Turfgrass IPM

What to consider?

- Realistic level of maintenance
- Expectations

Right plant, right place.

and
Turfgrass IPM

What to consider?

Cultural practices:

1. Mowing
2. Fertilization
3. Irrigation

Pest, disease, and weed levels

influence
Control

Assess risk / mitigate damage
hello

I took the time last summer and fall and removed the existing lawn, rototilled, brought in sand, top soil and peat moss and planted a great lawn. It remained a beautiful dark green throughout the winter until recently.

Initially I noticed a few yellow patches which I interpreted for dog or deer urine. Over the past 2 weeks the spots have increased to alarming levels. I direly need some assistance to resolve this. I understand I have some weeds coming up that I can rectify but the other scares me. My lawn has been heralded as the nicest in the area and if I lose it I will be beside my self.

I have included some photos of showing conditions. There are spots more infected than shown. Is it possible for a turf grass expert like yourself to come and inspect and advise.

On pins and needles

Thanks

Steve Johnson
Turfgrass IPM

* Photos courtesy of wikicommons
40 million acres nationwide

• 2 % of total land in the U.S.

• Largest irrigated crop in the country
Turfgrass IPM

Right plant, right place.
Turfgrass IPM

Right plant, right place.
Pests

1. Insects

2. Fungi
Pests

1. Insects

- Leafhopper
- Sod webworm
- White grub
- Billbug
- Chinch bug
- Crane fly
- Cutworm
Pests

- Anthracnose
- Brown blight
- Brown patch
- Curvularia blight
- Damping off
- Dollar spot
- Downy mildew
- Fairy ring and mushrooms
- Microdochium patch

2. Fungi

- Necrotic ring spot
- Powdery mildew
- Pythium
- Red thread
- Rusts
- Take-all patch
- Yellow patch
- Yellow tuft
Weeds

- Bindweed
- Buttercup
- Chicory
- Chickweed
- Clover
- English daisy
- Henbit
- Knotweed
- Lambsquarters
- Pineapple weed

- Plantain
- Purslane
- Shepherdspurse
- Red sorrel
- Speedwells
- Spurge
- Thistle
- Woodsorrel
- Yarrow
Ecological perspective

Soil

Decay

Microbial

Nutrients
- 1.25 to 1.5 (in)
- 1.5 to 2
- 0.375 to 1
- -
- 1.25 to 1.5
- 1.25 to 1.5

Fine fescues (chewings, creeping, and hard)
Tall fescue
Colonial bentgrass
Creeping bentgrass
Kentucky bluegrass
Perennial ryegrass
Fertilization

1. Timing
2. Rate
3. Type

Active growing periods
- Spring
- Fall

Dependent, in part, on turfgrass type, but:
- 4 lbs N/year split into multiple applications

Synthetic N
- Quick release
- Slow release

Organic N
- Composts
- Fish meal/manures
- Milorganite

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Fertilization

Major concerns:

• Over application leads to succulent turfgrass

• Under application may lead to less competitive growth
Irrigation

1. Timing
2. Rate
3. Type

Highly variable and dependent upon site conditions

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Irrigation

Major concerns:
• Over application creates a suitable environment for pathogens and pests alike
• Under application may reduce competitiveness of desired plant
Soil management

By Chris Yeates, CC BY-SA 2.0, https://commons.wikimedia.org/w/index.php?curid=9193263
Ecological perspective

Inputs (e.g. irrigation, nutrients, heat ... )
Soil chemical properties

pH

Nutrient availability:

- Nitrogen (N), phosphorus (P), potassium (K)
- Calcium (Ca), iron (Fe), Magnesium (Mg)
Soil physical properties

Structure

Texture

Percent:
- Sand
- Silt
- Clay
Soil physical properties

Structure

Texture

Percent:
- Sand
- Silt
- Clay

Irrigation and soil moisture
Soil environment

- Chemical
- Physical
- Biological
Soil cultivation

- Aerification
- De-thatch
Soil environment

- Oxygen
- Water
Environment

More diversity = more functionality
Simplify

Baseline

• Soil sample (pH, nutrients)
• Texture

Records

• Year to year comparisons
Approach

• Group site by soil conditions

• Group sites by environmental conditions

• Group problematic site together in a management strategy
Be your own scientist:

- If and when you have problems, go back to records
- Then contact the county agent, or university personnel
Thank you!
Questions?
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