

Growing Blackberries

for Pleasure and Profit



Blackberries and dewberries are native to Louisiana, and many commercial varieties are well adapted to growing conditions of the state. They can be profitable commercial fruit crops. Blackberries also can be grown in the home garden with few or no pesticides.

Blackberries have their greatest commercial potential as small plantings designed specifically for the “pick your own” (PYO), roadside or farmers’ markets. With a decrease in the availability of harvest labor, fresh blackberries have become scarce in local markets. To satisfy this demand for fresh blackberries, the PYO concept was developed. The most successful operations use erect blackberry varieties that produce good quality fruit that ripen over an extended period. The development of erect thornless varieties by the University of Arkansas that also have good resistance to rosette disease has also increased interest in growing blackberries commercially.

Types of Blackberries

Basically, there are two types of blackberries – the erect type and the trailing type. The distinction between the two is their growth habit. Erect blackberries have arched self-supporting canes. Trailing blackberries have canes that are not self-supporting and must be tied or trellised.

The erect blackberry is recommended where the grower wishes to avoid trellising. Trailing blackberries are recommended only for home use.

Recommended Varieties

Erect Types: Thorny Varieties

Brazos is an erect blackberry released by the Texas Agricultural Experiment Station in 1959. It is early and has very large, fair quality fruit that is maintained over the entire fruiting season. The fruit is slightly sour and rather seedy. It is productive and well adapted to fresh market outlets. In Louisiana, it is very susceptible to rosette (double blossom disease) but resistant to anthracnose. The fruit is not extremely firm but holds its shape well when processed. Brazos has generally been replaced by the University of Arkansas varieties that are named after Indian tribes.

Cheyenne is a 1977 University of Arkansas release suitable for commercial or home use and especially adapted for PYO plantings. Its fruit is sweet, large and has a slight raspberry flavor. It ripens mid-season and is adapted to the entire state.

Brison is a large, erect, high-yielding blackberry. A 1977 Texas A&M release, its fruit is firmer and sweeter

than Brazos. It’s best suited to south Louisiana. It ripens with Brazos (mid-May).

Rosborough is a high-yielding 1977 Texas A&M release. The fruit is firmer with smaller seeds than Brazos. Canes are quite vigorous and thorny. It is adapted to the entire state. Rosborough is very susceptible to rosette disease.

Womack produces medium-size fruit and high yields. It is a 1977 Texas A&M release that is adapted to the entire state. Its fruit has smaller seeds and is sweeter than Brazos. Womack and Rosborough have consistently had high yields at blackberry trials in Baton Rouge.

Shawnee is a consistent high yielder with medium-large fruit. This University of Arkansas 1983 release ripens about one week later than Cheyenne. A peak in production during the harvest season is not apparent. Shawnee produces heavily for several consecutive weeks, making it an excellent PYO variety. The soft berries do not store or ship well. Shawnee is highly susceptible to double blossom disease.

Choctaw is a 1989 release from the University of Arkansas that has erect canes and medium-size fruit. It is a very early variety with small seeds. The fruit is soft with handling and storage qualities similar to Shawnee. Choctaw has a chill hour requirement of 300-400 hours and is susceptible to late freezes. It is susceptible to rosette disease. Choctaw is recommended for trial for early blackberries.

Kiowa is a 1996 release from the University of Arkansas with erect canes and very large fruit. The fruit is the largest of the Arkansas varieties; storage and handling qualities are good. Kiowa blooms just after Choctaw and Shawnee, although its chill hour requirements are probably near 200 hours. It is susceptible to rosette disease. Kiowa is recommended for commercial and home use throughout Louisiana.

Chickasaw is a 1998 release from the University of Arkansas with erect canes and a fruit ripening rate comparable to Shawnee. Storage and handling are better than Shawnee. Plants are high yielding. Chickasaw is susceptible to Rosette. It is recommended on a trial basis for commercial and home production.

Erect Types: Thornless Varieties

Arapaho is the earliest ripening erect thornless variety. Fruit is medium size. Yields are about 60 percent of those of Shawnee. Fruit begins ripening a few days ahead of Shawnee. Arapaho is a 1993 release from the University of Arkansas that appears to be resistant to orange rust and rosette diseases. Arapaho has chilling requirements of 400-500 hours; therefore, it should do

well in most areas of Louisiana except possibly some coastal areas. Arapaho is recommended for commercial and home use.

