

EB0775

Growing Grapes for Wine and Table in the Puget Sound Region



Most grapes are not well adapted to the generally cool climate of the Puget Sound region. Grape cultivars (varieties), such as Island Belle (Campbell Early), have been grown commercially, but the wines they produced are acidic, thin, and considered of low quality. The maritime climate favors development of mildew and other bunch rot problems, particularly on varieties containing European (*vinifera*) parentage. In small plantings, birds frequently destroy the crop before it reaches maturity. Thus, grapes should be considered only by those willing to cope with the vagaries of weather and perhaps manipulate the environment to obtain satisfactory results.

This publication will discuss some of the unique features of growing grapes in the Puget Sound region of western Washington. General information on the culture of grapes including propagation, trellis construction, training and pruning, soil management, and pest control are contained in other publications listed at the end of this publication. These can be obtained from your county Extension office.

Since temperature is the main limiting factor for grape production in coastal areas of the Northwest, data from

selected stations follow. Some important wine-producing areas of Europe have less than 2000 accumulated heat units (AHU) per season, i.e., Geisenheim, Germany 1700 AHU. In marginal areas such as this, only certain early maturing varieties can be grown successfully. Even the earliest varieties will be difficult to ripen with less than 1500 heat units.



Illustration: Puget Sound area for

Cultivars (Varieties)

The first step is to select cultivars that have a chance of reaching satisfactory maturity (18% to 20% soluble solids or sugar content). Based on the experience and recommendations of test locations throughout the Northwest and other similar regions, an experimental cultivar planting was made at the Washington State University Research and Extension Unit, Mount Vernon, Washington, in 1973. The average annual heat unit accumulation in the area is 1521. The location is flat, exposed on all sides, and the soils are naturally fertile. From many respects this is not a naturally good site for grapes. The most common blue grape, Concord, was not included in the trial because it does not mature satisfactorily in most areas of western Washington.

Selecting a Cultivar for Your Site

Refer to the weather data and find the heat units most likely to be typical of your site. If you have a southerly slope and gravelly soil you may have up to 300 more heat units than indicated for that location. For north slope or heavy, fertile soils, estimate less. If you are located in an area with less than 1500 heat units, you might have success with the very early (VE) cultivars. If your location averages 1500-1700 heat units, you could add the early (E) cultivars. The midseason (M) cultivars will probably not be successful in areas with less than 1700 heat units

without special efforts to increase heat accumulation.
(Windbreaks may be helpful.)

Some of the fine wine cultivars, such as Chardonnay, Pinot Noir, Cabernet Sauvignon, and White Riesling, will mature properly in only the warmest and most protected areas of western Washington.

Weather Data for Selected Locations in Western Washington

| Location | Elevation (ft.) | Annual Precip. | Heat Units* (base 50°) | Temp. Extremes (°F) | |
|-------------------------|--------------------|-------------------|---------------------------------|------------------------|-----------|
| | | | | Highest | Lowest |
| Aberdeen | 12 | 84.54 | 1348 | 104 | 6 |
| Anacortes | 30 | 25.70 | 1683 | 95 | 4 |
| Bellingham | 112 | 35.59 | 1321 | 94 | -4 |
| Buckley | 685 | 49.28 | 1625 | 102 | -3 |
| Centralia | 185 | 45.53 | 2005 | 104 | 2 |
| Coupeville | 50 | 17.73 | 1348 | 98 | 3 |
| Concrete | 270 | 65.21 | 2060 | 102 | 0 |
| Everett | 99 | 35.24 | 1574 | 98 | 1 |
| Friday Harbor | 100 | 27.40 | 1354 | 98 | 4 |
| Longview | 12 | 45.10 | 1862 | 105 | 1 |
| Monroe | 120 | 46.76 | 1801 | 101 | -3 |
| Mount Vernon | 14 | 32.01 | 1521 | 98 | -4 |
| Olympia, Airport | 190 | 52.37 | 1693 | 103 | -1 |
| Puyallup | 50 | 40.50 | 1755 | 101 | -3 |
| Sea-Tac, Airport | 386 | 38.94 | 1863 | 99 | 0 |
| Sedro Woolley | 56 | 46.07 | 1548 | 97 | -2 |
| Sequim | 180 | 16.81 | 1288 | 99 | -3 |
| Vancouver | 100 | 39.00 | 2404 | 105 | -5 |
| Yakima, | | | | | |

| | | | | | |
|----------------|-------------|-------------|-------------|------------|------------|
| Airport | 1061 | 7.86 | 2279 | 108 | -25 |
|----------------|-------------|-------------|-------------|------------|------------|

Source: Washington Climate Series, Washington State University Cooperative Extension, Pullman.
 *Heat Units (base 50°)—Accumulated difference between mean daily temperature and 50° (base temp.) from March through October.

