Preparing Your Lawn for Spring and Summer.

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HGS – March 17 2018
• What concerns or problems do you have?
• What have you done/will do? To figure it out.
Crabgrass

- Summer annual grassy weed
- Grows best under hot days
- In NJ – most germination occurs in April
- Pre-emergent
- Affects cultural practices
White Grubs

- When should you treat with insecticides?
- What non chemical options are there?
Topics

• Species selection
• Watering
• Mowing
• Fertilizer
• Cultural care
• Diseases
• Insects
• Weeds
Grass Species

Cool Season
- Kentucky bluegrass
- Perennial ryegrass
- Tall fescue
- Fine fescue

Warm Season
- Zoysiagrass
- Bermudagrass
<table>
<thead>
<tr>
<th>Species</th>
<th>Growth Habit</th>
<th>Establishment Rate</th>
<th>Mowing Height</th>
<th>Shade Tolerance</th>
<th>Drought Tolerance</th>
<th>Cold Tolerance</th>
<th>Traffic Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perennial Ryegrass</td>
<td>Bunch type</td>
<td>Very fast</td>
<td>1.5-2.5”</td>
<td>Good</td>
<td>Good</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>Annual Ryegrass</td>
<td>Bunch type</td>
<td>Very fast</td>
<td>2.0”</td>
<td>Fair to good</td>
<td>Fair</td>
<td>Good</td>
<td>Very good</td>
</tr>
<tr>
<td>Tall Fescue</td>
<td>Bunch type, slight rhizomes</td>
<td>Medium</td>
<td>1.5-3.0”</td>
<td>Very good</td>
<td>Very good</td>
<td>Good</td>
<td>Very good</td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td>Spread by rhizomes</td>
<td>Slow</td>
<td>1.5-2.5”</td>
<td>Fair to good</td>
<td>Good</td>
<td>Excellent</td>
<td>Good</td>
</tr>
<tr>
<td>Fine Fescues</td>
<td>Bunch type or spread by tillers</td>
<td>Medium</td>
<td>1.0-2.5”</td>
<td>Very good</td>
<td>Good</td>
<td>Very good</td>
<td>Poor to fair</td>
</tr>
<tr>
<td>Bentgrass</td>
<td>Spread by stolons, rhizomes</td>
<td>Medium</td>
<td>0.125-1.0”</td>
<td>Fair</td>
<td>Fair to poor</td>
<td>Very good</td>
<td>Good</td>
</tr>
</tbody>
</table>
Turf Species – General characteristics

- Rutgers Fact sheets on different species
- Inputs
- Disease
- Insect
Turfgrass

Blends
- Two or more varieties of the same species
- Increases the genetic diversity and produces a sod that is more stress resistant.

Mixes
- Two or more species
- For Example:
  - Kentucky bluegrass and creeping red fescue
    - Germination (CRF more rapid germination)
    - Light (KBG grows better in full sun/CRF in shade)
Grass Seed Selection Tips

✓ Identify species to use
✓ Not all products are the same
✓ Avoid rapid germination grasses - annual ryegrass
✓ Look for newer cultivars (Factsheet)
✓ Bag should not contain any noxious weeds
Grass Seed Selection Tips

<table>
<thead>
<tr>
<th>Variety</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospect Tall Fescue</td>
<td>47.00%</td>
</tr>
<tr>
<td>Gulf Annual Ryegrass</td>
<td>24.00%</td>
</tr>
<tr>
<td>Boreal Red Fescue</td>
<td>14.00%</td>
</tr>
<tr>
<td>Kelly Kentucky Bluegrass</td>
<td>10.00%</td>
</tr>
<tr>
<td>Inert Matter</td>
<td>3.00%</td>
</tr>
<tr>
<td>Other Crop Seed</td>
<td>1.75%</td>
</tr>
<tr>
<td>Weed Seed</td>
<td>0.25%</td>
</tr>
<tr>
<td>Noxious Weed Seed</td>
<td>1.25%</td>
</tr>
</tbody>
</table>

- **Germination**: 85% Oregon, 85% Oregon
- **Origin**: 80% Canada, 85% Washington

Net Weight: 15 Pounds

9 Hairy Chess per Pound (0.6 per Ounce)

Pennington Seed Inc.
Box 338 Greenfield, MO 65661
Grass Seed Selection Tips

TRIUMPH TALL FESCUE BLEND

% PURE SEED
33.25% 3RD MILLENNIUM TALL FESCUE
33.24% HEMI TALL FESCUE
33.13% BULLSEYE TALL FESCUE
OTHER INGREDIENTS:
00.38% INERT MATTER
00.00% OTHER CROP SEED
00.00% WEED SEED
UNDESIRABLE GRASS SEEDS: NONE FOUND
*VARIETY NOT STATED

GERMINATION TESTED 90 08/13
90 08/13
90 08/13
LOT#: TT1.98558
IN PA. SELL BY: NOVEMBER 30, 2014
Endophytes

- Fungi growing within a turfgrass plant
- Provides protection from leaf feeding insects and may increase tolerance to other stresses such as drought
- Under normal conditions, plants containing endophyte are similar to plants without endophyte
Coated Seeds

- White or gray coating
- Seed is coated with either a fertilizer or surfactant
- Fertilizer source upon germination
- Surfactant serves to uniformly wet the area around the seed for improved germination and establishment
Grass Seed Selection Tips

- Seedsuperstore.com
Soil Testing

- Soil acidity
  - The optimum pH range for most plants between 6.0 and 7.0
  - NJ soils are naturally acidic - liming necessary
  - Once adjusted pH within optimum around 3 yrs
### Soil Testing - pH

