

## Specialty Crop Profile: Ribes (Currants and Gooseberries)

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### Introduction

Currants and gooseberries are two closely related species within the genus *Ribes*. This genus is diverse with over 150 known species and hundreds of cultivated varieties (cultivars). Currants and gooseberries are easily distinguished by the presence or absence of thorns; gooseberries have thorns, while currants do not.

All ribes are long-lived perennial shrubs that are cold hardy, some to USDA Zone 2. Species and cultivars vary in plant size and form, but are usually upright to spreading (three to six feet) in habit. Disease and insect resistance are variable, depending on the cultivar. The fruit are versatile and nutritious with some currants being especially high in vitamin C. Fruit within species vary in presentation, ease of harvest, flavor, shape, size, texture, and color.

### Market Potential

Decisions to commercially produce “minor” small-fruit crops such as ribes should be driven by the availability of market outlets for the fruit. A market should be secured before plants are set in the ground. Fresh fruit sales are options for direct marketers, though most consumers are unfamiliar with the fruit and its uses. Consequently, processing the crop into jams, jellies, fresh juice products, and wine may be the best way to utilize these crops. In Europe, significant fresh and processing markets exist and may be an indication of the undeveloped market potential in this country. Growers near populations of people who are already familiar with the crop may have a ready market.

Successful production of these unique fruit involves knowledge of cultivars, their horticultural characteristics and requirements, and successful pest management.

### Ribes Descriptions

#### Currants

Most cultivated currants are of European origin, though there are many native North American species. Currant fruit color types include red, white, pink, and black. Plants are thornless and the fruit are small (pea-size) and are produced and harvested in grape-like clusters called “strigs” (Figures 1a, b). Cultivars may be classified under several species; however, it should be noted that there is some debate as to which species different types belong. Key species include *Ribes rubrum* (most red currants and some whites), *R. petraeum* (white), *R. vulgare* (pink, white, and red), and *R. nigrum* and *R. ussurienses* (black). Native currants, sometimes considered more closely related to gooseberries, belong to the species *R. odoratum*, the buffalo currant, with some selections known as clove currants (for example, the cultivar ‘Crandall’) because of the fragrance of their blossoms. Their flavor is tart and currants are seldom eaten as fresh fruit, but are processed into juices, jams, and jellies. Black currants are noted for their strong (some think offensive) odor and astringent flavor. Yet



Fig. 1a. Smooth, thornless stem of currant.  
(Photo by A. Bratsch)



Fig. 1b. Red currant fruit formed in “strig” or cluster, unknown cv.  
(Photo courtesy Steve McKay, Cornell University)

they are highly prized in Europe for juice products and their high nutrient content. Vitamin C concentrations can be as high as 250 milligrams per 100 grams of juice, even after six months of storage.

## Gooseberries

Cultivated forms of gooseberries are divided into two major types, European (*Ribes grossularia* var. *uva-crispa*), and American (*R. hirtellum*). European types are native to North Africa and the Caucasus Mountains of Eastern Europe and western Asia, while the American types are native to the northern United States and Canada. Within the European types, fruit size varies widely, from pea size to as large as a small egg. Color varies as well, with fruit maturing in shades of green, pink, red, purple, white, and yellow. This diversity is due to the historical popularity of the European gooseberry. Over the past two centuries, hundreds of cultivars have been developed, with a focus on prize-winning fruit size and color.

Native American gooseberry species have smaller fruit size and less flavor, but are very resistant to diseases compared to European cultivars, which are noted for powdery mildew and leaf spot susceptibility. This has limited the culture of most of the European types in the U.S., because they require significant fungicide applications to ensure regular cropping. However, disease resistance is improving through additional breeding with American types, and several new promising European cultivars have been introduced recently in the U.S. and Canada. These new cultivars have the potential to increase U.S. production, and enhance the feasibility of low-spray or organic production; important consider-

ing that registered pesticides are limited. In comparison, most known American cultivars in the trade today have had some historical infusion of European genetics to improve size and flavor, which can be traced to a handful of breeding crosses made in the 1800s. All gooseberry cultivars have varying degrees of thorniness. Fruit are produced in small groups or singly on stems, and are picked individually (Figures 2a, b). Specialized mechanical harvesters have been developed in Europe for both gooseberry and currant fruit. These harvesters are not readily available in the U.S., but can be imported. For small-scale production, hand harvesting still remains the most economical method of harvest, but adds significant cost to production.



Fig. 2a. Thorny gooseberry stem.  
(Photo by A. Bratsch)



Fig. 2b. Gooseberries are formed in small clusters or as single fruit on stem.  
(Photo courtesy Kathy Demchak, Penn State University)

## Jostaberries

The jostaberry is an interspecies cross between gooseberries and black currants. Its fruit are larger than currants, are gooseberry-like, and are black in color. The stems are thornless. Fruit quality has not gained wide appeal for either fresh or processed use, but it has inspired renewed breeding efforts, with new and improved crosses being developed. It has a vigorous

growth habit, and is resistant to white pine blister rust (*Cronartium ribicola*), an important disease problem (see below notes). Disease (mildew) resistance is similar to the black currant parent.

