

Home Blueberry Production *in Louisiana*

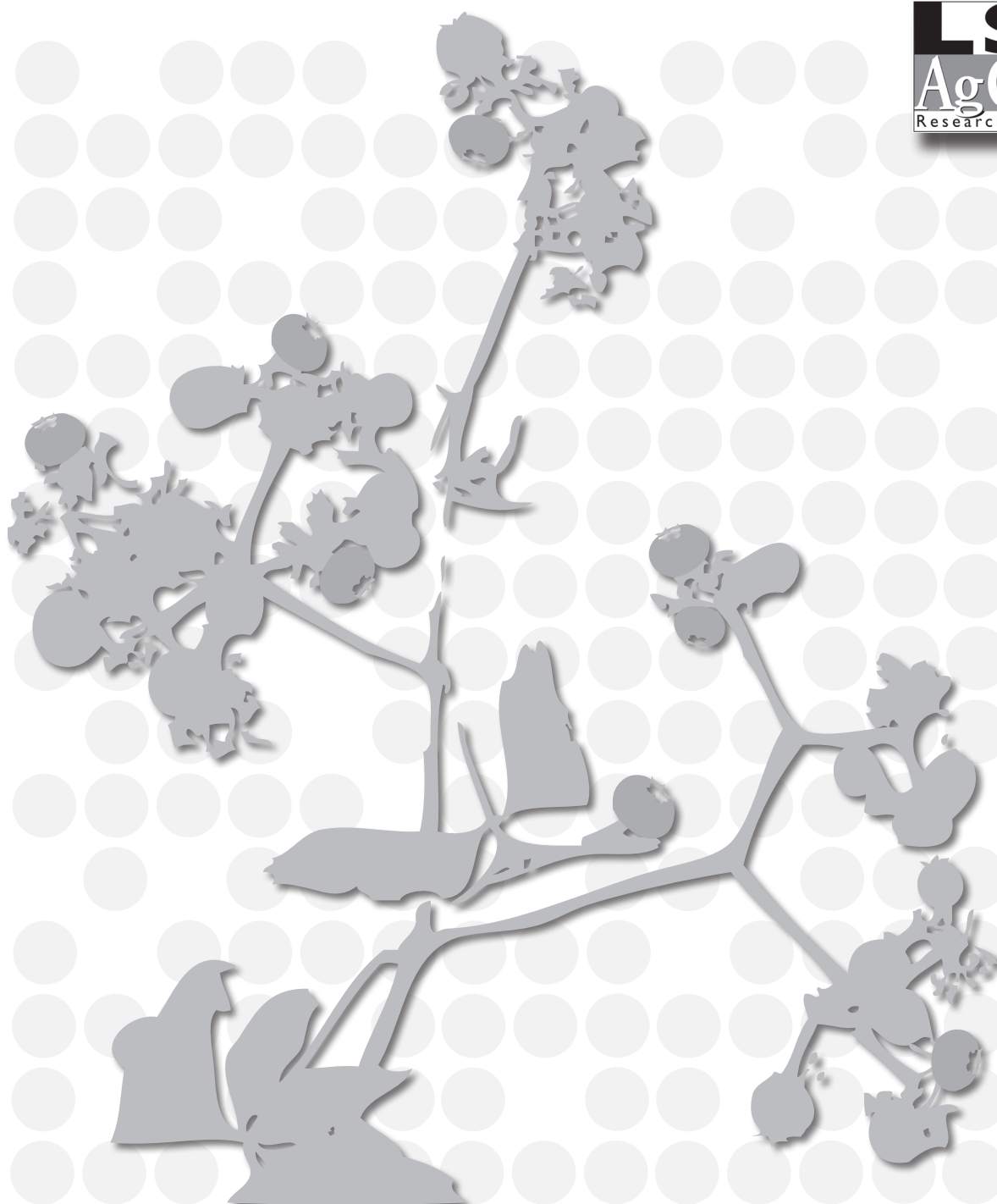


Table of Contents

	Page
Introduction	2
Site Preparation	3
Varieties	4
Plant Selection and Establishment	5
First Year Culture	6
Planting Culture in Subsequent Years	6-7
Yield Chronology	7

Introduction

Blueberries fit into any general home landscape design and can serve as hedges, borders or backgrounds. The blueberry's native adaptation to both the soil and the climate of the Southeast makes it a productive fruit for Louisiana. Blueberries are typically used in the landscape as hedges for screening purposes, but they also can be used in cluster plantings or as single specimen plants. Blueberries are an ideal year-round addition to the landscape with delicate white flowers in the spring, attractive blue fruit in the summer and the possibility of colorful fall foliage. In addition, blueberry plants lend themselves to the "organic" approach of gardening because they typically have very few insect or disease problems and pesticides are rarely needed in home garden plantings.

