

Recommended Wine Grape Varieties for Nova Scotia

Nova Scotia's commercial wine industry is less than thirty years old and the selection of suitable varieties for this new 'cool climate' region has undergone much discussion, trial and error, and evolution during this time. The best sites in the Province typically have winter minima above -23 °C and growing seasons above 1000 degree days of heat (Base 10 °C). Respectively, successful introductions must be hardy enough to survive these conditions without significant injury and be able to ripen fruit in a truly short, cool growing season. Other factors influencing the success of a new variety include the management skills of the wine grape grower and the complexity of Nova Scotia's climate itself as it changes in response to global warming.

Commercial grape varieties fall into one of three categories – European or *vinifera*, American or *labruscana*, and Hybrids which are derived from crosses between members of the former two groups. The European varieties belong entirely to the species *Vitis vinifera* and are known principally for their wine attributes, but tend to be the least winter hardy and most disease susceptible. Chardonnay and Pinot noir are examples of *vinifera* grapes grown in Nova Scotia but generally speaking only the earliest and hardiest varieties can be grown successfully in Nova Scotia.

American varieties are derived from native North American species (*V. riparia*, *V. labrusca*, *V. rupestris*, etc) and are typically vigorous, winter hardy, and disease resistant but are generally not considered suitable for quality wine production. Examples of prominent American varieties occasionally found in Nova Scotia gardens include Concord and Niagara. There are no varieties from this group grown for commercial wine production in the Province.

Hybrid varieties were developed to combine the hardiness and disease resistance attributes of American species with the superior wine quality attributes of the European varieties. Consequently, successful Hybrid varieties tend to have superior hardiness and disease resistance compared to European varieties and wine quality can be excellent, particularly in Nova Scotia's cool climate. Nova Scotia's wine industry is based predominantly on the production of these hybrids and prominent examples include Maréchal Foch, Leon Millot, Lucie Kuhlmann, L'Acadie, Seyval, and New York Muscat. At present there are about a dozen varieties that are recommended for consideration when establishing a vineyard in Nova Scotia. Descriptions of these varieties, including their agronomic and wine traits, are presented below:

Red Hybrids

Baco noir is a vigorous variety that is often recommended for heavier soils as excessive vigor and increased winter injury often occur when this variety is planted on lighter soils. It is prone to early bud break and therefore has a greater risk of frost injury in spring. It has small clusters with blue-black berries which tend to be high in acid but low in tannin, and produces a deeply pigmented wine of good quality. Following unsuccessful trial

plantings in the early 80's, more recent plantings are having greater success but growers should continue to be cautious with this variety. It is a late mid-season variety and requires high heat unit sites and good canopy management to reliably ripen in Nova Scotia. *For limited planting.*

De Chaunac is a vigorous and productive variety. Clusters are large and loose and require thinning to maintain consistent yield and quality. Wine is considered fair in quality. It is a late mid-season variety in Nova Scotia and requires high heat unit sites and good canopy management to reliably ripen. *For limited planting.*

Léon Millot (Millot) is a sister variety to Maréchal Foch being produced from the same cross. Its vine characteristics are also similar to Foch although Millot is considered more vigorous and productive. Bunches and berries are smaller than Foch and produce a wine with distinct berry aromas and medium to full body that is highly regarded. It is considered slightly less hardy than Foch and ripens about a week earlier. *For general planting.*

Lucie Kuhlmann is an early-ripening variety in Nova Scotia and is another sibling of Foch. It is vigorous, productive and very winter hardy, but has tight, medium sized bunches (larger than Millot but smaller than Foch) that show some susceptibility to bunch rot and powdery mildew. Lucie Kuhlmann ripens reliably to 20 Brix and above but tends to have high acids and may have an herbaceous character. The wine can be good on its own or be used in blends. It can have a lack of body which can be remedied by cluster thinning prior to harvest. It responds favorably to oak aging. This variety is widely adapted and can be successfully ripened in grape growing areas across the Province. *For general planting.*

