What We Will Cover...

• Where do they grow?
• Varietal Options & Selection
• Fertility
• Cultural Practices & Height of Cut
• Diagnostics for Better Decision Making
Variatel Selection & Options

Three Main Cool Season Options

Turf Type Tall Fescue
Kentucky Bluegrass
Perennial Ryegrass
Turf Type Tall Fescue

- Bunch Grass - spreads in clumps
- Most drought tolerant of the three
- Good wear tolerance
- Recovery can be limited due to bunch growth habit
- Taller height of cut - generally 2” to 4” or higher
- Moderate establishment time (7-21 day germination generally)
Kentucky Bluegrass

• Good durability
• Moderate water requirements
• Best recovery of the three, good wear tolerance
• Rhizomal growth habit - sends out runners that spread and fill in
• Wide adaptability of cutting heights (varietal dependent) - 1/2” to 3+”
• Long establishment times (14 to 28 day germination)
• NTEP trials can be very useful in selecting varieties
• Can be more susceptible to root-born fungal pathogens (summer patch)
Perennial Ryegrass

- Bunch type grass
- High water requirement
- Poor wear recovery
- Good wear tolerance
- Wide adaptability of cutting heights - 1/4” or less to 4+”
- Quick establishment (7 +/- days germination)
- Can be more susceptible to foliar fungal pathogens (grey leaf spot)
What To Use?

- It depends
  - Blends are usually the most common approach
  - “Best of all worlds”
  - “Worst of some...?”
- Certain grass types are more prone to certain disease, fungus, etc.
- Pick what will work best for your climactic microconditions, irrigation abilities, anticipated use, time of year the facility will be utilized
- Be budget conscience - water, fertilizer, fungicides, seed are ALL EXPENSIVE and ADD UP!
Fertility
Fertility

• Develop a sound program tailored to your varieties, use schedule, recovery requirements and applicable state regulations

• For instance... in MD you can only apply 3.5 lbs. of Nitrogen PER YEAR to established turfgrass (tracks fall under this classification)

• Program should be based upon the needs of the plant and soil type you are growing in

• Soil & Tissue testing are KEY to developing and maintaining an effective nutrient program
### Analysis Report

**Account No.:** 1793  
**Invoice No.:** 1112020  
**Date Received:** 04/26/2021  
**Date Analyzed:** 04/27/2021  
**Lab Number:** 19582

#### Results For:
- **Sample ID:** 1126280  
- **Location:** BOEKHOLDER, MICHAEL  
- **Address:** 810 S PENBROOK DRIVE MIDDLETOWN DE 19709

#### Extraction Method: Stomach 3

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**Sufficiency Levels**
- **Deficient:** 0
- **Low:** 25
- **Sufficient:** 50
- **High:** 75
- **U.M.D. P FIV:** 100

#### Results For:
- **Sample ID:** FH32021O1  
- **Location:** FAIR HILL OVAL TRACK FAIR HILL MIDDLETOWN DE 19709

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**Sulfur, % S**

**Phosphorus, % P**

**Potassium, % K**

**Calcium, % Ca**

**Magnesium, % Mg**

**Sulfur, % S**

**Zinc, ppm Zn**

**Manganese, ppm Mn**

**Copper, ppm Cu**

**Barium, ppm Ba**

**Molybdenum, ppm Mo**

**Sodium, % Na**

**Aluminum, ppm Al**

**B & A**

### Foliar nutrient applications should compliment adequate soil nutrients and soil pH. Consult an agronomist for nutrient sources and environmental conditions that may influence nutrient uptake.
Key Soil Test Items

• NOT a great indicator for Nitrogen (don’t use it for this!)
• Phosphorous (P) = 44 ppm (don’t overdo P!)
• Potassium (K) = 250 ppm to 280 ppm
• Calcium (Ca) = 3000 ppm (can be hard to achieve/cost prohibitive in some areas of the country)
• pH = 6 to 6.5 is IDEAL (best nutrient uptake for macro & micro nutrients)
• Ca/Mg ratio = 65/15
• K% = 3 to 6
• H% = 10 to 15 (may be off somewhat if other ratios are higher/lower)
Key Tissue Sample Items

- Very effective for determining what the plant is actually taking up from the soil
- Provides a “snapshot” to see how effective your nutrient application program is actually working
- Can help quickly identify nutrient deficiencies in the plant
- Helps “fine tune” your applications
General Recommendations

Turf Type: Tall Fescue

- Nitrogen
  - 87 to 130 lbs. N per acre per year (2 - 3 lbs./1000)
- P
  - Apply as needed
- Potassium
  - 72 to 109 lbs. K per acre per year (1.66 - 2.5 lbs./1000)
General Recommendations
Kentucky Bluegrass & Perennial Ryegrass

• Nitrogen
  • 175 to 260 lbs. N per acre per year (4 - 6 lbs./1000)

• P
  • Apply as needed per soil/tissue tests

• Potassium
  • 145 to 217 lbs. K per acre per year (3.3 - 4.15 lbs./1000)
Keep in mind...

• Some parts of the county, soils won’t allow you to achieve certain soil nutrient levels
  • Midwest has high Ca levels, but not a lot of soluble Ca (calcareous sands)
  • pH levels in calcareous soils can be 7+ and won’t most likely every drop lower
  • In locations where soils won’t allow “ideal” levels, supplemental applications of nutrients via a foliar application program are many times required
• Recommendations are for HIGH USE facilities that need rapid recovery from wear - reduce/adjust as your needs require
• General N to K ratio is 6 to 5 on all recommendations
When to Use

• Native Soils
  • TTTF = 1/3 in spring, 2/3 in fall
  • KB & Rye = 2 lbs. in fall, remainder spread from spring through late summer
  • Avoid high N apps mid-summer

• Sandy Soils
  • TTTF = 1/3 spring, 1/3 summer, 1/3 fall
  • KB & Rye = Higher in spring & fall, maintenance in summer
Aerate!

- Increases air/gas exchange in rootzone profile
- Controls thatch
- Softens the surface (allows better hoof penetration)
- Increases water infiltration rates
- Think of it as the turfgrass manager’s answer to plowing
Topdress!

- Controls thatch
- Creates a firmer, more stable surface
- Helps with surface moisture control
- Encourages increased sward density
- Can be VERY helpful when overseeding to create seedbed
- DO NOT mix sand and soil blends back and forth... pick on and stick!
Overseeding!

- Helps repair wear from use and environmental damage
- Introduces better varieties
- Increases overall sward density
- Turfgrasses are TEMPORARY... they need to be constantly rejuvenated
Height of Cut

• Provides cushion for hoof impact
• Extremely important in equine applications
• Can play a big role in track safety and wear resistance
• Generally accepted heights for cool season turf is 4” +/-
Diagnostic Tools
What should be in your “kit”

Must Have

• Soil Moisture Meter

• Should measure volumetric water content (vwc)
Nice to Have

- Longchamp Penetrometer
- CLEGG Hammer
- Shear Vane
• These tools HELP you to make better management decisions
• It is a TOOL... it’s not the end-all, be-all
• Every facility/track is different - tailor the data collection to your situation
• Remember... consistency is the end goal each and every day. Diagnostic tools should be used to help achieve that consistency!