Adaptation

The rabbiteye blueberry (*Vaccinium ashei*) is the primary species of blueberry grown in Louisiana. Rabbiteye blueberries can be grown successfully in most areas of the state, except in the extreme southern coastal areas, where the lack of sufficient cold to satisfy chilling requirements may limit production.

Site Selection and Preparation

Full sun is desirable, but up to 50 percent shade is usually acceptable. Yield is reduced with increasing shade. Select a site that has sun for at least half the day. Plant in a sunny location for maximum yield. Blueberries will grow in shady spots, but fruit production will be poor.

Site Preparation

Soil pH.

Blueberries require a lower pH than many other fruit and vegetable crops. Before planting blueberries, test the soil to determine the pH and amounts of nitrogen, phosphorus, potassium and organic matter present. You can find out what your soil pH is by taking a sample to your parish extension office. Blueberries require a soil pH of 4.0 to 5.3 for best growth. The primary material recommended for lowering soil pH is finely ground wettable sulfur. Since sulfur reacts slowly and must be converted by soil bacteria, the change in soil pH is brought about slowly. Therefore, sulfur should be added to the soil and mixed thoroughly several months to a year prior to planting.

The amount of sulfur to use for lowering the pH of the various soil types is given in Table 1. If your soil pH is in the range of 5.4 to 6.0, sulfur can be applied six months before planting to lower the pH. Sulfur also can be applied after planting to the soil surface but not mixed with the soil. Rates of up to 7/10 pound per 100 square feet can be used yearly, if needed.

If the initial soil pH is above 6.0, growing blueberries will be difficult unless massive amounts of peat moss or milled pine bark are mixed with the soil. Use 1 pound (2.5 cups) per 100 square feet on sandy soils to lower pH by 1 unit (for instance, from 6.0 to 5.0). Apply 2 pounds per 100 square feet for the same amount of pH lowering on heavier soils containing silt, clay or more than 2 percent organic matter. Try to achieve a pH of around 4.8; too much reduction can be detrimental to bush growth.

Organic matter additions.

Since Louisiana soils typically have a low organic matter content, incorporating peat moss or well-decayed pine sawdust or bark will improve plant survival and growth. Apply

3 to 4 inches of the organic material over the row in a band 18 to 24 inches wide and incorporate thoroughly using a rototiller or spade to a depth of 6 to 8 inches. For small plantings, the soil structure may be improved by the incorporation of organic materials such as peat, pine bark or leaf mold into the soil. Heavy soils require larger quantities than do lighter soils and are more difficult to maintain. Mix 2 to 5 gallons of wet peat moss or milled pine bark with the soil in each planting hole. Do not use any agriculture lime; blueberries require an acid soil.

Soil drainage.

Adequate soil drainage is essential. Blueberry plants will not tolerate excessive moisture (wet feet) for long periods. In low, poorly drained areas, set plants on raised beds 6 to 12 inches high and 4 feet wide. Arrange elevated rows to allow good drainage from between rows.

Irrigation.

Supplemental irrigation is essential in most seasons, and, on most soils, plants should be watered throughout the growing season when rainfall is inadequate. Irrigation of young plants is especially important. Adequate water is essential for plant growth and is important for fruit bud formation that occurs in the fall. Hand watering with a hose is possible for several bushes; however, a soaker hose will usually give more uniform wetting. In larger plantings, systems using micro-sprinklers have been more successful than point-source drippers. Even two drippers per plant often do not wet enough of the soil in the root zone. At least 50 percent of the area under the drip line should be wetted. The use of automatic timers on drip or microsprinkler irrigation systems can result in shallow root systems and root rotting if systems apply water daily. Apply irrigation no more than once every two days to reduce the chances of root rot infection.

