Wine Grape Variety Recommendations for Ohio

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Before establishing a vineyard, you should consider the viticultural characteristics and market demand of the variety(s) to be planted. The major challenge in growing grapes is winter injury, which is likely to occur during the grapevine life. Therefore, selecting a variety should take into account its winter hardiness first. Other considerations for variety selection include fruit characteristics, ripening season, disease susceptibility (especially bunch rot), yield potential, growth habit, and cultural requirements. A descriptive list of recommended varieties for Ohio is published in the Midwest Grape Production Guide, OSUE 919 (ohioline.osu.edu/b919/). The following tables are based on the variety list from the grape guide with some updates of newly introduced varieties and selections. The Viticulture Expansion Assistance Program cannot guarantee the success of any given variety due to the variables sites. The following tables include six (6) categories each briefly described below.

Grape type: There are three types of "wine grapes" grown in Ohio – American, Hybrids, and European (or vinifera). *Vinifera* are the most challenging to grow, but produces high quality wines and typically are the highest priced grapes (>$900/ ton). To date, Vinifera acreage is expanding the most. *Hybrids* are typically more cold hardy and more disease resistant than vinifera, they produce high quality wine and acreage is expanding as well. *American* varieties have been grown the longest and adapt well to Ohio conditions. However, their acreage is declining and new planting is limited due primarily to their lower price per ton. Each variety is followed by a letter in parenthesis to indicate if it is processed into red (R) or white (W) wine.

Winter hardiness: Winter hardiness of a given variety measures the critical temperature at which 50% bud injury occurs. Based on the publication "Winter Injury to Grapevines and Methods of Protection", grape species and varieties are divided into six (6) classes of winter hardiness: *very tender,* winter injury in dormant buds is expected to occur at 5 F to -5F; *tender* (0F to –8F)*, moderately tender (*-5F to -10F); *moderately hardy* (-10F to -15F); *hardy* (-15F to –20F); and *very hardy* (-20F to -30F). The *frequency* of occurrence of extreme subfreezing temperatures is also important and depends on the vineyard site: the best sites have less frequent (e.g. once in 8 to 10 years) winter damage than poor sites (every 2 to 3 years).

Ripening season: Grape varieties ripen at different times of the season and are thus classified into categories based on number of days between bloom (typically occurs 4-6 weeks after bud break) and harvest, and corresponding months as follows:

- *Early season:* includes varieties that have less than 95 days between bloom and harvest and ripen in late August
- *Early- Midseason:* 95-100 days, ripens early to mid September
- *Midseason:* 100-105 days, ripens mid to late September
- *Mid-Late season:* 105-110 days, ripens early to mid October
- *Late season:* 110-115 days, ripens mid to late October
- *Very late season:* 120-130 days, ripens in November

Regions grown / suggested: Grape varieties have performed better in some regions than others because vine performance is very site specific. So the comments are meant to assist you based on your vineyard location. The suggested geographic distribution is work in progress and based primarily on winter hardiness of grape varieties.

Region 1*:* This category includes the coldest vineyard sites (frequent occurrence of -15 F and below) in the state. For an approximate geographic delineation, this includes the region between interstate 70 North and state route 23 West. These sites are best suitable for the *cold hardy* and *very cold hardy* varieties.

Region 2: This category includes sites with minimum temperatures between -10 F and -15 F. The sites are geographically located south of I-90 (no lake effect), east of state route 23 and north of I-70. *Moderately hardy*, *hardy* and *very hardy* hybrids and American varieties are best suited for these sites. Vinifera varieties are risky and only the best sites should be considered.

Region 3: includes the warmest sites (-10F or warmer) and the sites with the longest growing season (FFD >170) in the state. These sites have been the most successful in growing vinifera and some hybrid varieties. This category is further divided into 2 subcategories:

> *Region 3 a:* this group is geographically located along Lake Erie shores. This area is characterized by moderate winters, and cool and long growing season. It is best suited for cool-season varieties including several vinifera (only on the best sites) and some hybrids.
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> *Region 3 b:* This group is located along the Ohio River Valley characterized by moderate winter temperatures and warm and long growing season. This area is best suited for warm-season and late ripening vinifera and hybrids.

