Healthy Lawns Protect Water Quality

A dense turf protects against soil erosion and nutrient runoff
Nutrients are carried away with eroding soil

Soil Sediment is Pollution
**Improper Use of Lawn Fertilizers and Pesticides. . .**

Can Result in Non-point Source Pollution

**Phosphorus, Urban Runoff & Aquatic Weeds**
Don’t Fertilize the Bay

Eutrophication

Nitrogen
Phosphorus

These nutrients cause an increase in phytoplankton

Sediments from land block sunlight
Phytoplankton growth on Sedgegrass

Algae Bloom
Algae Die
Decay

Oxygen

Lose: Food, Habitat & Oxygen Production
Turfgrass Adaptation Zones

- Cool Season
- Transition Zone
- Warm Season
Cool Season vs. Warm Season

- Prefer cooler temps 65° – 75° F.
- Grow best in spring and fall
- Limited winter dormancy
- Good color 9 months of year
- Fescue, Bluegrass

- Prefer warmer temps 80° to 95° F.
- Grow best in summer
- Extended winter dormancy
- Good color 6 months of year
- Bermuda, Zoysia
Lawn Maintenance
LAWN MAINTENANCE
Best Management Practices

- Get a soil test
- Measure for accuracy
- Apply lime if needed
- Fertilize properly
- Mow properly
- Water well . . . or don’t water at all!
- Core aerate each year
- Use integrated pest management
Soil Testing

◆ Will provide information about
  – pH
  – P and K, Ca and Mg, some micros

◆ Will provide recommendations about
  – lime applications
  – fertilizer types and rates

◆ Recommended every two to four years
Accurate Soil Testing

- Requires a representative sample
- Sample from 10+ areas
- Sample to 4-6 inch depth
- Mix soil together
- Place 1 cup of mix in soil sample box
- Send to Soil Testing Lab
Soil pH

- A measure of soil alkalinity or acidity.
- Many nutrients become unavailable if pH is not correct.
- May need 100 pounds of lime per 1000 square feet to raise pH 1 point.

Proper pH for Lawns

6.2 to 6.5
pH and Nutrient Availability

- Nitrogen
- Phosphorus
- Potassium
- Sulfur
- Calcium
- Magnesium
- Iron
- Manganese
- Boron
- Copper and Zinc
- Molybdenum
Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

619. Lime recommendations: NONE NEEDED.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)
<table>
<thead>
<tr>
<th>Analysis</th>
<th>P (lb/A)</th>
<th>K (lb/A)</th>
<th>Ca (lb/A)</th>
<th>Mg (lb/A)</th>
<th>Zn (ppm)</th>
<th>Mn (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>B (ppm)</th>
<th>S.Salts (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>56</td>
<td>115</td>
<td>948</td>
<td>155</td>
<td>3.0</td>
<td>7.8</td>
<td>0.9</td>
<td>30.8</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td>H</td>
<td>M</td>
<td>M-</td>
<td>H-</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FERTILIZER AND LIMESTONE RECOMMENDATIONS**

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

612. LIME RECOMMENDATIONS: Apply 60 pounds of agricultural limestone (ground or pulverized) per 1000 square feet in several small applications of up to 50 lbs each, at intervals of 1 to 6 months, until the full amount is applied.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)
HEARN BROOKE
1402 GILLSPUR RD
RICHMOND, VA 23238

SAMPLE HISTORY

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Field ID</th>
<th>Name</th>
<th>Yield</th>
<th>Months Prev.</th>
<th>Tons/Acre</th>
<th>SMU-1 %</th>
<th>SMU-2 %</th>
<th>SMU-3 %</th>
<th>Yield Estimate</th>
<th>Productivity Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRONT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LAB TEST RESULTS (see Note 1)

<table>
<thead>
<tr>
<th>Analysis</th>
<th>P (lb/A)</th>
<th>K (lb/A)</th>
<th>Ca (lb/A)</th>
<th>Mg (lb/A)</th>
<th>Zn (ppm)</th>
<th>Mn (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>B (ppm)</th>
<th>S.Salts (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>45</td>
<td>146</td>
<td>396</td>
<td>205</td>
<td>2.3</td>
<td>6.7</td>
<td>0.3</td>
<td>28.7</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td>H-</td>
<td>M</td>
<td>L</td>
<td>H+</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

612. LIME RECOMMENDATIONS: Apply 170 pounds of agricultural limestone (ground or pulverized) per 1000 square feet in several small applications of up to 50 lbs each, at intervals of 1 to 6 months, until the full amount is applied.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)
Proper Fertilization

