Examine Site Conditions before Embarking In Viticulture

Many locations throughout Nebraska are suitable for growing grapes due to soil quality, water and adequate sunshine. However, viticulture can be a risky venture. Producers need to gather as much information as they can before getting started.

There are three critical points to keep in mind when selecting a site for growing grapes - cold temperatures, air movement and soil drainage. Cold winters, abrupt drops in temperature and temperature fluctuations can injure buds and vines or even kill the entire plant. Good air drainage and movement can help diminish these effects and reduce the likeliness of damage from frost or disease, while good soil drainage assures adequate air is available to roots.

When referring to grapes, climate is broken down into macroclimate, mesoclimate and microclimate. Macroclimate is determined by the general geographic area and is typically favorable across Nebraska. However, differences in the microclimate, the conditions in the immediate vicinity of the grapevine, have a much larger impact on disease severity and fruit quality.

Most cultivars grown in the Midwest don't handle extremely low temperatures. Therefore, it is important to match the cold-hardiness of cultivars to the site selected for planting. Producers can limit the impact of cold weather by taking into account mesoclimate factors such as elevation, slope and topography. Vines grown at a higher elevation on a gentle slope are at a lower risk for frost because cold air sinks to lower areas. This movement of air also helps foliage dry after a rain or heavy dew. Steep slopes, on the other hand should be avoided due to potential soil erosion problems and difficulty in using machinery. Wooded areas and windbreaks are hazards as well because cold air will create frost pockets and wildlife will be more likely to damage the vines and fruit.

Soil type is another mesoclimate factor that can influence the success of vine and grape growth. Soil drainage is one of the most critical factors. "Wet feet" leads to poor root growth that ultimately restricts the plant from growing and producing. Impervious soil layers also may lead to poor soil drainage and should be reversed by ripping or installing drain tile.

Producers may find it beneficial to conduct soil tests for pH levels and nutrient content. Ideal pH levels range from 5.5 to 6.5, but most grapevines will tolerate levels

between 5 and 8. Organic matter should range from only 1 to 3 percent because excess mineralization of organic matter can lead to nitrogen levels that can cause vines to become too vegetative and lead to fruit of low quality. It is beneficial to make an annual check for phosphorous and potassium and zinc, boron and magnesium as well.

Site design and preparation should be done carefully and well in advance to make sure conditions are suitable. North-south row orientation and exposure to prevailing winds also is recommended.

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SOURCE: Paul Read, Ph.D., viticulturist