## Notes on History and Legality of Culture

The history of ribes production in America is of significant interest. Cultivated currants and gooseberries were first introduced in America in the Massachusetts Bay Colony in 1629. By the mid-1800s, commercial acreage of currants and newly developed European and American gooseberry crosses such as 'Houghton' and 'Downing' were common in the East. In 1899, reported production in the U.S. reached nearly 7,000 acres. In the early 1900s, ribes species were implicated in the spread of white pine blister rust (WPBR), a devastating disease for white pine trees that was brought into this country on imported nursery-tree stock. Ribes, in particular black currants, are a secondary host to this disease, which requires both pine and ribes species to complete its life cycle. Red currants and gooseberries exhibit varying degrees of susceptibility to WPBR. In 1912, federal and state governments introduced restrictions on the import, planting, and cultivation of ribes species to protect the lucrative timber industry. Soon after, a sweeping federal law was passed banning only black currants while some northern states passed outright bans on all ribes species. A program of eradication of both native stands and domestic plantings was implemented, with Civilian Conservation Corps crews doing much of the work.

The federal law was rescinded in 1966; however, today laws regarding ribes culture remain on the books in many states. While some states allow all species to be cultivated, others continue full or partial bans, geographically, or by selected species, namely black currant. Laws banning ribes species range from being well to poorly enforced or ignored by state officials. Often restrictions vary by township or county within a state. Across Virginia, growing black currants is still against the law, and enforcement is conducted in nursery sales. Hybridized cultivars (nonpure black currant) that are resistant to WPBR are now available (and legal) and should be selected.

The early ribes industry was dealt a great setback because of these bans and has yet to recover. Variable and often confusing legal issues are still an effective roadblock to development of a viable industry. Nevertheless,

the threat of WPBR remains a reality today, and site selection in new plantings should take into account the presence of susceptible pine species, identified by having 5 needles per needle cluster (Figure 3), any nursery operations in the area, and neighbor relationships.



Fig. 3. White pine and other five-needle pine species are susceptible to white pine blister rust.  
(Photo by Alex Niemiera, Virginia Tech)

## Adaptability, Site, and Soils

### General

Overall cultural requirements are similar for all ribes species. They are adapted to cooler climates, but can be grown successfully in most areas of the commonwealth. Excessive summer heat may be a limiting factor in the hotter regions of Southside and southeast Virginia. At temperatures above 85°F, currant leaves will begin to flag (wilt) and extended direct sunlight can cause leaf sunburn. Temperatures of 95°F sustained for three or more days may cause most of the fruit to drop from the plant, especially if the fruit are nearly ripe. Partial shade, a soil mulch and adequate water are essential in drier, hotter areas. American gooseberries are more tolerant of direct light, drought, and warm temperatures.

### Site Selection

Unlike other fruit crops, currants and gooseberries can tolerate partial shade. Northern to northeastern exposure is often ideal, as the air and soil will be cooler and moister, and plants will be protected from direct sun. Full-sun exposure in cooler or mountainous climates, however, is desirable and leads to increased yields. Currants and gooseberries require approximately 1,000 to 1,200 chilling hours (hours of winter exposure to 35° to 45°F). This exposure time satisfies physiological dormancy and allows the plant to break bud early in the spring. As compared to other fruit such

as apples (needing 1,000 to 1,700 hours), this is a moderate requirement, but high compared to other small fruit such as grapes or strawberries (<500 hours). Once dormancy is broken, plants make good growth under cooler conditions compared to other crops.

Plants bloom early in the spring, usually several weeks ahead of strawberries. Therefore, planting them in low areas where late spring frosts are possible has greater potential to injure the blossoms. Though tolerant to cold and light frost, temperatures below 28°F can cause damage to the flowers and reduce yields. An additional advantage of cooler, northern slopes is slow spring warm-up and delayed plant growth that can further reduce frost risk.

Air circulation and movement are important considerations in site selection. As indicated, foliar disease can be a problem in many cultivars. Consider summer prevailing winds and align rows to take advantage of air movement that can help reduce foliar diseases.

Ribes plants have shallow, fibrous roots and should be situated where irrigation can be provided. They should be grown beyond the canopy of shade trees in order to eliminate or reduce competition for moisture.

Though currants and gooseberries are not excessively damaged by WPBR, their proximity to susceptible pine species should be considered. Locate plantings at least 1,500 feet away from valuable ornamental plantings, commercial nurseries, or commercial pine crops.

## Soils

Currants and gooseberries are fairly tolerant of a wide range of soil conditions and less-than-perfect sites. They perform best in well-drained silt to sandy loam soils with organic matter content greater than 1 percent and good water-holding capacity. Planting in light sandy or heavy clay soils should be avoided, as well as areas in which water stands for any length of time. If the site is poorly drained, improve it by tiling or building raised beds. When using raised beds, monitor soil moisture as they can dry more quickly than level soil areas. Both heavy and light soils can be improved with the addition of organic matter. The ideal soil pH is moderately acidic, from 5.5 to 6.5. Micronutrient deficiencies may occur at an alkaline pH greater than 7.0. Saline or salty soils near coastal areas should be avoided.

## Cultivars

Several factors should be considered when choosing a cultivar. Adaptability, availability of nursery stock, productivity, ripening time, fruit size, appearance, flavor, ease of harvest, and disease resistance are just a few important considerations. Cultivars used for juice processing may vary in quality and suitability, and buyers may be specific in their requirements. Selection for cold hardiness is usually not an issue, though cultivar bloom time and bloom hardiness should be considered in areas where late spring frosts commonly occur. More important for the Mid-Atlantic is the cultivar's relative tolerance to summer heat, as well as foliar disease and insect pressure. University evaluations and data on cultivar performance in the Mid-Atlantic region are limited, and test plantings of cultivars are strongly recommended before larger plantings are committed.

