

Blackberries

*Monte Nesbitt, Jim Kamas & Larry Stein
Extension Fruit Specialists, Texas AgriLife Extension*

Introduction

Brambles or caneberries are fruits in the *Rubus* genus, and include blackberries, raspberries (red and black), boysenberries, loganberries and other hybrids. The most important bramble for Texas is the cultivated blackberry, which is an improved form of wild southern blackberries or “dewberries”. Blackberries, unlike raspberries and many other brambles, tolerate the high summer temperatures of Texas well. Blackberry varieties are available today which bear large-sized fruit, have an extended period of harvest, can be thorny or thornless plants, and have improved firmness for transporting to more distant markets.



Blackberries are an excellent fruit plant for home landscapes, because they are relatively easy to grow in small areas, and bear nice fruit in spring, summer and fall. Although blackberries do have some challenging insect pests

and diseases, it is a fruit crop that works well for growers who want to follow Earth-Kind® Orchard and Small Fruit Crops production principles.

Blackberries have very high production potential, and fresh fruit commands good prices, making commercial production of blackberries a potentially profitable fruit crop in Texas. Labor requirements for harvesting fruit is very high, which restricts most commercial plantings to small acreage ventures. Machine harvesting blackberries is possible, but not practiced in Texas. Many small commercial blackberry farms have enjoyed success with Pick-Your-Own fruit sales.

Botany

Blackberries are biennial plants having two types of canes. Current-season canes are called “primocanes” and one year-old canes are called “floricanes”. Floricanes are flower-bearing canes, which die after the fruit crop matures. Cultivated blackberries today are classified into two fruiting types: Floricane-bearing, which only flower and set fruit on floricanes; and Primocane-bearing, which flower on primo-canes late in the growing season, and then bear on floricanes also.

Vegetative Primocane (foreground); Floricanes with flowers (background)

Fruit production of blackberries is directly related to primocane growth and vigor. Primo-

cane bearers are capable of producing a small crop the first year, and Floricane bearers can bear a crop of 2,000 lbs per acre the second



Primocane growth (foreground); floricanes blooming (background).

year if primocanes grow well the first year. Plants may produce for 15 years if managed; but, the best production is usually during years 3 through 8, depending on the variety. Good yields on healthy mature plantings range from 5,000 to 10,000 pounds per acre.



Abundant fruit set on healthy plants.

Soil

Blackberries grow best in sandy soil; however, they can be grown in soils that are at least one foot deep, have good drainage, and have a range of pH 4.5 to pH 7.5. On soils with a pH of 8.0 or above, plants will experience severe iron chlorosis and -the addition of chelated iron products will be needed. If internal soil

drainage is slow, planting on berms or raised beds is advisable.

Climate

Blackberries are a warm southern climate crop and can be grown anywhere in USDA Hardiness Zone 7, 8, or 9. Regular irrigation is needed for plants to grow well and for fruit to reach full size potential. Most blackberries have relatively low winter chilling requirement, and will fruit well in areas of the state that receive 300 hours or more below 45 F. Certain varieties from the University of Arkansas do have a higher chill requirement and should only be grown in the northern areas of Texas (Table 1).

Table 1.

Variety	Chill Hour Requirement
Kiowa	200
Ouachita	300
Arapaho	500
Natchez	500
Chickasaw	500-700
Navaho, Apache	800

Varieties

Blackberry varieties recommended for Texas fall into three categories: *Thorny*, *Thornless*, and *Primocane Bearing*. Primocane bearing varieties have not been grown long in Texas and should be considered experimental. Thorny varieties are generally the most productive and bear larger fruit than Thornless-types, but ease of harvest and pruning is a real advantage of growing thornless varieties. Combining all three types in a planting is recommended for most commercial growers and home gardeners alike.

Thorny Varieties

'*Brazos*'- a Texas A&M University variety released in 1959, has been the standard in Texas for 35 years. Its vigorous canes produce a high yield of large fruit and is typically the first blackberry variety to ripen. The acid-flavored fruit is usually recommended for cooking more than for the fresh market. Plants are drought

and heat tolerant, and exhibit good longevity and productivity.

'Rosborough' - a variety released by Texas A&M University in 1977, is an erect thorned blackberry and has large fruit which are sweeter than *Brazos*, and yields are often higher. It is the best early variety for East and South Central Texas.



'Rosborough'

'Womack' - released in 1977 by Texas A&M University, is an erect thorned blackberry and yields are similar to *Rosborough*, but fruit are smaller. It does best on deep, sandy soil.

'Brisson' - a variety released by Texas A&M University in 1977, is an erect thorned blackberry and has done better in south-central Texas and on black land clay soils. Fruit is very large and similar to 'Rosborough'.

'Kiowa' - released by the University of Arkansas in 1996 bears the largest-sized fruit of any variety currently available. Kiowa is the top performing Arkansas variety for Texas conditions, having good yields of high quality, large, firm berries.

'Shawnee' - is a 1983 release from the University of Arkansas, which is very productive, but is not being planted due to the success of Kiowa.

'Choctaw' - released by the University of Arkansas in 1989 is an early-maturing, erect variety which produces medium-large soft fruit. Seed size is small.

'Chickasaw' - released by the University of Arkansas in 1998 ripens a little before Kiowa, yields well and bears, large desirable fruit.

Thornless Varieties

'Arapaho' - released in 1993 by the University of

Arkansas, is an erect-growing, thornless variety that produces a medium sized, firm, high-quality fruit over a four-week season. Arapaho is very productive, has no thorns, and is resistant to both Double Blossom and Orange Rust. Arapaho is a lower chill variety suitable for zones 8-9 and above.

