

BEES Info #100

Lime and Fertilizer Recommendations
for the Various Crops of Tennessee

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Chapter VIII
Home Ornamentals

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Chapter VIII, Table of Contents

Page

Home Ornamentals

Bulbs (Spring Flowering)..... 1
Bulbs (Summer Flowering)..... 2
Flowers (Annual) 3
Flowers (Perennial)..... 4
Ground Covers 5
Roses 7
Shade Trees 8
Shrubs (Acid Loving)..... 10
Shrubs (Non Acid Loving)..... 12

BULBS (SPRING FLOWERING)

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,5
	L	M	1,5
	L	H	2,5
	L	V	2,5
	M	L	1,5
	M	M	1,5
	M	H	2,5
	M	V	2,5
	H	L	3,5
	H	M	3,5
	H	H	4,5
	H	V	4,5
	V	L	3,5
	V	M	3,5
V	H	4,5	
V	V	4,5	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 7

1. Prior to planting, incorporate one-third (1/3) cup 5-10-10 or 6-12-12 per 10 square feet of bed area. Topdress at same rate when growth is 1 to 2 inches tall.
2. Incorporate 1 level tablespoon of 34-0-0 or similar and one-fourth (1/4) cup of superphosphate, 0-46-0 or similar prior to planting to each 10 square feet of bed area. Topdress at the same rate when the plants are 1 to 2 inches tall.
3. Incorporate one-fourth (1/4) cup 15-15-15 per each 10 square feet of bed area before planting. Topdress with same amount when plants are 1 to 2 inches tall.
4. Incorporate 1 level tablespoon of 34-0-0 or similar per 10 square feet of bed area. Topdress with same amount when plants are 1 to 2 inches tall.
5. If lime is recommended, use dolomitic limestone.

BULBS (SUMMER FLOWERING)

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,5
	L	M	1,5
	L	H	2,5
	L	V	2,5
	M	L	1,5
	M	M	1,5
	M	H	2,5
	M	V	2,5
	H	L	3,5
	H	M	3,5
	H	H	4,5
	H	V	4,5
	V	L	3,5
	V	M	3,5
	V	H	4,5
V	V	4,5	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 7

1. Apply one-third (1/3) cup 8-8-8 or 10-10-10 in March, June and August to each 10 square feet of bed area.
2. Apply one-sixth (1/6) cup of 0-46-0, superphosphate or similar and 1 level tablespoon of 34-0-0 or similar in March, June and August to each 10 square feet of bed area.
3. Apply one-fourth (1/4) cup of 15-15-15 in March, June and August to each 10 square feet of bed area.
4. Apply 1 level tablespoon full of 34-0-0 or similar in March, June and August to each 10 square feet of bed area.
5. If lime is recommended, use dolomitic limestone.

FLOWERS (ANNUAL)

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,5
	L	M	1,5
	L	H	2,5
	L	V	2,5
	M	L	1,5
	M	M	1,5
	M	H	2,5
	M	V	2,5
	H	L	3,5
	H	M	3,5
	H	H	4,5
	H	V	4,5
	V	L	3,5
	V	M	3,5
	V	H	4,5
V	V	4,5	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 7

1. Prior to planting, incorporate one-half (1/2) cup of 8-8-8 or 10-10-10 per 10 square feet. Repeat at 6-week intervals throughout the growing season.
2. Prior to planting, incorporate one-fourth (1/4) cup of 0-46-0, superphosphate or similar and 1 level tablespoon 34-0-0 or similar per 10 square feet. Repeat at 6-week intervals throughout the growing season.
3. Prior to planting, incorporate one-third (1/3) cup of 15-15-15 per 10 square feet. Repeat at 6-week intervals through the growing season.
4. Prior to planting, incorporate 1 level tablespoon of 34-0-0 or similar per 10 square feet. Repeat at 6-week intervals throughout the growing season.
5. If lime is recommended, use dolomitic limestone.

