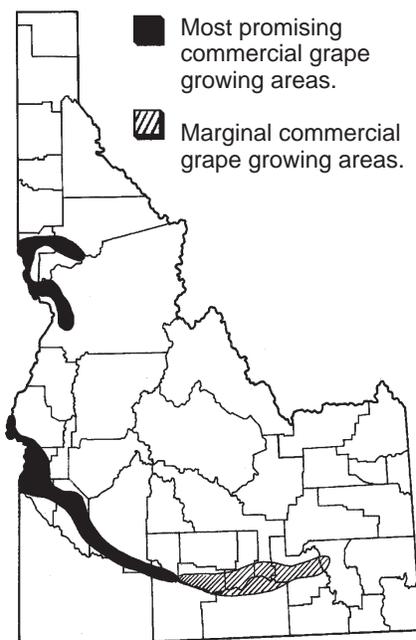




Selecting Grape Cultivars & Planting Sites in Idaho

Because of their adaptability to a wide range of growing conditions and the many uses for the fruit, grapes are the most important fruit crop in the world. California is the leading grape producing region in the United States, followed by Washington, New York, and Oregon. With a few exceptions, Idaho's climate does not favor commercial grape production.

Grapes are temperate zone plants that require both a cool season to meet chilling requirements and a warm growing season (150 to 180 frost-free days) to develop and mature a crop. Commercial areas are generally located where relative humidity remains low during



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the growing season, summer rains are infrequent, and the soil never becomes excessively dry. Table 1 lists some of the characteristics and requirements of grapes.

Sites with well-drained soils are generally best. As with all small fruits, you should begin site preparation at least a year before planting. Acidic to neutral soils with pH values between 5.5 and 7.0 are best, although grapes tolerate a wide range of soil pH. European cultivars may perform better than American grapes on alkaline soils (pH greater than 7.0). Soils with pH values greater than 8.0 can create nutritional problems, such as iron chlorosis, in the grape vines.

Growing Grapes in Idaho

During the 1970s, University of Idaho researchers twice evaluated the feasibility of commercial grape production in Idaho. Evaluations were based on the lengths of the growing seasons, winter low temperatures, and growing degree days. The studies suggested that about 45,000 acres in Ada, Payette, Gem, and Canyon counties and 17,000 acres in Elmore, Owyhee, Gooding, Idaho, and Nez Perce counties were good prospects for grape production (see map on cover). Marginal production might be possible in portions of Jerome, Cassia, Minidoka, Power, and Bannock counties.

In 1994, commercial growers raised about 1,000 acres of grapes in Idaho, mostly in Canyon, Payette, and Gem counties. Even in those areas, growers can expect to lose a crop to freezing injury about one year in seven. Severe winters may kill vines to the ground one year in ten.

There are sites throughout Idaho where the microclimates (the climate covering a small area) are suitable for grapes. Commercial production in such areas is risky, however, and only the earliest and hardiest cultivars should be grown. Home gardeners can often grow grapes on marginal sites by providing special care to the vines to offset poor climatic and soil conditions.

Cultural Practices

The cultural practices used for grapes are more sophisticated and complex than for any other small fruits. Correct site selection and preparation, cultivar selection, pruning, and training are critical. A complete guide to grape production is beyond the scope of this publication.

Anyone considering or actually involved in grape production should refer to more detailed guides listed in "Further Readings".

Cultivars

There are three types of commercially valuable grapes. Native North American *Vitis labrusca* grapes have skins that slip easily from the pulp when you squeeze the grapes between your fingers. This group, represented by the cultivar Concord, is quite cold hardy and cultivars typically have strong flavors suited to juice and processing. Some American cultivars are also used for wine. As with European and hybrid grapes, both seeded and seedless cultivars are available.

European wine grapes, *Vitis vinifera*, are the most widely grown grapes in the world and make up most of the grapes grown in California. These cultivars are less cold hardy than American grapes and can be grown only on the warmest sites in Idaho. Commercially they are used for wine, raisins, and table grapes. *Vinifera* grapes are susceptible to an American pest called the phylloxera root louse and are sometimes grafted onto phylloxera-resistant rootstocks for

commercial production. Phylloxera has not been a problem in Idaho.

Hybrid (also known as French hybrid) grapes were produced by cross breeding North American species (not including *labrusca*) and *vinifera* cultivars. The hybrids generally used for wines are intermediate in cold hardiness and usually have small berries.

Commercial fruit growers should plant *vinifera* grapes only in the warmest areas of southwestern Idaho, primarily around Boise. Hybrids extend wine grape production into less ideal areas near Lewiston. In marginal areas, such as Twin Falls, commercial producers should focus on North American grapes.

Recommending grape cultivars for Idaho is difficult because of the wide range of microclimates and the tremendous number of cultivars. Most cultivars listed in table 2 have been tested or grown commercially in Idaho with some degree of success. Estimated hardiness and maturation dates for the cultivars are given, but these values are strongly influenced by soil, climate, cultural practices, and crop load. European grapes will probably suffer occasional winter injury on even the best sites.

Note: As of 1996, Idaho has strict quarantine regulations that limit the importation of grapes into the state. Before purchasing or bringing any grape plants or parts (other than fruit) into Idaho, contact the Idaho State Department of Agriculture, Plant Industries Division, P.O. Box 790, Boise, ID 83701; phone (208) 334-3240.



