

Growing Grapes for Home Use



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Grapes can grow in almost any part of Minnesota if a suitable site and adapted varieties are used.

PLANTING

Grapes need full sunlight and high temperatures to ripen, so plant on southern slopes, the south side of windbreaks, or the south sides of buildings. Avoid northern slopes and low ground since these will be cooler throughout the growing season, delaying ripening of the fruit. Choose deep, well-drained soils to avoid standing water in the spring and encourage early growth.

Plant in the spring as soon as the soil can be worked. Use healthy plants with well-developed root systems. Space the plants six to eight feet apart. Before planting the vine, remove all canes except the most vigorous one. Trim off any broken or excessively long roots.

Dig a hole large enough so you can spread the root system out without bending the roots. Plant vines at the same depth as in the nursery, generally two to three inches above root level. Do not plant too deeply. Spread the roots and cover them completely with soil. After planting, shorten the remaining cane to two strong buds. Each bud will develop into a cane.

GRAPE VARIETY CHARACTERISTICS

AURORE

In the mid-1970's this white French Hybrid variety was much more widely planted across the eastern United States and in Minnesota than it is today. Although an early ripening and fairly hardy white wine grape, growers were disappointed with its mediocre wine quality and susceptibility to both black rot and splitting at harvest time.

BETA

For decades this cross between Concord and a wild *Vitis riparia* vine was the most widely grown grape in Minnesota. Beta's popularity arose from extreme hardiness and acceptable juice and jelly quality. At present, there are newer varieties (such as Valiant) which may be as hardy and are certainly higher in quality. Beta wine tends to be quite poor.

BLUEBELL

An old variety from the University of Minnesota. Bluebell is currently being rediscovered by growers and nurseries. It is recommended for those interested in a high quality labrusca-type grape for either fresh eating or juice and jelly. It has sufficient hardiness to be left on the trellis over winter in the southern half of the state.

CANADICE

This is a relatively new, pink, seedless variety from the New York State Experiment Station at Geneva, New York. Worthy of trial (with winter protection), it has not been an outstanding performer to date.

CONCORD

Concord is the most widely planted grape east of the Rockies and is popular in Minnesota, too. Although considered "very hardy" in other states it is not dependably hardy in Minnesota. This fact, together with its late ripening date, makes it a relatively poor choice for our area. Alternatives include Bluebell, Fredonia, Van Buren, and Worden.

DE CHAUNAC

De Chaunac is a French Hybrid wine variety that has made some palatable red wines in Minnesota. Although a heavy yielding cultivar, it is not grown as extensively as Foch or Millot, primarily because the latter two are earlier ripening. De Chaunac has a large cluster and should be cluster thinned to avoid overcropping.

EDELWEISS

Elmer Swenson of Osceola, Wisconsin has been breeding hardy grape vines for over 40 years. His first two introductions, Edelweiss and Swenson Red, were released jointly with the University of Minnesota. Edelweiss is a large-clustered, white variety that has good quality as a table grape as long as it is picked promptly. When completely ripe its labrusca flavor becomes too strong for many palates. Edelweiss is also sometimes used for wine, but again it should be harvested early. This variety has proven to be less than reliably hardy in central Minnesota so winter mulching is recommended. Its young shoots tend to be unusually brittle so extra care is needed when tying these vines.

ELVIRA

Elvira is a white wine variety of *Vitis labrusca* and *Vitis riparia* parentage. While it is hardy enough to be grown without winter protection on good sites in Minnesota, Elvira's wine has a foxy flavor and is frequently acidic.

ESPRIT

Esprit is a relatively new white wine variety developed locally by Elmer Swenson. To date, late ripening and marginal hardiness have discouraged widespread planting.

MARECHAL FOCH

This French Hybrid grape is the most widely grown variety in Minnesota and has frequently produced some good quality red

wines. In addition to being very early ripening, Foch is one of the hardiest French Hybrids. Unfortunately, in Minnesota it still requires winter protection for consistent cropping. The small black berries can be very attractive to birds and in a rich soil this vine can frequently have excess vigor. As its clusters are small, its pruning should not be severe.

FREDONIA

Fredonia is a blue labrusca table grape. It is similar to Concord except that it is earlier ripening, has larger berries, and its quality is a bit lower. In Minnesota, it should be laid down each winter for good production.

HIMROD

This variety from the Geneva experiment station in New York State is a white seedless table grape descended from the familiar Thompson Seedless cultivar. Although its flavor is outstanding, Himrod's berries tend to be small and its clusters are frequently straggly. It is also particularly vulnerable to winter injury.