Cultivar Descriptions

Buffalo—Excellent midseason Concord-type grape, productive, good for table, juice, or wine; like other American grapes, should be trained to 4-cane kniffin system.

Campbell Early—Rather old variety formerly used for wine and juice. Will ripen only in the warmest areas of the Puget Sound region.

Canadice—Small, red, seedless, early maturing, with sweet, slightly foxy flavor; new introduction from New York.

Cayuga White—American hybrid, becoming very popular for white wine in the eastern United States. No foxy flavor. Ripens with Müller-Thurgau.

Einset—New, early red seedless grape from New York. Fruity, crisp berries with slight strawberry flavor. Not a heavy bearer.

Gewurztraminer—A white to pink grape with small compact clusters and having a characteristic spicy flavor; makes a highly aromatic white wine; sometimes blended with Riesling wines to increase bouquet; shy bearer.

Interlaken Seedless—Developed by the New York Agricultural Experiment Station (NYAES) from Thompson Seedless and Ontario. The vine is extremely vigorous and in warm areas, highly productive with fine quality grapes; in cool areas it often produces poor sets and many unevenly sized berries; improved with gibberellic acid

(GA) during bloom.

Leon Millot—Vigorous vine; may require cluster thinning to prevent overbearing; fruit much like Foch; early, high sugar; wine similar to Foch; one of the better red wine grapes for cool areas.

Lynden Blue—A very early dark blue grape, large berries in small open clusters; sweet, seeded, vigorous vines.

Madeleine Angevine—A very worthwhile grape giving heavy crops of green-white grapes that yield large quantities of juice for wine and may be enjoyed fresh; highly susceptible to birds and bunch rot (*Botrytis*); makes a light, fruity, Riesling-type wine with a minimum of amelioration (blending).

Madeleine Sylvaner—One of the earliest maturing white grapes; vigorous vine, consistent cropping but highly susceptible to yellowjackets, birds, and *Botrytis* fruit rot; wine is light, sometimes quite aromatic but not complex; excellent for blending with Gewurztraminer, or other wines with more flavors.

Marechal Foch or Foch (Kuhlmann 188-2)—Similar to Leon Millot with looser clusters, matures about 10 days later in cool climates; clusters below medium in size, long pruning recommended; acidity tends to remain high, requiring some deacidification.

Marechal Joffre—Earliest of the red wine types, moderate vigor and yield, easier to manage than Millot.

Mars—Early, blue slipskin type with strong, typically labrusca flavor; clusters medium size, well filled. Vine is vigorous, precocious.

Müller-Thurgau—A Riesling-type grape from Germany; susceptible to mildew; vine vigorous and productive; clusters medium, compact; wine quality good considering its earliness.

New York Muscat—A fine, aromatic, Muscat-type for

fresh eating or wine; medium vine with large-berried, loose clusters; moderately hardy; fruit pink to dark red; makes a pleasing red muscatel wine with American fruitiness and fairly low acid.

Okanagan Riesling—Thought by Canadian viticulturists to be a Teleki hybrid rather than true vinifera; medium to small compact clusters of medium-sized white berries; fruit is of high quality for wine; especially good on light soils; productive; may overbear; quite resistant to birds and mildew.

Pinot Noir—Classic red wine grape from the Burgundy area of France; small, compact clusters, vigorous vine, tender to cold, susceptible to mildew; variable ripening; grow only in warm favorable locations; when well grown, produces excellent light-bodied red wine.

Reliance—Medium size pink seedless grape, early maturing, slight muscat flavor, full bunches, good quality.

Saturn—Early, bright red skin, very large berries, crisp flesh; compact clusters. Vine is medium vigor, precocious.

Siegerrebe—Fairly recent cross from Germany, Riesling x Traminer, has similar characteristics to Scheurebe (Sylvaner x Riesling) but generally less acidity; wines have Muscat bouquet and are useful for blending. Good table grape also. Better than Csaba even though seedier.

Van Buren—Developed by the New York Agricultural Experiment Station at Geneva; a good, uniform setting bunch grape; good for table; not good for juice—fresh only, though not on a par with well-ripened Concord; consistent producer.

Vanessa—Early Flame seedless type, fruit medium size, deep red, firm crisp flesh; clusters medium size. Vine is vigorous, moderately hardy.