Navaho is an erect blackberry with thornless canes. It has medium-size fruit with high sugar content and excellent flavor. It has firm berries with perhaps the best post-harvest shelf life. Yields are 60 percent to 75 percent of those of Shawnee. Navaho is tolerant of rosette but susceptible to orange rust. It is a 1989 release from the University of Arkansas. Navaho has an extended ripening season, beginning one week after Shawnee and continuing two weeks later than the last Shawnee harvest. Navaho has a chill hour requirement of 800-900 hours and is recommended for commercial and home use in North Louisiana.

Apache is a 1999 erect thornless blackberry release from the University of Arkansas. It has the largest fruit and highest yield of the Arkansas thornless blackberries. Fruit ripening is approximately five days after Navaho. Plants appear to be resistant to rosette disease and orange rust. White drupelets or sunburn have sometimes been noted as a problem. Apache is believed to have chill hour requirements similar to Navaho. Apache is recommended for trial in North Louisiana.

Ouachita is a 2003 erect thornless blackberry release from the University of Arkansas. The fruit is large and has good fruit storage and handling qualities. Fruit ripens with Kiowa and extends for about five weeks. Research trials indicate that yields are comparable to Apache. Ouachita is resistant to rosette disease. Ouachita chill hour requirements are probably similar to Arapaho, possibly 300-500 hours. Ouachita is recommended for trial in Louisiana.

Trailing Types (Dewberries)

Boysenberry is a large, tart, soft, reddish, highly flavored berry. Widely grown in the South, it is late maturing. Thornless selections of this variety are available.

Youngberry is a very large, mid-season, wine-colored, sweet berry of Louisiana origin. Plants are vigorous. It is susceptible to rosette disease.

Primocane Fruiting Blackberries

Primocane fruiting is a third type of blackberry that has recently been developed by the University of Arkansas. The primocane blackberry produces fruit on the current season growing cane. This differs from standard blackberries that produce fruit on 2-year-old canes.

A standard blackberry produces new canes, called primocanes, from the ground in late spring and summer. These canes do not produce fruit. The primocanes will produce flowers and fruit the following spring and are then called floricanes. The floricanes die after producing fruit and are replaced by new primocanes that will flower the following spring.

The University of Arkansas released two primocane varieties in 2004. These are Prime-Jim and Prime-Jane. These varieties have produced good yields on primo-

canes in Oregon; however, yields on primocanes have been very low in South Arkansas. The problem appears to be that temperatures above 85 degrees tend to severely reduce fruit set, size and quality on primocanes. Fruit on floricanes of these varieties have been similar to fruit yield on floricanes of Apache and Ouachita. Prime-Jim and Prime-Jane are thorny erect blackberries. They are not recommended for Louisiana. They should be grown only on very limited trial basis. It's hoped that additional primocane varieties will be developed that are better adapted to Louisiana conditions.

Raspberries

Raspberries are not well adapted to Louisiana conditions. Afternoon or partial shade may aid production. **Dorman Red** is the only raspberry that has consistently produced fruit in Louisiana. It has trailing canes and can be managed similar to dewberries. It has medium-size, attractive fruit with average to poor flavor.

Location and Site

Consider nearby markets and available labor when establishing commercial blackberry plantings. When berries are to be grown primarily for the processor, plantings should be located near a processing plant.

Berries can be grown in almost any soil type if good drainage is provided. Blackberry plants are harmed by water standing around their roots, even in winter. Accessibility to water for irrigation is an important factor to consider when choosing a planting site, since blackberries require large amounts of water during the growing and ripening season.

Soils where tomatoes, peanuts, sweet potatoes, roses or any of the cucurbits (watermelon, cucumber, pumpkin, etc.) have been grown recently should be examined for soil borne diseases and nematodes before planting blackberries.

Preparing the Soil, Planting and Spacing

A well-prepared plant bed is essential for blackberries just as it is for any other crop. Deep plowing and the turning under of one or two cover crops before planting improve the physical condition of the soil by adding organic matter and a small amount of nitrogen. All annual and perennial weeds should be killed in the planting row before planting. This can be done with herbicides or repeated cultivation in dry soils. The middles between the rows can be kept clean or covered with mowed vegetation to prevent erosion and to make the middles firmer during rainy periods.

Home gardeners can plant blackberries in hedge fashion on rows spaced 6 feet apart.