A few cultivars of currants and/or gooseberries may be available locally through nurseries and garden centers in the spring; however, specialty mail order nursery suppliers are a dependable source of stock, and offer wider selections. A comprehensive list of nurseries and specific cultivars offered is maintained by Cornell Cooperative Extension at <http://www.hort.cornell.edu/extension/commercial/fruit/Berries/nurseries/ribes.html>.

A selected list of U.S. wholesale mail order nurseries is provided in Table 1.

## Currant Cultivars

Most currants are self-fruitful; therefore, only one cultivar is needed for fruit production. However, currants will produce better and larger fruit crops when more than one cultivar is planted and cross pollination occurs.

### Red Currants

**Cascade.** Early. Fruit are large, medium dark red, and produced on short strigs. Plants are erect to slightly sprawling and of medium productivity and vigor. Berries are susceptible to sunscald and should be picked promptly.

**Jonkeers van Tets.** Popular early- to mid-season selection from Holland. Fruit are dark red and soft, have very good flavor, and are on medium-size strigs. Plants bloom early and are heavy producers. Growth habit is not uniform. Plants are mildew and aphid resistant, but

**Table 1. Selected U.S. mail order/internet nursery sources for ribes.**

Source	Contact information	Comments
Nourse Farms, Deerfield, Mass.	(413) 665-2658; <a href="http://www.noursefarms.com/varieties/variety_glanceribe.html">http://www.noursefarms.com/varieties/variety_glanceribe.html</a>	gooseberries and currants
Daisy Farms, Dowagiac, Mich.	(269) 782-7131; <a href="http://www.daisyfarms.net/Gooseberries.htm">http://www.daisyfarms.net/Gooseberries.htm</a>	gooseberries and currants, several standard selections
One Green World, Mollala, Ore.	(877) 353-4028; <a href="http://www.onegreenworld.com/">http://www.onegreenworld.com/</a>	wide selection, including newer black currant cultivars and imported selections
Indiana Berry and Plant Company, Huntingburg, Ind.	(800) 295-2226; <a href="http://www.inberry.com/index2.html">http://www.inberry.com/index2.html</a>	wide selection of currants including <i>R. odoratum</i> , a native species

gray mold (*Botrytis* spp.), a common fruit rot fungus (also called “run-off”), can be a problem for production in wet years.

**Detvan.** Mid-season selection from Slovakia. Plants are very large, robust, and upright. Fruit are large and produced on very long strigs, often with as many as 25 to 30 berries per strig. Very high yielding. Good resistance to gray mold. Should be planted on at least five-foot row centers.

**Red Lake.** Mid- to late-season. Fruit are large, firm, light red, and sub-acid. Has high juice content and easy-to-pick long strigs. Plants are productive, upright, dense, and hardy. Susceptible to mildew. Has a low tolerance to frost. Easily found in nurseries.

**Wilder.** Mid- to late-season. Fruit are large, dark red, sub-acid, and produced on large, compact clusters. Plants are productive, large, and upright to spreading. Resistant to leaf spots.

**Rovada.** Late-season. Fruit are large and produced on long compact strigs. This cultivar is a dependable bearer and productive. Blooms late, so frost can be less of a problem than with other cultivars. Resistant to mildew and other leaf diseases.

**Tatran.** Late-season. A sister selection of ‘Detvan,’ with many similar characteristics. Plants are robust and upright. Fruit are very large and produced on long strigs of 25 to 30 berries. Very high yielding and resistant to grey mold. Should be planted at least five feet apart both within the row and between rows. Canes become very heavy with fruit and may need some support.

### White and Pink Currants

White and pink currants are more difficult to find. They grow like red currants, but have a less acidic, sweeter, unique flavor. The fruit are small, white to yellowish, and opaque to translucent (Figure 4).

**White Imperial.** Mid-season. One of most commonly available white varieties. Lowest acidity of currant cultivars. Produces small fruit on long strigs. Yields are moderate. Plants have a spreading growth habit.

**Pink Champagne.** Mid- to late-season. Quality and flavor are good. Fruit are a translucent pink color. Yields are generally low. Plants are vigorous, upright, and resistant to leaf diseases.

**Blanka.** Late-season. Known for heavy yields and dependability. Produces long strigs of large, opaque, off-white fruit; tart when immature. Plants are vigorous and spreading, and are easy to grow. Flowers in mid-spring, avoiding late frosts.



Fig. 4. White currant fruit cluster at harvest time, unknown cv.

(Photo courtesy Steve McKay, Cornell University)

**Primus.** Late-season. Has white to yellowish fruit on upright, vigorous plants. Similar to Blanka in fruit quality, but yields may be slightly lower.

## Black Currants

Black currants are prized for their strong aroma, flavor, and high vitamin C content. Some cultivars, particularly those that are purely *Ribes nigrum*, are highly susceptible to WPBR. Resistance has been developed in cultivars by crossing with *R. nigrum* and *R. ussurienses*. However, juice and processing quality of initial crosses ('Crusader,' 'Coronet,' 'Consort') are considered substandard as compared to standard nonresistant cultivars. Recent backcrosses (crosses back to a parent) have resulted in new cultivars such as 'Titania,' which have retained near-immunity to WPBR. These backcrosses also have improved commercial traits such as tolerance of adverse weather at flowering and suitability for machine harvest. In addition, they have a long hang time, even fruit-ripening within clusters, high yield, improved resistance to mildew and leaf diseases, and better juice quality. Black currants nonresistant to WPBR are not recommended and usually are the target group still prohibited by law. There are a few new Russian seedling selections that are being increased in number for distribution and will become available in the near future. These selections are variable in resistance to mildew and WPBR. Many of these selections are large-fruited and in general, much more palatable for fresh use than black currant cultivars that are currently available

**Ben Sarek.** Early-season. Known for strong set of very large fruit, ease of hand harvest, and tolerance to frost and cold injury. Good for processing. Growth habit is very compact. Recommended for small-scale growers with limited land area. Has slight to moderate resistance to WPBR.

