

# Establishing a Vineyard in Oregon

## *A Quick-start Resource Guide*



*P. Skinkis*

When thinking of starting a vineyard, many questions come to mind: Is the land suitable for growing grapes? What types of soils are needed for successful grape and wine production? How much would it cost to establish a vineyard and produce grapes?

Decisions regarding design and location will largely determine the success and sustainability of a vineyard. This guide discusses factors to consider when planning a vineyard and suggests resources to help in the planning.

## Step 1

### Learn about viticulture and vineyard establishment *before* planting

The most important step in deciding whether to start a vineyard is to learn as much as possible about vineyard establishment, vine growth and development, and requirements of vineyards. Considerations include vine physiology, vineyard inputs, and crop management. By having some understanding of winegrape production, you can avoid many mistakes when establishing vines and during the early years of production. Some of the resources listed below were developed specifically for Oregon and/or the Pacific Northwest. They are especially good sources of information for new growers.

#### **Oregon State University viticulture and enology website**

This website contains information from various resources at OSU, including research and Extension faculty in many disciplines. Check out the Extension link to view current and archived newsletters. The Research link includes studies conducted at OSU for the Oregon wine industry during the past 20 years. Click Outreach for links to presentations given by OSU Extension viticulture and enology specialists. Future workshops and seminars are also listed. New growers or those interested in establishing a vineyard are encouraged to attend Extension events and programs.

<http://wine.oregonstate.edu/>

#### **Oregon State University Extension Service educational materials**

The OSU Extension Service provides information for both commercial growers and gardeners. Many educational materials (reports, bulletins, DVDs, etc.) created by experts at OSU are available at no charge or for a nominal fee on the OSU Extension Service website.

<http://extension.oregonstate.edu/catalog/>

#### **Oregon Viticulture**

This book provides information on all aspects of vineyard establishment, from vine physiology to vineyard management. It is a great resource for both new and established vineyards.

<http://oregonstate.edu/dept/press/o-p/OregonViticulture.html>

#### **Berry and Grape Infonet**

This OSU online resource covers many topics in vineyard establishment and management, from grafting methods to pest management and more.

<http://berrygrape.oregonstate.edu/>

#### **Vineyard development consultants**

While it is best to learn as much as possible about vineyard establishment and viticulture before starting your vineyard, it may also be beneficial to seek help from a vineyard consultant to guide you through the establishment process. Many consultants throughout Oregon specialize in vineyard systems. Contact your local Extension office for more information.

*Patty Skinkis, Extension viticulture specialist, Oregon State University.*

## Step 2

### Understand vineyard economics and develop a business plan

Like any agribusiness based on perennial crops, vineyard establishment involves substantial cost. In some cases, the cost of establishing and maintaining grapevines is higher than that for other perennial crops due to the need for a trellis system and the use of manual labor for many vineyard establishment and production tasks.

#### Status of the Oregon wine industry

##### Oregon Vineyard and Winery Report

Published by the National Agricultural Statistics Service (NASS, U.S. Department of Agriculture), this report provides historical information on grape cultivars grown in Oregon, yields, prices for harvested fruit, and production statistics.

[http://www.nass.usda.gov/Statistics\\_by\\_State/Oregon/Publications/Vineyard\\_and\\_Winery/index.asp](http://www.nass.usda.gov/Statistics_by_State/Oregon/Publications/Vineyard_and_Winery/index.asp)

#### Economics of vineyard establishment

It is important to consider the establishment and development costs associated with a vineyard. A number of resources are available to help assess these costs.

##### A Grower's TEAM

This online economics workbook is one of the best tools for assessing the costs of vineyard establishment. Developed by economics and Extension faculty at Oregon State University, this program is available online at no charge. If you need help learning to use the software, OSU Extension holds training sessions annually. Contact your local Extension office for more information.

