

Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

## **Turf**

Frank Reilly

Past Lawn Client of a Prince William Master Gardener

### **Why Turf?**

- Savannahs, Grasslands & Steppes
- Even indigenous North Americans!
- Italianate Gardens
- Levittown

### **Why do MGs need to know turf?**

### **What is Turf?**

- Short grasses
- Mosses
- Other ground covers
- The dreaded mixture of all of the above!

### **Poaceae**

- 3<sup>rd</sup> largest family in Plant Kingdom
- Over 8,000 species,
- Important family for food - includes forage, grains, wheat, rice,
- Taxonomy is a nightmare
- Based on flower and seed parts.
- Only about a dozen make good turf grasses

### **Grass plant**

- Whole other vocabulary to describe
- Crown at soil level where growth originates (grazing)
- Culm = stem
- 2-ranked arrangement

### **Grass plant**

- Inflorescence
- Spikelets made of individual florets
- Flower is key characteristic to ID, so to ID a grass, usually need mature seed head

### **So it is easiest to Identify by**

Growth habit

- Tillers (bunch grass)
- Rhizome(spreading grass)
- Stolon(running grass)

Environmental requirements

- Cool Season

Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

– Warm Season

### **Growth habits**

- Tillers – “bunch grass”
- Eg. Fescue
- 

### **Growth habits**

- Rhizome
- Eg. Bluegrass

### **Growth habits**

- Stolon
- Eg. Centipede, Bermuda

### **Environmental requirements**

– Cool

- Thrive between 50-75 degrees
- Requires irrigation
- Sun or shade
- Rye, Bluegrass, Bentgrass and Fescue

### **Environmental requirements**

– Warm

- Thrive between 85-95 degrees
- Drought tolerant
- Full sun
- Zoysia, Bermuda or Centipede

### **We live in a ‘transition’ zone**

### **Not all of Virginia IS Transitional**

#### **Tall Fescue –**

- cool season
- 75 – 85% grow it
- Bunch-type
- Deep-rooted for drought tolerance
- Coarse texture, wide blade (breeding varieties for thinner blade)
- Grows in from full sun to lightly dappled shade
- Fertility range is from kinda’ poor to doing better
- 3-4 week germination

#### **Kentucky Bluegrass**

- Cool Season

## Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

- Spreading
- Strong rhizomes
- Fine texture, thin blade, dark green
- Requires full sun
- Some are shade tolerant, but they're stressed

### **Kentucky Bluegrass**

- Shallow roots - Requires more moisture
- with 2 weeks of dryness, goes into dormancy
- With 4 weeks of dryness, some dying
- Some insect and disease problems
- Takes up to 3 weeks to germinate

Identification Look at tip for canoe point = Bluegrass

### **K-31**

- Not Kentucky Bluegrass, but a tall fescue developed in 1931
- Coarse texture
- "Contractors' Blend"

### **Perennial Ryegrass**

- Bunch
- Texture and color like Kentucky Bluegrass
- Special use-type grass
- Doesn't tolerate hot, dry periods
- Is durable
- Germinates quickly (found as part of blend to make us feel better)

### **Creeping Red Fescue**

- Dry soil
- Shade tolerant
- Low fertility
- Fine texture, doesn't stand up to traffic
- Flops, never get a nice clean- mowed appearance

### **Zoysia**

- Warm season
- Aggressive stolon
- Propagated by plugs

### **Bermuda grass**

- Almost a weed for long stolons
- Thrives under hot dry conditions
- Straw-colored in winter

## Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

- Does well under low fertility
- Chokes out weeds
  - Few diseases
- Less clippings
- propagated vegetatively plugging or sprigging
- Expense of establishment
- Seeded varieties slow to germinate, have a low germination rate
- Bermuda grass – use on ball fields
- It's at its most northernmost edge here (new seed coming)
- Can be overseeded with perennial rye for fall color
  - @PW Waterpark

### **Cultivars** **pg 402**

- National Turfgrass Evaluation Program
- Haymarket, Loudoun, Charlottesville, Blacksburg
- Monthly readings, numerical rating for 3 years
- If gets a 'superior' rating, goes on list
- DC, MD & VA participate
- Check the recommendations
- How to use this sheet

### **How can I choose? Pg 404**

- There is no one best grass seed – look at current turfgrass selections handout
- Want Category 1
- How much work?
- Environment
- What are expectations?

### **Buying Seed**

- Pays to spend the extra \$ to get good seed
- Germination rate
- Variety
- Weeds
- Noxious weeds
- Date

### **Should I overseed or should I renovate?**

- New Construction – means new turf
- 50% rule
- Don't obsess
- Mostly green rule or "Dashboard Rule"

### **Should I overseed or should I renovate?**

- Don't obsess
- Mostly green rule or "Dashboard Rule"
- This isn't Augusta

## Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

- If it is we would have greens crews
- And THEY would know what to do
- Handout TurfTips: How can I plant a lawn?

