

HOME FRUIT PRODUCTION: BLUEBERRIES

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Introduction-

Blueberries can be an excellent fruit crop for the homeowner. The blueberry fruit is delicious eaten fresh, or used in pies, pancakes, muffins and a host of other dishes. Blueberries freeze well, and easily, and thus can be available all year.

The blueberry bush is an attractive ornamental plant that does justice to any landscape. It has beautiful, whitish, bell-shaped flowers in the spring, attractive green berries that ripen to a beautiful blue overlain with a whitish "bloom" during the summer, and most cultivars exhibit an attractive autumn red leaf color.

Given good growing conditions, expect the blueberry bush to yield about a pint of berries the third year after planting and up to 20 pints per bush by ten years. So plant accordingly - perhaps 3 to 6 plants will provide a good landscape setting and all the blueberry fruit the family can use.

Location and Soils-

Blueberries must have full sun. Perhaps some shade late in the afternoon would be beneficial during hot summer days, but eight hours or more of full sunlight will give the best growth response.

Blueberries require a special soil for proper growth--similar to that required for azaleas and rhododendrons. The soil should be in the pH range of 4.6 to 5.2. It should be plentifully supplied with organic matter and moderately fertile.

A soil test would be highly desirable. For information contact your County Extension Center. For testing pH, there are some inexpensive pH kits at garden centers and hardware stores that would enable frequent checks of soil pH.

Soil conditions for blueberries must permit good water drainage (blueberries do not like wet feet) and good aeration for proper root development. For the homeowner, this can be accomplished by planting in raised beds or landscape developed berms (mounds).

Organic matter should be added to the soil during bed preparation. Compost, leafmold, well rotted animal manures (not poultry) make excellent organic additions to the soil. Perhaps the best and most common organic source is sphagnum peat moss. It can provide organic matter and also assist in providing the needed acidifying effect on the soil. Use a minimum of 2 cubic feet of sphagnum peat moss per 100 square feet of soil.

Phosphate and potash fertilizers should be added to the soil during bed preparation in the amount indicated on the soil test. Without a soil test, apply for each 100 square feet of blueberry bed, 1 lb. 0-20-0 (superphosphate) or 1/2 lb. 0-46-0 (triple superphosphate) plus 1/2 lb. 0-0-60 (potash).

To correct a pH inadequacy, consider the following -- For a pH up to 5.5, the addition of sphagnum peat moss as suggested above will be adequate. For a pH 5.5 to 6.0, add one pound of microfine wettable sulfur per 100 square feet of bed. For a pH 6.0 to 6.5, add 1.5 lbs. microfine wettable sulfur per 100 square feet of bed. For pH levels above 6.5 use 2 lbs. microfine wettable sulfur per 100 square feet of bed and double the amount of sphagnum peat moss suggested earlier. Do not use aluminum sulfate to correct a pH inadequacy!

Work the necessary organic matter, sphagnum peat moss, fertilizer and sulfur into the soil with a tiller or spade to a depth of about six inches. You are now ready to plant.

Cultivars (varieties)--

Several species of blueberries are grown in the United States. Of these, the highbush blueberry is best adapted to Missouri climatic conditions. Of some two dozen highbush cultivars, the following are those that have performed best in Missouri and the neighboring states of Arkansas and Illinois:

Early season (late June, early July)

Spartan

Collins

Midseason (July)

Blueray

Bluecrop

Late midseason (late July, early August) Coville

Herbert

Late season (August)

Lateblue

Elliot

Two year old plants are the best buy. Plant two or more cultivars to benefit from the effects of cross pollination--earlier ripening, more and larger fruit.

Planting Tips-

Blueberries may be planted in the fall or in the spring. Greatest success is likely with fall soil preparation and spring planting. After the soil has been properly prepared, open a hole where the plants are to be placed to adequately accommodate the depth and spread of the blueberry roots. Take a big, double handful

of previously moistened sphagnum peat moss (but squeezed out) and mix with the soil from the hole. Set the plant with roots spread out laterally on this soil:peat mix and cover all the roots with about an inch of mix. The plant will be essentially the same depth as it was in the nursery. Space plants 4 to 6 feet apart.

Do not let the roots be exposed to drying winds and sun during planting. Do not use fertilizers when setting out blueberry plants. And water each plant after setting.

Mulching-

It is important to use and maintain a mulch on blueberries to: 1) provide a more even moisture level in the root zone; 2) provide protection to the root system from extremes of heat and cold; 3) maintain the proper mulch depth; 4) prevent competition from weeds.

The most commonly used mulches are sawdust and wood chips, or better yet, a combination of sawdust and wood chips. Sawdust alone tends to "cake" and prevent adequate water penetration. Disturbing the sawdust every few weeks with a rake or rotary hoe will prevent serious compaction.

Other mulching materials to consider are chopped corncobs, straw, previously dried grass clippings and mixed chopped leaves. Mulch to depth of 4 to 5 inches and maintain this depth by additional mulch in July (to protect from heat) and November (to protect from cold).

Mulch of this depth should control most weeds. Weeds that do grow through the mulch should be removed while still small by hand pulling.