**Consort.** Early- to mid-season. Fruit are medium-small with medium firmness. Juice quality is fair. It does not machine harvest well. Plants are self-fertile with dependable set, but are rated fair in productivity. Susceptible to leaf spot and mildew. Resistant to WPBR.

**Coronet and Crusader.** Similar to 'Consort,' but both require pollinators. Yields and quality are poor. Resistant to WPBR.

**Ben Lomond.** Mid-season. Known for even ripening and high yields of large, firm fruit that have a long hang time and high vitamin C content despite high pectin

levels. Plants are compact yet spreading, and have good frost tolerance at flowering. Plants have variable resistance to mildew and slight resistance to WPBR. (Figure 5).



Fig. 5. Black currant at harvest time, 'Ben Lomond' cv.

(Photo courtesy of Dick McGinnis, McGinnis Berry Crops, <http://www.berrycrops.net/>)

**Titania.** Mid-season. Fruit are large and of high quality. Yields are high. Plants are vigorous, growing up to six feet tall, come into full production by the third year, and are well suited for machine harvest. Nearly immune to WPBR.

**Tisel.** Mid-season. New cultivar that is a progeny of Titiana. Productive. Fruit ripen evenly and have very high vitamin C levels. Has reported immunity to WPBR and also is resistant to mildew. Not yet available in the U.S.

**Black September.** Late-season. Fruit are large and firm with a mild flavor. Yields are poor. This cultivar has no resistance to WPBR.

## Gooseberry Cultivars

American gooseberry cultivars are more disease resistant, more productive, healthier, and more adaptable to varied climatic conditions than European cultivars, which have the advantages of large fruit size, good color, and sweet flavor. However, lack of disease resistance and marginal hardiness has limited European cultivar use in North America, and a stringent disease management program is required to grow them. Despite the huge number of European cultivars in existence, few are commonly available in the U.S. Specialty nurseries may carry selections or they may be found through grower interest groups such as the North American Fruit Explorers. Newer European cultivars with American genetic disease resistance are being developed and introduced. In comparison, few new

commercial American cultivars are on the market, and most commercial American cultivars have been around for many years. While the true genetic lines are somewhat blurred between American and European gooseberries, there still remains a distinct separation of the two types (Figures 6a,b).



Fig. 6a. American gooseberries harvested at green mature stage.  
(Photo courtesy Zoë Ann Holmes, Food Resource site, Oregon State University, <http://food.oregonstate.edu/>)



Fig. 6b. European type gooseberry, unknown cv.  
(Photo courtesy Steve McKay, Cornell University)

### American Origin

**Poorman.** Early- to mid-season. Fruit are red, medium size, and oval shaped. Fruit ripens over a long period and is of high quality. The flavor is sprightly sweet. Plants are vigorous and are the largest of American cultivars. Plants are also productive, upright, dense with few short thorns, and are mildew resistant.

**Oregon Champion.** Mid-season. Fruit are small to medium in size, round to oval, and pale white to greenish-yellow at maturity. The fruit have thin skin and are juicy and tart. Plants are large, vigorous, upright to spreading, and productive. They are somewhat susceptible to mildew.

**Captivator.** Late-season. This cultivar is an American-European hybrid. Fruit are large, pink to red, teardrop-shaped, and sweet. Plants are mildew resistant with few thorns. Yields are moderate.

**Pixwell.** From North Dakota. Fruit of medium size, pink, in clusters, and fair quality. Plants are vigorous, productive, have few thorns, and are hardy. Mildew-resistant. Recommended for home garden use. Best if used slightly under-ripe.

**Welcome.** Released by the University of Minnesota. Fruit are a dull red and medium to large size. Plants are hardy and have few spines.

### European Origin

**Careless.** Mid-season. Fruit are large, oval, and pale green to milky white when ripe with smooth transparent skin. Plants are moderately vigorous, upright to spreading, and very susceptible to mildew.

**Clark.** Mid- to late-season. Fruit are very large, red, and of high quality. Plants are thorny, dense, short with branches close to the ground, moderate in vigor, and productive. Thought to be a natural American-European cross. Plants are very susceptible to mildew.

**Hinonmaki Red and Hinonmaki Yellow.** Developed in Finland. Fruit are red and green-yellow respectively. Hinonmaki Red fruit are medium size; Hinonmaki Yellow fruit are smaller. With both, the skin is tart, but the flesh is sweet, aromatic and has very good flavor. Plants are short, moderate in vigor, and upright to slightly spreading. H. Red is more mildew resistant than H. Yellow. Both are thorny. H. Red is also known (erroneously) as Leppa Red.

**Industry.** Older, large cultivar with slightly hairy red fruit. May be difficult to find. Plants are very susceptible to mildew.

**Invicta.** Early- to mid-season. Fruit are large and pale green with a bland flavor. This cultivar is often used for processing, where it provides an even color and flavor. Plants are large and very productive, and have numerous spines. Resistance to mildew (but not to other leaf spots) is good.

