

Vineyard Establishment

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Owning a vineyard and a winery is a dream of many, including doctors, lawyers, movie stars and athletes. For many the opportunity to withdraw from the complexities of corporate America and to return to the simpler life of farming and ownership of one's own business is irresistible. Owning a winery has become the poster child of retirement as presented by one investment company. In my case, it was as my wife describes it "a hobby run amuck".

Most individuals contemplating establishing a vineyard in New England already own the land. They may have bought the land some years back and are considering putting in a vineyard as a career change or a retirement project. The land may have been in the family for a generation or more as a farm, and in the interest in keeping the property in agriculture, consideration is given to converting it to a value added agriculture product such as wine. In any case the decision to install a vineyard is made after the land is owned. The question is; is the land appropriate for a vineyard, and if so, what varieties should be planted and how should it be established? If not, what can be done to mitigate the situation?

There are a number of issues which need to be addressed in establishing a vineyard in New England. These include the microclimate of the site, the aspect of the vineyard and the soil.

The climate of the location determines what varieties of grape can be grown. It is important to know the average winter low temperature, the usual dates of the last spring frost and the first fall frost and, if known, the number of degree days (base 50) for that location. The United States Department of Agriculture publishes a temperature map which delineates zones of average winter low temperature throughout the country. For instance, Zone 6 covers areas ranging from -10 to 0° F. Zone 5 covers -20 to -10 °F. Zone 4 covers -30 to -20 °F. As a very broad generalization, with many exceptions, Zone 6 will support some vinifera, and almost all French-American and Cornell hybrids. Zone 5 will support most French-American and Cornell hybrids as well as many American varieties. Zone 4 and below will support primarily the Minnesota hybrids.

Grapes need both good air and good water drainage. Locations with slopes, up to 8° incline, promote good drainage of air. Low spots or areas with blocked air movement create frost pockets which will adversely affect winter vine and bud survival as well as pose a risk for spring bud injury and early fall frost damage.

The nature of the land determines the appropriateness of the site for planting grapes. Land with big boulders and shallow ledge is not appropriate for a vineyard. Nor is land that is wet for a major portion of the summer. It is said "grapes do not ripen with wet feet". However, flat land with poor drainage or land with heavy clay near the surface may be farmable if the drainage problem is improved with tiling.

Grapes need full sun for as much of the day as possible. Sites which are surrounded by tall trees not only limit the sun exposure, but also are an invitation to hungry birds and other wild life to steal the crop.

The ideal soil for a vineyard is somewhat gravelly, with the potential for good water drainage. It should not be overly fertile since fertility can lead to excessive foliage growth with associated shading.

Establishing the Vineyard

The year prior to planting, a soil test should be obtained from your local agriculture extension. One of the most important values is the pH. The preferred pH for vinifera varieties is about 6.5, for French-American and Cornell hybrids is 6.0-6.5, and for American and Minnesota hybrids is around 5.5 to 6.0. If indicated, amendments for deficiencies of potassium, phosphorus, calcium and magnesium should be considered.

Grapes are a perennial crop. Established perennial weeds will be a real challenge to the newly planted vines. It is strongly recommended that in this pre-plant year, the prospective vineyard be plowed and harrowed, or rototilled. All stumps and large rocks should be removed. PH and nutrient amendments should be made at this time, and a crop such as winter rye be planted. This will suppress the perennial weeds, and when plowed in will provide a “green manure”. This should be done several times during the pre-plant season. Finally, vines for the following season should be ordered from a commercial nursery in the fall prior to planting.

The following spring, as soon as the land can be worked, the field for the vineyard should be rototilled for the last time. The vineyard can now be laid out. For safety reasons, rows are best laid out running directly up and down slopes. If a slope is gentle, rows can run across the slope. Rows which run North and South theoretically get 10 % more sun. Rows that run East and West have the advantage of the prevailing wind for drying. The lay of the land should determine the row alignment.

The distance between rows and vines is determined by the type of trellis, the training system, and the type of mechanical equipment to be used. Row spacing for vineyards in the East is usually a minimum of eight feet, and frequently nine or ten feet apart, especially if a divided curtain training system is used or if mechanical harvesting is anticipated. Vine spacing is determined by the variety of grape and the training system. In general, vinifera are trained to a cordon system and spaced at 4 to 7 foot intervals. Hybrids are frequently trained, either cane or cordon, to a vertical shoot positioning system (VSP) and spaced at 6 to 8 foot intervals. American varieties with a drooping habit are best trained to a Geneva Double Curtain system (GDC) and spaced at 6 to 8 foot intervals. A vineyard with 8X8 spacing will contain 680 vines per acre.

Vines ordered from a commercial nursery the previous fall will be sent to you as bare rooted vines in a dormant state, at about the proper time for planting. Vines are usually planted using a tree planter or a post-hole digger. If using a post-hole digger, the roots are spread at the bottom of the hole and then it is back-filled with soil. Care should be taken that the crown is 1-2” above the ground so that when the soil settles the vine crown will be flush with the soil surface. A stake should be inserted close to the vine on the North side and the newly planted vine should be cut back to 4 nodes. The vines are usually not fertilized the first year, but should be watered as needed. The trellis should be installed during the first year or at the latest, the beginning of the second year. Grow tubes are used by some growers to accelerate growth during the first year and to protect against herbicide injury. When used care should be taken to spray to prevent damage from Japanese beetles.

Mid rows are usually planted with a cover crop or a slow growing grass. The area under the trellis is usually kept clear with herbicides. It is especially important to control weeds during the first year for newly planted vines. Alternatively for those who prefer not to use herbicides, a weed badger or grape hoe may achieve the same goal.

Variety selection, trellis construction, pruning and training to a trellis system are subjects for another session.