

## Pruning Blueberry Plants in Florida <sup>1</sup>

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Pruning has long been recognized as a beneficial cultural practice in blueberry growing. Skillful pruning requires experience and growers generally develop their own style which may be slightly different from their neighbor's, but should accomplish the same objectives. The following text discusses some basic principles of pruning and provides a few suggestions and observations which may be helpful in determining how and when to prune blueberries in Florida.

Pruning benefits blueberry production in several ways:

- it aids in the establishment of young plants by balancing the top with the root system and limiting fruit production;
- it aids in the development of desirable plant size and shape that facilitates other cultural practices such as harvesting;
- it increases plant vigor and promotes growth of new fruiting wood;
- it reduces the incidence and spread of certain diseases and helps control some pests;

- it prevents over-fruiting and enhances fruit size, quality and earliness and
- it improves sunlight penetration into the interior and lower portions of the canopy that is needed for continued fruit production there.

There are two basic types of pruning cuts commonly used in blueberries. They are:

- heading-back cuts which consist of cutting the terminal of a shoot back to a lateral bud, usually on one-year-old wood; and
- thinning out cuts which consists of complete removal of a shoot or cane at or near its origin.

Each type of pruning cut results in a different growth response and each has different purposes. Heading-back cuts stimulate growth of one to several lateral vegetative buds along the shoot, usually just below the cut. Heading-back cuts are used to limit bush height and width, stimulate growth of new fruiting wood, and adjust crop load. This type of pruning may be done mechanically, or by hand. Thinning out cuts are used to remove older, less productive, canes and rejuvenate bushes through increased production of new canes. They may also be used to thin out dense canopies and allow for better

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air circulation, and light and spray penetration. This type of pruning is usually done with hand loppers, pneumatic loppers, or pruning saws.

## Pruning During Plant Establishment

The general rule is to remove 1/3 to 1/2 of the top of young blueberry plants when transplanting them to the field (Fig. 1). Also remove weak, twiggy, growth near the base of the plant and side branches bearing flower buds. All flower buds should be removed during the first year, either by pruning or rubbing-off. Failure to remove flower buds from young plants can reduce canopy growth, delay plant establishment, and has resulted in high mortality rates of some southern highbush cultivars (Fig. 2 and Fig. 3). Containerized plants that are not pot bound and are provided with overhead or microsprinkler irrigation may require little if any pruning at planting except to remove flower buds. For 2-year-old plants, remove weak, twiggy, growth, and damaged or diseased wood, and continue to remove flowers from weak plants and from non-vigorous cultivars. This pruning should be done during the winter, prior to flowering and fruit set. If some cropping is desired during the second year, it is important to limit the number of flower buds through winter pruning so that canopy growth and establishment will continue in the presence of modest fruit production.

The goal during the first two to three years is to encourage canopy establishment through vegetative growth and to develop properly shaped plants for maximum fruit production in the following years. Mechanically harvested rabbiteye plants should be kept narrow at the base (18 inches or less if possible). Remove all side branches below 18 inches in the second and third year if mechanical harvesting is anticipated as these branches are typically below the catch plate (portion of a mechanical harvester which collects the fallen berries).

## Pruning Bearing Southern Highbush Plants

*Dormant pruning.* Annual dormant pruning of highbush blueberry plants is needed to prevent overbearing, maintain plant vigor, and enhance fruit quality and earliness. Dormant pruning should begin



**Figure 1.** A young blueberry plant pruned back to about 50% to 65% of its original size at transplanting from the nursery to the field.

during the late winter when flower buds are readily visible and should be completed before petal fall. Fruiting canes should be headed back if fruit load reduction is needed. This is particularly important for varieties that tend to set large numbers of flower buds and leaf poorly during the spring. Removal of low spreading branches and weak, twiggy, growth in the lower portions of plants can be done at this time. More severe pruning will be required in weak plants, and less vigorous cultivars. Extremely vigorous one-year-old shoots should be headed-back to stimulate lateral branch development. The overall goals are to adjust fruit load, stimulate vegetative growth for the next year's crop, and maintain proper plant size and shape.

For plants five to six years old and older, cane renewal will become one of the primary objectives of pruning. Individual blueberry canes that are 5 to 7-years-old become increasingly branched, twiggy,



**Figure 2.** Young 'Misty' plant with heavy fruit set and few leaves with probably die from blueberry stem blight before the end of the growing season.

and lose their vigor and productivity. When blueberry plants are between 5 and 6 years old, removal of some of the older canes should begin. This will stimulate the development of new, productive, canes. Each year, thinning cuts are used to remove approximately 25% of the oldest canes by cutting them back to strong laterals or close to the ground. Regular cane renewal pruning allows for constant long-term productivity with bushes that contain a mixture of canes of different ages. As plants age, a combination of thinning cuts and heading back cuts will be needed to meet the objectives of cane renewal, fruit load adjustment, maintenance of vigor, and proper plant size and shape.