**Tixia.** Mid- to late-season. Recent introduction, large cultivar, noted for semi-thornless character, and red fruit; vigorous and productive. Resistant to mildew.

## Obtaining Plants

Plants should be one or two years old, vigorous, and well-rooted (Figure 7). Reliable disease-free stock can be purchased from a nursery or nonpatented stock can be propagated easily by layering and cuttings (see Propagation). Only disease- and insect-free stock should be propagated and planted. Nursery-grown plants usually come bare-rooted. Request that plants be shipped as close to the planting date as possible.



Fig. 7. Well-rooted ribes plants.  
(Photo courtesy Jerry Williams, Virginia Tech)

After receiving the plants, check the roots for moistness, moisten if necessary, and store plants in a plastic bag in cold storage (separate from apples or other sources of ethylene, as this is lethal to plants) until the site is ready to plant. If storage is necessary for longer than two weeks, plants can be “heeled in,” with roots covered with soil in a temporary outdoor trench.

## Site Preparation

Site preparation should begin with the eradication of perennial weeds in the planting area. This can be achieved through the application of translocated herbicides (i.e. glyphosate) in mid to late summer or diligent cultivation. A soil test should be done to determine the soil pH and phosphorous and potassium levels and needs. These nutrients should be amended to moderate levels, with available phosphorus brought to a range of 50 to 75 pounds per acre and potassium to 150 to 200 pounds per acre. If pH levels are below 5.5, lime should be added to bring the soil pH to 6.0 to 6.3. Along with lime, phosphorus can be incorporated in the fall. However, both potassium and nitrogen (25 to 35 pounds per acre) should be incorporated in the spring to avoid the loss of nutrients to leaching. Note that currants and gooseberries are sensitive to the chloride contained in muriate of potash (0-0-60) so another form of potassium, such as sulphate of potash, should be used. If plants are to

be fall-planted, nitrogen should not be applied until the following spring. For smaller plantings, a general purpose fertilizer such as 10-10-10 or similar analysis can be used, and it should be broadcast and worked into the planting area, using approximately one pound of material per 100 square feet. Fertility management after planting is specific for crop age, soil type, and use of manures. It is discussed in the Field Care section.

Currants and gooseberries respond well to organic amendments, which in all soil types improves aeration and drainage and increase water-holding capacity. Organic matter can be applied in the fall or spring before planting. Well-aged manure at four to five bushels per 100 square feet (1,750 to 2,200 bushels per acre) is a good option. Other suitable additions include finished compost, leaves, rotted hay or straw, shredded peat, or sawdust. Any additions should be free of weed seeds and insects.

For larger plantings, a cover crop (green manure) can be grown and turned in to increase organic matter. In the year prior to planting, two or possibly three green manure crops can be grown during the course of the growing season. Once the cover crop begins to flower, till or disc it down and replant immediately. Buckwheat is a good example of a quick-developing spring/summer cover crop. A winter cover crop (cereal rye, vetch) can be sown after fall site preparation. At least three weeks prior to spring planting, overwintered cover crops should be either burned down with herbicides and/or mowed or chopped and incorporated. Be sure to disc or rototill organic materials deeply into the soil to insure adequate breakdown and soil loosening. If large amounts of non-decomposed materials are added, ammonium nitrate can be applied at one-half pound per 100 square feet (225 pounds of ammonium nitrate per acre) to aid in decomposition.

In areas of questionable drainage, permanent raised beds three to four feet wide and four to six inches high should be formed. A second option to improve drainage is to install drain tiles at least 25 inches deep near the row prior to planting.

## Spacing and Planting

### Spacing

Spacing plants depends on cultivar vigor and growth habit, site fertility, planting system used, and equipment size. In general, red currants and gooseberries should be planted three to four feet apart in rows a



minimum of six to eight feet apart. Black currants are more vigorous and should be spaced four to five feet apart in rows eight to 12 feet apart. Avoid overcrowding as adequate air circulation and movement are critical in reducing foliar disease incidence. Equipment access is another important preplant consideration, and adequate room must remain to navigate between rows when plants mature.

Plants can be established as freestanding bushes at the above spacing, or planted at closer densities to form a hedgerow, a common practice for black currant production. A third, less common method is to keep plants pruned as a tree form or as a standard with a trunk kept at a chosen height, and supported by a trellis. This is sometimes practiced with gooseberries and increases air circulation and reduces disease. In this system, spacing is the same as for freestanding bushes.

## Planting

Because ribes plants break dormancy early, very early spring planting is recommended. A plant which has just leafed out can easily tolerate 20°F, so do not be afraid to plant as soon as the soil can be worked. If dormant nursery stock is available, fall planting can be done; however, avoid nitrogen fertilizer application which may decrease winter hardiness. In addition, plants should be mulched to reduce winter frost heaving effects.

Avoid excessive root drying and exposure as plants are set out. The roots of bare-root plants should be soaked in a bucket of clean water one to two hours prior to planting. Damaged and straggling root parts should be trimmed. Plants should be set about an inch deeper than they were growing in the nursery. Covering of one to three buds on the lower part of canes will encourage a larger root system and increase renewal cane production; however, avoid excessive planting depths. The roots should be spread out, covered with soil and pressed firmly to remove air pockets. Water the plants to settle the soil, but avoid “water logging.”