KAY GRAY

Kay Gray is one of the Swenson varieties widely planted in our region in recent years. Its virtues include early ripening, low acid levels, disease resistance, and good winter hardiness. On the negative side, its clusters tend to be small and winemakers have sometimes experienced difficulty making Kay Gray into a high quality wine.

LA CROSSE

Another white Swenson variety, La Crosse has shown the potential to make some pleasant wines that reflect its Seyval parentage. The vines should be covered for best results.

LEON MILLOT

Leon Millot is a sister seedling of Foch and is very similar to it in many ways. By comparison, Millot is slightly earlier ripening, more susceptible to powdery mildew, less hardy, and may make a higher quality red wine.

ST. CROIX

St. Croix is the one red wine variety that Elmer Swenson has released to date. It is similar to his white variety, Kay Gray, in that it is a hardy, low acid, disease resistant vine. It is still too soon to judge its wine quality potential.

ST. PEPIN

Yet another Swenson introduction, St. Pepin is a sister seedling of the variety La Crosse. St. Pepin makes a fruitier wine and has the disadvantage of being pistillate (it requires cross pollination with another variety). Unlike many wine grapes, St. Pepin is also pleasing either as a table grape or for juice.

SEYVAL

Seyval is perhaps the premier white wine variety in the eastern United States. It is also commonly grown in Minnesota although it

**Grape Variety Characteristics
University of Minnesota**

Variety	Origin	Relative Hardiness	Berry Color	Ripening Season	Principal Uses
Aurore	France	Tender	White	V. Early	W, T
Beta	MN	V. Hardy	Blue	Mid	J
Bluebell	U of M	Mod Hardy	Blue	Early-Mid	T, J
Canadice	NY	Tender	Red	Early-Mid	T*
Concord	MA	Tender-Mod	Blue	Late	J, T
De Chaunac	France	Tender	Blue	Mid-Late	W
Edelweiss	U of M	Tender-Mod	White	Early-Mid	T, W
Elvira	MO	Mod Hardy	White	Early-Mid	T, W
Esprit	Swenson	Tender-Mod	White	Late	W
Foch	France	Tender-Mod	Blue	Early	W
Fredonia	NY	Tender-Mod	Blue	Mid	T, J
Himrod	NY	Tender	White	Early	T*
Kay Gray	Swenson	Hardy	White	Early	W, T
La Crosse	Swenson	Tender-Mod	White	Early-Mid	W
Millot	France	Tender	Blue	Early	W
St. Croix	Swenson	Hardy	Blue	Mid	W
St. Pepin	Swenson	Tender-Mod	White	Early-Mid	W, J
Seyval	France	Tender	White	Mid-Late	W
Swenson Red	U of M	Tender-Mod	Red	Mid	T
Valiant	SD	Hardy	Blue	Early	J, T
Van Buren	NY	Tender-Mod	Blue	Early	T, J
Vanessa	Ontario	Tender	Red	Mid	T*
Vignoles	France	Tender	White	Mid-Late	W
Worden	NY	Mod Hardy	Blue	Early-Mid	T, J

Key for Principal Uses:

J = Juice or Jelly
T = Table
T* = Seedless Table
W = Wine

Key for Hardiness:

Tender = Requires winter protection everywhere in Minnesota.
Tender-Moderately Hardy = Can be grown without protection on especially good sites in southern Minnesota.
Moderately Hardy = Can be grown without protection on good sites in central Minnesota.
Hardy = Can be grown without protection throughout the southern two-thirds of the state. Will require protection in northern Minnesota.
Very Hardy = Needs no winter protection in Minnesota.

does not always ripen adequately here. It requires both cluster thinning and thorough winter protection to perform well.

SWENSON RED

Swenson Red is a high quality seeded table grape with large crisp berries. Its pleasant mild flavor is closer to that of vinifera than labrusca grapes. This variety is the result of Elmer Swenson's breeding work and like Edelweiss was a joint introduction between Swenson and the University of Minnesota. Swenson Red is susceptible to downy mildew and is not quite hardy enough to be dependable in the Twin Cities area without winter protection.

VALIANT

A cross between Fredonia and a wild *Vitis riparia* vine resulted in this recent introduction from South Dakota State University. Valiant is a very hardy blue table grape that ripens dependably throughout much of the region. It makes good quality juice and jelly, but is unsuitable for wine. As a table grape its biggest drawback is the small size of both berry and cluster.

VAN BUREN

Van Buren is another of the numerous blue labrusca-type varieties useful for dessert, juice, or jelly. Its hardiness in Minnesota has yet to be thoroughly tested but its earliness and high quality make it deserving of further trial.

