

GENERAL COMMENTS FOR ALL FLOWERS, SHRUBS, AND TREES

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. For all crops except Christmas Trees)

Crop Code No. 108

Annual Flowers, Roses

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	120-120-120	120-120-100	120-120-80	120-120-60	120-120-0
Medium	120-100-120	120-100-100	120-100-80	120-100-60	120-100-0
Sufficient	120- 50-120	120- 50-100	120- 50-80	120- 50-60	120- 50-0
High	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0
Excessive	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0

COMMENTS (1, 71, 73, 105, 300, 323, 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)

300 As a precaution against fertilizer burn, water the plants immediately after the fertilizer is applied.

323 Uniformly spread fertilizer over the area and soak into the soil. If applied before planting, mix in the top 6 inches.

Crop Code No. 109

Azaleas, Rhododendron, Camellias

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	120-120-120	120-120-100	120-120-80	120-120-60	120-120-0
Medium	120-100-120	120-100-100	120-100-80	120-100-60	120-100-0
Sufficient	120- 50-120	120- 50-100	120- 50-80	120- 50-60	120- 50-0
High	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0
Excessive	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0

COMMENTS (1, 71, 73, 105, 300, 308, 315, 323, 325, 326, 327, 328, 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)

300 As a precaution against fertilizer burn, water the plants immediately after the fertilizer is applied.

308 Uniformly spread fertilizer over area beginning 6 inches from the trunk and extending well beyond end of branch spread. Not necessary to remove the mulch before applying the fertilizer. Brush or rinse the fertilizer from the leaves and stems. Always use an azalea/rhododendron fertilizer, such as that containing ammonium sulfate to help lower pH.

315 If plants show iron deficiency symptoms (yellow tissue between green veins on upper leaves), apply chelated iron following label directions for the material used, or apply a 2% solution of ferrous sulfate including a surfactant applied at a rate of 120 to 180 gallons per acre. Apply the iron-containing solution to the foliage in the late afternoon when the air temperatures are warm and only to plants that are being adequately watered and fertilized. (Recommendation when soil pH is greater than 6.0)

323 Uniformly spread fertilizer over the area and soak into the soil. If applied before planting, mix in the top 6 inches.

325 Soil pH too high for acid-loving plants. To lower the soil pH, apply 900 lbs elemental sulfur per acre. Increase the recommended rate by one-half for clay soils and reduce it by one-third for sandy soils. If aluminum sulfate is used to lower the soil pH, use seven times the above recommended rate as that for elemental sulfur. Take a second soil sample after several weeks to check its pH before applying additional material needed to lower the soil pH. When applying elemental sulfur, mix with builder's sand for easier spreading. **Caution** – sulfur dust may irritate the eyes. (When soil pH is greater than 6.0 and less than 6.6)

326 Soil pH too high for acid-loving plants. To lower the soil pH, apply 1,300 lbs elemental sulfur per acre. Increase the recommended rate by one-half for clay soils and reduce it by one-third for sandy soils. If aluminum sulfate is used to lower the soil pH, use seven times the above recommended rate as that for elemental sulfur. Take a second soil sample after several weeks to check its pH before applying additional material needed to lower the pH. When applying elemental sulfur, mix with builder's sand for easier spreading. **Caution** – sulfur dust may irritate the eyes. (When soil pH is greater than 6.5 and less than 7.1)

327 Soil pH too high for acid-loving plants. To lower the soil pH, apply 1,700 lbs elemental sulfur per acre. Increase the recommended rate by one-half for clay soils and reduce it by one-third for sandy soils. If aluminum sulfate is used to lower the soil pH, use seven times the above recommended rate as that for elemental sulfur. Take a second soil sample to check its pH before applying additional material needed to lower the pH. When applying elemental sulfur, mix with builder's sand for easier spreading. **Caution** – sulfur dust may irritate the eyes. (When soil water pH is greater than 7.0 and less than 7.6)

328 Soil pH too high for acid-loving plants. To lower the soil pH, apply 2,100 lbs elemental sulfur per acre. Increase the recommended rate by one-half for clay soils and reduce it by one-third for sandy soils. If aluminum sulfate is used to lower the soil pH, use seven times the above recommended rate as that for elemental sulfur. Take a second soil sample to check its pH before applying additional material needed to lower the soil pH. When applying elemental sulfur, mix with builder's sand for easier spreading. **Caution** – sulfur dust may irritate the eyes. (When soil water pH is greater than 7.5)

Crop Code No. 110

Perennial Flowers

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	120-120-120	120-120-100	120-120-80	120-120-60	120-120-0
Medium	120-100-120	120-100-100	120-100-80	120-100-60	120-100-0
Sufficient	120- 50-120	120- 50-100	120- 50-80	120- 50-60	120- 50-0
High	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0
Excessive	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0

