

GENERAL COMMENTS FOR TURF

1 Apply dolomitic limestone at the recommended rate. (When lime is recommended and soil test calcium and/or magnesium is low)

105 To convert the recommendation from lbs per acre to lbs per 1,000 square feet, divide by 43.5.

650 Level of soil test zinc is potentially toxic at the current soil test pH. Lime according to recommendations. If the pH is greater than 6.2, consult your local county Extension office or the Home and Garden Information Center at 1-888-656-9988. (If soil test zinc is greater than 40 lbs per acre)

651 The soil test boron is low, however, this is not a boron sensitive crop, therefore no boron is recommended. (When soil test boron is low)

652 The soil test manganese is low, however, this is not a manganese sensitive crop, therefore no manganese is recommended. (When soil test manganese is low)

653 The soil test zinc is low, however, this is not a zinc sensitive crop, therefore no zinc is recommended. (When soil test zinc is low)

Crop Code No. 040 or 041

Athletic Field (040) or Golf Fairway (041)

| Soil Groups 1, 2, 3, or 4 | | | Desired pH 6.0-6.5 | | |
|---|------------|------------|--------------------|-----------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | | |
| Low | 120-100-80 | 120-100-60 | 120-100-30 | 120-100-0 | 120-100-0 |
| Medium | 120- 40-80 | 120- 40-60 | 120- 40-30 | 120- 40-0 | 120- 40-0 |
| Sufficient | 120- 40-80 | 120- 40-60 | 120- 40-30 | 120- 40-0 | 120- 40-0 |
| High | 120- 0-80 | 120- 0-60 | 120- 0-30 | 120- 0-0 | 120- 0-0 |
| Excessive | 120- 0-80 | 120- 0-60 | 120- 0-30 | 120- 0-0 | 120- 0-0 |

COMMENTS (1, 4, 5, 6, 7, 9, 105, 440, 650, 651, 652, 653)

4 Apply 100-150 lbs magnesium sulfate, or 20-30 lbs magnesium oxide, or 90-140 lbs sulfate-of-potash-magnesium per acre, or a mixed fertilizer to supply 10-15 lbs magnesium per acre. (When the soil test magnesium is low, and for Soil Codes 1, 2, or 3 when the soil pH is greater than 6.5, or for Soil Code 4 when the soil pH is greater than 7.0, or for Soil Code 6 when the soil pH is greater than 6.0)

5 Apply 100-150 lbs magnesium sulfate, or 20-30 lbs magnesium oxide, or 90-140 lbs sulfate-of-potash-magnesium per acre, or a mixed fertilizer to supply 10-15 lbs magnesium per acre, or by applying 1,000 lbs dolomitic limestone per acre. (When the soil test magnesium is low, and for Soil Codes 1, 2, or 3 when the soil pH is between 5.9 and 6.6, or for Soil Code 4 when the soil pH is between 5.9 and 7.1, or for Soil Code 6 when the soil pH is 6.0)

6 Apply 435 lbs gypsum per acre or a calcium-containing fertilizer to supply 100 lbs calcium per acre. (When the soil test calcium is low, and for Soil Codes 1, 2, or 3 when the soil pH is greater than 6.5, or for Soil Code 4 when the soil pH is greater than 7.0, or for Soil Code 6 when the soil pH is greater than 6.0)

7 Apply 435 lbs gypsum per acre, or a calcium-containing fertilizer to supply 100 lbs calcium per acre, or 500 lbs dolomitic or calcitic limestone per acre. (When the soil test calcium is low, and for Soil Codes 1, 2, or 3 when the soil pH is between 5.9 and 6.6, or for Soil Code 4 when the soil pH is between 5.9 and 7.1, or for Soil Code 6 when the soil pH is 6.0)

9 Apply 10 lbs sulfur per acre, or sufficient sulfur-containing fertilizer to supply this amount. (For Soil Codes 1 and 2)

440 Apply 60 lbs nitrogen per acre with the recommended rates of phosphate and potash in the spring and late summer. Apply additional nitrogen as needed in mid-summer at the rate of 60 lbs nitrogen per acre.