**Lbs of lime/1000 sq ft to raise pH to 6.5**

<table>
<thead>
<tr>
<th>Existing pH</th>
<th>Sandy Loam</th>
<th>Loam</th>
<th>Silt Loam</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.9 – 5.2</td>
<td>95</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td>5.3 – 5.6</td>
<td>65</td>
<td>120</td>
<td>150</td>
</tr>
<tr>
<td>5.7 – 6.0</td>
<td>35</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

Lime can be applied at almost any time of the year. Lime is slow acting – need time to work.
Soil Testing - Nutrients

• Nutrient Status
  • Determines the ratio of nitrogen, phosphorus, and potassium that should be applied for balanced nutrition

• Rutgers Soil Test Results
  • Will not test for N
  • Will indicate if P is required
Fertility

- The most common fertilizers are the complete fertilizers
  - nitrogen, phosphorus and potassium (N-P-K)
  - true for ornamentals
  - now many fertilizers are x-0-x

- Total fertilizer amounts depend on maintenance level
Fertility

- Returning clippings to the lawn equals approximately 1# nitrogen per 1000 ft²/year

- 2/3 to ¾ of fertilizer should be applied in the fall

- Timing will be affected by agronomy of plants and by the law
FERTILITY - Phosphorus

- Stimulates early root formation
  - Recommended for new seedlings
- Improves winter hardiness
- Aids in the recovery from drought
Fertility - Potassium

- Increases drought, heat, and cold resistance.
  - increased root production
    - Used to be recommended for winterizing turf
  - increased turgidity - better wear
Fertilizer applications

- Rutgers Fact sheets on different N sources
- Calibrating spreaders
Fertility – How much to apply

- Calibrate your spreader
- Figure out how much nitrogen you want to apply
  - Rate
  - Over what area
- Type of fertilizer based on soil test
Fertilization

Figure 3. Spreading pattern.
Timing is everything!!

- Spring growth surge
- Summer decline
- Fall recovery
Fertilization
Fertilization
Fertilization

Figure 3. Spreading pattern.
Fertilization
New Jersey Fertilizer Law

How much should be applied

Don’t apply more than 0.7 pounds of water-soluble nitrogen per 1,000 sq. feet of turf. Don’t apply more than 0.9 pounds of total nitrogen per 1,000 sq. feet of turf per application.

Don’t apply more than 3.2 pounds of nitrogen per 1,000 sq. feet of turf per year.
New Jersey Fertilizer Law

What should it contain

Fertilizers should contain at least 20% of its nitrogen in slow-release form.

Phosphorus bans unless:
  • A soil test done within the past 3 years indicates phosphorus need
  • During initial establishment, re-establishment, or repair of turf
New Jersey Fertilizer Law

When it can’t be applied

Before March 1st or after November 15th

Do not apply fertilizer during or just before a heavy rain
Do not leave it on an impervious surface like pavement
Do not apply to frozen ground.
Moss

- Poor soil fertility
- Low soil pH (acid soils)
- Heavy shade
- Excessive moisture
Light Irrigation

- Conserves water
- Light/frequent – stimulates superficial root growth
Moderate Irrigation

- Less frequent but deeper irrigation can stimulate deeper rooting – a benefit during drought
Irrigation

- Turf should be irrigated before it shows signs of wilt with enough water to wet the entire root zone (6 a 8"")
Mowing
Mowing Height and Root Growth
Organic Mowers
Mowing

- Kentucky bluegrass
  - 2.0” to 3.0”
- Perennial ryegrass
  - 2.0” to 3.0”
- Tall fescue
  - 2.5” and up
- Fine fescue
  - 2.0” to 3.0”
Mowing

- Kentucky Blue

Higher mowing of turfgrass promotes a good root system - Sir Walter results are similar to above.
Mowing

- Blades must be sharp
- Do not move too quickly
- Mower blades should be cleaned between use
Mowing Frequency

Avoid removing more than 1/3 of the grass blade length at any one mowing.
Thatch

1/2” improves traffic tolerance and products from fluctuations in soil temperatures

More that 1” increases sensitivity to heat, cold, and drought
Thatch - Problems

- Crown of the turf plants grows elevated and the turf is spongy, resulting in scalping issues
- Roots grow in thatch – increased risk of drought stress and wilt
- Hydrophobic when dry – dry patches in turf
- Once wet can stay extremely wet
- Reduces effectiveness of fertilization
Thatch - Solutions

- Wetting Agents
- Dethatch
- Aeration (also good for compaction)
Dethatching
Dethatching

- Uses blades or hooks to cut
- Key is to remove as much as possible without damaging the turf
- Should be done before a period of growth of the turf (Spring and Autumn)
- How often?
Problems with Dethatching

- Can damage turf if too much is removed
- Wrong time can encourage weeds
Aeration
Aerification
Overseeding

- Lime according to soil test
- Dethatch and core aerify
Seeding Dates

Early spring for all of NJ (*crabgrass issue*)

Crabgrass products – preemergent, cannot seed into treated areas.
Seeding vs Sodding
Seeding vs Sodding

• Sodding
  • Provides an instant lawn
  • Can be installed as long as ground is not frozen

• Seeding
  • Less expensive
  • Seed available for all cool season species and varieties
  • No soil incompatibility issues
Seeding vs Sodding

• Sodding
  • Thin cut – $\frac{1}{4}$ to $\frac{1}{2}$”
  • Thick cut – 1 to 2”
  • Washed sod
Seeding vs Sodding

• **Seeding**
  - *Initial mowing height of 1.5 to 2.0”*
    – Mow early and often
    – Encourage the lawn to fill in
    – Will help keep the weeds down
  - *After a few mowings raise to 3”*
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