More people enjoy eating blueberries than growing them, yet blueberries are exceptionally handsome bushes worthy of planting in the home landscape. The blueberry fruit can be eaten fresh, or frozen for out-of-season use. Plants have a profusion of white blossoms in late spring. Leaves are glossy green in summer and have outstanding red foliage in autumn.

Blueberry growing presents a challenge for most gardeners because the plants need special growing conditions. They require acidic, well-drained soils, which are not common in most Minnesota landscape situations. When the initial pH is less than 7.0, most soils can be amended to make them suitable. In western Minnesota, where the native pH of the soil is greater than 7.0, amending the soil to a suitable range is not possible. Winter hardiness is also a consideration. Production should be successful if cultivar recommendations for your particular area of the state are followed.

Site
Blueberries grow best in a sunny location. Plants will tolerate partial shade, but as shade increases, plants produce fewer blossoms and fruit production declines. Avoid areas surrounded by trees which provide too much shade, compete with plants for water and nutrients, and interfere with air movement around plants. Poor air movement increases danger of spring frost injury to blossoms and favors disease development.

Soil
Blueberry plants grow best in acid soils (pH 4.0 to 5.0) that are well-drained, loose, and high in organic matter. The soil water level should be at least 1 foot below the soil surface or roots will suffocate. Soil pH (degree of acidity or alkalinity) can be determined by sending a sample of the soil to the University of Minnesota Soil Testing Facility. Instructions for taking a soil sample, and containers for sending a sample can be obtained through your county extension office. Most garden soils in Minnesota have pH readings above those that are optimum for blueberries (most soils are too alkaline).

Soil Preparation
Blueberry plants are long-lived so considerable time and effort in preparing the soil is a wise investment. Soils not within the range of pH acceptability for blueberry plant growth must be prepared BEFORE planting. If the pH is too high, the growth of the plant is slowed and the foliage turns yellow. If the pH is too high for an extended period of time, the plants will die. When several plants are to be grown together, more satisfactory results will be obtained if an entire bed is prepared rather than digging holes for individual plants.

If the pH of the soil is between 5.5 and 7.0 and the texture is sandy to sandy loam, the following method can be used. Mix 4 to 6 inches of acid peat into the top 6 to 8 inches of soil. In addition to acidifying the soil, the peat increases the soil organic matter content.

Different sulfur compounds can be used as well. For 50 cubic feet of sandy soil, use one to two pounds of elemental sulfur to reduce the pH one point. You will need to use three to six pounds to get the same effect in loam soils. Fifty cubic feet is the amount of soil in a space 10 feet by 10 feet by 6 inches. Elemental sulfur takes at least one year to adjust the pH.

Iron sulfate can also be used to acidify soils. This material reacts much faster than elemental sulfur (less than 1 month); however, the cost is greater. Multiply the rate of elemental sulfur needed by six to determine the required amount of iron sulfate. Aluminum sulfate is not recommended as high rates of this compound can be toxic to roots.

Soils with a pH greater than 7.0 will require higher rates of acidifying amendments and are not recommended for blueberries.

In addition to an acid soil, blueberry plants require a soil that is well aerated and has a high water-holding capacity. Most garden soil is not good blueberry soil, so modification of the soil is frequently necessary. Prepare the soil to accommodate one plant by removing soil from a space 15 inches deep by 24 inches wide by 24 inches long. Replace this soil with one prepared from 2 bushels well-rotted sawdust, leaf mold, or peat; 1 bushel loam soil; and 1 cup wettable sulfur. Mix well and refill the hole with this mixture.

Cultivars
The University of Minnesota fruit breeding program has released six cultivars that are suitable for planting...
in Minnesota. The above table gives characteristics for the cultivars. Planting more than one cultivar is recommended for pollination.

**Planting**

Plant young blueberry bushes in late April or early May, spacing them 3 to 4 feet apart. Dig the holes large enough to accommodate all the roots and deep enough so you can cover the uppermost roots with 3 to 4 inches of soil. Pack the soil firmly around the roots, then mulch the planting with 2 to 4 inches of sawdust, peat moss, or chopped straw. Surface mulch helps maintain uniform soil moisture and good soil structure and reduces soil temperature in the summer. Replenish the mulch as needed. Water the planting frequently enough to keep the soil moist but not saturated throughout the life of the planting.

**Care of the Planting**

In the first two years remove flowers in the spring to encourage vegetative growth. Encouragement of vegetative growth is essential for healthy plants in the following years. Production of flowers and fruits deters growth when plants are too small or weak. A good-sized, healthy canopy is needed to support the fruit. The need for fertilizer will be indicated by plant growth and foliage color. Generally one application of an acid-producing fertilizer each year will be sufficient. Do not fertilize after the blooming period; late fertilizing will encourage late growth in the fall which, in turn, can cause winter injury. The nitrogen used should be in the ammonium form (ammonium sulfate) rather than the nitrate form (calcium nitrate). An azalea fertilizer that is properly formulated for acid-loving plants works well for a small planting. Follow the manufacturer’s instructions as to amount and method of application. The objectives of pruning are to remove dead and diseased wood, shape the bush, maintain an adequate number of vigorous main stems to prevent overbearing, and to stimulate new shoot growth. Pruning new bushes is needed only to remove any dead or dying parts of branches. After the fifth year, prune the bushes annually in the early spring, just before growth starts. Fruit is produced on one-year-old wood. The largest berries are produced on the most vigorous wood, so a good supply of strong, one-year-old wood is desirable. Excessive pruning should be avoided because it greatly reduces the crop for that year. Keep the bush fairly open by cutting out any weak, old stems that no longer produce strong young wood at ground level. Keep four to six of the vigorous older stems and one to two strong new shoots per mature bush. The new shoots will eventually replace the older stems.

Plants tend to overproduce. Often, if all the flowers are left to develop into berries, berries will be small and late ripening and plants will have little new growth. To avoid this, remove most of the thin, weak branches that have many flower clusters and few leaves. This type of pruning can be delayed until the extent of flowering can be determined. Try to have a good balance between berry production and growth of vigorous new shoots.

**Pests**

Blueberries are very attractive to birds. Birds can eat the entire crop of a small planting if it is not protected. Covering the individual bushes or the entire planting with netting supported by a light frame is the best protection. Secure the netting so there is no place for the birds to enter. The fruit ripens over a 3-week period, and you will have to remove the netting to harvest. The netting should not shade the plants or they will not flower well the following year. Completely remove the netting after harvest.

Young branches of blueberry bushes are attractive to rabbits. Most of the damage from rabbits occurs during the winter when other food is scarce. If rabbits are a problem, enclose the planting with a fine chicken-wire fence. The fence must be high enough so the rabbits cannot get over the top when the snow is deep. Insects and diseases are not likely to cause problems with most plantings. Careful pruning will help prevent disease infection. Prune out and destroy any part of the plant that is dead or dying. Examine the plants for cankers, that first appear as small, reddish, discolored areas on the stems. As the affected areas enlarge, the margins remain reddish and the bark in the central part turns gray and then brown. Cankers occur most frequently close to the ground but may occur higher on the stem. Stems are usually girdled in one season by cankers. Girdled stems die and their brown foliage is quite obvious. Cut out affected parts several inches below the cankered area.