Crop Code No. 042

Bentgrass Golf Green

| Soil Groups 1, 2, 3, or 4 | | | Desired pH 6.0-6.5 | | |
|---|-------------|-------------|--------------------|------------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | | |
| Low | 300-200-200 | 300-200-100 | 300-200-60 | 300-200-30 | 300-200-0 |
| Medium | 300-100-200 | 300-100-100 | 300-100-60 | 300-100-30 | 300-100-0 |
| Sufficient | 300- 50-200 | 300- 50-100 | 300- 50-60 | 300- 50-30 | 300- 50-0 |
| High | 300- 0-200 | 300- 0-100 | 300- 0-60 | 300- 0-30 | 300- 0-0 |
| Excessive | 300- 0-200 | 300- 0-100 | 300- 0-60 | 300- 0-30 | 300- 0-0 |

COMMENTS (1, 71, 73, 105, 560, 650, 651, 652, 653)

71 Apply 220 lbs Epsom Salts (magnesium sulfate) per acre or a fertilizer containing magnesium. (When lime is not recommended and soil test magnesium is low)

73 Apply 2,200 lbs gypsum per acre. (When lime is not recommended and soil test calcium is less than 400 lbs calcium per acre)

560 Alternate nitrogen fertilizer application with that of a complete fertilizer, such as 16-4-8, modified to maintain desired growth and color. Fertilize bentgrass in fall, winter, and very early spring months (September through February) and only sparingly in the summer.

Crop Code No. 043

Bermudagrass Golf Green or Tee

| Soil Groups 1, 2, 3, or 4 | | | Desired pH 6.0-6.5 | | |
|---|-------------|-------------|--------------------|------------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | | |
| Low | 400-200-200 | 400-200-100 | 400-200-60 | 400-200-30 | 400-200-0 |
| Medium | 400-100-200 | 400-100-100 | 400-100-60 | 400-100-30 | 400-100-0 |
| Sufficient | 400- 50-200 | 400- 50-100 | 400- 50-60 | 400- 50-30 | 400- 50-0 |
| High | 400- 0-200 | 400- 0-100 | 400- 0-60 | 400- 0-30 | 400- 0-0 |
| Excessive | 400- 0-200 | 400- 0-100 | 400- 0-60 | 400- 0-30 | 400- 0-0 |

COMMENTS (1, 71, 73, 105, 561, 650, 651, 652, 653)

71 Apply 220 lbs Epsom Salts (magnesium sulfate) per acre or a fertilizer containing magnesium. (When lime is not recommended soil test magnesium is low)

73 Apply 2,200 lbs gypsum per acre. (When lime is not recommended and soil test calcium is less than 400 lbs calcium per acre)

561 Alternate nitrogen fertilizer application with that of a complete fertilizer, such as 16-4-8, modified to maintain desired growth and color. Fertilizer should be applied in spring, summer, and very early fall months.

Crop Code No. 106 or 107

Carpentgrass (106) or Centipedegrass (107)

| Soil Groups 1 or 2 | | | Desired pH 5.5-6.0 | | |
|---|-----------|--------|--------------------|------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | | |

| | | | | | |
|------------|----------|----------|---------|---------|---------|
| Low | 40-10-20 | 40-10-20 | 40-10-0 | 40-10-0 | 40-10-0 |
| Medium | 40- 0-20 | 40- 0-20 | 40- 0-0 | 40- 0-0 | 40- 0-0 |
| Sufficient | 40- 0-20 | 40- 0-20 | 40- 0-0 | 40- 0-0 | 40- 0-0 |
| High | 40- 0-20 | 40- 0-20 | 40- 0-0 | 40- 0-0 | 40- 0-0 |
| Excessive | 40- 0-20 | 40- 0-20 | 40- 0-0 | 40- 0-0 | 40- 0-0 |

Crop Code No. 106 or 107

Carpetgrass (106) or Centipedegrass (107)

| Soil Groups 3 or 4 | | Desired pH 5.5-6.0 | | | |
|--------------------|---|--------------------|------------|---------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| | <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | |
| Low | 20-10-20 | 20-10-20 | 20-10-0 | 20-10-0 | 20-10-0 |
| Medium | 20- 0-20 | 20- 0-20 | 20- 0-0 | 20- 0-0 | 20- 0-0 |
| Sufficient | 20- 0-20 | 20- 0-20 | 20- 0-0 | 20- 0-0 | 20- 0-0 |
| High | 20- 0-20 | 20- 0-20 | 20- 0-0 | 20- 0-0 | 20- 0-0 |
| Excessive | 20- 0-20 | 20- 0-20 | 20- 0-0 | 20- 0-0 | 20- 0-0 |

COMMENTS (1, 71, 73, 105, 319, 562, 522, 650, 651, 652, 653)

71 Apply 220 lbs Epsom Salts (magnesium sulfate) per acre or a fertilizer containing magnesium. (When lime is not recommended and soil test magnesium is LOW)

73 Apply 2,200 lbs gypsum per acre. (When lime is not recommended and soil test calcium is less than 400 lbs calcium per acre)

319 To achieve better color, foliar apply on the turf a liquid solution of iron sulfate (dissolve 5 pounds iron sulfate in 160 gallons of water) including a surfactant (1/8 cup of a dishwasher detergent) per acre, or foliar apply a chelated iron source following label instructions. A foliar iron treatment should be made in either April or July for locations in the Piedmont and in March, July or September for locations in the Coastal Plain. Foliar apply the iron-containing solution in the late afternoon and only when the air temperature is greater than 80°F and soil moisture is adequate for good turf growth.