Table1. Changing soil pH with sulfur.

Present pH of soil	Desired pH Value														
	4.0			4.5 (Blueberry Range)			5.0			5.5			6.0		
	Sand	Loam	Clay	Sand	Loam	Clay	Sand	Loam	Clay	Sand	Loam	Clay	Sand	Loam	Clay
4.0	0.0	0.0	0.0												
4.5	0.4	1.2	1.4	0.0	0.0	0.0									
5.0	0.8	2.4	2.6	0.4	1.2	1.4	0.0	0.0	0.0						
5.5	1.2	3.5	3.7	0.8	2.4	2.6	0.4	1.2	1.4	0.0	0.0	0.0			
6.0	1.5	4.6	4.8	1.2	3.5	3.7	0.8	2.4	2.6	0.4	1.2	1.4	0.0	0.0	0.0
6.5	1.9	5.8	6.0	1.5	4.6	4.8	1.2	3.5	3.7	0.8	2.4	2.6	0.4	1.2	1.4
7.0	2.3	6.9	7.1	1.9	5.8	6.0	1.5	4.6	4.8	1.2	3.5	3.7	0.8	2.4	2.6
7.5	2.7	8.0	8.2	2.3	6.9	7.1	1.9	5.8	6.0	1.5	4.6	4.8	1.2	3.5	3.7

Note: To convert value to pounds of sulfur required per acre multiply by 436. Several months may be required for bacteria to oxidize sulfur and lower the soil pH to the desired level. Use no more than 1 pound of sulfur per 100 sq. ft. on established plantings in any one year.

Varieties

The most important things to remember when getting started with rabbiteye blueberries is to plant more than one variety for cross-pollination. Rabbiteye blueberries are self-sterile and cross-pollination is necessary for fruit set. The pollinating variety has no influence on fruit yield or quality and all varieties will cross pollinate each other as long as bloom times overlap. To spread out the harvest season, it is a good idea to select early, mid- and late-season varieties. Climax, Chaucer, Choice and Woodard bloom early. Austin, Climax and Premier are

the earliest ripening rabbiteye varieties. To lengthen your harvest season, select one or more of these varieties and one or more of the other varieties. Baldwin, Centurion and Delite are the latest maturing rabbiteye varieties. Woodard is a good berry for fresh eating but develops a tough skin when frozen. Brightwell, Centurion, Tifblue and Powderblue are generally the most spring freeze resistant. With early, mid-season and late varieties, you should enjoy fresh blueberries for six weeks.

Early Season	Mid-season	Late Season
Austin	Bluebelle	Baldwin
Brightwell	Briteblue	Centurion
Climax	Chaucer	Choice
Premier	Powderblue	Delite
Woodard	Tifblue	



Plant Selection and Establishment

Fall or winter planting works best because it gives the plants an opportunity to become established before the stressful heat of summer. Be sure to order early if you plan to mail order bare root plants from a specialty nursery so your plants will arrive in time for winter transplanting. Containerized plants can typically be purchased from local nurseries for fall or winter planting. Separate the root ball of containerized plants before planting. This will prevent stunting of the plants caused by root-bounding in the planting hole. A 2- or 3-year-old nursery plant that's 12 to 36 inches tall will transplant well. The roots must be kept moist at all times between digging and replanting. Take care to prevent drying of the fibrous root system during the transplanting operation. Soak plant roots in water for several hours prior to planting. If planting is delayed, pack bare-rooted plants in moist peat moss placed around the roots.

The standard spacing for rabbiteye blueberries is 6 feet (in row) and 12 feet (between rows). For a quicker hedgerow effect, plant rabbiteyes 4 feet apart in the row. If developing individual specimen plants of rabbiteyes, use a spacing of 8 to 10 feet between plants.

Plant to the same depth as the plants were growing in the nursery if organic mulch will be applied on the surface. Look for the soil line markings on plants. When planting without mulch, plant 1 inch deeper to allow for soil settling, firm the soil around the plant with your feet and water thoroughly.

Prune back one-third of the top growth on potted plants and one-half of the growth on bare-root plants at planting. Remove low, twiggly growth entirely and tip remaining shoots to remove all the flower buds. Remove all the flower buds (plump rounded buds), so that the plants will not flower the first year. Prune newly set bushes as in Figure 1.