Strengths and Weaknesses: outlines pros and cons of each variety based on research findings and/or observations and experience from commercial growers. A variety followed by an asterisk indicates that there is limited research information and/or commercial production experience in Ohio. Those varieties are being evaluated in OSU research vineyards.

Suggested Vinifera Varieties for Ohio

Grape Type / Variety VINIFERA	Winter Hardiness	Ripening season	Regions grown / suggested	Strengths	Weaknesses
Auxerrois (W)	Moderately tender	Midseason	3a	Productive and ripens well, lower acidity	Thin skin, susceptible to bunch rot
Cabernet franc (R)	Moderately tender	Late	3	Good hardiness, ripens well under Ohio conditions	Over crops easily, poor color development and excessive herbaceous flavors in some years
Cabernet Sauvignon (R)	Tender	Very Late	3	Complex tannin development in good years, clusters resistant to rot, important component in blends	Should be grown only on best sites, requires long growing season
Chardonnay (W)	Tender	Late Midseason	3	Productive, reliable, and adaptable to cool and warm ripening period	Early bud break thus prone to spring frost
Gamay noir(R)*	Moderately tender	Midseason	3a	Compared often to Pinot noir, but it is easier to grow, has better winter hardiness, better color and ripens earlier, promising variety for Ohio	Limited experience in Ohio
Gruner Veltliner (W)*	Moderately tender	Late	3a	Productive even after frost, ripens well under Ohio conditions, potential for still and sparkling wines, promising variety for Ohio	Limited experience in Ohio
Lemberger (R)	Tender	Late Midseason	3	Productive, excellent potential for rosé or red wine	Vigorous, requires cluster thinning, prone to fruit rot, susceptible to crown gall

Suggested Vinifera Varieties for Ohio (cont'd)

Grape Type / Variety VINIFERA	Winter Hardiness	Ripening season	Regions grown / suggested	Strengths	Weaknesses
Merlot (R)	Very tender	Late mid-season	3	Excellent ripening potential, excellent blending component	Winter tender, only for the best sites
Petit verdot (R)	Moderately tender	Very Late	3	Excellent tannin structure, blending potential is very good	Very late ripening
Pinot gris (W)	Tender	Mid-season	3a	Reliable, productive, and adaptable to many wine styles	Prone to fruit rot, requires intensive shoot and crop load management
Pinot noir (R)	Tender	Late Mid-season	3a	Clonal selection and mixing 3+ clones is important for success	Prone to fruit rot, requires intensive crop and canopy management to avoid uneven ripening, low yield may not be economical for some operations
Regent (R)*	Moderately tender	Early-midseason	3	One of the most disease-resistant, varieties, dark red wine, full bodied, Bordeaux style, promising variety for Ohio	Vine availability is scarce, protected variety, limited experience in Ohio
Riesling (W)	Moderately tender	Late	3a	Flagship variety for Ohio. One of the hardiest vinifera varieties, and one of the best white wines produced in Ohio	Susceptible to bunch rot due to tight clusters, requires long cool ripening season thus wine quality suffers in warm sites
Sauvignon blanc (W)*	Very tender	Mid-season	3	Unique wine profile	Winter tender, thus planted only on the best sites, limited experience in Ohio
Syrah (Shiraz)(R)*	Very tender	Late Mid-season	3	Productive, good wine quality	Winter tender, thus planted only on the best sites, limited experience in Ohio
Viognier (W)*	Tender	Midseason	3b	Good demand, excellent fruit quality, good bunch rot resistance	Early bud break, susceptible to winter cold injury, weak growth, modest yields linked to bud necrosis

