too much nitrogen in the soil or watering late in the day and/or thatch build-up.
 - D. Fairy Rings (all turf): the central body of the fungus, the mycelium, grows outward in a circle several inches a year. Edge of circle has fruiting bodies-mushrooms, toadstools or puffballs. Absorbs all the nutrients and water and kills the turf.
 - E. Dollar Spot (all turf): fungus; leaves show small round spots, light yellow; feed early am to late afternoon. Molts six times, sixth time voracious feeder.
 - F. Gray leaf spot (St. Augustine): a summer fungus, very infectious. Thins turf and can kill large areas during warm humid rainy periods. Likes shade. Shows as an oblong spot on the leaves which then wither.
2. VIRUS: St. Augustine Decline: first year shows mottled pattern on the leaves, the second year the leaves yellow, and the third is death.
3. CHEWING INSECT (all turf): Fall Army and Sod Web Worms. Shows as irregular dead patches and general thinning of sward.

4. SUCKING INSECT (St. Augustine): Chinch Bug.
5. PLANT PARASITIC NEMATODES: microscopic round worms, each is specific to a plant part (bud, stem, leaf, root). Each has a “lancet” to pierce cell walls. This causes decline of plant.

CONTROL OF DISEASES:

1. Successful disease control strategies start with manipulation of the environment: irrigation frequency and water drainage, air movement, thatch reduction, more sun, good mowing practices, and proper application of fertilizer.
2. When installing turf use a blend of cultivars to produce a diverse population of turf, which will be more resistant to disease and stress.
3. Applying fungicides.
 - A. Identify the disease correctly to choose the appropriate fungicide.
 - B. Contact fungicides: applied to the leaf and stem surfaces only. Effective for a week or a bit more.
 - C. Penetrant fungicides: absorbed into the plant and can control both foliar and root/crown diseases. Effective for about two to four weeks.