Grape Cultivars for Western Washington
(in approximate order of maturity within group)

| Season 1 | Cultivar | Type 2 | Color 3 | Comments 4 |
|---|---------------------|--------------|------------|--|
| Used Primarily for Dessert and Juice | | | | |
| *VE | Lynden Blue | Unknown Hyb. | B | Large berries, sweet, seeded |
| E | Interlaken Seedless | Amer. Hyb. | W | Earliest white seedless grape |
| VE | Reliance | Amer. Hyb. | W-R | Table and juice grape, productive |
| VE | Canadice | Amer. Hyb. | R | Small berried, pink, seedless |
| E | Van Buren | Amer. Hyb. | B | Earliest Concord-type bunch grape |
| *E | Mars | Amer. Hyb. | B | Slipskin, strong labrusca flavor |
| *E | Saturn | Amer. Hyb. | R | Very large berries, precocious |
| *E | Vanessa | Amer. Hyb. | R | Flame seedless type, medium size berries |
| M | Buffalo | Amer. Hyb. | B | Excellent quality for juice or table |
| L | Campbell Early | Amer. Hyb. | B | Juice grape, formerly used for wine |
| Used Primarily for Wine | | | | |
| VE | Siegerrebe | European | W | Earliest white wine type with slight muscat aroma |
| VE | Madeleine Sylvaner | European | W | Most consistent, heavy yield |
| E | Madeleine Angevine | European | W | Most consistent, heavy yield |
| E | Marechal Joffre | French Hyb. | B | Earliest black grape, satisfactory for home winemaking |
| E | Leon Millot | French Hyb. | B | Vigorous growth, needs shoot thinning |
| E | Marechal Foch | French Hyb. | B | Vigorous, productive, protect from birds |
| | Okanagan | Unknown | | Riesling type, good |

| | | | | |
|---|-----------------|------------|-----|---|
| M | Riesling | Hyb. | W | vine and fruit set |
| M | New York Muscat | Amer. Hyb. | R | Aromatic muscat wine, okay for table grape |
| M | Müller Thurgau | European | W | Riesling type, good yield |
| L | Gewurtraminer | European | W-R | Spicy, aromatic white wine |
| L | Pinot Noir | European | R-B | Classic red wine grape of Burgundy (France) |

* Not thoroughly tested but worthy of trial.

¹ Season: VE = very early; E = early; M = midseason; L = late. For extreme coastal area, select only VE and E cultivars.

² Hybrids of European and North American species have originated from breeders primarily in France (French hybrids) and in New York and Ontario, Canada (North American hybrids).

³ W = white; R = red; B = blue or black.

⁴ More detailed descriptions from our trials and other experience follow.

Location

In general, grapes require full sun and soils with good drainage and moderate fertility. Planting them in light soils is preferable. In such limited heat areas as the Puget Sound region, one must use all the "tricks" for trapping heat. Selection of a southern to western exposure, protection of the plants from the chilling effects of the wind, training vines close to the ground, and the use of black mulching materials, rocks under the vines to absorb heat, or even heating cable to warm the soil are some of the suggested methods. If you can plant against a reflective wall or fence (south side), you may gain enough extra heat to mature marginal varieties. Placing a material like aluminum foil around the base of the plants may hasten maturity by reflecting light and heat to the underside of the lower leaves.

Culture and Fertilization

It is important to know that in our cool, maritime climate, grapes have a tendency to be overly vegetative at the expense of fruit production and maturity. Thus, after the first year or two, eliminate nitrogen fertilizers until you can detect a definite need for them. Nitrogen deficiency is characterized by pale, yellowish green foliage; premature, reddish fall coloring; weak and spindly shoot growth. At planting, other elements should be added as determined by soil test. If shoot growth is too vigorous even though no nitrogen fertilizer is used, try planting a rye cover crop in early August to help slow growth and hasten maturity. Tipping the new growth from midsummer on and limiting the clusters to two per shoot also will enhance maturity and increase quality.

Weed and Pest Control

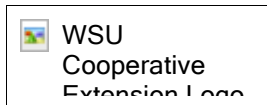
Grapes, in most regions, are clean cultivated. A cover crop may be grown temporarily between the rows, but usually no vegetation is allowed to grow in the vine row. However, with very vigorous vines, reduce the herbicide strip so that grass will compete with the vine, enhance grape maturity and reduce vine vigor. Unless the planting is a large-scale commercial venture, few herbicides should be used until vines are well established (3 years old). Vines are particularly susceptible to 2,4-D (in weed and fertilizer product). A number of herbicides are recommended for established plantings as outlined in [EB0762, Pest Management Guide for Grapes in Washington](#), available from your county extension office.

Powdery mildew is usually the most serious disease problem in grapes. Certain varieties, particularly the European types, will require an intensive spray program. Various bunch rotting diseases are also a problem as the grapes mature, especially if the fruit is covered by a canopy of leaves. Keep the fruit exposed to good air movement by leaf and shoot pruning. Recommendations for insect and disease control are given in the [Pest Management Guide for Grapes in Washington, EB0762](#). Also, see [EB1202, Powdery Mildew of Grapes in Washington](#).

Additional Information on Growing Grapes in the Northwest

Ahmedullah, M. 1987. [Trellising and Training Grapes for Production in Washington, EB0637](#). Washington State University Cooperative Extension, Pullman, WA 99164-5912. \$1.00.

Growing American Bunch Grapes, revised 1978. Farmers Bulletin 2123. Government Printing Office, Washington, DC.



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