Low-Input Lawn Care

STEPHANIE RUTTEN-RAMOS—DOUGLAS COUNTY
STRUCTURE OF GRASS

http://agsci.psu.edu
KENTUCKY BLUEGRASS

*POA PRATENSIS*

http://turfgrass.cas.psu.edu
KENTUCKY BLUEGRASS

*POA PRATENSIS*

- 2,177,000 seeds/pound
- Slower to germinate
- Minimum mowing height of 1.5”; no more than 1/3 removed in mowing
- Cut low going into winter where snow cover is heavy; cut higher first 6 weeks, then 2-2.5”
CHEWING’S AND OTHER RED FESCUES
FESTUCA RUBRA SPP
FINE FESCUES

- 400,000 - 550,000 seeds/pound
- Fast to germinate (7-10 days), slower to establish
- Dense leaf blades; fine leaf texture
- Drought resistant (goes dormant w/high temps); prefers drier soils
- Shade & cold tolerant
- Low nitrogen requirement
- Not tolerant of heavy traffic
- Can become thatchy and difficult to mow

http://ext.colostate.edu/mg/gardennotes/564.html
PERENNIAL RYEGRASS
LOLEUM PERENNE

Photo credit: Bob Mugaas, U of MN
PERENNIAL RYEGRASS

LOLEUM PERENNE

- 230,000 seeds per pound
- Medium texture, bunch-type grass
- Rapid germination & establishment* (can outcompete bluegrass)
- Traffic tolerant (acceptable for athletic fields and backyards); shade intolerant
- Shiny underside of leaf—glistens compared to Kentucky bluegrass
- Medium-to-high maintenance (N & normal water)
- Limited cold tolerance/hardiness
“NO-MOW” GRASSES
SCHEMATIC OF GRASS DEVELOPMENT
### UPPER MIDWEST HOME LAWN CARE FOR COOL SEASON GRASSES

<table>
<thead>
<tr>
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<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
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<td>SEEDING</td>
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<td>FERTILIZING</td>
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<tr>
<td>WEED CONTROL</td>
<td></td>
<td>Crabgrass pre-emerge</td>
<td>Crabgrass post-emerge</td>
<td>Broadleaf</td>
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Legend:
- Indicates times when lawn care practices can be done
- Indicates preferable times to carry out certain lawn practices

* Pre-emergence herbicides are put down before the crabgrass seedlings have emerged from the ground. Post-emergence crabgrass herbicides are applied to the visible growing crabgrass plants. These products are best applied when the crabgrass plants are small.

http://www.sustland.umn.edu/maint/calendar.htm
LAWN FERTILIZER: NITROGEN (#-0-0)

- Water soluble nitrogen
  - Fast release
- Water insoluble nitrogen
  - Extended release
- Grass clippings reduce N needs by ½ to 1/3

http://www.sustland.umn.edu/maint/selectin_2.html
<table>
<thead>
<tr>
<th>Fertilizer Source</th>
<th>Leaching Potential</th>
<th>Burn Potential</th>
<th>Low Temp. Response</th>
<th>Residual Effect</th>
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<tbody>
<tr>
<td>Inorganic</td>
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<tr>
<td>Ammonium nitrate</td>
<td>High</td>
<td>High</td>
<td>Rapid</td>
<td>Short</td>
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<td>Calcium nitrate</td>
<td>High</td>
<td>High</td>
<td>Rapid</td>
<td>Short</td>
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<tr>
<td>Ammonium sulfate</td>
<td>High</td>
<td>High</td>
<td>Rapid</td>
<td>Short</td>
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<td>Organic-Natural</td>
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<tr>
<td>Activated sewage sludge</td>
<td>Very Low</td>
<td>Very Low</td>
<td>Very Low</td>
<td>Long</td>
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<tr>
<td>Manures</td>
<td>Very Low</td>
<td>Very Low</td>
<td>Very Low</td>
<td>Long</td>
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<tr>
<td>Corn Gluten Meal</td>
<td>Very Low</td>
<td>Very Low</td>
<td>Very Low</td>
<td>Long</td>
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<tr>
<td>Synthetic</td>
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<tr>
<td>Urea solutions</td>
<td>Moderate</td>
<td>High</td>
<td>Rapid</td>
<td>Short</td>
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<td>Sulfur-coated urea</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>Resin-coated urea</td>
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<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>Polymer-coated urea</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Moderate to Long</td>
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<tr>
<td>Polymer-coated, sulfur-coated urea</td>
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<td>Low</td>
<td>Low</td>
<td>Moderate to Long</td>
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<tr>
<td>Isobutylidene diurea (IBDU)</td>
<td>Mod. Low</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
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<tr>
<td>Ureaformaldehyde (often abbreviated &quot;Ureaform&quot;)*</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Moderate Long to Long</td>
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<td>Methylene urea</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Short to Long</td>
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<tr>
<td>Stabilized nitrogen**</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Moderate to Long</td>
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### Table 7.16. Lawn / Turfgrass Fertilizer Schedule

<table>
<thead>
<tr>
<th>Lawn Care Level</th>
<th>Amount of N Fertilizer</th>
<th>Timing of Applications</th>
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<tr>
<td><strong>Program #1:</strong></td>
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</table>
| Irrigated average quality lawns - full sun conditions; soil organic matter >3.1%; clippings not removed | 2 lbs. N annually      | At first mowing in spring: 0.5 lbs N per 1000 ft²  
Memorial Day: 0.5 lbs N per 1000 ft²  
Labor Day: 1.0 lb N per 1000 ft² |

| **Program #2:**                                                                 |                        |                                                                                       |
| Irrigated average quality lawns - full sun conditions; soil organic matter <3.1%; clippings not removed | 2.5 lbs. N annually    | At first mowing in spring: 0.5 lb N per 1000 ft²  
(50% slow release N)  
Memorial Day: 0.5 lb N per 1000 ft² (50% slow release N)  
Labor Day: 1.0 lb N per 1000 ft² (50% slow release N)  
Memorial Day: 0.5# N per 1000 ft² (50% slow release N)  
Labor Day: 1.0# N per 1000 ft² (50% slow release N)   |