Commercial growers should space rows 10 to 12 feet apart to make cultural practices more convenient. Space root cuttings 2 feet apart within the row and allow them to grow in hedge fashion. Plantings should be made in February. Thornless varieties should be planted

as plants and spaced 2 feet apart. Plants of more vigorous thorny varieties can be planted at 3-foot intervals.

Root cuttings should be planted at a depth of 3 inches. Cuttings are dropped flat in an opened furrow and covered with soil. Irrigate as needed; do not allow the soil to dry.

When plants are used, cut the canes back to 6 inches. This 6-inch top will make handling easier and also mark the location of the plants.

If planting stock cannot be transplanted immediately after receiving them, cover with sawdust to prevent drying.

Propagation of Planting Material

Most blackberry varieties can be easily propagated from root cuttings. This is an economical method of propagation, since material for use in new plantings can be readily obtained by plowing a deep furrow away from the plant row. Exposed roots are gathered and placed in damp burlap or polyethylene bags to prevent drying. Root pieces 3/16- to 3/8-inch in diameter with lengths of 4 to 7 inches are tied into bundles. Root pieces 1/2-inch in diameter are often not productive, and roots 1/8-inch or smaller in diameter usually will not produce a strong, vigorous plant. Some thornless types will revert to thorny types when propagated by root cuttings.

Upright blackberries also can be propagated by suckers with roots attached, stem cuttings and leaf bud cuttings under mist. Trailing varieties are primarily propagated by tip layering. Some newer blackberry varieties are patented and cannot be propagated.

Growers should make a special effort to secure high quality disease-free planting materials. A reputable source should be used to assure that healthy accurately named plants are obtained.

Fertilization

On newly established blackberry plantings, apply approximately 200 pounds per acre of a complete fertilizer such as 8-8-8, 10-20-10 or 13-13-13 as a side dressing in early spring. Applications of fertilizers relatively high in phosphorous (1-2-1 ratio) the first two years after planting should be beneficial. Fertilizer should be placed about 10 inches to the side of and slightly lower than the cuttings. Don't apply fertilizer in the furrow where the crop is planted since fertilizer injury might occur.

Application of 300 to 500 pounds per acre of 8-8-8, 10-10-10 or 13-13-13 (11 pounds per 100 feet of row) as a side dressing should be made just before bud swell in the spring on established berry plantings. Broadcast fertilizer beginning about 20 inches from the plants to encourage a more extensive root system and to prevent injury to young, shallow feeder roots. A second application of fertilizer (200 pounds per acre or 5.5 pounds per 100 feet of row) should be made in June after harvest. Ammonium nitrate should be used at 1/3 rate of

10-10-10 fertilizer for soils that are high in phosphorus and potassium.

In early spring, home gardeners can use 4 to 6 ounces (1/2-3/4 cup) of 8-8-8 fertilizer or equivalent per plant broadcast evenly around the plant, starting about 9 inches from the stem and extending outward to about 2 feet.

Pruning

Blackberries usually require no pruning the year they are planted. Blackberry plants send up new shoots (primocanes) from crowns or buds formed on the roots in the spring. These canes are biennial and live for two years. They grow through one season, then produce a crop of fruit the second year as floricanes and gradually die after fruiting. Floricanes die soon after harvest and can be removed at any time up to spring. Early removal and burning is preferred since the old canes can be a reservoir of disease and insect pests.

After removing floricanes, top the new primocanes by removing about 6 inches of growth from the tip in the summer when they reach a height of 3 to 4 feet. Heading the new canes back early in the growing season encourages lateral branch development on which fruit will be produced the next year. Three or four canes of the erect varieties and four to eight canes of the trailing varieties should be selected for fruiting wood the following year. Remove dead and weak shoots in the winter. Cut lateral branches back to about 12 inches in length before growth starts in the spring.