Newly set plants should be pruned back to six to ten inches above the ground, depending on root system vigor. This will encourage development of new canes. With fall planting, this pruning should be delayed until spring. When practical, blossoms or any set fruit should be removed the year of planting. This helps plants to become well established and make better vegetative growth.

## Field Care

### Cultivation and Mulching

Mechanically cultivate or hand hoe from early spring until harvest to control weeds between plants. Practice level, shallow cultivation to avoid harming roots. After planting, and throughout the life of the plants, maintain an organic mulch of straw, hardwood sawdust or bark, pine needles, compost, or other suitable material around the base of each plant, or as a band over the row. Mulching helps to conserve soil moisture, cools the soil, and suppresses weeds. The mulch should be two to four inches deep, with additional annual applications made to maintain this depth as decomposition occurs. Fresh or nondecomposed materials such as wood chips or sawdust can tie up available nitrogen as they break down, and nitrogen above the recommended rates may be needed. Signs of nitrogen deficiency include yellowing of older leaves and poor growth. Rodents may infest mulched areas and should be controlled.

### Fertility

Currants and gooseberries have a moderate to high nutrient uptake and respond to a regular fertilizer program. Established plants should be fertilized each spring as growth begins. Depending on site fertility and plant vigor, fertilizer applications can be made only once in early spring, or split to encourage better growth. Because the plants have shallow roots and fertilizer may quickly leach below the root zone, it is often a good practice to split applications, especially in light-textured soils.

When applying a balanced fertilizer such as 10-10-10, as noted, it is preferable to use a fertilizer made with potassium sulfate rather than potassium chloride. Other potassium-containing fertilizers without chloride include potassium magnesium sulfate (i.e. Sul-Po-Mag™) if magnesium is also needed, and potassium nitrate. For second-year plantings, apply approximately four to five ounces of 10-10-10 fertilizer per plant (or an equivalent rate of a similar fertilizer based on nitrogen contribution of 25 pounds per acre). A broadcast application should be made, spread under the branches and just beyond the drip line. In third-year plantings, rates should be increased slightly. Fourth-year and mature plantings should receive a maximum of six to eight ounces of 10-10-10 fertilizer per plant (or 25 to 50 pounds actual nitrogen per acre). Depending on growth, up to double these rates may be needed where fresh sawdust or bark chips are used as a mulching material.

When available, manure or other composted materials with significant nitrogen content (3 percent to 5 percent) are the best nutrient sources for ribes, which respond well to slowly released organic nitrogen sources. These materials can be substituted for all or part of the fertilizer requirement and should be applied in early spring to allow time for nutrient movement into the root zone. In general, inorganic chemical nitrogen additions can be reduced by one-half or more with the use of manure. Both manure and chemical fertilizers applied in summer or early fall can make plants more susceptible to winter injury.

## Notes on Sod Row Middles

A permanent sod such as creeping red fescue or orchard grass may be grown between rows (Figure 8). This area should be lightly cultivated and fertilized prior to sowing or drilling of seed for best results. Sod eliminates the need to cultivate between rows and provides a clean walking area for hand picking. Sod should not be allowed to grow closer than one foot from the drip line, and it should be kept closely mowed and irrigated. Avoid clovers in a sod seed mix as they may provide untimely nitrogen. Plantings under sod culture tend to be more prone to frost injury as compared to cultivated soil, as bare soil warms more quickly in the spring and releases more heat on cold nights, protecting plants.



Fig. 8. Mulched ribes bed with sod strip.  
(Photo by A. Bratsch)

## Irrigation

For quality fruit, from bloom to the end of harvest, currants and gooseberries require about one inch of water per week. This ensures good plant growth, high yields, and large berry size. In most areas, rainfall is usually adequate, especially if mulch is being used. However, if rainfall is short, supplemental irrigation is advised. Drip or trickle irrigation is preferable to overhead irrigation, which can increase foliar disease problems.

During prolonged dry periods after harvest, plants should be watered periodically until late August or early September. Add enough water to moisten the soil to six to eight inches, allowing it to dry before watering again. Roots can be injured by over-irrigation.

As with strawberries, sprinkler irrigation can help to prevent frost injury during bloom. As temperatures fall just below freezing, low volumes of water are applied using special low delivery nozzles. A protective film of ice forms over the plant and blossoms, and as water is converted to ice, heat is released that protects blooms and newly set fruit. Trickle systems are not useful for frost protection.

## Pollination Considerations

Since currants and gooseberries are self-fruitful, (except for a few black currants) cross-pollination by a second cultivar is not needed. However, cross-pollination can result in bigger fruit and a larger harvest. Larger plantings may benefit from the inclusion of multiple cultivars and nearby placement of beehives to facilitate pollination. Bumblebees and solitary bees are more efficient due to the early bloom when weather is colder and honeybees are not as active. Use only insecticides nontoxic to bees during bloom.

## Pruning and Training

Currants and gooseberries should be pruned in the dormant season, during late winter and early spring. Red currants and gooseberries are similar in their fruiting characteristics. Black currants are different and should be pruned accordingly. Some summer pruning is often needed to keep the plants open and to facilitate harvest. Plants that are not pruned develop too many main stems and branches, are difficult to harvest, and become unproductive (Figures 9a, b)



Fig. 9a. Unpruned currant bush with too many older main stems, and few new shoots.  
(Photo by A. Bratsch)



Fig. 9b. Untamed gooseberry twig growth.  
(Photo by A. Bratsch)

## Pruning Red, White, and Pink Currants and Gooseberries

Plants of these two types produce most of their fruit from short spurs located on one-, two-, or three-year-old canes. Spurs decline in productivity by the fourth year; hence, older canes should be removed at ground level. In pruning for bush production, a goal for a mature plant is to have nine to 12 main stems (three to four each of one-, two- and three-year-old canes). All stems older than three years should be removed. This is called renewal pruning and will keep the bushes productive.