FLOWERS (PERENNIAL)

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,5
	L	M	1,5
	L	H	2,5
	L	V	2,5
	M	L	1,5
	M	M	1,5
	M	H	2,5
	M	V	2,5
	H	L	3,5
	H	M	3,5
	H	H	4,5
	H	V	4,5
	V	L	3,5
	V	M	3,5
V	H	4,5	
V	V	4,5	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 7

1. Apply one-third (1/3) cup 8-8-8 or 10-10-10 in March, June and August to each 10 square feet of bed area.
2. Apply one-sixth (1/6) cup of 0-46-0, superphosphate or similar and 1 level tablespoon of 34-0-0 or similar in March, June and August to each 10 square feet of bed area.
3. Apply one-fourth (1/4) cup of 15-15-15 in March, June and August to each 10 square feet of bed area.
4. Apply 1 level tablespoon full of 34-0-0 or similar in March, June and August to each 10 square feet of bed area.
5. If lime is recommended, use dolomitic limestone.

GROUND COVERS

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,5
	L	M	1,5
	L	H	2,5
	L	V	2,5
	M	L	1,5
	M	M	1,5
	M	H	2,5
	M	V	2,5
	H	L	3,5
	H	M	3,5
	H	H	4,5
	H	V	4,5
	V	L	3,5
	V	M	3,5
V	H	4,5	
V	V	4,5	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 5. Use note 6 only as indicated.

- Per 100 square feet, broadcast evenly 1 1/4 lb. (2 1/2 cups) of 12-6-6 or equivalent fertilizer, preferably containing a slow release source of nitrogen. Application can be anytime during growing season but early spring is preferable. Irrigate thoroughly, making sure no fertilizer residue is left on foliage. Test soil again next autumn.
- Per 100 square feet, broadcast evenly 1/2 lb. (1 cup) of 0-46-0, superphosphate or similar plus 6 ounces (3/4 cup) 40-0-0 sulfur coated urea, nitroform, ureaformaldehyde, or other slow release nitrogen fertilizer. Application can be anytime during growing season but early spring is preferable. Irrigate thoroughly, making sure no fertilizer residue is left on foliage. Test soil again next autumn.
- Per 100 square feet, broadcast evenly 3/4 lb. (1 1/2 cups) of 15-0-15 or 16-4-8 or equivalent low phosphorus fertilizer, preferably containing a slow release source of nitrogen. Application can be anytime during growing season, but early spring is preferable. Irrigate thoroughly, making sure no fertilizer residue is left on foliage. Test soil again next autumn.
- Per 100 square feet, broadcast evenly 6 ounces (3/4 cup) of 40-0-0 sulfur coated urea, nitroform, ureaformaldehyde or other slow release nitrogen fertilizer. Application can be made anytime during growing season but early spring is preferable. Irrigate thoroughly making sure no fertilizer residue is left on foliage. Test soil again in two to three years in autumn.
- If soil pH is above 6.0, apply to the following plants two-tenth (0.2) pound of elemental sulfur per 100 square feet (for medium-textured, silt-loam soils) for each one-tenth (1/10) unit the pH is above 6.0: Japanese Spruce and Periwinkle. Use 1/3 more sulfur for fine-textured (clay) soils or 1/3 less sulfur for coarse-textured (sandy) soils than the amount required for medium-textured soils. When more

than three (3.0) pounds of elemental sulfur per 100 square feet is required, it would be advisable to split the application. Apply two-thirds of the recommended rate and after about 3 months re-test the soil. If the pH has not been sufficiently reduced apply the remainder of the material.

6. [Note 6 is used only when the magnesium test indicates a need for magnesium] If lime is recommended use dolomitic limestone. Where lime is not needed, use one-fourth cup Epsom Salts (magnesium sulfate) per 100 square feet.

ROSES

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,5,6,7
	L	M	1,5,6,7
	L	H	2,5,6,7
	L	V	2,5,6,7
	M	L	1,5,6,7
	M	M	1,5,6,7
	M	H	2,5,6,7
	M	V	2,5,6,7
	H	L	3,5,6,7
	H	M	3,5,6,7
	H	H	4,5,6,7
	H	V	4,5,6,7
	V	L	3,5,6,7
	V	M	3,5,6,7
	V	H	4,5,6,7
V	V	4,5,6,7	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 7.