*Summer topping.* In Florida, summer topping is used to stimulate vegetative growth of bearing southern highbush and should be done soon after harvest, usually during June (Fig. 4). Plants should be fertilized the week before pruning so they will



**Figure 3.** Young blueberry plant with blueberry stem blight caused by stress associated with fruit set without leaves.

renew vegetative growth quickly after pruning. Delaying summer topping can delay bloom and fruit harvest the following year. Post-harvest pruning stimulates new summer growth with leaves that remain health longer and abscise later during the fall than spring flush leaves. The summer growth flush following topping will contain many of the flower buds for next year's crop. Some observations indicate that summer pruning every other year increases yields to annual pruning. Some growers have devised mechanical hedgers, which are mounted on tractors, and can be used to mow the tops of the plants about 40 inches above the ground. Light-weight gasoline-powered hand-held hedge pruners are also available which can be used to cut the tops off of the plants after harvest. These are far faster than hand loppers and can be used to thin the bush canopy as well as remove the tops of the plants.



**Figure 4.** Southern highbush blueberry plants are topped in the summer soon after harvest to stimulate strong vegetative growth during the remainder of the growing season.

### Pruning Bearing Rabbiteye Plants

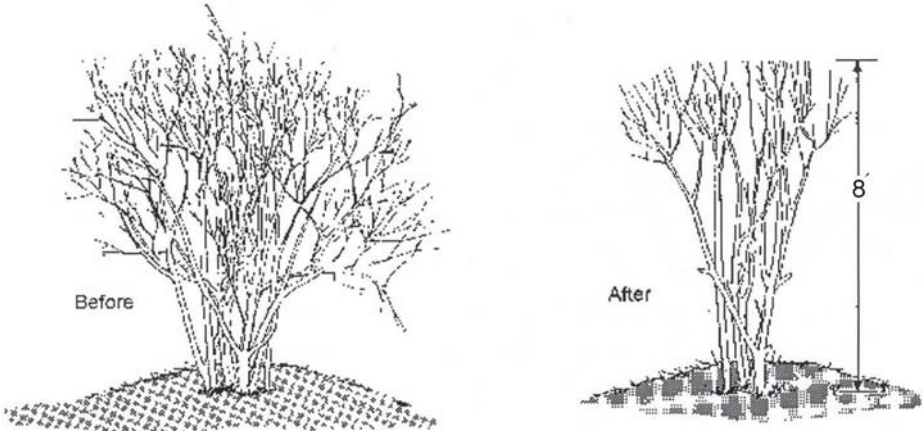
The objectives for pruning bearing rabbiteye plants are similar to those described above for southern highbush with the following exceptions. More attention may be given to narrowing the base of plants where mechanical harvesting is desired. Rabbiteye plants tend to be larger and more vigorous than southern highbush. As plants reach bearing age, more attention may be needed to limit plant height. Generally, rabbiteye plants are more vigorous and less prone to overbear than southern highbush plants. Dormant pruning with the specific objective of limiting fruit load is usually less important for rabbiteye than for southern highbush, but fruit size can be increased substantially by removing excess flowering wood. As rabbiteye plants reach 5 or more years old, selective hand pruning for cane renewal become one of the primary objectives (Fig. 5). Annual removal of 20% to 25% of the oldest canes prior to initiation of spring growth will stimulate the production of new canes and should result in plants with canes of different ages and a desirable balance of vigor and fruit production.

Moderate summer pruning may be combined with selective cane removal on early ripening rabbiteyes in Florida. Vigorous shoots that will grow

well beyond the desired canopy height can be identified and cut back to a desirable height. Other vigorous canes developing from the ground can be topped to stimulate branching and flower bud formation. Light mechanical topping done after harvest (July) can help maintain canopy height for mechanical or hand harvesting. Mechanical topping does not remove deadwood from the bush interior, nor does it allow for rejuvenation of the bush. Consequently, if mechanical pruning is to be used, some additional hand pruning will be required. As with highbush, alternate-year summer pruning may give higher yields than annual pruning, because the shoots that result from summer pruning tend to be unbranched the first year but will branch the second year.

### Rejuvenation of Rabbiteye Plants

Rejuvenation, or renewal, pruning of rabbiteye blueberry plants can be accomplished by one of several methods. Bushes can be hedged at one to two feet during the winter or summer, but this will significantly reduce yields for one or two years following pruning. In the Gainesville area, older Beckyblue and Bonita plants have responded well to what might be termed dormant severe renewal pruning (cutting entire plants back to a height of 12 inches). Two years after pruning, plants were about four feet tall and flowered heavily. This procedure should be considered only if plants have become unproductive through neglected pruning practices. When rejuvenating an entire field, growers may want to consider severe renewal pruning on only a portion of their planting during any given year in order to maintain some fruit production during the rejuvenation process.



**Figure 5.** Removal of one-fourth to one-fifth of major limbs at base of a mature blueberry plant.