

VINEYARD ESTABLISHMENT

WHAT DO I NEED TO KNOW BEFORE ESTABLISHING MY VINEYARD?

CHECKLIST OF QUESTIONS TO ANSWER:

1. Do I have a contract with a winery for new or additional acres?

- A contract helps ensure a home for my grapes. Without a contract, growers risk selling on the open market. See Contracts checklist for more information.

2. Where am I sourcing my plant material?

- Use only *clean* plant material.
- Start with clean (disease- and pest-free) plant material to protect the health and quality of the wine industry. Viruses, such as grapevine leafroll virus, the bacterial disease crown gall, or the soil-born louse phylloxera can devastate grape production regions because once established, infected vines cannot be cured.

Nursery source

- It is preferable to buy “certified” grape plants from nurseries to ensure that plants have been tested for viruses.
- Seek out reputable nurseries. Refer to the Northwest Grape Foundation Service’s Web site <http://nwgfs.wsu.edu> for a list of nurseries in Washington State that can provide certified stock.
- Visit the nursery one to two years in advance of plant material purchase, looking at plant material to evaluate the overall health status of nursery stock.
- Ask for grower references from the nursery.
- If certified stock is not available, stock can be indexed or tested for virus to give assurance that material is clean.
- Receive documentation if planting material is certified.
- Do I know the difference between *certified*, *registered*, or *foundation block* cuttings? See glossary for definitions.
- Have I complied with royalties and nursery propagation agreements?

Plant quarantine laws

- Am I complying with plant quarantine laws?
 - Plants shipped into the state must meet Washington State Department of Agriculture’s grape quarantine and phytosanitary regulations and come from a “certified” source. Check with WSDA before importing material from out of state to obtain proper documentation and inspection.
- Visit <http://www.fruit.wsu.edu/grapeweb/foundation.htm> to review state quarantine regulations.

3. What is needed for site preparation?

- Collect information on past cropping history, pesticide usage, fertilizer amendments and refer to the Soil and Site Properties checklist for site preparation needs.
- Before vines are planted, soil should be sampled for nematodes, especially if tree fruit or crops susceptible to nematodes were previously grown. Include old roots of the previous crop in the sample if possible.
- Use an electromagnetic conductivity survey—either a VERIS or EM38 soil survey—to help identify where to dig soil pits. Soil pits dug with a backhoe will help determine variability of soil properties, such as rooting depth, water holding capacity, and other factors.
- Soil samples collected at depths of one to two feet should be tested for soil properties (organic matter, pH, nutrients) and soil qualities. If samples indicate a need for soil amendments, add before planting.
- Is soil fumigation necessary? Decision depends on history of site. Virgin ground is generally not fumigated but fumigation can be necessary in replant situations.
- Does the soil need ripping? Rip only if there are compacted soil layers.



4. How do I lay out the vineyard?

- A soil survey map from county Natural Resource Conservation Service offices is a useful first step in segregating blocks into units with uniform soil qualities and water holding ability.
- Survey total area. GPS and GIS technology (Global Positioning System and Geographic Information System) can be used to map and grid vineyard and irrigation system.
- Row orientation is influenced by slope, variety, and topography; south facing slopes are generally sought so that row direction is north-south. A northeast-southwest row orientation is also used to minimize afternoon sun exposure and maximize morning sun exposure.
- Terracing or following hillside contours may be necessary if slopes are steep.
- Allow enough room for equipment to turn around at the ends of the vineyard rows.
- Vine spacing varies greatly but generally ranges between eight to ten feet between rows and three to six feet between vines. Equipment needs must be considered if planting higher density, narrow rows.

5. What kind of trellis system should I use?

- Trellis systems support the vines and must last the life of the vineyard. They are also used to mount irrigation systems and can aid in mechanical harvest and vine sun exposure.
 - Does the winery require a specific trellis system?
 - Is the design suitable to mechanized cultural practices like mechanical pruning, leaf removal, and harvest? Consider simple trellises because they are easiest for retraining winter-injured vines and lend to mechanical harvest.
- Systems range from simple, single posts with an undivided canopy and one or two lateral wires to complex T, Y, sloped, gabled, double curtain, or fan-shaped designs with multiple wires. Shoots can be trained to an upright position (Vertical Shoot Positioning) or nothing at all (sprawl) For detailed trellis designs, refer to Richard Smart's *Sunlight into Wine*. Trellis height and configuration depends on the training method selected, vigor of the vine, harvest method, and intensity of mechanization.
 - Be aware of any restrictions of material use for wine grape production, e.g. organic wine grape production.
 - Windy sites may require extra trellis support. Consider wind management issues in windy sites.
 - Consider not only initial costs of trellis system but also later management and maintenance costs.