The Right Amount at the Right Time
Information on a Fertilizer Label

16 - 4 - 8

Total Nitrogen .................................................. 16 %
5.6% WIN (Water Insoluble Nitrogen)

Available Phosphoric acid (P₂O₅) .................... 4 %

Sulfate of Potash (K₂O) ................................. 8 %
No Deficiencies

---

**SAMPLE HISTORY**

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Field ID</th>
<th>LAST CROP</th>
<th>LAST LIME APPLICATION</th>
<th>SOIL INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Name</td>
<td>Yield</td>
<td>SMU-1 %</td>
</tr>
<tr>
<td>31642</td>
<td></td>
<td>18+</td>
<td>10-50 lb/1000</td>
<td></td>
</tr>
</tbody>
</table>

**LAB TEST RESULTS (see Note 1)**

<table>
<thead>
<tr>
<th>Analysis</th>
<th>P (lb/A)</th>
<th>K (lb/A)</th>
<th>Ca (lb/A)</th>
<th>Mg (lb/A)</th>
<th>Zn (ppm)</th>
<th>Mn (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>B (ppm)</th>
<th>S.Salts (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>189</td>
<td>145</td>
<td>2620</td>
<td>548</td>
<td>4.1</td>
<td>14.2</td>
<td>0.2</td>
<td>10.6</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td>VH</td>
<td>M</td>
<td>VH</td>
<td>VH</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**FERTILIZER AND LIMESTONE RECOMMENDATIONS**

Crop: LAWN MAINTENANCE - BLUEGRASS, FESCUE (202)

619. Lime recommendations: NONE NEEDED.

208. FERTILIZER RECOMMENDATIONS: Use any complete "turf-type" fertilizer according to the instructions in the enclosed note on lawn fertilization. (A "turf-type" fertilizer is typically high in nitrogen, and low in phosphorus and potassium, e.g., 25-3-7.)
Complete “Turf-Type” Fertilizers
Phosphorus is low

### SAMPLE HISTORY

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Field ID</th>
<th>LAST CROP</th>
<th>LAST LIME APPLICATION</th>
<th>SOIL INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Name</td>
<td>Yield</td>
<td>Months Prev.</td>
</tr>
<tr>
<td>12345</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LAB TEST RESULTS (see Note 1)

<table>
<thead>
<tr>
<th>Analysis</th>
<th>P (lb/A)</th>
<th>K (lb/A)</th>
<th>Ca (lb/A)</th>
<th>Mg (lb/A)</th>
<th>Zn (ppm)</th>
<th>Mn (ppm)</th>
<th>Cu (ppm)</th>
<th>Fe (ppm)</th>
<th>B (ppm)</th>
<th>S.Salts (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>4</td>
<td>97</td>
<td>1137</td>
<td>261</td>
<td>2.8</td>
<td>9.7</td>
<td>0.3</td>
<td>28.4</td>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>Rating</td>
<td>L</td>
<td>M-</td>
<td>M</td>
<td>VH</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td>SUFF</td>
<td></td>
</tr>
</tbody>
</table>

### FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: NEW LAWN ESTAB. - BLUEGRASS, FESCUE (201)

609. LIME RECOMMENDATIONS: Apply 50 pounds of agricultural limestone (ground or pulverized) per 1000 square feet.

201. FERTILIZER RECOMMENDATIONS: Apply a 1-2-1 ratio fertilizer (examples of grades to use are 5-10-5, 15-30-15, etc.) Using the rate listed in the "2.5" LB. nitrogen column in Table 3 in the enclosed note on lawn fertilization. Be sure to incorporate the fertilizer into the soil (along with lime, if needed) to a depth of 4 to 6 inches. After the turf has been established (6 to 8 weeks) follow one of the maintenance fertilization programs described in the Note.
Potassium (K) is low
Other Maintenance Examples

- Starters for low P
- Winterizers for low K
Lawn Maintenance Fertilizer

4 - 1 - 2 Ratio

No deficiencies

Beginning 2014, zero P
Beginning December 31, 2013, no lawn maintenance fertilizer containing more than zero percent phosphorus or other compounds containing phosphorus, such as phosphate, shall be registered with the Commissioner or offered for sale, distribution, or use in the Commonwealth. This prohibition does not include lawn fertilizer, manipulated manure, yard waste compost, products derived from sewage sludge, soils containing fertilizer, fertilizer products intended primarily for gardening, tree, shrub, and indoor plant application, including nurseries, or reclaimed water. The provisions of this section shall not restrict the continued sale by retailers of any prohibited fertilizer from any existing inventories in stock on December 31, 2013.
"Lawn fertilizer" means any fertilizer intended for nonagricultural use on newly established turf areas from sod or seed during the first growing season, turf areas being repaired or renovated, and turf areas where soil tests performed within the past three years indicate a nutrient deficiency.