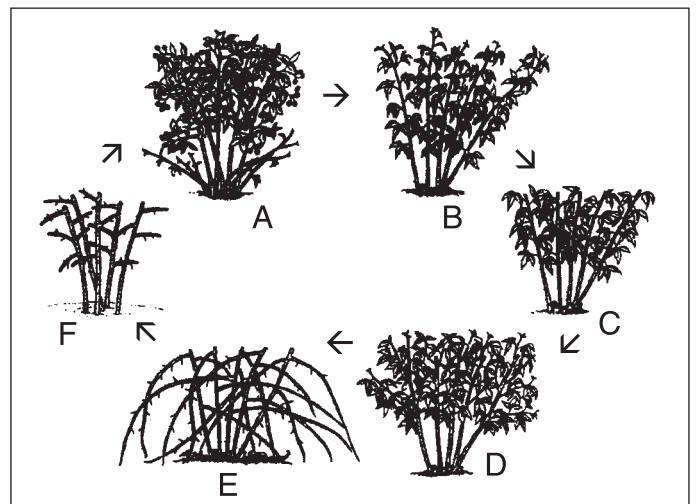


Figure 1. Blackberry development and pruning cycle:

- A. Summer fruiting of floricanes and growth of primocanes;
- B. Primocanes before summer topping after fruited floricanes have been removed;
- C. Primocanes after topping;
- D. Lateral branching of primocanes in response to topping;
- E. Dormant canes before winter pruning;
- F. Laterals pruned back during dormant season.

Where plantings are severely infested with rosette or double blossom disease, mow both old and new cane growth near the ground immediately after harvest, and broadcast 40-50 pounds of actual nitrogen per acre to encourage new growth after mowing. This practice of removing all top growth may reduce yield the following year.

When it's necessary for home gardeners to cut plants back to the ground, it is suggested they use 5-8 tablespoons of 13-13-13 fertilizer per plant.

On large plantings, it's often not convenient to prune out old canes selectively. Rather, it's simpler to mow down the entire planting after fruiting to within 6 inches of the ground followed with generous applications of commercial fertilizer. Apply 300-400 pounds of 13-13-13 per acre, then irrigate. Because this will reduce yields compared to selective pruning, it's suggested that only half the acreage be pruned with this method one year followed by the other half the next year.

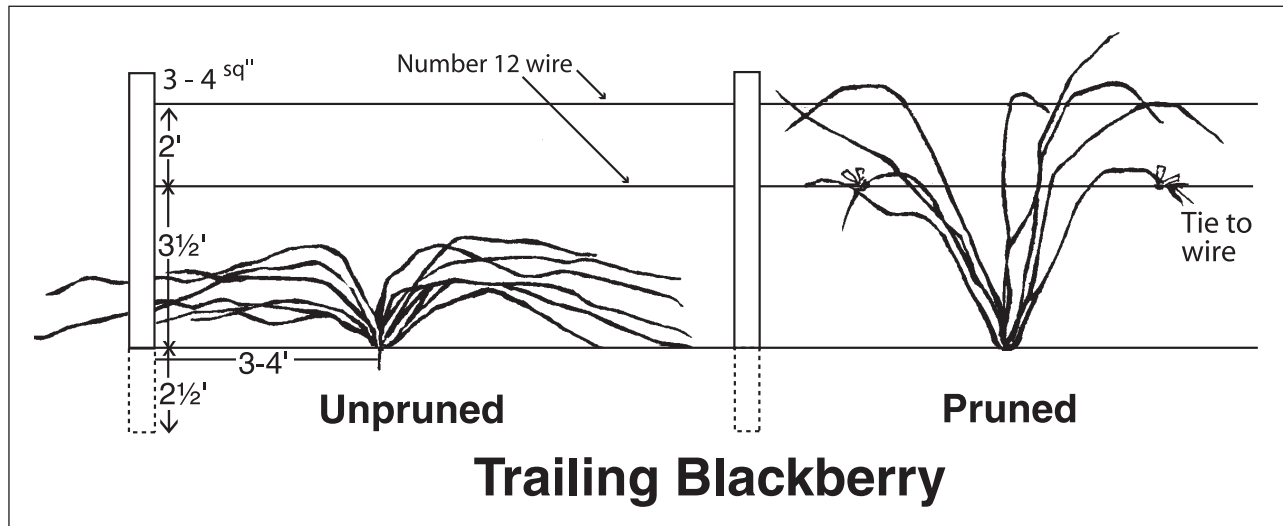


Figure 2. Trailing blackberries are pruned by simply selecting the best (4-8) primocanes and tying them to support wires. Old fruiting canes are removed.

