

SOIL TEST INFORMATION SHEET NO. F-520

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Blueberries (Rabbiteye)

1. Poor water quality often causes physiological problems in blueberries. Check irrigation water for possible salts.
2. Only upland soils are considered suitable for commercial blueberry production. Alluvial soils are generally unsatisfactory.
3. Nitrogen. The demand for nitrogen by blueberries is relatively minor compared with its use by other crops. Nevertheless, nitrogen is the most important element needed for blueberries. Sandy soils used for growing blueberries are essentially void of nitrogen. Nitrogen that is applied in the spring is quickly leached out by heavy rains.
4. Alternative fertilizer blends other than those suggested in Table 1 may also be used as long as the overall rates and ammonium- nitrogen source are used.

Table 1. Blueberry fertilizer recommendations.

Age of Plant	Ounces Per Plant							
	Ammonium nitrate**				or		15-5-10 alone	
Year	March	April	May	September	March	April	May	September
1	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
2	2.0	1.0	1.0	1.0	2.0	2.0	1.0	1.0
3	3.0	1.0	1.0	1.0	2.5	2.5	1.0	1.0
4	4.0	2.0	2.0	2.0	3.0	3.0	2.0	2.0
5 & over	5.0	2.0	2.0	2.0	3.5	3.5	3.0	2.0

*Note: Do not apply supplemental amounts of Phosphorus or a phosphorus carrying fertilizer unless soil test results for phosphorus fall into the low range. For this March application use Ammonium nitrate (at April rate) instead of 13-13-13 if phosphate is not needed.

**Note: Below pH 5, use urea as the nitrogen source. When using urea in the place of ammonium sulfate, apply half as much. Do not make the last fertilizer application until residual salts have been leached from the soil by 3-4 inches of rain or by sprinkler irrigation with water low in salts.

5. Phosphorus and potassium. The fertilizer program outlined in Table 1 should provide sufficient phosphorus and potassium in most situations. However, take annual soil tests and leaf analyses to assure that phosphorus and potassium needs are being met. Table 2 indicates the appropriate fertilization rates for different soil levels of phosphorus and potassium. If soil tests and leaf analyses indicate that more phosphorus and potassium are needed, use the mixed blend more frequently in place of just nitrogen. For a phosphorus-only application, use 0-46-(superphosphate) and for a potassium-only application use 0-0-60 (potassium chloride).

Table 2. Supplemental fertilization rate for phosphorus and potassium.

Potassium		Phosphorus	
Soil test level	Ounces of 0-0-60/plant	Soil test level	Ounces of 0-46-0/plant
very low	5	very low	7
low	3	low	3
medium	See Table 1	medium	See Table 1

6. **Other nutrients and pH.** Magnesium deficiencies frequently occur in blueberries. Use soil tests (less than 50 parts per million) and leaf analyses (less than 0.08%) to determine if supplemental magnesium is needed. In soils where there are 8 parts calcium to 1 part of magnesium, magnesium deficiency may also occur. If the soil pH is less than 4.0, apply a very fine dolomitic limestone (according to soil test recommendations) to correct magnesium deficiency. At soil pH greater than 4.0, apply potassium-magnesium-sulfate or Epsom salts in the spring. On mature plants use 2 ounces per plant, and on young plants use 1 ounce per plant.
7. One of the most critical nutritional problems in blueberries is correction of soil pH. Unless pH is greater than 6.0, do not add sulfur. Improper sulfur application has been a frequent cause of plant death. Sulfur acts like other fertilizer salts and kills the plant. If needed, apply only sulfur rates recommended by the soil-testing lab. Never apply sulfur in the concentrated zone at the base of the plant. Instead, broadcast uniformly around the plant extending past the perimeter of the branches. Whenever possible make all sulfur applications 6 months to 1 year before planting.
8. Correcting “chlorosis” in blueberries:

The following recommendations can be suggested to minimize or eliminate symptoms of chlorosis caused by low soil pH.

- a. Manage soil pH levels: Soil pH in and around blueberries should be monitored annually, and in the case of dangerously low pH values, dolomitic lime (high Mg) should be added.

Approximately ¼ pound of dolomitic lime per plant equals 2 tons per acre and will adjust pH upward approximately 1 pH increment (such as 4.5-5.5). The lime should be placed under individual plants, over the root systems. Remember, blueberries have a limited root system, and lime need not be applied where there are no functional blueberry roots. If mulch is present, pull the mulching material back and apply the lime to the soil surface.

- b. Managing nitrogen sources: Discontinue the use of ammonium sulfate unless specifically recommended to lower soil pH. Use urea as a nitrogen source when the pH is critically low (3.5-4.5). Continue its use until the pH can be adjusted upward by applying dolomitic lime.
- c. Manage soil drainage: all blueberries should be planted on rows 12-18” above grade, even when planted in sandy soils. Such rows require drip/trickle irrigation to maintain sufficient moisture. Elevation allows excessive soil moisture to move gravitationally away from blueberry, this preventing water logging.

Drainage between rows should also be maintained by eliminating low spots and keeping all row middles open at the ends. Water can accumulate between rows and back up under individual plants, causing additional water logging. Tops of rows can also become depressed and develop pockets in which water will collect, creating damage.

- d. Managing blueberry phosphorus: Phosphorus should be eliminated as a routine fertilizer until soil tests show levels to be in the low range. Excessive amounts of phosphorus in the soil can chemically tie up iron.
- e. Managing organic matter: where practical, add organic mulch to blueberries. Preplant applications of soil organic matter can be critical to managing blueberries under certain soil conditions (high manganese soils). Use peat, pine bark or sawdust as availability and need dictate. Preplant soil tests can determine a base manganese content to use to establish the amount of organic matter that may be needed.

In conclusion, if blueberries begin to develop the symptoms of chlorosis, monitor the soil annually with a soil test. Have the results interpreted by your county Extension agent or local adviser and take corrective action as recommended in this manuscript.

- 9. Contact your county agent for additional information and help in your fertilization program. The agent also receives a copy of this report for the parish office files.