Fertilization-

Once the basic soil fertilizer needs have been satisfied (during soil preparation of the blueberry bed), blueberries seem to respond primarily to applications of nitrogen. Specifically Ammonium forms of nitrogen, including urea. Avoid using nitrate forms of nitrogen.

Some of the turf fertilizers on the market today would seem to be ideal for blueberries. They have a high ammoniacal or urea content of nitrogen (always check the label!) and low levels of phosphate and potash. Caution! Do not use turf fertilizers that contain lawn herbicides or insecticides or fungicides! Other fertilizers suitable for blueberries are ammonium sulfate and urea. Blueberries seem to respond to rather frequent light applications of fertilizer. Feeding about once a month during spring and early summer may give best results. The following table attempts to specify the nitrogen needs of the plant with the soil situation.

Amount to Apply per 100 Square Feet of Blueberry Bed*

Nitrogen Source**	April	May	June	July
Urea (467 N)	3 oz.	2 oz.	2 oz.	2 oz.

Ammonium sulfate (21% N)	6 oz.	4.5 oz.	4.5 oz.	4.5 oz.
Turf fertilizers (10-1-1 ratio)	4.5 oz.	3 oz.	3 oz.	3 oz.

ex. -30-4-4, 28-3-3

*Apply the type and amount of fertilizer chosen evenly over the 100 square feet of blueberry bed--not just around the plant. To prevent loss of the ammonium form of nitrogen, water in the nitrogen immediately after application.

**Use urea if the soil pH is in the optimum range (4.6 to 5.2) and phosphate and potash levels in the soil are moderate to high.

Use ammonium sulfate if the soil pH is above 5.2 and phosphate and potash levels in the soil are moderate to high.

Use a 10-1-1 ratio lawn fertilizer if pH is in optimum range (4.6 to 5.2) and phosphate and potash levels are low to moderate.

Alternate use of ammonium sulfate and 10-1-1 ratio lawn fertilizer if pH is above 5.2 and phosphate and potash levels in the soil are low to moderate.

***Most turf fertilizers contain some slow release forms of nitrogen.

The amount of slow release nitrogen should be less than 1/3 of the total nitrogen in the fertilizer. Read the labels carefully!

A final comment on using fertilizers--the satisfactory performance of your blueberry plants is the ultimate response desired. If, using the fertilizer program(s) suggested above your plants show poor growth (pale leaf color, weak, spindly stems and low production) you may need to apply additional nitrogen. Please note that it may take a year or two to stabilize the nitrogen:mulch complex. On the other hand, if your plants seem excessively vigorous and have a dark green leaf color you may have to reduce the rate of nitrogen application or withhold one or more applications.

Watering-

The blueberry is a shallow, fibrous rooted plant with no root hairs. Therefore, blueberry roots must be kept moist. During the summer check young, succulent shoots on hot days. If the tips of the shoots droop or wilt the plants are in need of additional moisture. As a general rule, water your plants twice a week (three times during hot, dry weather).

Check the soil:mulch complex once a week Apply more or less water as needed. Water management is important on blueberries -- and you are the manager!

Water management

Pruning-

Three concepts to remember about pruning blueberries:

1. During late summer and early fall, flower buds are formed on the tips of current season's shoots.
2. Blueberries tend to produce excessive, unproductive wood.
3. Profitable production decreases after the canes reach about five years of age.

So, in pruning blueberries, leave the vigorous terminal shoots and branches--they produce the berries; prune out damaged, weak, crowding and diseased shoots and branches; after five or so years, remove one to three of the older branches and renew with one to three new shoots from the base of the plant each year.

Remove all weak, spindly growth from newly set plants. Remove all flower buds by tipping back flowering shoots or rubbing off blooms after they emerge. Do not permit fruit to form the first year. Fruit only the most vigorous bushes the second year, but very lightly. During the life of the blueberry planting, larger berries will be obtained by thinning out some of the blossom clusters on each shoot.

Bird Protection-

Birds love blueberries. Without some kind of protection, birds can harvest most of the crop. Some provision must be made to protect against bird pilferage. When all is considered, the only effective method of bird control is the use of netting--wire, plastic, nylon, etc. This means a framework of some kind must be erected and netting put into place as the first berries ripen.

Harvesting-

Highbush blueberries ripen one or two at a time in the cluster. Ripe berries should be rolled from the cluster with the thumb into the palm of the hand, then placed in container. Beware of harvesting immature berries--those that may look ripe, but really have a reddish cast to the berry. Berries will become fully ripe some 3 to 5 days after turning "blue". They are then at the peak of flavor and attain largest size. Overripe berries tend to shrivel and drop from the bush.

During the harvest season pick berries at least twice a week. Berries will keep in the refrigerator for about a week. Freeze berries as soon as possible after harvest.

Insects and Diseases-

Blueberries are subject to numerous diseases and a few insect pests in areas of prevalent production. However, in Missouri, blueberries are a relatively new crop and the incidence of pest problems are low. If one obtains virus free plants, pest problems are not likely to be troublesome into the near future.