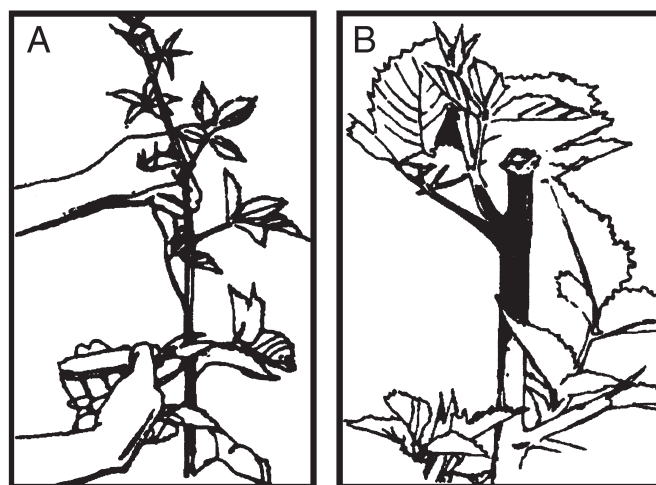


Figure 3.

- A. Primocanes are summer topped at a height of 3-4 feet. This is done over several weeks because first-year canes reach the proper height for topping at different times.
- B. Primocane several weeks after summer topping, showing the growth of lateral shoots from leaf axils.

Weed Control

Weed control is important in the blackberry row and in a 2-foot-wide strip on both sides of the planted row. The aisles between the rows are often maintained with mowed vegetation to reduce erosion and to keep the area firmer during rainy weather.

Cultivation is generally not recommended since blackberry roots grow close to the soil's surface and are easily injured by cultivation. Cultivation can spread crown gall disease through the planting. Make shallow cultivations only when necessary to keep the planting

free of weeds. Where herbicides aren't used, it may be necessary to remove the weed growth near the plants by hand or a hoe. This is one of the most expensive operations in the growing of blackberries and must be continued throughout the growing season.

Mulch can also be used to control weeds. Common mulches used include wheat straw, pine needles, pine bark or black plastic. Organic mulches should be at least 4 inches thick for weed control. Care must be used when using black plastic mulch to ensure that adequate openings are allowed for new primocanes to emerge.



Diseases and Control

Several diseases attack blackberry plants, affecting canes, leaves, fruit or roots. Awareness of the symptoms of the major diseases and their control is important for successful culture.

The severity of any one disease may vary with the locality, variety grown and the weather, but disease problems can be held to a minimum if recommended control practices are followed.

Diseases

Anthracnose

Anthracnose is a common fungus disease that can attack both the canes and leaves. It is characterized by small, purplish, slightly raised spots on new shoots. These spots enlarge gradually and become oval with slightly raised purplish edges, and the center becomes grayish and sunken. Larger, irregular spots are formed as the small spots run together. Girdling may occur on some canes. Small purplish-bordered spots occur on the leaves and can cause premature defoliation. Severe infections can reduce growth and yield of plants.

Providing good air circulation around plants and removing old and diseased canes can reduce anthracnose infections.

Erect berries, such as Humble and Brazos, are more resistant to anthracnose than the trailing type, such as Boysen and Young. Abound, Pristine Switch, Cabrio or Captan 80WDG are fungicides that can control Anthracnose when applied when the blossoms are in bud and the young canes are 8-10 inches long. A second application should be made 10-14 days later.

Leaf Spots

Several fungi may infect blackberry leaves, causing small circular spots with purplish borders similar to the anthracnose leaf spots. Infected leaves may drop early, usually starting with the lower leaves. Canes can be stunted and weakened. Abound, Cabrio or Pristine can be used for control.

Orange Rust

More than one rust disease may affect blackberries, but only orange rust is of major importance. This disease is potentially a very serious problem because the causal fungus becomes systemic within the roots and crown of the plant and cannot be controlled by sprays or dusts after infection. Infected foliage in the early spring is a lighter green than healthy leaves. The young leaves, even before they unfold, are covered with small dots which later turn black. Two or three weeks later, lower surfaces of leaves are covered with bright orange pustules.

Infected plants, including the roots, should be removed and burned as soon as the disease is observed. A number of varieties appear to be resistant to Orange Rust.

Cane and Leaf Rust

Cane and Leaf Rust does not produce systemic infections and should not be confused with Orange Rust. It can sometimes cause economic damage to susceptible blackberries varieties; however, this disease is not systemic, and the drastic measure of removing infected plants is not required.

Cane and Leaf Rust can be identified by the lemon-yellow spores, unlike the orange spores produced by Orange Rust. Also, Cane and Leaf Rust produces spores on canes and leaves, whereas Orange Rust produces spores only on leaves. Fungicide applications should begin at bud break and continue at a 7-14 day interval. Nova 40W, Cabrio and Pristine can be used for rust control.