**A seasonal pruning schedule should follow the below pattern:**

- 1. At planting:** After planting, head back plants to six to ten inches tall. This encourages root and basal shoot growth.
- 2. After the first season:** During late winter or early spring, remove all but six to eight of the most vigorous shoots, making pruning cuts close to the ground.
- 3. After two seasons:** Leave four or five new one-year shoots, and keep three or four of the two-year-old canes.
- 4. After three seasons:** Keep three to four canes each from new one-, two- and three-year-old growth.
- 5. Mature Plantings:** After the fourth and in following years, remove the oldest canes and keep three to four new one-year-old canes to replace the older canes removed.

When pruning, also remove branches that lie too close to the ground. Heading back is not necessary; however, remove diseased tips and weak or otherwise damaged

branches is advised. Excessively crowded and vigorous canes should be thinned to create an open center to increase light exposure for fruit bud formation and to increase air circulation. Do not make the common mistake of leaving the bushes too thick. Plants may also be thinned in summer by removing many of the side branches on the canes so that the canes are better able to support a heavy fruit load and to facilitate harvest.

Pruning red currants or gooseberries to a tree or standard form is also possible. Trellising or some means of support is usually required. The advantages of this system are increased yields and air circulation. Disadvantages are increased hand labor in pruning and training, the cost of wire supports, and decreased plant longevity. This method is recommended for those who have had experience with dwarf-tree fruit systems, or are interested in specialized or unique methods of production or ornamental aspects. Trellising also helps to reduce wind damage in early spring.

## Pruning Black Currants

Black currants produce best on one- and two-year-old wood. They do not fruit on spurs, as do red currants and gooseberries. Strong one-year-old shoots and two- and three-year-old stems that have an abundance of strong one-year-old shoots are the most productive.

Because of their bearing habit, black currants can be pruned by two different methods, both of which can be used in free-standing and hedgerow systems.

**Method 1:** Plants should have two- and three-year-old canes along with one-year-old shoots, with a total of ten to 15 canes per mature bush. Black currants are somewhat more vigorous than red currants; hence the number of canes kept is higher. The proportion of one-year-old canes kept to older canes is also different, with approximately one half of all canes kept being one-year-old canes. Remove all shoots more than three years old at ground level.

**Method 2:** An easier method of pruning black currants takes advantage of its fruiting habit. This system uses only one-year-old canes and an alternate-year production system:

*Year 1:* Plants are pruned to the ground immediately following the harvest, then lightly fertilized and watered. Small immature canes may be allowed to grow. This will usually provide 12 to 18 inches of growth by dormancy. These canes do not set flower buds.

*Year 2:* The previous year's canes remain vegetative and additional canes are allowed to grow.

*Year 3:* A large crop is produced on the previous two seasons' growth. All canes are again pruned to the ground after fruiting.

The cycle repeats with only vegetative growth the next year. As plants are out of production for a season, the planting should be divided into differently pruned blocks to insure a crop each year. This method greatly simplifies the pruning of black currants and reduces insect and disease carryover. The hedgerow planting system is ideal for this timesaving pruning method.

Black currants can also be trained as a standard. This requires diligent pruning to promote one-year-old shoot production on older wood.

## Harvest

Currant and gooseberry plants can be very productive at maturity, with yields of four to six quarts per plant considered good (by weight, gooseberries, eight to ten pounds per plant, and currant, five to eight pounds per plant). Black currant yields are usually ~50 percent less. Red currants and gooseberries reach full economic bearing capacity in three to four years and black currants in four to five years. With care, the life of currant plantings is about eight to 15 years and that of gooseberry plantings 15 to 20 years. The fruit ripen over an extended period and depending on variety, can remain on the plant in cool weather, allowing harvest schedule flexibility.

Black currants, jostaberries, and gooseberries are harvested as individual berries; red, white, and pink currants are picked as whole strig clusters. Red currants are smaller and more tightly bunched than black currants. Gooseberry fruit are borne singularly or in small clusters.

Fruit are harvested in mid-summer. Currants ripen over a two-week or longer period while gooseberries take from four to six weeks to ripen, depending on weather. Once a berry fully ripens, it can be left on the bush a week or more without becoming over mature; but in some varieties, fruit acidity can drop. Weekly harvest allows slower-maturing fruit to ripen and can condense the harvest number to two to three pickings. Red currants turn red long before they are fully ripe. They should be allowed to remain on the plant as long as possible to develop additional flavor and become sweeter with time. Bird predation is often a sign that it is time to harvest.

Gooseberry harvest generally requires the use of gloves, especially with thornier varieties. If desired, a canvas may be spread out under the bush, and fruit knocked off on to it. Berries can be harvested when they are full size but not yet ripe, which is preferred for pies and jam. For fresh and juice use, fruit should be allowed to reach full ripeness and color expression. For retail sales, pack fruit in pint to quart containers; however, because currant fruit are softer, be careful not to place fruit too deep in any container (Figure 10). Both types of fruit can be frozen and kept for later use.



Fig. 10. Black currant fruit packed for fresh sales, note depth of fruit in container to prevent damage.