VANESSA

The characteristic that separates Vanessa from other eastern seedless introductions is its crisp texture. Vanessa has attractive medium-sized clusters that are well filled with red berries. Its taste is mild, but its texture is superior to other commonly available cultivars. Like the other seedless types, Vanessa does require winter protection in Minnesota.

VIGNOLES

Vignoles (or Flavet 51) is a low yielding French Hybrid variety that has the potential to produce outstanding white wines under favorable conditions. It has not been widely tested in Minnesota, but appears to have promise. Additional sprays may be required to control bunch rot in a wet year and extra buds should be left when pruning to compensate for its small cluster size.

WORDEN

This Concord seedling has proven to be one of the most dependable eastern labrusca varieties in Minnesota. It is not only more winter hardy than its parent, but earlier ripening. The fruit resembles Concord except that its berries are more pointed and Worden's flavor is more subdued. In a wet year, the tightly packed berries have a tendency to crack.

CARING FOR GRAPES

Although vines often are allowed to grow at random, sprawling over the ground during the first season, it's best to train the stronger of the two canes which developed from the plant to a strong stake five to six feet high. Remove any suckers growing from the base of the canes. Remove the weaker cane in the dormant season (March). If neither cane is three feet long, cut the plant back to two buds again the second year.

Apply nitrogen two weeks after planting at a rate of 10 lb of 10-6-4/100 ft of row. Reapply at the same rate annually in early spring, right before growth starts. Fertilizer can be applied to a single plant at a rate of 1 lb/plant. Have the soil tested every three to five years. Do not apply fertilizers containing herbicides (e.g., certain lawn fertilizers) in or near the grapes. Hand hoe to eliminate weeds. Four to six inches of mulch may be applied to help control weeds and conserve soil moisture.

PRUNING HARDY VARIETIES

Although there are several systems for pruning grapes, the four-arm Kniffen system (Figure 1) is the most simple for varieties that do not require winter protection. In this system two horizontal wires are stretched between posts for support of the vine. The bottom wire is 36 inches and the top wire 60 inches above the ground. The young vine is tied to a stake and, as it grows, to the two wires. This ensures a straight trunk for the mature vine.

Begin training after the vine reaches the first wire. Remove all shoots between the wires and cut back shoots along the lower wire to two buds (Figure 1b).

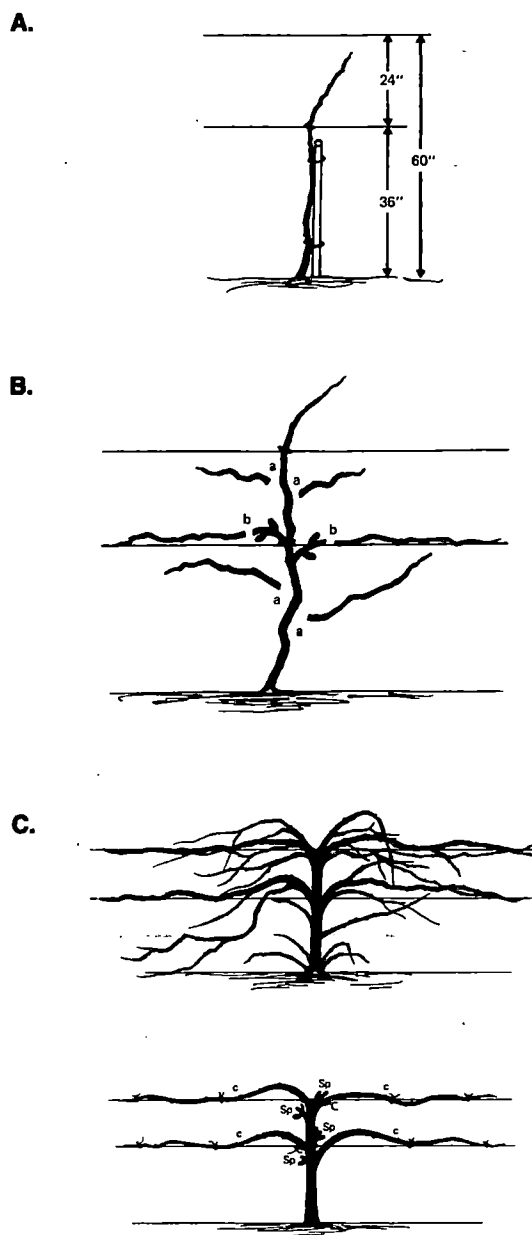


Figure 1. The four-arm Kniffen system. A. The vine is tied first to a stake and later, as it grows, to the wires. B. Branches should be removed (a) or cut back to two buds (b) along the lower wire. C. A mature vine before and after pruning. Sp = renewal spur; c = fruiting cane.

The mature vine has four to six canes (each with five to twelve buds) and four to six renewal spurs (each with two buds).