[http://oregonstate.edu/dept/NWREC/decision\\_tools/download.php](http://oregonstate.edu/dept/NWREC/decision_tools/download.php)

##### Enterprise budgets

Enterprise budgets for winegrapes in eastern and western Oregon are available in print and online from the OSU Extension Service.

<http://extension.oregonstate.edu/catalog/>

#### Financing

It is important to research the availability of financing before making a commitment to buy land or establish a vineyard.

##### OSU Small Farms Program website

This website provides information regarding financial assistance and start-up funding resources.

<http://smallfarms.oregonstate.edu/>

#### Marketing and location

It is important to locate your vineyard in an area where you can produce a consistent crop of high-quality grapes. However, an equally important factor is proximity to a viable market. You want to be in an area that facilitates sale of your fruit or marketing it to wineries.

Specified regions in the United States are known as American Viticultural Areas (AVA). Wineries may wish to obtain fruit from a particular AVA and label it for distinction. Furthermore, locating within a specific AVA can improve marketing of wine if you plan a winery. American Viticultural Areas are under federal regulation (Code of Federal Regulations Title 27, Part 9).

##### U.S. Geological Survey AVA maps

To determine boundaries of AVAs or find out whether your land lies within an AVA, you can search maps that delineate these areas.

1-800-HELP-MAP

<http://www.usgs.gov/>

##### Bureau of Alcohol, Tobacco, and Firearms frequently asked questions: Viticultural areas

This website contains more information on AVAs and related regulations.

<http://www.atf.gov/alcohol/info/faq/wine.htm>

##### Oregon Wine Board

e-mail: [info@oregonwine.org](mailto:info@oregonwine.org)

phone: 503-228-8336



## Step 3

### Determine site suitability

Whether you already own land that you plan to develop into a vineyard or are searching for the perfect site, you must determine whether the site is suitable for grapes and identify specific areas that are conducive to growing quality fruit. Environmental factors such as climate and topography play the most important role in determining whether a site is suitable for a vineyard. For information on topography, soils, and climatic conditions suitable for grape growing, see Chapter 3 (pages 44–50) of *Oregon Viticulture*, and other resources listed in Step 1.

#### Growing degree-days and other climatic factors

Information on temperatures, growing degree-days, and frost-free days is needed to determine which grape cultivars can be grown on your site, or whether you can grow grapes at all.

An important climatic factor is seasonal accumulation of growing degree-days (GDD). GDDs are a measure of heat accumulated during the growing season. GDDs are calculated using the average daily temperature for each day, with a daily threshold temperature of 50°F. The GDD for an entire growing season is calculated by adding together all daily GDDs for the season.

Not all grape cultivars perform well in a given location. GDDs determine whether you can plant cool-, warm-, or hot-climate grape cultivars. In general, cool-climate grapes require 1,800–2,500 GDDs in a growing season. Examples include Pinot Noir, Pinot Gris, Riesling, Gewürztraminer, Muscat, and Chardonnay.

Warm-climate grapes such as Cabernet Sauvignon, Merlot, Viognier, and Tempranillo need 2,500–3,000 GDD. Finally, hot-climate grapes require more than 3,500 GDD. These cultivars typically are used for dessert wines and table grapes.

The following websites provide GDD data as well as daily temperatures, precipitation, and other weather data.

#### Oregon climate summaries

<http://www.wrcc.dri.edu/summary/climsmor.html>

#### Agrimet Weather Infonet

<http://www.usbr.gov/pn/agrimet/webarcread.html>

#### Oregon Climate Service

<http://www.ocs.oregonstate.edu/index.html>



#### Topography

An assessment of site topography is vital to designing and establishing a successful vineyard. Slope and aspect determine the site's sunlight exposure patterns and duration, heat accumulation, and air drainage. Topography is important to take into account for vineyard design and equipment safety, particularly on hillsides. Another consideration of topography is elevation and frost pockets. To learn more about specific topography effects on the vineyard climate, see *Oregon Viticulture*, Chapter 3, "Site Assessment."