6. What's involved in planting grape vines?

- Planting is generally done in the spring, February through May, although some growers plant in the fall. Growing a healthy, vigorous vine is the priority in the early stages of a vine's life—harvesting a large crop in the second year is discouraged. A full production year should occur in the fourth leaf or year. Varieties chosen should be based on broad market trends, winery demands, and most importantly, site.
 - Consider the benefits and risks of using different types of nursery stocks (one-year hardwood cuttings, mist plants, or rootstocks).
 - Orders should be placed 12 months in advance, although some plants may be available from inventory.
 - Do I have access to facilities needed to handle grape material, providing the proper temperature and moisture for storage until planting? Handling grape planting material properly is extremely important.
 - Follow nursery guidelines for planting depth.
 - Water vines to remove air pockets.
 - Vines can be trained up the first year or allowed to grow as a bush for one year before training. Trellis system must be installed prior to training of vines.
 - Grow tubes (protective sleeves) placed around young vines will provide protection from rodents, wind, pests, and herbicides and assist in early growth. Remove the tubes before winter to aid in winter hardiness.
 - Ensure that irrigation system is installed and ready when vines will need moisture. Refer to the Water Management checklist.
 - Frequent, light watering is important after planting vines because young root systems only explore a small soil area.



- Control weeds to reduce competition from weeds that can delay growth and production.
- Review Soil Surface Management checklist when considering if cover crops will be planted.
- Maintain pest control, focusing on gophers, cutworms, and mildew.
- Replant weak or dying vines throughout the growing season.

7. Is cold protection needed?

- If the site and variety have been carefully chosen with temperature, slope, and drainage as primary criteria, cold problems are minimized. However, many vineyards need protection from cold temperatures in winter, spring, and fall. Cold protection tools include wind machines, heat (propane burners), sprinklers, and a combination. Sprinklers used for frost protection must have a water source in early spring or late fall (when water may not always be available from irrigation districts).
 - Consider the effects on vine vigor when using water for cold temperature protection.
 - Accelerating vine dormancy and lignification of the shoots is important to avoid winter injury, and is especially important in non-fruiting vines.
 - Using sprinklers for fall frost protection can delay vine dormancy.

CHECKLIST: BUILDING MY VINEYARD ESTABLISHMENT TOOLBOX

- Have I sourced certified plant material for my vineyard?
- Have I ordered plant material well in advance to assure supply?
- If shipping plant material from out-of-state, am I complying with state plant quarantine regulations?
- Have I sampled the site and readied it for planting based on a soil assessment?
- Have I fumigated the site if necessary?
- Have I surveyed the site, mapping out blocks with uniform soil and temperature characteristics, maximizing row length and orientation?
- Have I considered mechanization and retraining from winter damage when choosing a trellis system?
- Have I considered vigor and soil fertility when matching variety to a trellis and training system?
- Have I am considered cold protection options?
- Am I prepared to work closely with the winemaker or viticulturist during the growing season and harvest?
- Am I willing to refrain from setting a heavy crop in the first few years of the vineyard to give it time to fully develop a strong root system?

RESOURCES

Additional information about clean grape plant material can be found online at:
<http://wawgg.org> under “Clean Plants”.

Information about the Northwest Grape Foundation Service can be found at:
<http://nwgfs.wsu.edu>.

Natural Resource Conservation Service Web site of field offices:
<http://www.wa.nrcs.usda.gov/contact/index.html>.

NRCS Web site of soil survey information:
http://www.wa.nrcs.usda.gov/technical/soils/soil_survey.html.

O’Neal Coates, S. 2003. Crop profile for wine grapes in Washington. Washington State University publication MISC0371E. Available on the Internet at:
<http://www.tricity.wsu.edu/cdaniels/profiles/WineGrapes.pdf>



Smart, R. and Robinson, M. 1991. Sunlight into Wine: a Handbook for Winegrape Canopy Management. Winetitles, Adelaide, South Australia.

Watson, J. Growing Grapes in Eastern Washington. Proceedings from a Washington State University short course for establishing a vineyard and producing grapes. 1999. Good Fruit Grower, Yakima, Washington.

Washington State regulations on grape plant quarantines for phylloxera and virus are found at: <http://www.fruit.wsu.edu/grapeweb/foundation.htm>.

GLOSSARY

Certified material means grape planting material has been certified in accordance with the regulations of an official grapevine certification program that includes inspection and testing methods approved by the Washington State Department of Agriculture Director for fanleaf, leafroll, and corky bark viruses. An official certification issued by the plant protection organization of the state of origin that certifies that the grapevines meet the requirements of Washington State quarantine regulations must accompany the grapevine planting stock into the state.

Foundation block describes a planting of grape vines established, operated, and maintained by Washington State University or other equivalent sources approved by the director of the Washington State Department of Agriculture, that are indexed and found free from the major viruses.

Lignification refers to the process of depositing lignin in cell walls, which converts the canes into wood. Woody canes are ready for dormancy and better protected from cold temperatures.

Registered block is a planting of grapevines maintained by a nursery and used as a source of propagation material for certified grapevines.

Registered vine means any vine propagated from an approved foundation block, identified to a single vine source, and registered with the Washington State Department of Agriculture.



Washington Guide to Sustainable Viticulture

This document provided by the Washington Wine Industry Foundation's "Risk Management Education Program for the Northwest Grape Industry" — a USDA-RMA Partnership. For questions about VineWise, please contact the Washington Association of Wine Grape Growers at 1-877-88WAWGG (1-877-8892994) or email vinewise@wawgg.org.