When pruning, keep in mind that fruit is produced on current season's growth that in turn grows from last season's wood. Heavy pruning provides the best fruit. Light pruning results in large yields of poor-quality fruit; very heavy pruning produces too much vegetative growth and little or no fruit. The table, juice, and jelly varieties can have 40 to 60 buds per vine but wine varieties should have only 20 to 30 buds per vine after pruning.

PRUNING TENDER VARIETIES

In varieties that require winter protection, prune the vine to a single horizontal trunk that can be removed from the trellis (Figure 2).

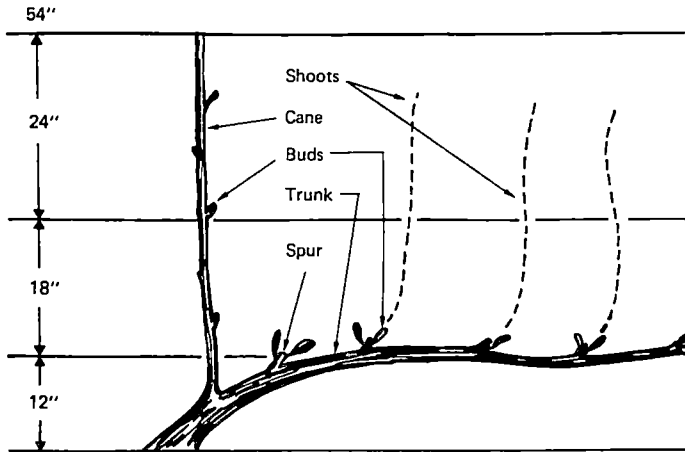


Figure 2. Training system for tender varieties.

To winter the plant, bend the trunk down and cover it with six to eight inches of soil or mulch. Uncover approximately mid-April, or as soon as frost is out of the ground. Then lift the vine and tie it in place on the trellis. As shoots grow from the trunk, tie them in an upright position to the upper wires. In the fall, when these shoots have matured into canes, cut them back to short spurs containing one or two buds each.

You can increase the trunk's length by bending down the cane near the top. In this manner, one to two feet of new trunk usually is added each year until the trunk reaches the desired length of six to seven feet.

PRUNING NEGLECTED VINES

Prune old and neglected vines in stages. Select a sturdy cane originating near the base of the plant. Cut it back to three to four feet. After this cane completes its second growing season, cut off the old trunk just beyond the attachment of the renewal cane. Old, neglected, or improperly pruned vines usually have too much wood. When pruning, cut as much of the old wood as possible. This encourages the growth of new wood near the main body of the vine.

HARVESTING

Grapes change color long before they are fully mature, so it's possible to pick the clusters before they have reached their peak in flavor, size, and sweetness if berry color alone is used as a guide. For best fruit, taste the grapes first to see if they are ripe. If

they aren't, wait for optimum quality to develop. Grapes will not improve in quality after they are harvested.

PROPAGATION

It's easy to propagate grapes from cuttings. Take sections of the canes from healthy, moderately vigorous vines while they are dormant. This can be either in late fall or early spring before growth starts; early spring is preferred because once the cuttings have leafed out and formed roots they can be placed outside in the shade and then planted. Cut the sections directly from the vine or from brush that has been recently pruned off. Make cuttings three nodes long with the bottom cut (the portion that will form roots) just below the bud or node and the upper cut at an angle of about 45° 3/4 to 1 inch above the bud or node (Figure 3). Plant cuttings as soon as possible after they are made. Place the cuttings at the depth of the second bud from the top and cover with loose soil. Rooting will be enhanced if the cuttings are placed in a humid environment. After rooting has taken place, move the cuttings outside if the temperature remains above freezing. Protect new plants from the direct sun. After the cuttings have adjusted to the outside environment, they can be planted. It is important to not allow the cuttings to dry off during this process.

PESTS

Birds can be a nuisance in grapes. The only protection is to place netting over your grapes.

Grapes are extremely sensitive to the fumes of 2,4-D, which is widely used to control dandelions in the lawn. Severe exposure results in deformed leaves and destroyed flower clusters. Gardeners that use 2,4-D around their grape plants after they have leafed out may find it impossible to grow grapes.

There are a few pests that can be problems on grapes. A listing of them with control measures can be found in the folder *Home Fruit Spray Guide*, AG-FO-0675.

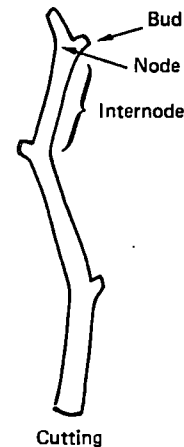


Figure 3. Grape vine cutting.

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