#### Soils

When choosing a vineyard site, avoid areas with a high water table, very shallow soils, and/or impervious soil layers. For more information, see Chapter 18, "Soil Management and Grapevine Nutrition," in *Oregon Viticulture* (pages 143–161). Before planting a vineyard, or even buying land, submit soil samples for analysis of soil properties, fertility, and nematodes.

Sampling soil for nematodes is essential. Nematodes are soilborne plant parasites that can damage grapevines. Some species transmit viruses or other diseases. A wide range of soils host nematodes. These soils should be tested even if a vineyard was not in the location previously.

#### Natural Resources Conservation Service (NRCS) soil surveys

This website has soil maps to help you identify soil types and properties on your land. Click on the green "Start WSS" button to begin. You can input your address or location and view your soil characteristics, slope, and more.

<http://websoilsurvey.nrcs.usda.gov/app/>

Printed soil maps are also available from local NRCS offices.

### OSU Extension Service Small Farms Program

This website offers basic information on how to take a soil sample, a list of analytical labs, and how to interpret results.

<http://smallfarms.oregonstate.edu/soil-testing>

### OSU Extension Service publications

*Soil Sampling for Home Gardens and Small Acreages*, EC 628

*Soil Test Interpretation Guide*, EC 1478

*Laboratories Serving Oregon: Soil, Water, Plant Tissue, and Feed Analysis*, EM 8677

<http://extension.oregonstate.edu/catalog/>

### OSU plant parasitic nematode sample submission form

This form provides information on how to sample for nematodes and where to submit samples.

[www.bcc.orst.edu/bpp/Nematodes/Nematode\\_Testing\\_Service\\_Form.pdf](http://www.bcc.orst.edu/bpp/Nematodes/Nematode_Testing_Service_Form.pdf)

### Water availability

In some areas of the state, primarily southern and eastern Oregon and the Columbia Gorge, it is difficult to farm quality winegrapes without irrigation. It is possible to produce winegrapes without irrigation (dry farm) on most sites in the Willamette Valley. However, it is important to have access to water for the establishment years (years 1–3). Before buying land or developing a vineyard, investigate water rights and water availability.

### Oregon Water Resources Department

<http://www.wrd.state.or.us/>

If you need specific information on irrigation design and installation, irrigation companies and specialists can design systems and programs suitable for your crop and soils. Ask your local Extension agent for details.



## Step 4

### Investigate cultivars, clones, and rootstocks

Choosing the best cultivars and clones to grow in your vineyard depends on many factors, including climate, soils, disease, pests, and cultural practices. To narrow down cultivar options, begin with climate and market. Some climatic factors are addressed in Step 3.

#### Marketing considerations

##### Oregon Vineyard and Winery Report

This report includes sales and production statistics for various grape cultivars in Oregon.

[http://www.nass.usda.gov/Statistics\\_by\\_State/Oregon/Publications/Vineyard\\_and\\_Winery/index.asp](http://www.nass.usda.gov/Statistics_by_State/Oregon/Publications/Vineyard_and_Winery/index.asp)

#### Clones

A clone has one or more specific characteristics that can be propagated and maintained. Selecting specific clones within a cultivar can be difficult. The resources below provide helpful information.

##### OSU Viticulture and Enology website

This website includes results of research on clones of several grape cultivars, including Chardonnay and Pinot Noir, as well as research on rootstocks. Check out the “Research” section.

<http://wine.oregonstate.edu/winegrape>

##### The National Grape Registry

This online resource lists plant materials that have been registered in the United States. It provides information on where specific cultivars can be purchased and on the origin of cultivars and clones.

<http://ngr.ucdavis.edu/index.cfm>

#### Rootstocks

A main reason for grafting vines to rootstocks is to prevent damage or death due to phylloxera, an insect that feeds on grape roots. Phylloxera has been found in all grape-growing regions of the world, including Oregon. The European winegrape, *Vitis vinifera*, is susceptible to this pest and ultimately will die from an infestation.