Table 1. Grape culture information.

Expected yield	4,000 to 16,000 pounds per acre
Age to maturity	4 years
Life of planting	30+ years
Hardiness	varies greatly, depending upon cultivar
Optimal pH	5.5 to 6.5
Spacing	6 to 8 feet apart in rows 8 to 10 feet apart
Plants per acre	544 to 907

Table 2. Grape cultivars recommended for Idaho.

Cultivar	Color ¹	Hardiness ²	Heat units ³	Ripening ⁴	Use ⁵
North American Grapes					
Campbell's Early	B	2	2	3	T,J,W
Catawba	R	3	3	5	T,W
Concord	B	2	2	4	T,J,W
Delaware	R	3	2	3	T,J,W
Niagra	W	3	2	4	T,J,W
Steuben	B	4	3	4	T,W
Hybrids					
Aurore	W	3	2	1	T,W
Chancellor	B	3	2	3	W
Chelois	B	4	2	3	W
DeChaunac	B	3	2	3	W
Foch	B	2	2	1	W
Rosette	B	2	2	4	W
Seibel 10868	W	6	2	2	W
Verdelet	W	6	2	3	T,W
European Grapes					
Cabernet Sauvignon	R	7	2-3	4	W
Chardonnay	W	6	2-3	2	W
Gewurtztraminer	W	7	2	2	W
Pinot Noir	B	7	1-2	2	W
Sylvaner	W	6	2-3	2	W
White Riesling	W	6	2-3	4	W
Seedless Grapes					
Canadice	R	2	1-2	2	T
Concord Seedless	R	2	2	4	T
Himrod	W	5	1-2	2	T,W
Interlaken Seedless	W	6	1-2	1	T
Reliance	R	3	1-2	2	T

¹ Color: W = white; B = blue; R = red

² Hardiness. Temperatures at which you can expect injury:

- 1 = -25° to -35°F
- 2 = -15° to -25°F
- 3 = -10° to -20°F
- 4 = -5° to -15°F
- 5 = 0° to -10°F
- 6 = +5° to -5°F
- 7 = +10° to 0°F

³ Heat units:

- 1 = 1,500 to 2,000 degree-day heat units

2 = 2,000 to 2,500 degree-day heat units

3 = 2,500 to 3,000 degree-day heat units

⁴ Ripening. Compared to Concord with a value of 4

- 1 = very early
- 2 = early
- 3 = mid-season
- 4 = late mid-season
- 5 = late

⁵ Use: T = table; J = juice; W = wine

Further Readings

Grapes Belong in Your Backyard, 35¢

Order CIS 790 from Agricultural Publications, University of Idaho, Moscow, ID 83844-2240 phone (208) 885-7982.

Cultural Practices for Commercial Vineyards

Order Misc. Bulletin 111 from Resource Center, 7 Cornell Business and Technology Park, Ithaca, NY 14850 phone (607) 255-2080.

General Viticulture, 2d ed.

A. Winkler et al. 1974. University of California Press, Berkeley, CA.

Grape Growing

R. Weaver. 1976. John Wiley & Sons, New York, NY.

How to Plan a Commercial Vineyard

Order publication number 21475 from ANR Publications, University of California, 6701 San Pablo Ave., Oakland, CA 94608-1239 phone (510) 642-2431.

Site Selection for Grapes in Eastern Washington, \$1.00

Order EB 1358 from Bulletin Office, Cooperative Extension, Cooper Publications Bldg., Washington State University, Pullman, WA 99164-5912 phone (509) 335-2857.

Publications and Organizations for Small Fruit Producers, 50¢

Order CIS 979 from Agricultural Publications, University of Idaho, Moscow, ID 83844-2240 phone (208) 885-7982.

Calculating Degree-Day Heat Units

Maturation and ripening of grapes depend on the amount of heat available to the plants during the growing season. The amount of heat required is different for different cultivars. Table 2 gives recommended cultivars' heat requirements as the number of degree-day heat units required between April and October to mature a crop.

Calculate heat units for a given day by adding the maximum and minimum temperatures for that day and dividing by two. From this figure, subtract 50°F to obtain the number of heat units. For example, if the maximum temperature for a

given day is 85°F and the minimum is 55°F, you would calculate that day's heat units as follows:

$$\frac{85 + 55}{2} = 70$$

70-50 = 20 degree-day heat units.

The heat units for each day from April through September are added to find the seasonal heat units for that particular site. Heat units for selected Idaho locations appear in table 3. To get temperature information for other locations, contact State Climate Services, University of Idaho, Moscow, ID 83844-0904; (208) 885-7004.

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Table 3. Approximate degree day heat units between April and October for selected Idaho locations (50°F base).

Ashton	1,300	Moscow	1,650
Blackfoot	2,000	Mountain Home	2,700
Boise	2,650	Payette	2,900
Burley	2,200	Pocatello	2,100
Coeur d'Alene	1,600	Rexburg	1,700
Idaho Falls	1,800	Salmon	1,900
Kellogg	1,800	Sandpoint	1,500
Lewiston	2,700	Stanley	500
Malad	1,900	Twin Falls	2,000
McCall	950		

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