Maréchal Foch (Foch) is a mid-season ripening variety in Nova Scotia and is considered the industry standard for red wine grapes. It is very winter hardy and has medium vigor, disease resistance and production levels. It has small berries and medium sized clusters that produce an intense, dark red-violet wine of good quality. In hotter years the wine may have a much lighter color. *For general planting.*

White Hybrids

L'Acadie blanc (L'Acadie) is considered Nova Scotia's signature white wine variety. It is considered hardier than Seyval and vines are upright growing with medium vigor and productivity. It has good disease resistance and fruit produces a very good wine that tends to be richer and fuller bodied than Seyval with crisp apple and citrus characteristics. It has been called Nova Scotia's 'Chardonnay' and like the latter lends itself to a variety of winemaking styles including oak fermentation and/or maturation, sur lees aging, partial skin contact and even sparkling wine. It ripens slightly earlier than Seyval but later than midseason varieties like Foch. *For general planting.*

New York Muscat has a labrusca-like growth habit with good hardiness and disease resistance. It has a tendency to be low yielding but produces a highly aromatic muscat

style wine that is highly regarded by many. Excellent ice wine has also been made from this variety. New York Muscat is a mid-season variety in Nova Scotia, ripening in the same harvest window as Foch. Its tendency for low yields limits its potential acreage. *For limited planting.*

Seyval is one of the most widely planted hybrids in eastern North America and can also be grown in Nova Scotia. It is a late mid-season variety with an upright growth habit and low to moderate vigor. It tends to overbear and should be thinned to ensure adequate ripening in Nova Scotia's short cool climate, and to maintain vine health. It is slightly less hardy than L'Acadie and is very susceptible to *Botrytis* bunch rot due to its large compact clusters. Wine from Seyval can be made in a variety of styles and compares favorably to that of many viniferas. It requires high heat unit sites with deep, well-drained soils and a moderate winter climate for best performance. *For limited planting.*

Vidal blanc (Vidal) is a late ripening variety with only moderate winter hardiness and disease resistance. Clusters are very large with small berries and thinning is required to prevent over-cropping. Adequate ripening is the greatest challenge for this late variety but it lends itself very well to ice wine production for which it is primarily used in Nova Scotia. It should be grown on only the warmest sites in Nova Scotia. *For limited planting.*

Vinifera Varieties

Chardonnay is perhaps the most widely grown European variety grown in Nova Scotia. It is moderately vigorous and productive but like most other European varieties is highly susceptible to most diseases. It appears to be adequately winter hardy but should only be grown in areas with mild winter minima such as the Annapolis Valley and South Shore. It is a late midseason variety that ripens about the same time as Seyval, producing a high quality wine with apple and pear flavors. Chardonnay is perhaps the best known wine variety in the world and is highly regarded for both its still and sparkling table wines. Unlike the hybrid varieties, Chardonnay tends to be grown on grafted rootstock in Nova Scotia as opposed to its own roots and seems to perform best on the rootstock 3309. *For limited planting.*

Pinot noir is one of the best known red wine varieties in the world and has been trialed in a number of Nova Scotia vineyards. It is considered one of the more difficult varieties to grow but is also considered the red vinifera with the greatest potential to produce high quality wines in our cool climate. It is perhaps the most susceptible to winter injury of the varieties listed in this publication but is capable of reliably ripening on warm sites. Like other vinifera varieties it is very disease susceptible and is particularly prone to *Botrytis* bunch rot due to its very compact bunches of thin-skinned berries. It can be used for a variety of wine styles including red table wine and white sparkling wine - either alone or in blends. There are numerous clones of Pinot noir and some are reported to be earlier ripening and hardier. Careful attention should be paid to these characteristics when selecting a clone for trial in Nova Scotia. Pinot noir is a late mid-season variety recommended for sites having warm summers and mild winters. *For trial planting.*