Grafting to a resistant rootstock is the only method of control. It is highly advisable to plant new vineyards with grafted vines, but there are a few exceptions. For example, in eastern Oregon and Washington and the Illinois Valley of southern Oregon, very cold winters can damage *Vitis vinifera* vines, requiring regrowth from roots. Grafting is not an option in these areas.

##### OSU Extension Service publications

*Phylloxera: Strategies for Management in Oregon's Vineyards*, EC 1463

*Grapevine Rootstocks for Oregon Vineyards*, EM 8882

<http://extension.oregonstate.edu/catalog/>

## Step 5

### Order plants

#### *Plant materials*

Always buy plants from reputable sources that sell plant stock certified to be free of viruses and other diseases. Vines that are not certified are not tested to be free of virus. Some viruses can remain latent, or rest, in plant tissues for years. If they later become active, the resultant disease can lead to complete vineyard loss and potentially spread to other vineyards. It is important to ask the nursery whether the cultivars, clones, and rootstocks you are interested in are certified free of virus and other diseases.

Nurseries that sell certified stock obtain plants from a foundation plant service to develop their “mother” vineyards, from which they propagate and sell certified plant materials. Two foundation blocks on the West Coast acquire plants from all over the world and clean up grape cultivars to maintain a reliable source of certified clean stock.

#### **Foundation Plant Services (California)**

<http://fpms.ucdavis.edu/>

#### **NorthWest Grape Foundation Service (Washington)**

<http://nwgfs.wsu.edu/>

### **Nurseries**

#### **NorthWest Grape Foundation’s certified nurseries list**

This website lists Oregon and Washington nurseries that carry certified plant materials.

<http://nwgfs.wsu.edu/certified.html>

#### **National Grape Registry**

This website includes a database that allows you to search for nurseries that carry specific cultivars.

<http://ngr.ucdavis.edu/index.cfm>

### **Oregon grape quarantine**

Rules and regulations govern shipment of plant materials to Oregon from outside the state. It is important to be aware of these rules when buying plants. The quarantine is enforced by the Oregon Department of Agriculture.

#### **Oregon Department of Agriculture grape quarantine information**

[http://egov.oregon.gov/ODA/PLANT/docs/pdf/quar\\_grape.pdf](http://egov.oregon.gov/ODA/PLANT/docs/pdf/quar_grape.pdf)



**Planning before planting is the key to success!**

## Need more information?

Many questions arise when determining how to start a vineyard. If you have consulted the resources above and need additional help, please contact your local Extension office. Extension faculty are available to

answer questions regarding soil sampling, regional climates, and viticulture in general. The following faculty are in key grape-growing regions of Oregon. For a complete list of statewide Extension offices, visit <http://extension.oregonstate.edu/locations.php>

| OSU Extension viticulture contacts |                                                                                                                                         |                  |              |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|------------------|--------------|
| AVA                                | County office and website                                                                                                               | Extension agent  | Phone        |
| Umpqua Valley                      | Douglas<br><a href="http://extension.oregonstate.edu/douglas/">http://extension.oregonstate.edu/douglas/</a>                            | Steve Renquist   | 541-672-4461 |
| Southern Oregon*                   | Jackson/Josephine<br><a href="http://extension.oregonstate.edu/sorec/">http://extension.oregonstate.edu/sorec/</a>                      | Marcus Buchanan  | 541-776-7371 |
| Columbia Gorge                     | Hood River<br><a href="http://extension.oregonstate.edu/hoodriver/">http://extension.oregonstate.edu/hoodriver/</a>                     | Steve Castagnoli | 541-386-3343 |
| Walla Walla                        | Umatilla, Milton-Freewater<br><a href="http://extension.oregonstate.edu/umatilla/mf/">http://extension.oregonstate.edu/umatilla/mf/</a> | Clive Kaiser     | 541-938-5597 |

*\*Includes the AVAs of the Umpqua, Rogue, Illinois, and Applegate valleys.*

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