"Lawn maintenance fertilizer" means any fertilizer intended for the nonagricultural routine maintenance of turf.
Timing of Fertilizer Applications for Cool Season Grasses

- September
- October
- November
Timing of Fertilizer Applications for Warm Season Grasses

- April
- May
- June
- July/August
Fertilizing Cool Season Lawns

- **Root Growth**
- **Top Growth**
- **Carbohydrate**

**Seasonal Trends**
- **Fall**: Low nitrogen (Low N) may be beneficial.
- **Winter**: Nitrogen most beneficial.
- **Spring**: Nitrogen fertilization should be avoided.
- **Summer**: Nitrogen fertilization should be avoided.

Graph showing peaks and troughs for root growth, top growth, and carbohydrate levels throughout the year.
Advantages Of Fall Fertilization

- Increased root growth
- Increased density
- Decreased weed problems
- Decreased spring mowing
- Increased drought tolerance
- Decreased summer disease
- Improved fall to spring color
## COOL-SEASON TURF FERTILIZATION

50% or less slowly available nitrogen (WIN)

Program 1

<table>
<thead>
<tr>
<th>Time</th>
<th>lbs. Nitrogen per 1000 sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 1 to 15</td>
<td>1</td>
</tr>
<tr>
<td>October 1 to 15</td>
<td>1</td>
</tr>
<tr>
<td>November 15 to December 15</td>
<td>1</td>
</tr>
<tr>
<td>May 15 to June 15</td>
<td>0 to ½</td>
</tr>
</tbody>
</table>

**TOTAL:** 3 to 3 ½
W. I. N. = Water Insoluble Nitrogen

Espoma Organic
18-8-6

NET WEIGHT 25 LBS (11.33 kg)

GUARANTEED ANALYSIS

Total Nitrogen (N) .................................................. 18.0%
2.3% Ammoniacal Nitrogen
4.7% Other Water Soluble Nitrogen
11.0% Water Insoluble Nitrogen

Available Phosphate (P₂O₅) ........................................ 8.0%
Soluble Potash (K₂O) ............................................. 6.0%


6.6% of Nitrogen, 1% of Phosphate, and 1% of Potash is Natural Organic.

The Espoma Co. • 6 Espoma Rd. • Millville, NJ 08332
To Find the % Nitrogen that is WIN use the Following Calculation:

\[
\frac{% \text{ WIN}}{% \text{ TOTAL N}} \times 100 = \% \text{ of the Total Nitrogen that is WIN}
\]

Using the Label Example:

\[
\frac{11}{18} \times 100 = 61\% \text{ of the Total Nitrogen is WIN}
\]
**COOL-SEASON TURF FERTILIZATION**

50% or more slowly available nitrogen (WIN)

Program 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Lbs. Nitrogen per 1000 sq. ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 15 to September 15</td>
<td>1.5 to 2</td>
</tr>
<tr>
<td>October 1 to November 1</td>
<td>1.5</td>
</tr>
<tr>
<td>May 15 to June 15</td>
<td>0 to 1.5</td>
</tr>
</tbody>
</table>

**TOTAL :** 3 to 5
<table>
<thead>
<tr>
<th>Fertilizer Analysis</th>
<th>Amount to apply 1 lb. nitrogen per 1000 sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-10-10</td>
<td>10</td>
</tr>
<tr>
<td>12-4-8</td>
<td>8.3</td>
</tr>
<tr>
<td>14-7-14</td>
<td>7.1</td>
</tr>
<tr>
<td>15-30-15</td>
<td>6.6</td>
</tr>
<tr>
<td>16-8-8</td>
<td>6.2</td>
</tr>
<tr>
<td>18-6-12</td>
<td>5.5</td>
</tr>
<tr>
<td>20-5-10</td>
<td>5.0</td>
</tr>
<tr>
<td>23-3-7</td>
<td>4.3</td>
</tr>
<tr>
<td>33.5-0-0</td>
<td>3.0</td>
</tr>
<tr>
<td>46-0-0</td>
<td>2.2</td>
</tr>
</tbody>
</table>
Using the percentage of nitrogen from the fertilizer analysis on the bag you can accurately figure how much to apply by using the formula:

\[
\text{Desired lbs. of nitrogen per 1,000 sq. ft.} \times \frac{\% \text{ nitrogen in fertilizer}}{\times 100} = \text{lbs. of fertilizer to apply per 1,000 sq. ft.}
\]
Example