(Photo courtesy Jerry Williams, Virginia Tech)

## Notes on Propagation

Currants and gooseberries are easily propagated by means of cuttings or layering. Patented varieties cannot be propagated for plant marketing purposes except by agreement with the patent holder.

## Cuttings

Currants and the American varieties of gooseberries can be propagated by cuttings. These are taken during the dormant season from new one-year-old wood. Cuttings are six to eight inches long, with the bottom and top cuts made near nodes. Cuttings can be taken and stuck in rooting media in the late fall, or taken later and kept in moist sand, sawdust, or peat moss in a cool place (refrigerator) until they are set in early spring. Cuttings should be set about six inches apart in well-drained soil in a nursery area, and inserted so that one to two buds extend out of the soil. Fall-stuck cuttings should be mulched with straw or may be stuck through black plastic in raised beds. These cuttings should be cut and placed as soon as the plants are dormant, this will allow several weeks for rooting to start before the ground freezes.

## Layering

Gooseberries, particularly the European types, can be propagated by layering. This can be done using a “stooling bed” (mound layering), or by individual branch layering (ground layering). Stool beds require the use of a “stock” plant that is cut back before growth starts in the spring. By early summer a large number of vigorous shoots will have been produced. Soil is mounded around these shoots about halfway to the tips, with care taken to work the soil down among the shoots. The covered parts of the shoots usually become rooted by fall. Cut the newly rooted plant from the parent in the spring and plant in a permanent site or in nursery rows.

Branch layering is similar to mound layering, and is accomplished by bending branches down while they are still attached to the plant, and partly covering them with soil. Pegs may be necessary to hold down the stems. This can be done fall or spring. Plants are kept covered for one growing season. Roots and shoots form along the branch; often several plants can be obtained from one branch. These can be dug and separated after the growing season.

## Weed and Pest Management

There are limited registered herbicides for weed control in ribes. Spot spraying with glyphosate (Roundup™) and paraquat (Gramoxone™), and selective grass control with clethodim (Select™) are registered uses. Knowing the modes of action of these materials is important. Glyphosate is nonselective and translocated and should never contact green tissue. Paraquat is also nonselective, but is not translocated, thus contact with green tissue should be avoided, but it will only damage the plant at the point of contact. Clethodim is selective and contact with ribes will not harm them. Cultural controls such as mulching and cultivation are the primary methods to keep plantings clean and weed-free.

Both currants and gooseberries can be affected by several insect and disease problems. Powdery mildew and leaf spot (anthracnose) are the two most common disease problems that can lead to defoliation by mid-season if the plants are not protected (Figures 11a, b). Aphids, mites, scale, and cane boring insects can be important insect problems, and regular scouting should be conducted. Careful site selection, choosing resistant cultivars, and proper pruning often provide fair control, but plantings should be monitored through the season and pesticide applications may be required.



Fig. 11a. Powdery mildew on gooseberry fruit.

(Photo courtesy Jay Pscheidt, Online Guide to Plant Disease Control, Oregon State University, [http://plant-disease.ippc.orst.edu/factsheet.cfm?RecordID=170&rec\\_type=image](http://plant-disease.ippc.orst.edu/factsheet.cfm?RecordID=170&rec_type=image))



Fig. 11b. Leaf anthracnose on ribes.

(Photo courtesy Jay Pscheidt, Online Guide to Plant Disease Control, Oregon State University, [http://plant-disease.ippc.orst.edu/factsheet.cfm?RecordID=169&rec\\_type=image](http://plant-disease.ippc.orst.edu/factsheet.cfm?RecordID=169&rec_type=image))

Various chemical compounds are available for use in ribes to control pests. It is beyond the scope of this publication to detail each material and its use. A complete discussion and recommendations for weed and pest control are provided in the *Mid-Atlantic Berry Guide for Commercial Growers* which provides additional information on culture as well as alternative pest control measures that organic growers may consider. This publication is available through local Virginia Cooperative Extension offices.

## Additional References

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*The Brooks and Olmo Register of Fruit and Nut Varieties*. Third Edition. 1997. ASHS Press. Alexandria, Va. ISBN# 0-9615027-4-6. 743 pages.

## Web-based Information

Virginia Small Fruits website, <http://www.ento.vt.edu/Fruitfiles/VirginiaSmallFruitSite.html>

Ribes Cultivar Review, Cornell Fruit Resources, <http://www.fruit.cornell.edu/Berries/ribescult2003.html>

Pest Management Guidelines for Berry Crops, Berries, Cornell Fruit Resources, <http://www.fruit.cornell.edu/Berries/pestman/index.html>

National Clonal Repository for Small Fruit, Corvallis Oregon, Agricultural Resources, USDA, [http://www.ars.usda.gov/main/site\\_main.htm?modecode=53581500](http://www.ars.usda.gov/main/site_main.htm?modecode=53581500)

International Ribes Association, <http://dir.gardenweb.com/directory/tira/>

Northwest Berry and Grape Information Network, <http://berrygrape.oregonstate.edu/>

Currants, *Ribes* spp., *Saxifragaceae*, California Rare Fruit Growers, Inc., <http://www.crfg.org/pubs/ff/currants.html>

Gooseberry, *Ribes* spp., *Saxifragaceae*, California Rare Fruit Growers, Inc., <http://www.crfg.org/pubs/ff/gooseberry.html>

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## Acknowledgments

Special thanks to reviewers: Jason Murray, Extension agent, Loudon County; Regina Prunty, Extension agent, King George County; and Cathy Demchak, Extension specialist, Penn State University.

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