522 The soil pH should be lowered cautiously and only when necessary because a low pH (<5.0) can also be detrimental. To lower the soil pH to an optimal range, consult the Home and Garden Information Center at 1-888-656-9988 for the recommended application rate of elemental sulfur or aluminum sulfate. (Recommendation when soil pH is greater than 7.0)

562 In the spring when the grass is fully green, apply slow-release nitrogen fertilizer. Do not over fertilize or apply fertilizer after August 15.

Crop Code No. 112

**Cool-Season Turf Grass Maintenance
(Orchard, Kentucky Bluegrass, Ryegrass)**

| Soil Groups 1, 2, 3 or 4 | | | Desired pH 6.0-6.5 | | |
|---|-----------|-----------|--------------------|-----------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | | |
| Low | 160-80-80 | 160-80-80 | 160-80-60 | 160-80-40 | 160-80-0 |
| Medium | 160-40-80 | 160-40-80 | 160-40-60 | 160-40-40 | 160-40-0 |
| Sufficient | 160-40-80 | 160-40-80 | 160-40-60 | 160-40-40 | 160-40-0 |
| High | 160- 0-80 | 160- 0-80 | 160- 0-60 | 160- 0-40 | 160- 0-0 |
| Excessive | 160- 0-80 | 160- 0-80 | 160- 0-60 | 160- 0-40 | 160- 0-0 |

COMMENTS (1, 71, 73, 105, 401, 650, 651, 652, 653)

71 Apply 220 lbs Epsom Salts (magnesium sulfate) per acre or a fertilizer containing magnesium. (When lime is not recommended and soil test magnesium is low)

73 Apply 2,200 lbs gypsum per acre. (When lime is not recommended and soil test calcium is less than 400 lbs calcium per acre)

401 Split nitrogen into three applications, one-fourth in September, one-half in November, and one-fourth in February.

Crop Code No. 045

Roadside Turf Establishment

| Soil Groups 1, 2, 3 or 4 | | | Desired pH 6.0-6.5 | | |
|---|-------------|------------|--------------------|------------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | | |
| Low | 120-160-160 | 120-160-80 | 120-160-40 | 120-160-20 | 120-160-0 |
| Medium | 120- 80-160 | 120- 80-80 | 120- 80-40 | 120- 80-20 | 120- 80-0 |
| Sufficient | 120- 40-160 | 120- 40-80 | 120- 40-40 | 120- 40-20 | 120- 40-0 |
| High | 120- 40-160 | 120- 40-80 | 120- 40-40 | 120- 40-20 | 120- 40-0 |
| Excessive | 120- 0-160 | 120- 0-80 | 120- 0-40 | 120- 0-20 | 120- 0-0 |

COMMENTS (1, 4, 5, 6, 7, 9, 105, 400, 650, 651, 652, 653)

4 Apply 100-150 lbs magnesium sulfate, or 20-30 lbs magnesium oxide, or 90-140 lbs sulfate-of-potash-magnesium per acre, or a mixed fertilizer to supply 10-15 lbs magnesium per acre. (When the soil test magnesium is low, and for Soil Codes 1, 2, or 3 when the soil pH is greater than 6.5, or for Soil Code 4 when the soil pH is greater than 7.0, or for Soil Code 6 when the soil pH is greater than 6.0)

5 Apply 100-150 lbs magnesium sulfate, or 20-30 lbs magnesium oxide, or 90-140 lbs sulfate-of-potash-magnesium per acre or a mixed fertilizer to supply 10-15 lbs magnesium per acre, or by applying 1,000 lbs dolomitic limestone per acre. (When the soil test magnesium is low, and for Soil Codes 1, 2, or 3 when the soil pH is between 5.9 and 6.6, or for Soil Code 4 when the soil pH is between 5.9 and 7.1, or for Soil Code 6 when the soil pH is 6.0)

6 Apply 435 lbs gypsum per acre or a calcium-containing fertilizer to supply 100 lbs calcium per acre. (When the soil test calcium is low, and for Soil Codes 1, 2, or 3 when the soil pH is greater than 6.5, or for Soil Code 4 when the soil pH is greater than 7.0, or for Soil Code 6 when the soil pH is greater than 6.0)