To apply 1 pound of nitrogen per 1,000 sq. ft. using a 16-4-8 fertilizer:

$$\frac{1}{16} \times 100 = 6.25 \text{ lbs.}$$

6.25 lbs. of 16-4-8 is required per 1000 square feet to apply 1 pound of nitrogen.
Measuring and Calibrating
Measuring Lawn Areas

Measure smaller areas and add up for total lawn area.
Both must be calibrated!
Follow Bag Instructions

### SPREADER SETTINGS (for Grass Clippings)
- Covers up to 5,000 square feet

<table>
<thead>
<tr>
<th>Brand</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclone</td>
<td>5</td>
</tr>
<tr>
<td>Scott</td>
<td>6-6½</td>
</tr>
<tr>
<td>Central</td>
<td>7</td>
</tr>
<tr>
<td>Sears</td>
<td>7</td>
</tr>
</tbody>
</table>

The above settings are approximate. Variation can occur because of condition of the spreader, speed it is operated and the pattern of application. This bag should be applied to 5,000 sq. ft.

### Low Ball Settings
- Covers up to 7,000 square feet

<table>
<thead>
<tr>
<th>Brand</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statesman and Republic (Drop)</td>
<td>4-4½</td>
</tr>
<tr>
<td>Statesman and E-Z Spreader (Broadcast)</td>
<td>9</td>
</tr>
<tr>
<td>Scotts Drop</td>
<td>12</td>
</tr>
<tr>
<td>Scotts Broadcast</td>
<td>5-5½</td>
</tr>
</tbody>
</table>

The above settings are approximate. Variation can occur because of condition of the spreader, speed it is operated and the pattern of application. This bag should be applied to 7,000 sq. ft.
Trial and Error Calibration
Mowing Practices
# Recommended Mowing Heights

<table>
<thead>
<tr>
<th>Turfgrass</th>
<th>Mowing Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky Bluegrass</td>
<td>1 ½ to 2 ½ Inches</td>
</tr>
<tr>
<td>Tall Fescue</td>
<td>2 to 3 Inches</td>
</tr>
<tr>
<td>Creeping Red Fescue</td>
<td>2 to 3 Inches</td>
</tr>
<tr>
<td>Perennial Ryegrass</td>
<td>1 ½ to 2 ½ Inches</td>
</tr>
<tr>
<td>Zoysia</td>
<td>½ to 1 Inches</td>
</tr>
<tr>
<td>Bermudagrass</td>
<td>½ to 1 Inches</td>
</tr>
</tbody>
</table>
# Broadleaf

<table>
<thead>
<tr>
<th>Height</th>
<th># Broadleaf Weeds per 100 sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 inch</td>
<td>42.3</td>
</tr>
<tr>
<td>2 inch</td>
<td>2.5</td>
</tr>
<tr>
<td>3 inch</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Measuring Mower Height

Keep mower blades sharp
One-Third Rule

- Mow frequently enough so that no more than one-third of grass blade is removed each time.
- Research shows that when turf height is reduced by 50% or more, root growth is slowed or even stopped.
Don’t Bag the Clippings!

(Unless there’s a good reason)
What is Thatch?

- Layer of dead and decaying tissue between green vegetation and soil surface.
- Problems when greater than ½”.
- Roots, rhizomes, stolons major cause.
- Tall fescue has low thatch potential.
Watering
Watering Properly
“"All or Nothing””

- Avoid light, frequent irrigations
- Turf needs 1 inch of water per week
- Calibrate your irrigation system
- Water early in the day, not late
- Use the “screwdriver test”
Calibrate Irrigation System

- Place shallow pans in the irrigation pattern.
- How long does it take for 1 inch of water to collect?
- This type of sprinkler may require 2-3 hours to deliver 1 inch.
When to Water?

- Screwdriver (4 to 6 inch blade) can only be inserted halfway.
- Footprints remain in grass.
- Grass is smoky-blue color
Aeration

◆ Relieves soil compaction and/or thatch buildup.
◆ Allows oxygen, water and nutrients to reach the root system.
◆ Soil moisture important.
◆ Fall for cool-season turf.
◆ Core or hollow-tine aerators recommended.
Core Aeration

Hollow tines
Integrated Pest Management

◆ Insects
  - white grubs most problematic

◆ Diseases
  - variety selection and cultural practices

◆ Weeds
  - mowing practices and fertility management
  - herbicide type and timing
Types of Lawn Weeds

