

Growing Blueberries in the Home Garden

Blueberries can be grown in home gardens anywhere in North Carolina, if the right species and proper soil modifications are used. Blueberries are typically used in the landscape as hedges for screening purposes, but they can also be used in cluster plantings, or as single specimen plants. Blueberries are an ideal year round addition to the landscape. They have delicate white or pink flowers in the spring, the summer fruit has an attractive sky blue color, and the fall foliage adds great red and yellow colors to the landscape. In addition, blueberry plants lend themselves to the "organic" approach of gardening, because pesticides are rarely needed in home garden plantings.

Soil pH - Blueberries require a lower pH than many other small fruit crops. Before planting, take a soil test. Apply wettable sulfur (90% S) if pH is above 5.3 for rabbiteye blueberries or 5.0 for highbush blueberries. Use 1.0 pound (2.5 cups) per 100 square ft on sandy soils to lower pH by 1 unit (for instance, from 6.0 to 5.0). Apply 2.0 pounds per 100 square ft for the same amount of pH lowering on heavier soils containing silt, clay or more than 2% organic matter. Try to achieve a pH of around 4.8; too much reduction can be detrimental to bush growth. Apply sulfur at least 3 to 4 months before planting, and take another soil test before planting. If pH is still above the acceptable range, additional sulfur can be applied. If you must plant without an initial soil test, mix 1 cubic ft of peat moss with an equal amount of sand. On a heavy clay soil or a soil that sometimes remains wet, put the peat-sand mixture on the soil surface. If you are certain the soil has good internal drainage, part of the peat-sand mixture can go in a hole or furrow several inches below the soil surface. However, leave enough of the peat-sand mixture to form a mound (single plant) or ridge (row of plants) at least 6 inches above the surrounding soil surface. The mound or ridge will insure against damage from excess water, however, with this planting method, water thoroughly 2 to 3 times per week during dry periods, because the raised peat-sand mix will dry out quickly.

Organic Additions - If the soil contains less than 2% organic matter (OM on soil test report), 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 roto-tiller or spade to a depth of 6 to 8 inches. Preparing the beds in the fall will allow planting earlier in the season (late February to late March depending on the location). If the organic material is incorporated in the fall, any sulfur required to lower the pH can be added at the same time. Avoid opening a furrow, adding the organic material and planting directly in the pure organic material. Water and nutrient management is likely to be difficult in the pure organic material and plants are more likely to become weak and die.

Drainage - Blueberry plants require excellent soil drainage, so provisions for drainage must precede planting. Soil maps or observing the soil profile may be helpful in predicting internal drainage. Alternatively, digging a "dry well" can be a very effective means of determining soil drainage. Dig a hole(s) 6 to 8 inches deep and observe the water level following heavy rains. Water should not remain in the hole for more than 24 hrs, otherwise select another site or plant on ridges high enough for the water level to reach 6 to 8 inches deep within 24 hrs.

Irrigation - In most seasons and on most soils, irrigation is absolutely essential the year of planting. 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 2 drippers per plant often do not wet enough of the soil in the root zone. At least 50% of the area under the drip line should be wetted. The irrigation system must be designed for the higher output of micro-sprinklers (about 10 gal per hr) compared with 1 or 2 gal per hr for drippers. Align the micro-sprinklers to avoid saturated soil around the crown of the bushes. 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.

Sun Versus Shade - Full sun is desirable but up to 50% shade is usually acceptable. However, yield is reduced with increasing shade, so plant in a sunny location to achieve maximum yield.

Planting

- a) **Plants** - 2- or 3-year old nursery plants 12 to 36 inches tall will transplant well. The roots must be kept moist at all times between digging and replanting.
- b) **Time** - Late winter (Feb-Mar) as soon as the soil can be worked is best for bare-root plants; Fall (Nov-Dec) planting has been successful on sandy soil in the southeastern Coastal Plain with bare-root plants and in the other areas with potted plants.
- c) **Spacing** - Plant highbush varieties every 4 to 5 ft in the row and 8-10 ft between rows. Plant rabbiteye varieties every 6 ft in the row and 10 to 12 ft between rows.
- d) **Depth** - Plant to the same depth as the plants were growing in the nursery if organic mulch will be applied on the surface. When planting without mulch, plant 1 to 2 inches deeper to allow for soil settling, firm the soil around the plant with your feet and water thoroughly.
- e) **Cut Back** - Prune approximately $\frac{2}{3}$ of the top growth on bare-root plants and $\frac{1}{2}$ on potted plants, leaving only 1 to 3 of the most vigorous upright shoots. Remove any remaining flower buds (plump rounded buds), so that the plants will not flower the first year.