'Navaho' - released by the University of Arkansas in 1989, is an erect thornless variety which produces a firm, medium sized, sweet berry. It is difficult to establish from root cuttings, but produces a dense hedgerow after establishment. It ripens later than Arapaho, but yields are usually higher. Chilling requirement of Navaho is high and it should not be grown in central or south Texas.

'Ouachita' - released by the University of Arkansas in 2003, is a lower-chill variety, having mid-late season maturity, heavy yields, and firm berries. Fruit size is similar to Arapaho and Navaho.

'Apache' - released in 1999, is a high chill variety that bears large size, sweet fruit. Plants grow rapidly, but yields have been variable. White drupelet is a serious problem on Apache.

'Natchez' - released in 2007, combines desirable traits of large fruit size, good production and growth, with low chilling. Natchez has not been widely tested, but has shown very promising results where growers have tried it.

Primocane Bearing Varieties

'Prime-Jim' and *'Prime-Jan'* - these "sibling" varieties were the first primocane bearing varieties released by the University of Arkansas in 2004. They have not performed well in the hot, humid South, and should only be tried by hobbyists and home gardeners. These varieties set fruit on primo-canes from July to August, and then bear fruit on floricanes in May. Fruit are similar in size and quality to some of the thornless varieties. Canes are thorny.

'Prime-Ark 45' - is the newest primocane bearer from Arkansas, which has improved adaptation to hotter climates. Bears nice sized fruit on thorny primocanes in August-

gation lines can be buried at planting time, laid on top of the ground beside the plants and covered with mulch or attached to trellis wires. Begin irrigation in March or April and reduce watering by September in order to slow new growth and allow hardening of the canes. Infrequent winter irrigations may be needed during drought years.

Weed control is necessary to maximize yields and minimize harvesting problems. If there are perennial weeds in the planting area, these should be killed before planting, especially native dewberries which can harbor diseases and are near impossible to remove later. They may be sprayed with glyphosate or glufosinate the year before planting berries. A mulch of hay or rotted wood chips will help to slow weed growth. Preemergent herbicides, Surflan, Sinbar and low rates of Simazine, may be applied by commercial growers. Some growers have used black plastic or nylon weed barrier fabrics to aid in weed control.

Pests

Proper management and sanitation are important to keep blackberries vigorous and minimize problems. Some chemical control may be needed.

Double blossom (AKA “rosette”, or “witches broom”) is the most serious fungal disease in east and southeast Texas. Short, broom-like clusters of foliage arise from infected canes. Blooms appear large and misshapen with wrinkled and distorted petals and may have leaves in the flowers. Infected canes should be removed and destroyed, and wild berries in the area should be destroyed. Mowing plants to the ground may be necessary. Fungicides, including the strobilurins, can be used during bloom. Most of the thornless varieties are highly resistant to this problem; ‘Brazos’, ‘Womack’ and ‘Kiowa’ have some tolerance, but many of the other thorny varieties are highly susceptible.

Anthracnose is a fungal disease which produces small purplish spots on new shoots, and leaves in the spring and elliptical lesions on the emerging primocanes. A shot hole effect on



Healthy, normal floriculture (left); Double-blossom infection (right).

leaves may result and canes may die back. Affected fruits are usually small, dry, and scabby. Plant in sites with good air circulation and control weeds. Chemical control is with copper sprays in the delayed dormant/or early spring period as buds are beginning to open. Strobilurin fungicides are also effective if applied between the period of budbreak and flower petal fall.

Orange rust fungus produces masses of orange colored spots on leaves in the spring. It moves



Orange rust

through the plant, and all canes produced after that will be non-productive. It is a serious problem for susceptible varieties, and the thornless varieties as a class have a lot of problems with this disease. Start new plantings

with disease-free nursery stock and quickly remove infected plants exhibiting symptoms.

Crown gall is a bacterial disease that causes swelling on the base of the canes. It may be prevented by purchasing cuttings or plants from a reliable source, and not planting in areas known to be infected.

Nematodes may infest roots and cause a loss of vigor and productivity. Blackberries should not be planted in areas where nematodes are present. Growers considering new sites should collect a soil sample and submit to the Plant Disease Diagnostic Clinic for a determination (www.plantclinic.tamu.edu)

Strawberry weevil is a small, reddish brown weevil which lays its eggs at the base of the flower buds where the larva girdles the stem. An approved insecticide may be applied when cut buds are first noted, and as needed thereafter.

Red-neck cane borer burrows longitudinally in the cane, causing plants to lose vigor and die. Strict pruning and destruction of infested canes and wild berries is important to control its spread.

Spider mites may feed on leaves in summer, giving them a dull grey look. Sprays of insecticidal soap directed under the leaves may help to lower populations, or more potent miticides may be used.

Stink bugs and leaf-footed plant bugs attack maturing berries causing dried brownish drupelets. Synthetic pyrethroids are the most effective insecticides for control of these pests

Thrips may live in the berries between the drupelets, making them unmarketable.

White grubs may feed on the roots, lowering plant vigor.

Harvest

Thousands of wild blackberries and dewberries are harvested and marketed by the gallon along Texas highways in May and early June. Cultivated blackberries are hand harvested and usually sold as pick-your-own or wholesale in 12-pint

flats. Because blackberries do not continue to ripen after harvest, fruit should be picked every three days to obtain a maximum sugar content. The storage life is only one day without refrigeration. Few crops are as easy to grow and as rewarding as blackberries; however, economic success is based on affordable and readily available labor. Economic analyses of commercial blackberry farms show that labor for harvest and other operations is approximately 70% of total annual variable expenses.



For More Information

<http://aggie-horticulture.tamu.edu/fruit-nut>