**GRASSY**
- **Annual**
  - crabgrass
  - goosegrass
  - annual bluegrass
  (Preemergence)
- **Perennial**
  - bermudagrass
  - dallisgrass
  (Postemergence)

**BROADLEAF**
- **Annual**
  - lespedeza
  - spurge
  (April - May)
  - common chickweed
  - Carolina geranium
  - henbit
  (Oct - Nov)
- **Biennial**
  - mustards
  - yellow rocket
  (Oct - Nov)
- **Perennial**
  - white clover
  - dandelion
  - wild garlic
  (varies)
Common Lawn Questions

- Should I lime each year?
- What kind and how much fertilizer should I buy?
- Should I bag my clippings?
- What can I do about all these weeds?
- Why do parts of my lawn look bad?
- Are lawns bad for the environment?
SMART Lawns Have Answers!
SMART Lawns . . .

- Are beautiful because they’re healthy
- Green up more quickly in the spring
- Make the best use of two valuable resources - time and money
- Are environmentally responsible
- Protect the Chesapeake Bay
SMART Lawns – Basic Steps

◆ Know your **Soil**
◆ **Measure** to save time and money
◆ **Aerate** those roots
◆ Be **Right** about Fertilizer
◆ Practice **Trouble-free** maintenance
Lawn Establishment
When to Establish

Cool-season Turf
- Kentucky bluegrass, tall fescue, perennial rye grass
- Fall (mid-Sept to mid-Oct)
- Late winter/early spring (mid-Feb to mid-Mar)

Warm-season Turf
- Zoysiagrass, bermudagrass
- May and June
Lawn Establishment

- Choose species / variety for site conditions
- Seed, Sprigs, Plugs or Sod
- Soil Test
- Weed Control (Roundup)
- Installation of Irrigation and Drainage
- Soil Preparation
  - final topsoil depth 6 to 8-inch minimum
Lawn Establishment

- **Lime**
  - pH 6.2
  - 100 pounds of lime per 1000 square feet may be required to raise pH one point
  - incorporate to 4 to 6 inch depth
- **Fertilizer**
  - correct deficiencies
  - incorporate 2/3; broadcast remaining 1/3 to surface
Seeding, Mulching, Irrigating

- Good seed to soil contact
- Seed lightly covered with soil
- Straw mulch to cover 50% to 75% of soil surface (1 ½ to 2 bales / 1000 sq.ft.)
- Light, frequent watering to keep seed and soil surface moist
- Maintain for at least 30 days after seeding
Renovation

- Less expense and mess
- Steps are similar to establishment
- Good seed to soil contact
  - dethatching
  - aerification
- Lower rates for lime, fertilizer and seed
Tall Fescue

- Moderately coarse textured
- Wide range of soil and climatic conditions
- Low to moderate management
- Establish from seed or sod
- No rhizomes = no thatch, but overseeding needed for recovery
- Seeding rate: 4 to 6 lbs. / 1000 sq.ft.
Recommended Tall Fescue Varieties – annual list

Biltmore, Bingo
Chochise III, Constitution, Coyote II
Crossfire II, Endeavor, Fidelity
Good-en, Grande, Greenkeeper WAF
Houndog 5, Inferno, Kalahari
Magellan, Masterpiece, Onyx
Padre, Picasso, Penn 1901
Quest, Raptor, Rebel Exeda,
Rembrandt, Rendition
## Turfgrass Seeding Rates

<table>
<thead>
<tr>
<th>Turfgrass</th>
<th>lbs. / 1000 sq. ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky Bluegrass</td>
<td>2 to 3</td>
</tr>
<tr>
<td>Tall Fescue</td>
<td>4 to 6</td>
</tr>
<tr>
<td>Creeping Red Fescue</td>
<td>3 to 5</td>
</tr>
<tr>
<td>Perennial Ryegrass</td>
<td>3 to 5</td>
</tr>
</tbody>
</table>
Purchase Quality Seed

- **Compare labels, not price**
  - Pure Live Seed = Germination % \times \text{Pure Seed %}

- **Certified Seed**
  - Blue label guarantees kind and variety of seed named on label
Lawn Establishment Steps

- Soil test
- Kill existing vegetation
- Apply lime and fertilizer
- Add organic amendments
- Rototill 4-6 inches deep and grade
- Apply seed
- Rake or drag to cover seed lightly
- Roll lightly
- Mulch, Water
OR
Incorporate lime, fertilizer, organic matter
Seed in 2 directions

Rake smooth
Roll for good seed to soil contact

Drag chain link fence to cover seed lightly followed by straw mulch
Best Lawn in the Neighborhood