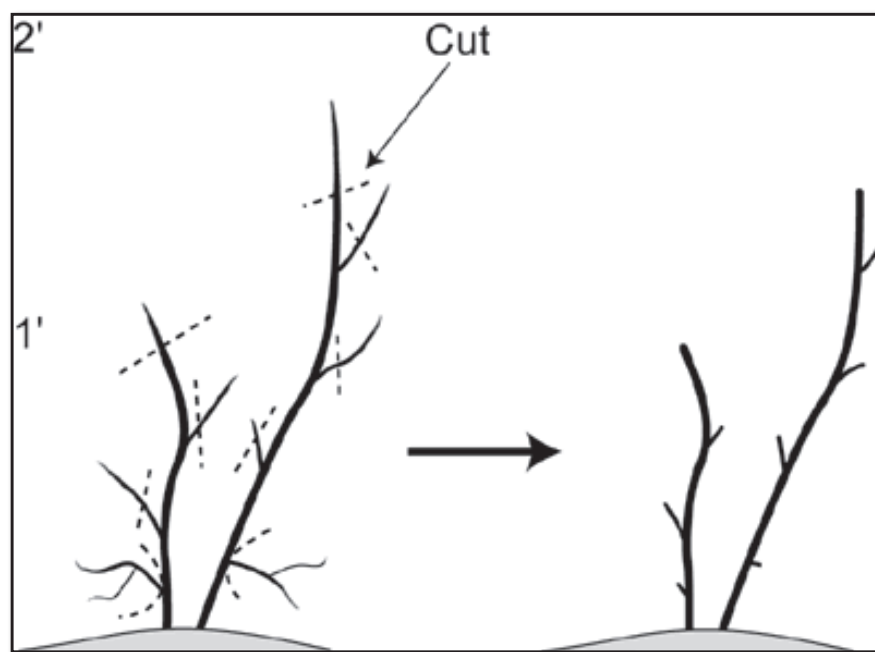


Figure 1: Pruning at planting. Remove low, twiggly growth entirely and tip remaining shoots to remove all the flower buds. About 1/2 to 1/3 of the plant top should be removed in this process. Mulch 4 inches deep with pine needles or pine bark after planting.

First Year Culture

Do not apply any fertilizer at transplanting. After new growth begins in the spring and rain or irrigation settles the soil, apply 2 ounces of azalea special fertilizer (4-8-8) or 1 ounce of 12-4-8 or 10-10-10 per plant. Refertilize at the same rate in May and July if rainfall or overhead irrigation has been good. Spread the fertilizer evenly over a circle 18 inches in diameter with the plant in

the center. The first year, remove any flowers or fruit that escaped the pruning process. Keep weeds and grass away from plants by hand cultivation and mulching with pine straw, leaves, wood chips or other weed free organic matter. Keep plant adequately watered. Young plants have a very limited root system and will quickly become stressed and plant loss will be high in unattended plantings.

Planting Culture in Subsequent Years

Fertilization.

In March and July of the second year apply 2 ounces of 10-10-10 or 12-4-8 or 3 to 4 ounces of azalea special fertilizer (4-8-8). Never overfertilize; fertilizer damages blueberries easily until they are established. Spread the fertilizer evenly over a circle 24 inches in diameter with the plant in the center.

From the third season on, base the amount of fertilizer applied on the size of the bushes. If your soil tests high in phosphorus, use 12-4-8. If your soil tests low or medium in phosphorus, use 10-10-10. Use "premium grade" fertilizer if possible; this type contains secondary and micronutrients that may be needed. Apply 1 ounce of 12-4-8 or 10-10-10 per foot of bush height at the time of bud break in the spring and after harvest in the summer. Continue to increase the amount of fertilizer applied yearly until the bushes are 8 feet tall. Bushes 8 feet tall or taller should receive the maximum rate of 8 ounces of fertilizer per bush. Spread the fertilizer evenly under and around the bushes.

Since most Louisiana soils are low in magnesium, magnesium sulfate (Epsom Salt) may be necessary to obtain maximum plant growth. A soil test is the easiest means to determine the need for magnesium. When the calcium/magnesium ration exceeds 8:1, blueberry plants will likely respond to an application of magnesium.

