

Barbados Cherry¹

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- **Common Names:** Acerola, West Indian Cherry
- **Scientific Name:** *Malpighia glabra* L.
- **Family:** Malpighiaceae
- **Origin:** West Indies, Central and South America
- **Distribution:** West Indies, Central and South America, southern Florida, Hawaii, and other tropical and subtropical regions of the world.

IMPORTANCE

Barbados cherry received considerable attention in the 1950's in Florida, Puerto Rico and Hawaii because of its extremely high vitamin C content. Approximately 100 acres were established in the late 1950's in Florida but this has decreased to less than 25 acres. Recent interest in this fruit as a natural source of vitamin C has not stimulated much interest in new commercial plantings but it will continue to be a popular fruit for the home garden.

DESCRIPTION

Tree.The Barbados cherry is a large, densely branched shrub or a small tree if pruned to form a central trunk. It varies in shape from a low and spreading habit to a more upright and open habit. It has slender branches with shiny light to deep green leaves which vary in size from 1 to 3 inches and in shape from ovate to obovate.

Flower.The small, attractive flowers range in color from pale pink to rose. They usually appear in April in southern Florida and flowering continues throughout the summer.

Fruit.The soft, juicy, thin-skinned fruit are light to deep crimson when mature. They average about an inch in diameter but vary from one-half to more than an inch. The three-lobed fruit are borne in leaf axils, singly or in clusters of 2 or 3. The flesh is yellow-orange and very high in vitamin C (ascorbic acid). Vitamin C content ranges from 1000 to 2000 mg per 100 gm in the edible portion of fully ripe fruit and may be as high as 4500 mg per 100 gm in

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partially ripe fruit. A single fruit of some selections could supply the daily adult requirement of vitamin C. The fruit from most seedlings is rather tart but from some it is sub-acid to almost sweet. The more acid fruit has the higher vitamin C content. The tree may have 3 to 5 crops per year, May to November, with the largest crops during the summer. However, this can vary with climatic conditions.

CULTIVARS

Barbados cherry seedlings are quite variable and fruit quality is usually not as good as desired. A number of improved selections have been developed. Homeowners should look for improved clones such as 'Florida Sweet' and 'B-17'. The latter is an acid selection with much larger fruit. Commercial producers may prefer to plant a more acid selection, higher in juice and vitamin C.

PROPAGATION

Barbados cherry is usually propagated by air layering (marcottage) or by hardwood cuttings. Air layering is best done during spring and summer while the plants are growing and requires 6 to 8 weeks for rooting. Leafy hardwood cuttings from healthy plants root within 2 months. Indolebutyric acid will help to induce rooting. It can also be propagated by side veneer or cleft grafts on young seedlings or on trees which produce inferior fruit.

CLIMATE AND SOILS

Barbados cherry is fairly tender to cold, especially when young, and is suitable only to south Florida and the warmest areas of central Florida. Mature trees can withstand temperatures down to 28°F for short periods without damage but young trees should be protected from cold below 30°F.

Barbados cherry grows well in a wide variety of soils, provided they are well drained and are not infested with nematodes. Planting sites should be treated for nematodes because of its susceptibility for this pest. This is seldom necessary in limestone soils, however.

PLANTING

The plants may be set out at any time of the year but the best time is spring, just before the rainy season. Choose sites with good water drainage and which are in protected locations if in Central Florida. The proper spacing depends on the particular clone used since some are upright and others are spreading. Specimen trees in home plantings should be allowed at least 15 feet of growing room. Plants in a border hedge may be set out as close as 2 to 4 feet apart. Rows in commercial plantings should be about 15 feet apart and spaced between trees within the row 6 to 8 feet for hedges and 12 to 15 feet if the trees are to be maintained as individual units. Isolated plants or groves of a single variety have usually set poor crops. Mixed plantings with different varieties should alleviate this problem.

MULCHING

The use of mulch is desirable, especially in sandy soils where nematodes are frequently a problem. Mulching helps to conserve soil moisture, control weeds and lessen nematode damage. The mulch may be straw, grass clippings, leaves, wood chips, sawdust or similar material.

FERTILIZATION

A complete fertilizer such as those used on citrus and other fruit trees should be used. Start with no more than 1/4 pound of 6-6-6-3 or similar fertilizer at monthly or bi-monthly intervals, increasing the rates to commensurate with growth. Avoid over-fertilizing since this can result in excessive vegetative growth and few fruit. Apply nutritional sprays annually or as needed.

IRRIGATION

An adequate supply of water is beneficial in promoting good growth and maximum yields of large fruit. It is especially important during the blooming and fruit development period. Irrigation is usually needed during the dry spring months while rainfall is usually sufficient during the summer and fall months.

PRUNING

Pruning can be useful in shaping trees and thinning growth. Some clones, such as 'Florida Sweet,' tend to grow more upright and open. The upright branches can be headed back to encourage more side branches for developing a less leggy, fuller tree. More bushy selections, producing numerous branches and forming thick growth, can be thinned to promote heavier yields. Early fall, after the plants have finished fruiting, is a satisfactory time to prune. Pruning should not extend into late fall since tender regrowth may suffer cold injury nor should it be done just previous to the new spring growth since this will reduce yields.

PESTS AND DISEASES

The most serious pest of the Barbados cherry is the root-knot nematode which weakens the plant, causing it to drop leaves and display symptoms of malnutrition. Severe infestations inhibit growth and fruit production. This nematode is a more serious problem in sandy soils than in the alkaline, rockland soils of Dade County. It is not a problem in marl or clay soils. Preventive measures include use of sterilized soil in propagation, fumigation of the planting site and heavy mulching around the tree.

Frequently, the fruit is attacked by plant bugs which sting the fruit, giving it a dimpled appearance. This may result in off flavors and reduced fruit size. There is no practical control for this pest. Other insects which attack the tree include various scale insects, whiteflies, aphids and caterpillars.

Cercospora leaf spot is the only disease problem on Barbados cherry of much concern in Florida where its occurrence is associated with high humidity. The spots are roughly circular, slightly sunken, dark brown lesions with gray centers and are surrounded by a yellow halo. The lesions occur on both leaf surfaces and are typically larger on young leaves than on mature ones.

YIELDS AND HARVESTING

Barbados cherry will flower and fruit the second year after planting and will be in good production in the third or fourth. The fruiting season normally

extends from April to November. The fruit should be picked frequently since it does not store on the tree. Ripe fruit must be carefully handled to avoid bruising and should be utilized as soon as possible or be frozen for future use. Half-ripe fruit usually will hold up well for several days under refrigeration.

USES

Barbados cherry can be used in many ways. It can be eaten fresh and is excellent for juice, by itself or in a mixture. It can also be made into jelly, jam, preserves, puree, pie, sherbet and wine. The fruit is also widely used in the health food industry as a natural source of vitamin C. In addition to the value of its fruit, Barbados cherry is an attractive shrub or tree which can be used for its ornamental value in landscaping.