### **How to plant?**

- Seed
- Sod
- Plug
- Sprig

### **New Lawns**

- Soil test
- Kill off existing weeds
- Insolation
- Herbicide – watch your timing
- Amendments can be added all at once
- Till
- Smooth – roll
- Seed – roll - mulch
- Water – Water -

### **Renovating lawns**

- Soil test
- Soil amendments as prescribed
- Herbicides if needed – watch the timing
- Rough up the soil
- Seed – mulch
- Roll
- Water

### **How Much Seed?**

### **Managing weeds**

- Use the magic bullet
- There is no magic bullet
- Page 412-414 & pg 24-41 NC State
- March 15<sup>th</sup> 6:30-9:30 WEED Class
- Stonewall High school room 2A
- Cultural control
- Maintain density through proper mowing, fertilization
- Hand digging weeds
- Chemical control
- Identify the weed
- Herbicide selection based on mode of action
- And weed life history
  - Annual weeds – use pre-emergent

Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

– Perennial weeds – use post-emergent

### **Method of application and use**

1. Pre-emergent (prevention)
2. Post-emergent (reactive, but may only require spot treatment, and less herbicides)

### **Crabgrass for example**

- Summer annual
- Germinates in soil temperature above 50 degrees
- Full sun
- Dies with first frost
- Control with pre-emergent
- Apply prior to germination
- Pre-April 1 (not *Forsythia* but Dogwood)

### **PMG for Crabgrass**

#### **Pre-emergent**

- Look in the PMG – pg 166 in the 2006 edition
- Balan (benefin) -2 application per year
- crabgrass, goosegrass, annual blue, foxtail – pg 166
- betasan (Bensulide)- 1 – 2 applications
- If people unhappy, they probably didn't put down 2<sup>nd</sup> application
- Barricade (prodiamine) – 1 application depending on rain
- Tupersan (siduron) -Seed can germinate in this -Reapply in 30 days pg 167 – can kill bermudagrass!
- Look at grass tolerance in the remarks for interactions with desired species **THIS IS NEW – NO MORE TOLERANCE CHARTS IN THE PMG!!**

#### **Watch out for interactions!**

#### **CAUTIONS for Chemical Control**

- Pesticide Safety
- Get the right one – use the PMG
- Look for interactions with desirable species
- Make certain it is labeled for use on the species present!
- Ornamentals and drift
- not used on new lawns – wait until after 3 mowings when lawn is “established”

#### **PMG For Interactions**

#### **Best Management Practices**

- Selection
- Mowing pg 407
- Thatch pg 414
- Fertilization pg 409-411
- Irrigation
- Overseeding pg 399

Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

### **How much to mow?**

- No more than 1/3 of blade at any one time
- short clippings are more aesthetic and recycle quicker
- SHARP BLADE!!!

### **Mowing heights**

#### **Thatch**

- Accumulation of woodier parts of plants (crowns, stolons, etc.)
- A bit of thatch is good, acts like mulch
- Bluegrass and Zoysia = thatch problems
- Fescues don't have as much problem

#### **Problem Thatch**

- Above 1 inch is a problem
- Prevents water infiltration
- Roots come to surface (dehydration)
- Harbors pests
- Makes pesticides less efficacious

#### **What to do about Thatch?**

- Core aeration
- Cores help spread bacteria and fungi (composting action)
- Helps alleviate compaction,
- Improves cultural conditions for turf
- De-thatching not usually recommended
- May remove with mechanical rake for small areas

#### **Disease triangle**

- Look in the book
- Page 416
- Page 417
- Page 418
- Susceptible host
- Pathogen
- Favorable environment

#### **Disease Treatment**

- Know the disease
- preventative applications may not be the smartest
- don't know if the disease will start
- may not be the best thing to expose yourself to
- doing nothing can be a viable alternative

#### **Diagnoses – Use the Calendar!**

Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

### **Rhizoctonia for example**

- Saprophytic v. parasitic
- Host and pathogen are always there
- >65° at night (June) in Cool-season grasses
- Or < 65° during the day for Warm-season grasses
- Warm( or cool), wet conditions (weather and watering practices)

### **Disease Treatment**

- Use the PMG – Get help
- preventative applications may not be the smartest
- don't know if the disease will start
- may not be the best thing to expose yourself to

### **Disease Treatment**

- doing nothing can be a viable alternative
- Red thread – cool wet weather and poor fertility
- Powdery Mildew – low light, over fertilization
- Slime Mold – warm wet weather or winter

### **Irrigation**

- 1 inch per week (slowly, at one time)
- but dependent on grass species, previous rain and temperature
- Water early
  - Less evaporation
- Don't water late
  - disease

### **Insects**

White grubs,

- Japanese beetles,
- Green June bug,
- European chafer

Know their life cycle for best control

### **Life cycle**

- June adults feeding on plants, into July
- Late July mating time
- Females burrow into thatch layer, lay eggs
- Adults die
- Larvae start feeding on roots in July and August
- As temperatures decrease (September, October), they migrate into soil 8 – 10 inches
- April, May start their way back up, feeding on roots as they go

### **Control - Chemical**

- Best time is late summer, targeting young grubs which are close to surface and most vulnerable to insecticide
- Pre-water to draw grubs into cool, moist soil, apply insecticide

## Turf for Prince William Master Gardeners

Frank Reilly [www.advancedmastergardener.org/water](http://www.advancedmastergardener.org/water)

- All insecticides used are broad-spectrum, do kill worms and beneficial insects that are near or at the surface (but there are others deeper in soil)
- Beware of the endless cycle

### **Control - Other**

- Milky spore – specific to the Japanese beetle
- Bacteria – takes 2 – 3 years for 100% cover
- Predatory nematodes
- Patience

### **Fertilization**

- Essential to good stewardship
- Apply it when the plant can use it

### **Look at the effects of Fertilization**

- Prince William MG Teaching Garden Photo
- Good turf prevents erosion
- Good turf aids water infiltration
- Lowers ambient temperature in summer
- Raises it in winter
- Good turf needs less pesticide

### **Apply it when the plant can use it**

#### **Fertilization Program**

- Cool season program
- SON
- Get a soil test
- Calibrate spreader

### **Enjoy March Madness**

- Don't buy that weed 'n feed they advertise
- Loobey doesn't have a good lawn  
and his kids can't play on it