7 Apply 435 lbs gypsum per acre, or a calcium-containing fertilizer to supply 100 lbs calcium per acre, or 500 lbs dolomitic or calcitic limestone per acre. (When the soil test calcium is low, and for Soil Codes 1, 2, or 3 when the soil pH is between 5.9 and 6.6, or for Soil Code 4 when the soil pH is between 5.9 and 7.1, or for Soil Code 6 when the soil pH is 6.0)

9 Apply 10 lbs sulfur per acre, or sufficient sulfur-containing fertilizer to supply this amount. (For Soil Codes 1 and 2)

400 Before planting, apply and mix into the surface soil the recommended lime, and phosphate and potash fertilizer, and 60 lbs nitrogen per acre. Apply additional 60 lbs nitrogen per acre after the grass is well established (4 to 6 weeks).

Crop Code No. 046

Roadside Turf Maintenance

| Soil Groups 1, 2, 3 or 4 | Desired pH 6.0-6.5 | | | | |
|--------------------------|---|-----------|------------|---------|---------|
| | Phosphorus | Potassium | | | High |
| Low | | Medium | Sufficient | | |
| | <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | |
| Low | 80-80-80 | 80-80-60 | 80-80-40 | 80-80-0 | 80-80-0 |
| Medium | 80-40-80 | 80-40-60 | 80-40-40 | 80-40-0 | 80-40-0 |
| Sufficient | 80-40-80 | 80-40-60 | 80-40-40 | 80-40-0 | 80-40-0 |

| | | | | | |
|-----------|----------|----------|----------|---------|---------|
| High | 80- 0-80 | 80- 0-60 | 80- 0-40 | 80- 0-0 | 80- 0-0 |
| Excessive | 80- 0-80 | 80- 0-60 | 80- 0-40 | 80- 0-0 | 80- 0-0 |

COMMENTS (1, 4, 5, 6, 7, 9, 105, 513, 650, 651, 652, 653)

4 Apply 100-150 lbs magnesium sulfate, or 20-30 lbs magnesium oxide, or 90-140 lbs sulfate-of-potash-magnesium per acre, or a mixed fertilizer to supply 10-15 lbs magnesium per acre. (When the soil test magnesium is low, and for Soil Codes 1, 2, or 3 when the soil pH is greater than 6.5, or for Soil Code 4 when the soil pH is greater than 7.0, or for Soil Code 6 when the soil pH is greater than 6.0)

5 Apply 100-150 lbs magnesium sulfate, or 20-30 lbs magnesium oxide, or 90-140 lbs sulfate-of-potash-magnesium per acre, or a mixed fertilizer to supply 10-15 lbs magnesium per acre, or by applying 1,000 lbs dolomitic limestone per acre. (When the soil test magnesium is low, and for Soil Codes 1, 2, or 3 when the soil pH is between 5.9 and 6.6, or for Soil Code 4 when the soil pH is between 5.9 and 7.1, or for Soil Code 6 when the soil pH is 6.0)

6 Apply 435 lbs gypsum per acre or a calcium-containing fertilizer to supply 100 lbs calcium per acre. (When the soil test calcium is low, and for Soil Codes 1, 2, or 3 when the soil pH is greater than 6.5, or for Soil Code 4 when the soil pH is greater than 7.0, or for Soil Code 6 when the soil pH is greater than 6.0)

7 Apply 435 lbs gypsum per acre, or a calcium-containing fertilizer to supply 100 lbs calcium per acre, or 500 lbs dolomitic or calcitic limestone per acre. (When the soil test calcium is low, and for Soil Codes 1, 2, or 3 when the soil pH is between 5.9 and 6.6, or for Soil Code 4 when the soil pH is between 5.9 and 7.1, or for Soil Code 6 when the soil pH is 6.0)

9 Apply 10 lbs sulfur per acre, or sufficient sulfur-containing fertilizer to supply this amount. (For Soil Codes 1 and 2)

513 Broadcast all the fertilizer in the spring with a repeat application made in midsummer.

Crop Code No. 105

St. Augustinegrass

Soil Groups 1, 2, 3, or 4

| | | Desired pH 5.5-6.0 | | | |
|------------|---|--------------------|------------|---------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| | <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | |
| Low | 80-10-20 | 80-10-20 | 80-10-0 | 80-10-0 | 80-10-0 |

| | | | | | |
|------------|----------|----------|---------|---------|---------|
| Medium | 80- 0-20 | 80- 0-20 | 80- 0-0 | 80- 0-0 | 80- 0-0 |
| Sufficient | 80- 0-20 | 80- 0-20 | 80- 0-0 | 80- 0-0 | 80- 0-0 |
| High | 80- 0-20 | 80- 0-20 | 80- 0-0 | 80- 0-0 | 80- 0-0 |
| Excessive | 80- 0-20 | 80- 0-20 | 80- 0-0 | 80- 0-0 | 80- 0-0 |