1. Apply one-fourth (1/4) cup of 10-10-10 per plant March 15 and every month through August. Reduce the rate by one-half for plants less than 18 inches in height.
2. Apply two tablespoons of 0-46-0, superphosphate or similar and one tablespoon of 34-0-0 or similar per plant March 15 and continue each month through August.
3. Apply two tablespoons of 15-0-15 per plant March 15 and continue each month through August.
4. Apply one tablespoon of 34-0-0 or similar per plant March 15 and continue each month through August. If excess growth occurs, apply nitrogen less frequently.
5. Spread fertilizer uniformly in a circular band starting six inches from the trunk and extending out to 18 inches from the base of the plant. Water thoroughly washing all fertilizer from leaves and stems. It is not necessary to remove the mulch when applying fertilizers.
6. If soil pH is above 6.5, apply two-tenth (0.2) pound of elemental sulfur per 100 square feet (for medium-textured, silt loam soils) for each one-tenth (1/10) unit the pH is above 6.5. Use 1/3 more sulfur for fine-textured (clay) soils or 1/3 less sulfur for course-textured (sandy) soils that the amount required for medium-textured soils.
7. If lime is recommended, use dolomitic limestone.

SHADE TREES

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1
	L	M	1
	L	H	2
	L	V	2
	M	L	1
	M	M	1
	M	H	3
	M	V	3
	H	L	4
	H	M	3
	H	H	3
	H	V	3
	V	L	4
	V	M	3
V	H	3	
V	V	3	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 5. Use note 5 only as indicated.

1. Mature shade trees located in a well-fertilized lawn and showing adequate growth and color need no extra fertilization. Otherwise use half the amount recommended for younger trees. For fast growth of younger trees fertilize twice annually until desired size is reached. Measure area under and 25 percent beyond spread of branches. Broadcast fourteen pounds 12-6-6 or equivalent per 1000 square feet. Irrigate immediately with sufficient water to carry into root zone. Make applications in late November and again in early spring or up until late June. Test soil again in two years during autumn. Keep grass and weeds away from trunk.

2. Mature shade trees located in a well-fertilized lawn and showing adequate growth and color should need no extra fertilization. Otherwise use half the amount recommended for younger trees. For fast growth of young trees fertilize twice annually until desired size is reached. Measure area under and 25 percent beyond spread of branches. Broadcast 6 lbs. 34-0-0, ammonium nitrate or similar and 4 lbs. 0-46-0, superphosphate or similar per 1000 square feet in late November. Irrigate immediately with sufficient water to carry into root zone. Repeat the 6 lbs. of 34-0-0, ammonium nitrate or similar in early spring or up until late June. Test soil again in two years. Keep grass and weeds away from trunk.

3. Mature shade trees located in a well-fertilized lawn and showing adequate growth and color should need no extra fertilization. Otherwise use half the amount recommended for younger trees. For fast growth of younger trees fertilize twice annually until desired size is reached. Measure area under and 25 percent beyond spread of branches. Broadcast 6 lbs. 34-0-0, ammonium nitrate or similar per 1000 square feet. Irrigate immediately with sufficient water to carry into root zone. Make applications in late November and again in early spring or up until late June. Test soil again in two

years during autumn. Keep grass and weeds away from trunk.

4. Mature shade trees located in a well-fertilized lawn and showing adequate growth and color should need no extra fertilization. Otherwise use half the amount recommended for younger trees. For fast growth of younger trees, fertilize twice annually until desired size is reached. Measure area under and 25 percent beyond spread of branches. Broadcast 12 lbs. of 18-6-12 or other equivalent low or no phosphorus fertilizer per 1000 square feet. Irrigate immediately with sufficient water to carry into root zone. Make application in late November and again in early spring or up until late June. Test soil again in two years in autumn. Keep grass and weeds away from trunk.
5. [Note 5 is used only when the test for magnesium indicates a need for magnesium] If lime is recommended, use dolomitic limestone. Where lime is not needed, use one-fourth cup Epsom Salts (magnesium sulfate) per 100 square feet.

SHRUBS, ACID LOVING

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,13
	L	M	2,13
	L	H	2,13
	L	V	3,13
	M	L	4,13
	M	M	5,13
	M	H	6,13
	M	V	3,13
	H	L	5,13
	H	M	5,13
	H	H	7,13
	H	V	8,13
	V	L	9,13
	V	M	10,13
V	H	11,13	
V	V	12,13	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 9. Use note 14 only as indicated.