Rosette

This disease is often referred to as double blossom. It can be recognized by the short bunchy shoots or rosette growth on the fruiting canes in the spring. The flowers look abnormal, exhibiting pinkish to green blossoms with a gray center. The young fruit is actually transformed into a mass of gray fungus spores.

The spores produced in the flowers serve as primary source of infection. Buds on young, newly emerging

canes are the target of the attack and must be protected. If these buds are infected, no symptoms are seen until the following spring when bunchy growth can be seen as infected buds start growing. Flowers produced from these infected buds start the cycle again.

Control rosette by removing bunchy growth from canes in early spring before flowers open. Rosette can also be controlled by cutting both old and new cane growth at the ground level immediately after harvest. If this is done, apply nitrogen to force new cane growth. Planting resistant varieties is also a good way of controlling this disease. Most of the erect thornless blackberry varieties from the University of Arkansas breeding program appear to have excellent resistance to rosette.

Begin fungicide applications as infected blooms start to open and continuing at 10-14 day intervals as long as infected flowers are present, often into harvest. Fungicide applications will not control rosette symptoms on canes in the current year. It will prevent infections and symptoms on canes that will produce fruit the following year.

Abound is labeled for rosette control on blackberries. Abound or other strobilurin fungicides should not be used more than twice consecutively because of the potential of the fungus developing resistance to this group of fungicides. Fungicide applications at 7-14 day intervals from bloom to harvest is required for effective chemical control. Abound can be used up to the day of harvest.

Crown Gall

Plants affected by this bacterial disease have large swellings at the crown and on the roots. Galls have a more or less spongy texture.

Remove and destroy affected plants. Use disease-free stock, and avoid resetting plants in the same area where infected plants were located. Do not cultivate

around infected plants. This can spread the bacteria to uninfected plants through out the planting.

Fruit Rots

Several fungi may attack the fruit of blackberries. Botrytis (gray mold) can infect blackberry fruit before and after harvest, causing a soft, watery decay. Rotted berries may be covered with a gray or black mold. In later stages of infection, berries may shrivel and become hard. Botrytis is often not a problem under normal weather conditions; however, wet conditions with temperatures below 70 degrees favor Botrytis development. Fungicide applications may be needed if Botrytis was a problem the previous year. Rovral 4F, Switch, Captan 80WDG and Pristine are labeled for Botrytis on blackberry. Frequent and thorough harvesting is important in controlling fruit rots.

Disease Control

A combination of sanitation and spraying is necessary to control blackberry diseases.

Cut off all diseased canes at the soil line just after harvest and burn them.

Only disease-free plants should be planted. Before planting, inspect all plants and cut off and burn any old or diseased stems.

Don't plant near wild brambles. Remove any wild brambles growing in the vicinity of cultivated plantings.

Control weeds and grasses around plants to facilitate good air circulation and rapid drying conditions. This makes conditions less favorable for disease development.

Proper selection of fungicides, thorough coverage of canes and foliage and proper timing will help control blackberry diseases. Alternating fungicides will reduce development of disease resistance.



Insects and Control

Soil-borne, cane and bud, and foliage-feeding insects attack blackberries. To grow this fruit successfully, you must control these pests. The most important insects attacking blackberries in Louisiana are aphids (plant lice), spider mites, stink bugs, cane borers, strawberry weevils and some soil-borne insects such as grubs.

Blackberry (Raspberry) Crown Borer

The blackberry (raspberry) crown borer is potentially a severe pest of blackberry plantings and is able to cause loss of plant vigor, loss of yield and plant destruction. Plants not killed outright by the larvae become susceptible to other stress factors.

The blackberry (raspberry) crown borer adult is a black, clear-winged moth with a wingspan of 1 inch. Female moths have yellow legs and four horizontal stripes on the abdomen and in the thorax, which makes them resemble a yellow-jacket wasp. Female blackberry (raspberry) crown borer moths may be seen during the summer and early fall. They lay eggs singly on the underside of the leaves from late June to Late October. Eggs hatch as small caterpillars during the fall which crawl to the base of canes to form overwintering cells. Larvae are yellowish-white with brown heads and a soft, thick body. Larvae continue to feed during the following spring and summer on the fleshy part of the crown and bore further in the roots and lower canes. Larval feeding causes weak, spindly canes that break off easily at ground level.