COMMENTS (1, 71, 72, 105, 319, 562, 650, 651, 652, 653)

71 Apply 220 lbs Epsom Salts (magnesium sulfate) per acre or a fertilizer containing magnesium. (When lime is not recommended and soil test magnesium is low)

72 Apply 435 lbs gypsum per acre or as a mixed fertilizer containing sufficient calcium to supply 100 lbs calcium per acre. (When lime is not recommended and soil test calcium is less than 400 lbs calcium per acre)

319 To achieve better color, foliar apply on the turf a liquid solution of iron sulfate (dissolve 5 pounds iron sulfate in 160 gallons of water) including a surfactant (1/8 cup of a dishwasher detergent) per acre, or foliar apply a chelated iron source following label instructions. A foliar iron treatment should be made in either April or July for locations in the Piedmont and in March, July or September for locations in the Coastal Plain. Foliar apply the iron-containing solution in the late afternoon and only when the air temperature is greater than 80°F and soil moisture is adequate for good turf growth.

562 In the spring when the grass is fully green, apply slow-release nitrogen fertilizer. Do not over fertilize or apply fertilizer after August 15.

Crop Code No. 113

Turf Establishment

| Soil Groups 1, 2, 3 or 4 | | Desired pH 5.5-6.0 for centipedegrass and carpetgrass and 6.0-6.5 for other grasses | | | |
|--------------------------|--|---|------------|------------|-----------|
| | | Potassium | | | |
| Phosphorus | pounds of N-P ₂ O ₅ -K ₂ O per acre | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| Low | 120-100-120 | 120-100-60 | 120-100-40 | 120-100-20 | 120-100-0 |
| Medium | 120- 60-120 | 120- 60-60 | 120- 60-40 | 120- 60-20 | 120- 60-0 |
| Sufficient | 120- 30-120 | 120- 30-60 | 120- 30-40 | 120- 30-20 | 120- 30-0 |
| High | 120- 0-120 | 120- 0-60 | 120- 0-40 | 120- 0-20 | 120- 0-0 |
| Excessive | 120- 0-120 | 120- 0-60 | 120- 0-40 | 120- 0-20 | 120- 0-0 |

COMMENTS (1, 71, 73, 105, 402, 650, 651, 652, 653)

71 Apply 220 lbs Epsom Salts (magnesium sulfate) per acre or a fertilizer containing magnesium. (When lime is not recommended and soil test magnesium is low)

73 Apply 2,200 lbs gypsum per acre. (When lime is not recommended and soil test calcium is less than 400 lbs calcium per acre)

402 When phosphate recommended, incorporate into the soil before planting along with one-third recommended nitrogen and potash. Apply the remaining nitrogen and potash in two separate applications 6 to 12 weeks after planting when the grass is established.

Crop Code No. 114

**Warm-Season Grass Maintenance
(Zoyziagrass and Bermudagrass)**

| Soil Groups 1, 2, 3 or 4 | | | Desired pH 6.0-6.5 | | |
|---|-----------|----------|--------------------|----------|-----------|
| Phosphorus | Potassium | | | | |
| | Low | Medium | Sufficient | High | Excessive |
| <i>pounds of N-P₂O₅-K₂O per acre</i> | | | | | |
| Low | 80-80-80 | 80-80-80 | 80-80-60 | 80-80-40 | 80-80-0 |
| Medium | 80-40-80 | 80-40-80 | 80-40-60 | 80-40-40 | 80-40-0 |
| Sufficient | 80-40-80 | 80-40-80 | 80-40-60 | 80-40-40 | 80-40-0 |
| High | 80- 0-80 | 80- 0-80 | 80- 0-60 | 80- 0-40 | 80- 0-0 |
| Excessive | 80- 0-80 | 80- 0-80 | 80- 0-60 | 80- 0-40 | 80- 0-0 |

COMMENTS (1, 71, 73, 105, 404, 650, 651, 652, 653)

71 Apply 220 lbs Epsom Salts (magnesium sulfate) per acre or a fertilizer containing magnesium. (When lime is not recommended and soil test magnesium is low)

73 Apply 2,200 lbs gypsum per acre. (When lime is not recommended and soil test calcium is less than 400 lbs calcium per acre)

404 In the spring when growth begins, apply one-half of the recommended fertilizer and the remainder in midsummer.