Suggested Hybrid Varieties for Ohio

Grape type / variety HYBRID	Winter Hardiness	Ripening season	Regions grown / suggested	Strengths	Weaknesses
Cayuga white (W)	Moderately hardy	Mid-season	2, 3a	Cold hardy, disease-resistant, high yields, good wine quality	Overripe fruit produces wine with strong labrusca character, should be picked before full maturity, excessive vigor in fertile sites
Chambourcin (R)	Moderately tender	Late	2, 3b	Productive, moderate vigor, good resistance to bunch rot and downy mildew, high wine quality, perhaps the highest quality among red hybrids,	Overcrops thus requires cluster thinning, requires long season and heat units (>2700 GDD) for best wine quality, sensitive to sulfur
Chardonel (W)*	Moderately hardy	Late Mid-season	2, 3b	High yields, loose clusters, less susceptible to bunch rot than parents Chardonnay & Seyval, more cold hardy than Chardonnay. Best in warmer regions where Chardonnay is not suitable	Less hardy than Seyval, susceptible to crown gall in wet sites, susceptible to Phylloxera and fan leaf virus and thus should be grafted
Corot noir (R)	Moderately hardy	Late Mid-season	2, 3	Very productive, good powdery mildew and Botrytis rot resistance, wines are free of the hybrid aromas typical of many red hybrid grapes, suitable for either blending or the production of varietal wines.	Vigorous, cluster thinning is usually required to avoid overcropping
Frontenac (R)*	Very hardy	Late	1, 2	Very winter hardy, productive, loose clusters, very resistant to downy mildew, unique flavor attributes, makes excellent port- and rosé -style wines	Susceptible to foliar phylloxera, requires thinning, high acid
Frontenac gris (W)*	Very hardy	Late	1, 2	Very winter hardy, promising wine quality	High acid, limited experience in Ohio

Suggested Hybrid Varieties for Ohio (Cont'd)

Grape type / variety HYBRID	Winter Hardiness	Ripening season	Regions grown / suggested	Strengths	Weaknesses
LaCrescent (W)*	Very hardy	Midseason	1,2	Moderate disease resistance, loose clusters	Limited experience in Ohio
Marechal Foch (R)	Very hardy	Early	1, 2	Very winter hardy, early-ripening, adapts to short growing season in the north , good wine quality	Medium vigor, tight clusters, very susceptible to bird damage, uncertain future demand
Marquette (R)	Very hardy	Midseason	1, 2	Good resistance to downy, powdery, black rot, excellent wine quality, no hybrid flavor	Limited experience in Ohio
Noiret (R)	Moderately Hardy	Late Mid-season	2, 3	Relatively easy to grow, productive, requires minimum canopy management, Wine richly colored and has notes of green and black pepper, tannin structure, no hybrid flavor	Performs poorly on VSP thus should be grown on high cordon training system
NY 76.0844.24 (W)*	Hardy	Mid-season	2, 3	Excellent Muscat flavor wine, highly productive, clusters are large and loose, more cold hardy than parent Traminette	Highly vigorous, occasional leaf phylloxera problem, observed berry shatter in dry years, experimental selection thus limited vine availability, limited experience in Ohio
NY 81.0315.17 (W)*	Moderately hardy	Mid-season	2, 3	Produces a floral and sometimes spicy light Muscat wine. Highly rated for wine quality for several years in NY	Experimental selection thus limited vine availability, limited experience in Ohio
NY 84.0101.04 (W)*	Moderately hardy	Early-Midseason	2, 3	Very productive, loose clusters	Experimental selection thus limited vine availability, limited experience in Ohio

Suggested Hybrid Varieties for Ohio (Cont'd)