Weeds and Pests.

Continue annual weed control around the plants by hand weeding or careful application of herbicides. Heavy mulching is an excellent way to control weeds while adding organic matter to the soil, conserving moisture and moderating soil temperatures. Blueberries seldom require spraying for pests. If, however, pests attack them, see your parish extension agent for pest-control recommendations.

Bird Protection.

Birds love to harvest blueberries. They can consume the complete crop from a small planting. The only practical control while the fruit is ripening is draping plastic or cloth netting over the bushes or from a framework.

Pruning.

After establishment, rabbiteye blueberries require little pruning until they reach about 6 to 8 feet in height. At this point, a cane renewal pruning program should be started. Remove one to three of the largest canes each winter at zero to 24 inches from ground level or a total of about 20 percent of the canopy (Figure 2). Over a period of five years the bush will be totally renewed. New, more productive canes will sprout from the old canes and will sprout below ground level. In addition, excessively tall canes can be pruned back to 6 to 8 feet each winter.

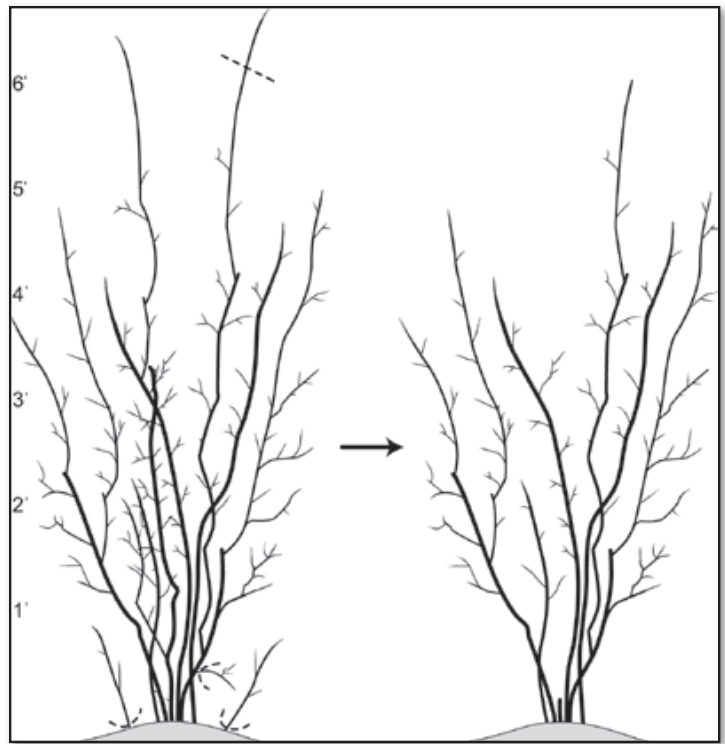


Figure 2. Cane renewal of rabbiteye blueberries 6 feet and taller. Remove one to three of the oldest, tallest canes each winter or about 20 percent of the canopy. In addition, excessively tall canes can be pruned back to 6 to 8 feet.

Yield Chronology

Blueberries usually begin bearing the second or third year after transplanting. All fruit should be stripped from the plants the first year following transplanting. Since fruiting is competitive with plant growth, it also may be desirable to remove all flower buds the second year after planting and plan on your first harvest in year three. Yields usually increase up through the seventh to eighth year as the plant increases in size. With good care, mature rabbiteye plants should produce more than 10 lb or 15 pints each year.

Harvest Frequency

Rabbiteye blueberries will be of best quality when picked about every 10 days. This allows for maximum flavor with few soft overripe fruit.

Cultivated blueberries are a great fruit for the home planting. The berries are large and they are easy to pick. To freeze them, pack the berries dry in plastic containers and place in the freezer. A small amount of frozen berries can be removed from the container and washed afterward.

Author

David G. Himmelrick, Professor (Horticulture)
School of Plant, Environmental and Soil Science



Visit our Web site: www.lsuagcenter.com

Louisiana State University Agricultural Center
William B. Richardson, Chancellor
Louisiana Agricultural Experiment Station
David J. Boethel, Vice Chancellor and Director
Louisiana Cooperative Extension Service
Paul D. Coreil, Vice Chancellor and Director

Pub. 1978

(2.5M)

5/09 Rev.

Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.