1. Per 100 square feet of bed, broadcast evenly over mulch 1/2 lb. (1 cup) of 13-13-13 or equivalent fertilizer, preferably containing a slow release source of nitrogen, in early April. Repeat in mid-May and again in late June. Test soil again next autumn.
2. Per 100 square feet of bed, broadcast evenly over mulch 3/4 lb. (1 1/2 cups) of 12-6-6 or equivalent fertilizer, preferably acid forming and containing a slow release source of nitrogen, in early April. Repeat in mid-May and again in late June. Also apply 1/2 lb. (1 cup) 0-46-0, superphosphate or similar per 100 square feet anytime. Test soil again next autumn.
3. Per 100 square feet of bed, broadcast evenly over mulch 1/2 lb. (1 cup) of 0-46-0, superphosphate or similar plus 1/4 lb. (1/2 cup) of 40-0-0 sulfur coated urea, nitroform, ureaformaldehyde, or other slow release nitrogen fertilizer in early April. Repeat in late June. Test soil again next autumn.
4. Per 100 square feet of bed, broadcast evenly over mulch 1/2 lb. (1 cup) of 18-6-12 or equivalent, preferably containing a slow release source of nitrogen, in early April. Repeat in mid-May and late June. Test soil again next autumn.
5. Per 100 square feet of bed, broadcast evenly over mulch 3/4 lb. (1 1/2 cups) 12-6-6 or equivalent fertilizer, preferably acid-forming and containing a slow-release source of nitrogen, in early April. Repeat in mid-May and late June. Test soil again next autumn.
6. Per 100 square feet of bed, broadcast evenly over mulch 1/2 lb. (1 cup) of 0-46-0, superphosphate or similar plus 1/4 lb. (1/2 cup) of 40-0-0 sulfur coated urea, nitroform, ureaformaldehyde, or other slow

- release nitrogen fertilizer in early April. Then in mid-May and late June, broadcast 3/4 lb. of 12-6-6 or equivalent fertilizer, preferably acid forming and containing a slow-release Test soil again next autumn.
7. Per 100 square feet of bed, broadcast evenly over mulch 1/2 lb. (1 cup) of 12-6-6 fertilizer or equivalent, preferably acid forming and containing a slow release source of nitrogen, in early April. Repeat in late June. Test soil every two years in autumn.
 8. Per 100 square feet of bed, broadcast evenly over mulch 1/4 lb. (1/2 cup) of 0-46-0, superphosphate or similar, plus 1/4 lb. (1/2 cup) of 40-0-0 sulfur coated urea, nitroform, ureaformaldehyde, or other slow release nitrogen fertilizer in early April. Repeat in June. Test soil every two years in autumn.
 9. Per 100 square feet of bed, broadcast evenly over mulch 1/2 lb. (1 cup) of 16-0-16 or equivalent low-phosphorus fertilizer, in early April. Repeat in mid-May and late June. Test soil again next autumn.
 10. Per 100 square feet of bed, broadcast evenly over mulch 1/4 lb. (1/2 cup) of 40-0-0 sulfur coated urea, nitroform, ureaformaldehyde, or other slow release nitrogen fertilizer in early April. Then in mid-May and again in late June, broadcast 1/2 lb. (1 cup) of 16-0-16 or equivalent amount of low phosphorus fertilizer. Test again next autumn.
 11. Per 100 square feet of bed, broadcast evenly over mulch 1/4 lb. (1/2 cup) of 40-0-0 sulfur coated urea, nitroform, ureaformaldehyde, or other slow release nitrogen fertilizer in early April. Then in late June, broadcast 1/2 lb. (1 cup) of 16-0-16 or equivalent amount of low phosphorus fertilizer. Test soil every two years in autumn.
 12. Very high P & K levels indicate possible over fertilization recently. If plants are not stunted or showing leaf burn, broadcast evenly over mulch 1/4 lb. (1/2 cup) of slow release nitrogen fertilizer such as sulfur coated urea, nitroform, ureaformaldehyde, or equivalent per 100 square feet of bed in April.
 13. If soil pH is above 5.5, apply two-tenth (0.2) pound of elemental sulfur per 100 square feet (for medium-textured, silt-loam soils) for each one-tenth (1/10) unit the pH is above 5.5. Use 1/3 more sulfur for fine-textured (clay) soils or 1/3 less sulfur for course-textured (sandy) soils than the amount required for medium textured soils. When more than three (3.0) pounds of sulfur per 100 square feet is required, it would be advisable to split the application. Apply two-thirds of the recommended amount and after 2 or 3 months re-test the soil. If the pH has not been sufficiently reduced apply the remainder of the material.
 14. [Note 14 is used only when the magnesium test indicates a need for magnesium]. If lime is recommended, use dolomitic limestone. Where lime is not needed, use one-fourth cup Epsom Salts (magnesium sulfate) per 100 square feet.