Grape type / variety HYBRID	Winter Hardiness	Ripening season	Regions grown / suggested	Strengths	Weaknesses
Traminette (W)	Moderately hardy	Late Mid-season	2, 3	High demand, high yields, excellent fruit and wine quality, good disease resistance, more cold hardy and looser clusters than parent Gewurztraminer	Difficult to establish in the first 2 years due to susceptibility of young trunks to sub-freezing temperature (just below 0F), vigorous and may require divided training system in fertile soils, requires leaf pulling of fruit zone for best fruit and wine quality
Valvin Muscat (W)	Moderately hardy	Mid-late season	2,3	produces excellent, high quality muscat wine, without bitterness, that may be made into a dessert wine or used in blending	Low vigor, thus may graft in less fertile soils and use closer vine spacing
Vidal (W)	Moderately hardy	Late	2, 3	Productive, versatile wine styles, easy to grow, good resistance to bunch rot, late bud break thus less prone to spring frost injury	Needs cluster thinning, susceptible to viruses (tomato and tobacco ring spot) and thus should be grafted
Vignoles (W)	Hardy	Midseason	2, 3a	Cold hardy, high quality wines, especially dessert wines, late bud break	Moderate vigor and low yields, very susceptible to bunch rot complex due to tight clusters, uncertain future demand

Suggested American Varieties for Ohio

Grape type / variety AMERICAN	Winter Hardiness	Ripening season	Regions grown / suggested	Strengths	Weaknesses
Catawba (R)	Hardy	Late	1, 2, 3	Used for wine and sherry, historically significant to Ohio	Uncertain future demand
Concord (R)	Hardy	Late	1, 2	Number one grape grown in Ohio (acreage and production) for juice production, well adapted to Ohio climate and soils	Early bud break thus susceptible to spring frost injury, decline demand, and not economical to plant for wine production with current pricing
Delaware (R)	Hardy	Mid-season	1, 2	Produces pleasant wines, originated from Ohio thus historically significant	Uncertain future demand
Niagara (W)	Hardy	Late Mid-season	1, 2	Used for wine and white juice, cream sherry is excellent	Strong labrusca flavor, limited market and uncertain future demand, susceptible to crown gall
Norton (Cynthiana) (R)	Hardy	Very Late	3b	Excellent cold hardiness, high fruit and wine quality, excellent disease resistance, requires the lowest pesticide input among all commercial grape varieties, increased demand by wineries, promising future in southern Ohio	Low yields, should be trained on Geneva Double Curtain in fertile soils, shoot positioning and leaf pulling is required to drop pH and K in the fruit and wine, sensitive to 2,4-D

Seedless Table Grape Cultivars for Ohio						
Cultivar	**Color**	**AverageCluster Wt. (lbs)**	**WinterHardiness***	**Days fromBloom to Harvest****	**RipeningDate**	**Remarks**
Canadice	Red	0.28	Moderately Hardy	75	Very Early	Productive; good clusters.
Einset	Red	0.20	Hardy	75	Very Early	Slip skin; mild strawberry flavor; may shatter.
Himrod	White	0.22	Moderately Hardy	75	Very Early	High quality; straggly clusters.
Marquis	White	0.50	Hardy	105	Midseason	Highly productive; high quality; loose clusters; resists cracking; susceptible to downy mildew in wet years.
Mars	Blue	0.29	Hardy	80	Early	High productivity; medium clusters; disease resistant.
Reliance	Red	0.33	Hardy	90	Early Midseason	High quality; productive; uneven color; susceptible to berry cracking.
Vanessa	Red	0.24	Hardy	105	Midseason	Adherent skin; compact clusters; firm, crisp flesh; requires girdling for berry sizing.
Lakemont	White	0.50	Moderately Hardy	80	Early	Adherent skin; firm flesh.
Jupiter	Blue	0.29	Moderately Hardy	85	Early	Muscat flavor; oval berries; large, 4.3 g; very susceptible to downy mildew.
Neptune	White	0.53	Moderately Hardy	97	Midseason	Compact clusters; low vigor; adherent and thick skin; oval berry, 3.2 g.
Suffolk Red	Red	0.24	Moderately Hardy	90	Midseason	Loose clusters; good flavor.
* Winter hardiness rating: tender, 0°F to -10°F; slightly hardy, -5°F to -15°F; moderately hardy, -10°F to -20°F; hardy, -15°F to -25°F; and very hardy, -20°F to -35°F.						
** Bloom occurs four to six weeks after bud break. **Tablegrapes can be grown in all regions in Ohio**.						

Suggested Geographic Locations of Grape Growing Regions

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