Put it on Smart!
The 411 on Efficient Lawn Watering

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Considerations

- Deciding when a lawn does and doesn’t need water
- How much water should be applied
- What to do if the lawn is sloped
- The 2 bottom lines of lawn irrigation
- How to apply irrigation water evenly
- How to make changes during the growing season
- The pros & cons of various turf species
- What to do for a languishing lawn

Does It Need Water?
How Do You Know?

Method 1
Method 2

All of these methods are instructive, some are more practical than the others

Does It Need Water?
How Do You Know?

Method 3
Method 4
Does It Need Water? How Do You Know?

Method 5

Method 6

Method 7

Method 8

Good measurement technique; very practical

How much water should be applied?

- Is that the right question, or is it how long should the sprinkler system run?
- What are the factors that influence the length of time a zone should run?
  - Soil type
  - Slope
  - Sun/Shade
  - Season of Year
  - Species

How Much, How Long?

Soils have different capacity to absorb irrigation water

Images courtesy Brad Jakubowski
Soil Type/Age Influence on Infiltration

Soil Compaction

Slope

Strategies for a Sloped Lawn
- Delayed Starts
- Aerate for greater infiltration
- Increase application uniformity
Aeration Helps a Lot!

Image courtesy Roch Gaussoin, UNL

Sun vs. Shade

Strategies for Fixing Sun/Shade Conflicts

• Right Plant Right Place...sun turf species in sun; shade turf species in shade
• Rezone the turf area...run the sunny areas longer due to higher use rate/evapotranspiration
• Run shorter cycles and supplement the sunny parts with portable hose sprinklers

Season of Year Influences How Much, How Long?

Two Bottom Lines: Water to the bottom of the roots and keep it moist, not soggy or dry
What Happens If It Runs Too Long or Too Short?

The 2 Bottom Lines

1. Keep the soil and roots moist, not soggy or dry
2. Water to the bottom of the roots
   • The first is easy; use a screwdriver
   • The second is more difficult to determine and implement...how do you know how deep the roots are?
     – Historical average throughout the year
     – Consider how much NPK has been applied; N & P especially will influence rooting depth; both deeper and shallower
     – Dig and look!

Historical Average Throughout the Year

Ok, that’s interesting, but what is this based on?
Historical Average Throughout the Year

Images courtesy Keith Karnok, UGA

Fertility Level – Too Little vs. Too Much

- Unattractive yellow color (chlorosis)
- Reduced shoot density
  - Weeds, bare soil, runoff issues
- Low nitrogen/low growth rate disease
  - Dollar spot, rust, leaf spot, etc.
- Unsafe playing conditions
- Reduced root growth

When You Dig...

- Increased mowing requirement
- Excessive thatch development
- Reduced root growth
- Reduced plant health
- Increases incidence of many diseases
  - brown patch, snow mold, gray leaf spot, take-all patch
- Nitrogen leaching risk

Dig and Look

Images courtesy Bill Kreuser, PhD
Big Need - How to Apply Water Evenly

Why Does This Happen?

Big Need – How to Apply Water Evenly

Big Need – How to Apply it Evenly

Watch it run...frequently...look for flaws
Ever See This? What’s Going On?

Answer = Human Nature/$$ and Irrigation for the Dry Spots

When? Timing – 5-10 am
Helps with application uniformity

Audits
• 1. Turn it on and watch it run
• 2. Fix obvious flaws; fix the biggest flaw first
• 3. Measure output with cans/ruler
• 4. Replace parts/make adjustments
• 5. Re-measure output with cans/ruler
• 6. Trim – reduce runtime a little
• 7. Review an expanded version on go.unl.edu/waterdogs
Trim 10%

- Scale back the runtime
- I.e. from 30 minutes per zone to 27 minutes
- Not likely to notice the difference in turf quality, and it’s an easy 10% savings

Audit Steps

How to Make Changes During the Growing Season

- Monitor natural rainfall received onsite
- Consider season of the year and draw of water from the atmosphere
- Monitor soil moisture
- TURN THE SYSTEM OFF and run each zone according to its unique needs
- Make weekly changes in runtime
- KBG – on average – 0.5 to 0.75 inch/week in April & May, 1.0 in June, 1.5 in July & August, 0.75 in Sept., 0.5 in October
- TF – 0.5 to 0.75 that amount. Why?
Kentucky Bluegrass

**Pros**
- Self repairing via rhizomes
- Low evapotranspiration rate
- Excellent low temperature tolerance
- Good plant for sunny sites

**Cons**
- Shallow root system in the heat of summer
- Susceptible to many diseases and grub/billbug damage
- Needs at least 7-8 hours of sun per day to perform well

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Turf Type Tall Fescue

**Pros**
- Extensive root system
- Disease resistant except for brown patch
- Recent breeding efforts have produced narrow, finer texture cultivars
- Shade and sun adapted; needs at least 4 hours of sun to perform well

**Cons**
- No capacity to recover from drought stress except for the rhizomatous cultivars
- Slightly wider leaf texture
- Brown patch susceptible

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Fine Fescue

**Pros**
- Shade adaptable. Will usually grow reasonably well with only 3-4 hours of sun per day
- Very fine texture

**Cons**
- Sun intolerant
- Non self repairing, even the creeping red fescues, which are very slow spreaders
- Need reseeding every few years

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Perennial Ryegrass

**Pros**
- Germinates quickly
- Wear and traffic tolerant
- Mixes well with KBG

**Cons**
- Short lived
- Non self repairing
- Susceptible to pythium blight
Zoysiagrass

**Pros**
- Very extensive root system; rarely needs supplemental irrigation water to perform well
- Very thick; high density chokes out most weeds
- Can perform well with low fertility
- Resistant to many diseases

**Cons**
- Slow to green up in spring and early to go dormant compared to KBG and TF
- Strong spreader; hard to keep out of landscape beds and neighbor’s property
- Heavy thatch producer

Buffalograss

**Pros**
- Very extensive root system; rarely needs supplemental irrigation water to perform well
- Fine texture
- Very disease and insect resistant

**Cons**
- Slow to green up in spring and early to go dormant compared to KBG and TF
- Weak spreader; can be hard to keep out of landscape beds and neighbor’s property

What to do for a Languishing Lawn

- Irrigation Audit
- Bottom 2 lines
- Count # of hours of sun per day - RPRP
- Aerate/power rake extensively and renovate; consider switching turf species
- Identify possible disease and insect problems
- Identify abiotic maladies – slope, compaction, etc.
Site – Right Plant, Right Place

For shade - overstory

In shade - understory

Site – Separate Turf and Trees,

Soil Moisture Nebraska

Map released: Thurs. January 12, 2023
Data valid: January 10, 2023 at 7 a.m. EST

Intensity
None
D1 (Moderate Drought)
D2 (Severe Drought)
D3 (Extreme Drought)
D4 (Exceptional Drought)
No Data

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