COMMENTS (1, 71, 73, 105, 300, 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)

300 As a precaution against fertilizer burn, water the plants immediately after the fertilizer is applied.

Crop Code No. 117

Shrubs

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	120-120-120	120-120-100	120-120-80	120-120-60	120-120-0
Medium	120-100-120	120-100-100	120-100-80	120-100-60	120-100-0
Sufficient	120- 50-120	120- 50-100	120- 50-80	120- 50-60	120- 50-0
High	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0
Excessive	120- 0-120	120- 0-100	120- 0-80	120- 0-60	120- 0-0

COMMENTS (1, 71, 73, 105, 300, 308, 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)

300 As a precaution against fertilizer burn, water the plants immediately after the fertilizer is applied.

308 Uniformly spread fertilizer over area beginning 6 inches from the trunk and extending well beyond end of branch spread. Not necessary to remove the mulch before applying the fertilizer. Brush or rinse the fertilizer from the leaves and stems. Always use an azalea/rhododendron fertilizer, such as that containing ammonium sulfate to help lower pH.

Crop Code No. 092

Christmas Trees

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	#-150-150	#-150-150	#-150-100	#-150-0	#-150-0
Medium	#- 75-150	#- 75-150	#- 75-100	#- 75-0	#- 75-0
Sufficient	#- 50-150	#- 50-150	#- 50-100	#- 50-0	#- 50-0
High	#- 0-150	#- 0-150	#- 0-100	#- 0-0	#- 0-0
Excessive	#- 0-150	#- 0-150	#- 0-100	#- 0-0	#- 0-0

#see comments

COMMENTS (1, 62, 70, 105, 351, 352, 354, 355, 356, 357, 358, 650, 651, 652, 653)

62 If the pH is less than 6.5, generally zinc is not recommended under standard management. If the pH is greater than or equal to 6.5 or if zinc deficiency symptoms occur and if the zinc soil test level is not excessive, apply 5 – 10 lbs zinc per acre. Once trees are established, zinc may be foliar applied if needed.

70 Apply 100-150 lbs magnesium sulfate (Epsom salts), or 20-30 lbs magnesium oxide, or 90-140 lbs sulfate of potash-magnesium per acre, or as a mixed fertilizer containing sufficient magnesium to supply 10 to 15 lbs magnesium per acre. (When lime is not recommended and soil test magnesium is low)

351 Best Christmas tree growth occurs when the soil pH is between 5.5 and 6.0. (When soil pH below 5.5)

352 Apply recommended lime 1 to 2 months before planting, and band the recommended fertilizer 2 inches to the side of the planted seedlings.

354 For establishment, apply after planting 50 lbs nitrogen per acre as a split application with 25 lbs nitrogen per acre applied before growth starts (usually in March) and 25 lbs nitrogen per acre in May. Apply six inches from the stem. For the second year, apply 75 lb nitrogen per acre as a split application, 40 lbs nitrogen per acre before growth starts (usually in March) and 35 lbs nitrogen per acre in May, broadcasting at the outer reach of

the limbs. For trees three years old and older, broadcast 100 lb nitrogen per acre at the outer reach of the limbs of each tree before growth starts.

355 For established trees when potash recommendation is greater than 100 lbs per acre, split the application, apply half during early spring and the remainder in the fall. Availability of potassium may be reduced if gypsum is applied at the same time. Broadcast over the field or band at the tree drip line so that no fertilizer is left lodging in tree branches and needles. (When soil test potassium is greater than 100 lbs potassium per acre)

356 For new plantings, all recommended phosphate and potash fertilizer, lime and gypsum should be thoroughly mixed into the top 6 to 8 inches of soil prior to planting. (When phosphorus, potassium, or lime is recommended)

357 For established trees, broadcast recommended phosphate fertilizer over the planted area. Fertilizer that lodges on tree branches and needles will result in foliage damage. (When phosphorus is recommended)

358 In order to prevent premature needle drop, additional calcium is needed. Ordinarily, soil calcium is maintained by liming, but when no lime is recommended and the soil test calcium is less than 800 lbs calcium per acre, apply sufficient gypsum to raise the percent calcium base saturation to the recommended 55% level. Consult Information Leaflet No. 69 or your County Extension Agent to determine the correct amount of gypsum to apply. Incorporate gypsum in the soil prior to planting. For established trees, broadcast or band gypsum at the tree drip line. (When there is no lime recommendation and soil test calcium is less than 800 lbs calcium per acre)