Fertilization

- a) **Use Caution** - Blueberries are easily damaged by excess fertilizer. Apply the recommended amount from a soil test report and allow 4 inches of rain or an equivalent amount of irrigation between applications.
- b) **First Year** - Do not fertilize immediately after planting. Wait until the first leaves have reached full size, then apply 1 Tbs of a special azalea fertilizer, 12-12-12 or 10-10-10 within a circle 1 foot from the plants. Repeat application of fertilizer at 6 week intervals depending upon rainfall or irrigation until mid-August in the Coastal Plain and mid-July in the Mountains. Use $\frac{1}{2}$ Tbs of ammonium nitrate instead of the complete fertilizer for the second and subsequent applications if phosphorus was above 60 on the soil test.
- c) **Second Year** - Double the first year's rates, but increase the circle around plants to 1 $\frac{1}{2}$ ft . Apply the first application when new growth begins in spring.
- d) **Bearing Plants** - When growth begins in the spring, apply 1 cup of complete fertilizer such as 10-10-10 within a circle 3 ft from the plant. If more vigorous growth is desired, sidedress with $\frac{1}{4}$ cup of ammonium nitrate at 6 week intervals. On mature bushes 6 to 12 inches of new growth is adequate for optimal balance of plant size and yield. Additional growth must be pruned away. This may result in a loss in production, but it is necessary to keep the plants from becoming excessively large. Determine sidedressing requirement based on the amount of shoot growth.
- e) **Lowering pH** - If the soil pH is slightly high in an established planting based on a soil test; then sidedress with ammonium sulfate rather than ammonium nitrate. If the pH is 0.5 units or more above the acceptable range, apply wettable sulfur in a narrow band under the drip line of the bush at the rate of 0.1 lb per bush to lower pH 1 unit.

Mulching

Organic material such as bark, wood chips, sawdust or pine straw as a 3- to 4-inch mulch on the surface after planting results in more uniform soil moisture, reduces soil temperature and generally promotes better bush growth and survival. Pine bark, chips or sawdust have a pH of 3.5 to 4.5 and are more desirable than the same mulches from hardwood with an associated pH above 5.0. However, hardwood mulches on the surface have been satisfactory. Avoid sticky hardwood sawdust that will "seal" the bed and prevent water infiltration.

Weed Control

- a) **Mulched** - Mulching home blueberry plantings is the best form of weed control. If mulch is applied following planting and replaced at the rate of 1 inch per year, few weed problems should develop. Hand pull or hoe the occasional weed growth. If row middles are in sod, mow often to reduce invasion by runner grasses and weed seeds into the mulched area.
- b) **Not Mulched** - Avoid deep cultivation since blueberry roots are very near the surface. Hoe no more than about 1 inch deep. In addition, hoe often (once every 2 weeks) when weeds are germinating to reduce competition with bush growth and to prevent disturbing the roots that will occur when large weeds are removed.
- c) **Herbicides** - Homeowners can use some chemical herbicides to control weeds. Please contact your local county extension agent for current recommendations.

Pruning

- a) **Rabbiteye** - During the first 3 years, pruning is very similar to highbush; however, excessively tall and limber shoots will need cutting back to stimulate branching and strengthen the shoot. With mature bushes that are excessively vigorous in spite of low rates of fertilization, cutting back the excessively vigorous shoots in late July will help control bush height and increase yield. Winter pruning of mature bushes is also similar to the recommendation for highbush except detailed thinning of fruiting shoots on each cane is less critical, and more suckers (shoots developing a distance from the crown) will require removal.

Harvest

- a) **Yield** - With good care, mature highbush and rabbiteye plants should produce more than 10 lbs each year. Rabbiteye varieties can, on occasion, produce up to 25 lbs per plant.
- b) **Bird Protection** - Birds love to harvest blueberries. They can consume the complete crop from a small planting. Plastic or cloth netting draped over the bushes or supported on a framework, while the fruit is ripening, is the only practical control.
- c) **Frequency** - Highbush blueberries will be of best quality when picked every 5 to 7 days, depending upon temperature. Rabbiteye flavor improves if berries are picked less often - about every 10 days allows for maximum flavor with few soft overripe fruit.

Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention or listing of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage and examine a current product label before applying any chemical. For assistance, contact an agent of the North Carolina Cooperative Extension Service in your county.



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