SHRUBS, NON-ACID LOVING

SOIL TEST LEVELS*

Practice	Phosphate (P ₂ O ₅)	Potash (K ₂ O)	Notes
1. Establishment and Maintenance	L	L	1,9
	L	M	2,9
	L	H	3,9
	L	V	3,9
	M	L	1,9
	M	M	4,9
	M	H	5,9
	M	V	5,9
	H	L	6,9
	H	M	7,9
	H	H	8,9
	H	V	8,9
	V	L	6,9
	V	M	6,9
V	H	8,9	
V	V	8,9	

*L = Low M = Medium H = High V = Very High

Notes: Lime recommendations from Lime Chart 5. Use note 10 only as indicated.

- Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1 1/2 lbs. (3 cups) of 13-13-13 or equivalent type of fertilizer, preferably containing a slow release nitrogen source. Water immediately, being sure to rinse dust and granules off foliage. Repeat application in June. For mature shrubs with adequate growth and color, use half the amount and apply only once per year. Test soil again next autumn.
- Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1 1/2 lbs. (3 cups) of 12-6-6 or equivalent type fertilizer, preferably containing a slow release nitrogen source, plus 1 lb. (2 cups) of 0-46-0, superphosphate or similar. Water immediately, being sure to rinse dust and granules off foliage. Repeat application in June. For mature shrubs with adequate growth and color, use half this amount and apply only once per year. Test soil again next autumn.
- Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1/2 lb. (1 cup) of 34-0-0, ammonium nitrate or similar plus 1 lb. (2 cups) 0-46-0, superphosphate or similar. Water immediately, being sure to rinse dust and granules off foliage. Repeat application in June. For mature shrubs with adequate growth and color, use half this amount and apply only once per year. Test soil again next autumn.

4. Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1 1/2 lb. (3 cups) of 12-6-6 or equivalent type of fertilizer, preferably containing a slow release nitrogen source. Water immediately, being sure to rinse dust and granules off foliage. Repeat application in June. For mature shrubs with adequate growth and color use half this amount and apply only once per year. Test soil again next autumn.
5. Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1/2 lb. (1 cup) 34-0-0, ammonium nitrate or similar plus 1/2 lb. (1 cup) 0-46-0, superphosphate or similar. Water immediately, being sure to rinse dust and granules off foliage. Repeat this application in June. For mature shrubs with adequate growth and color, use half this amount and apply only once per year. Test soil again next autumn.
6. Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1 lb. (2 cups) 15-0-15 or equivalent type of low or no phosphorus fertilizer. Water immediately, being sure to rinse dust and granules off foliage. Repeat application in June. For mature shrubs with adequate growth and color, use half this amount and apply only once per year. Test soil again next autumn.
7. Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1 lb. (2 cups) of 15-0-15 or equivalent type of low or no phosphorus fertilizer. Water immediately, being sure to rinse dust and granules off foliage. Repeat this procedure in June using 1 1/2 lbs. (3 cups) of 12-6-6 or equivalent per 100 square feet, preferably containing a slow release nitrogen source. For mature shrubs with adequate growth and color, use half this amount and apply only once per year. Test soil again next autumn.
8. Per 100 square feet of area, broadcast under and beyond spread of branches when growth starts in spring or earlier, 1/2 lb. (1 cup or less) of 34-0-0, ammonium nitrate or similar. Water immediately, being sure to rinse dust and granules off foliage. Repeat application in June. For mature shrubs with adequate growth and color, use half this amount and apply only once per year. Test soil in 2-3 years in autumn.
9. If soil pH is above 6.5, apply to the following plants two-tenth (0.2) pound of elemental sulfur per 100 square feet (for medium-textured, silt-loam soils) for each one-tenth (1/10) unit the pH is above 6.5: Hollies, Laurels, Aucuba, Nandina, Mohonia, Viburnum. Use 1/3 more sulfur for fine-textured (clay) soils or 1/3 less sulfur for course-textured (sandy) soils than the amount used for medium-textured (silt-loam) soils.
10. [Note 10 is used only when the magnesium test indicates a need for magnesium] If lime is recommended, use dolomitic limestone. Where lime is not needed, use one-fourth cup Epsom Salts (magnesium sulfate) per 100 square feet.