Riesling is another white vinifera variety being trialed with some success in Nova Scotia. It is primarily of interest due to its high winter hardiness (relative to most other vinifera varieties), and suitability for high quality still and sparkling wines. Like Chardonnay and Pinot noir, it is very susceptible to most grape diseases but its chief limitation in Nova Scotia is its late ripening. Like Vidal it makes a high quality white still wine but may have its greatest opportunity for sparkling wine production and/or ice wine. Riesling is very susceptible to bunch rot and requires careful attention to disease management if ice wine is the intended use. This variety is recommended for Nova Scotia's warmest sites only. *For trial planting.*

Relative disease susceptibility and sulphur and copper sensitivity among Nova Scotia grown grape cultivars

Cultivar	WH	Season	BR	DM	PM	Bot	Phom	Eu	CG	Susceptibility or sensitivity to S ¹ C ²	
Baco noir	4	LM	+++	+	++	++	+	++	+++	No	?
Chardonnay	3	LM	++	+++	+++	+++	+++	++	+++	No	+
De Chaunac	4	LM	+	++	++	+	+++	+++	++	Yes	+
L'Acadie	5	M-LM	+	+	+	+	+	+	?	?	?
Leon Millot	4-5	EM	+	++	+++	+	+	+	?	Yes	?
Lucie Kuhlmann	5	E	++	+	++	++	++	++	?	?	?
Maréchal Foch	5	M	++	+	++	+	++	++	?	Yes	?
New York Muscat	4-5	M	+	+	++	+	+	+	?	?	?
Pinot noir	2	LM	+++	+++	+++	+++	?	?	+++	No	+
Riesling	3	L	+++	+++	+++	+++	++	++	+++	No	+
Seyval	4	LM	++	++	+++	+++	++	+	++	No	+
Vidal	3	L	+	++	+++	+	+	+	++	No	?

Key to susceptibility or sensitivity: WH= Winter hardiness, 1=too tender for all but a few select sites, 2= tender, 3=slightly hardy, may be grown on better sites, 4=moderately hardy, 5=hardy, and 6=very hardy; BR=black rot; DM=downy mildew; PM=powdery mildew; Bot=Botrytis; Phom=Phomopsis; Eu=Eutypa; CG=crown gall; S=sulphur; C=copper

Ripening season: E, early; EM, early mid-season; M, midseason; LM, late midseason; L, late season ripening

Disease categories are rated as follows: +=slightly susceptible or sensitive; ++=moderately susceptible or sensitive; +++=highly susceptible or sensitive; No=not sensitive; Yes=sensitive; ?=relative susceptibility or sensitivity not known

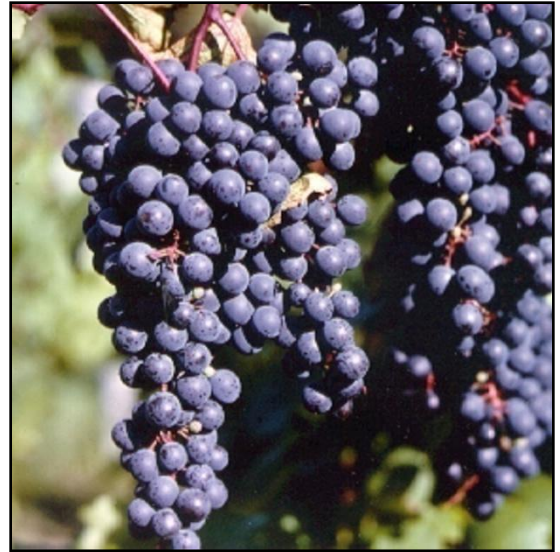
¹ Slight to moderate sulphur injury may occur even on tolerant cultivars when temperatures are 29 °C or higher, immediately during or after application.

² Copper applied under cool, slow-drying conditions is likely to cause injury.

Pictures of Nova Scotia Grown Grape Varieties



Baco Noir



De Chaunac



Léon Millot



Maréchal Foch



Lucie Kuhlmann



Pinot noir



Chardonnay



L'Acadie blanc



New York Muscat



Seyval



Riesling



Vidal blanc

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For more information, please contact:
John Lewis, Horticulturist
(902) 678-7722

AgraPoint's Ag Info Centre
1-866-606-4636

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