The second winter is spent in the roots. Larval development is completed in early June. Fully grown larvae may reach 1 1/2 inches in length prior to pupation. The pupae are reddish-brown, and pupation occurs in the crown or in the canes just above the crown.

Adults emerge in late June through October to complete their two-year life cycle. Adults leave the pupal skin projecting from the emergence hole. To check for infestations, scout fields during mid- to late summer for wilting or dying canes. Inspect stressed and wilted plants for presence of holes with sawdust at the base of affected canes and for hollow or tunneled canes. Dig out affected canes and roots and burn them in late fall or early spring.

Aphids

Aphids are probably the most important insect pests of blackberries in Louisiana. They reproduce rapidly, requiring only about a week to complete the life cycle. These pests not only sap the juice from the plant foliage, but transmit several virus diseases causing the plant to die. Therefore, an intense spray program must be followed to give good control of this insect. Also, Carbaryl (Sevin) should never be applied alone, because this material kills beneficial insects and leaves the aphids to build up unmolested.

Thrips

These small insects can damage the blossom and cause deformed fruits. They also may cause a surface discoloration on the fruit when populations are heavy. Malathion will help control these populations.

Spider Mites

Spider mites (including red spider mites) can be serious pests of the foliage, especially in dry weather, when moisture is already a critical factor. These pests reproduce rapidly, but are not known to transmit any diseases. Plants may be stunted and severe yield reductions may occur if mites are left uncontrolled. Applications of Sevin may cause outbreaks of spider mites. Malathion will suppress these pests. Savey and Brigade are registered for spider mite control in blackberries. Apply Savey when eggs and immature (motiles) mites are first detected and before adult populations build up. Savey will not be effective against adult spider mites. Limit applications to one per year. Spray must cover both sides of the leaves.

Cane and Bud Insects

The red-necked cane borer is a major pest of the canes. Infested canes have irregular spindle-shaped swellings or galls 1 1/2 to 2 inches long which usually show several longitudinal splits in the bark on the lower part of the young cane.

Infested canes with enlarged swellings should be removed and burned during the winter or at the time old canes are removed after fruiting. This will reduce damage to the next crop. Also, wild berry plants in the area should be destroyed to help reduce populations of the borer.

Scales

Heavily infested canes should be removed during the dormant period. Apply sprays of oil during the dormant stages, after bloom and after harvest. At each period, two sprays should be applied at 14-day intervals.



Insect Spray Schedule

Insect	Where and When to Apply	*Insecticide	Amount per Gal. Water	Minimum Days from Last Application to Harvest
Scales	Entire plant dormant and after bloom	**Sun Spray Ultra fine oil or Summer Oil or Superior Oil	Follow label	Follow label
Aphids	On foliage as needed	Malathion 57EC	3 tsps/gal. 3 pints/acre	1 day
	On foliage as needed	Insecticidal soap (M-Pede, several other formulations available)	Follow label	0 days
Spider mites	On foliage as needed	Savey 50DF	1/2 tsp/gal. (4-6 oz/acre)	3 days
		Brigade WSB	(16 oz/acre = 2 soluble bags)	3 days
Thrips	When damaging population is present	Malathion 57EC	1 1/2 tsp/gal.	1 day
Strawberry Weevil & Sawflies	When damage is noted	Carbaryl 80 S	2 tbs/gal. 2 1/2 lbs/ acre	7 days

**Sun Spray Ultra fine oil used in conjunction with insecticides may enhance performance and improve control.

* To prevent alkaline breakdown, adjust water pH to 5.5 to 6.0 before adding insecticides.

Harvest and Handling

Harvest blackberries as early as possible in the morning when the day is relatively cool. Fruit harvested when temperatures are high spoil more quickly than fruit harvested at lower temperatures.

Berries should be picked firm-ripe, handled carefully and stored in a cool place as quickly as possible. Most berries need to be harvested every other day for best results. Handle them carefully to prevent bruising and crushing.

The quality of blackberries deteriorates rapidly when they are held at 75 degrees or above for more than 24 hours. Berries may be stored for four to five days at 32 degrees to 35 degrees with a relative humidity of 90 percent.

Precautions

When using any pesticide, always READ THE LABEL carefully, store the chemicals in a safe place and dispose of the container properly.

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