**On occasion, an additional application of N to enhance growth and color may be needed:**  
Apply at the rate of 0.5 lb. N per 1000 ft² (50% slow release N; often this will be in late May to early June especially if weather conditions prior to that period have produced abundant and frequent rainfall)  
Labor Day: 1.0 lb. N per 1000 ft² (50% slow release N)   |

| **Program #3:**                                                                 |                        |                                                                                       |
| Non-irrigated, average quality lawns - full sun to lightly shaded conditions; soil organic matter >3.1%; clippings not removed | 1.5 lb. N annually     |                                                                                       |

**On occasion, an additional application of N to enhance growth and color may be needed:**  
Apply at the rate of 0.5 lb. N per 1000 ft² (50% slow release N; often this will be in late June to early July especially if weather conditions prior to that period have produced abundant and frequent rainfall)  
Labor Day: 1.0 lb. N per 1000 ft² (50% slow release N)   |

| **Program #4:**                                                                 |                        |                                                                                       |
| Non-irrigated, average quality lawns - full sun to lightly shaded conditions; soil organic matter <3.1%; clippings not removed | 1 lb. N annually       |                                                                                       |

**On occasion, an additional application of N to enhance growth and color may be needed:**  
Apply at the rate of 0.5 lb. N per 1000 ft² (50% slow release N; often this will be in late May to early July especially if weather conditions prior to that period have produced abundant and frequent rainfall)  
Labor Day: 1.0 lb. N per 1000 ft² (50% slow release N)   |

STARTER FERTILIZER: N-P-K

- In Minnesota, starter fertilizer is ONLY for use in establishment of new grass
- Phosphorus essential for root development
- 1.5 lbs P2O5/1000 ft2 for low-phosphorus soils (0-13 ppm)
- 1.0 lbs P2O5/1000 ft2 for mid- (13-25 ppm) and high-phosphorus soils (25+ppm)
NEW SEEDING

- Nutrient testing
- Till soil to 4”; allow 1-2 weeks to settle
- Incorporate starter fertilizer over seeding area (1-1.25 P2O5/1000 ft2)
- Apply seed and rake/incorporate into top ¼” soil; roll for soil-seed contract
- Water 2-4X daily initially to keep moist; mulch (50% soil visible), lawn mats retain moist/ temp.
- Mow to 1.5” 3-4X when grass reaches 2”; then adjust mower height to 3”
OVERSEEDING

- Mow desired area to 1.5”
- Aerate the area (20-40 plugs/ft²)
- Apply seeds in 2-4 passes for uniformity
  - 100% Ky Bluegrass: 1.5-2.0 lbs/1000 ft²
  - 85-90% Ky Bluegrass + 10-15% perennial rye: 3.0-4.0 lbs/1000 ft²
  - 50-70% Ky Bluegrass + 30-50% fine fescue: 4.0-5.0 lbs/1000 ft²
- Water 3-4X daily
- Mow frequently (to 1.5”); once new grass has been cut twice, raise mower height in ½” increments to normal height
- 4 wks post germination, apply starter fertilizer at 1 lb N/1000 ft²
WATER

- To maintain color and density
- Deep and infrequently (below the roots)
- Irrigate if signs of water stress observed
  - 1X per 2-3 weeks in early summer
  - 2X per week in heat of summer/August
- If you allow your lawn to go dormant, apply ½” water every 3-4 weeks to prevent the crowns from drying out
MOWING

- Mow so as to not remove more than 1/3 of the leaf blade (2.5-3.5” ideal)
- Given mower height of 3”, mow at 4”
- Mow frequently during periods of peak growth (2X/wk in spring)
- Mow less frequently during heat of summer (1X/2-3 wks)
- Use sharp blades
- Return clippings to the lawn
THATCH CONTROL

- Small amount is desired ($\leq 1/2''$)
- Too much and roots grow in thatch
- Accumulations due to
  - Over-fertilization
  - Over-watering
  - Soil compaction
- Dethatching machines cut live and dead matter; rake and remove material immediately
- Dethatch during periods of active growth
- Aeration as an alternative
AERATION

- Removal of soil cores
- Relieves compaction
- Reduces thatch
- 20-40 holes/ft², 2-3” deep, largest available diameter*
- Multiple passes may be needed to attain 20-40 holes/ft²
- Aerate during periods of active growth
WEED CONTROL

- Broadleaf herbicides
  - Fall applications most effective
  - 2,4-D, MCPP and dicamba

- Crabgrass
  - Pre-emergence herbicide in spring

- Glyphosate kills both weeds AND grass
7 STEPS TO A BETTER LAWN

1. Mow at 3.0 inches
2. Mow frequently*
3. Return the clippings
4. Fertilize in the Fall
5. Irrigate
6. Control dandelions
7. Control crabgrass
RESOURCES

Sustainable Urban Landscape Information Series, University of Minnesota
http://www.sustland.umn.edu/maint/maint.htm

Turfgrass Science at Purdue University
http://www.agry.purdue.edu/turf/homeowner.html
Thank you.

Questions?