

## *Cultivar Selection for Cold Climates*

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Many grapevine cultivars can be grown successfully with winter protection practices in cold climates. Ripening those cultivars is sometimes another issue. When looking to grow vines, however, that will survive your local cold weather conditions and reliably ripen their fruit, your choices of varieties that fit the criteria become narrower. Fortunately for those of us who are adventurous enough (or just crazy enough) to push the limits of grape growing northward, there have been some great developments in “winter hardy” varieties in the last fifty years.

Winter hardiness is a relative term. It is not only determined by a cultivar’s particular genetics, but is also influenced by the environment in which the cultivar grows. The environment can be thought of as the soil type that the vine is growing in as well as the current weather conditions it is experiencing. Together the soil and weather will affect the vine’s growth over the course of the season. When it comes time to enter dormancy, all that the vine experienced throughout the season will weigh in on how well equipped it will be to handle the upcoming winter. Think of it as the vine having a memory. Another component to winter hardiness besides genetics and environment is cultural practices. The relative hardiness of the vine can largely be affected by pruning, training, shoot thinning, shoot positioning, crop adjustment, fertilizing, spraying, irrigation, and so on. These practices must be constantly adjusted as new information is acquired. For example, if the season is drier than average we would want to alleviate the stress on the vines by possibly dropping fruit and irrigating more. If the season is wetter, we know that there is more fungal pressure in the vineyard as well as more luscious shoot growth which means more time will be required for exposing fruit clusters and spraying. The one practice that seems to set the tone for the whole growing season is pruning. Developing a pruning strategy that fits well with your cultivar and site will go a long way toward helping your vines reach their maximum winter hardiness.

One tool that we can use to measure our vines’ hardiness is bud dissection. It is a useful practice that helps guide our pruning according to how well the buds survived along potential fruitful canes. In the case of mature vines, we prune off 85-90% of the last season’s growth, so we are able to sacrifice a few canes for bud dissection. The following table shows “Primary Bud Survival” data collected over the course of four years at the University of Minnesota’s Horticultural Research Center in Excelsior, Minnesota. It is meant to convey that “hardiness” is in fact “relative” from one year to the next and also provide some comparative options when determining which cultivar to plant. The “other varieties considered hardy” are just that with no bud dissection data available at this time. Remember that a cultivar’s commercial viability can change dramatically over time. Checking on local market demands will help with your cultivar selection process. Good Luck!

## Primary Bud Survival of Dissected Buds of Grapevine Canes

	2011	2010	2009	2008
Baltica	100%	N/A	N/A	N/A
Castel	71%	44%	7%	56%
Edelweiss	75%	77%	69%	92%
Frontenac	94%	98%	84%	86%
Frontenac Gris	96%	100%	93%	81%
La Crescent	100%	96%	80%	94%
La Crosse	83%	79%	67%	6%
Leon Millot	69%	83%	84%	58%
Lousie Swenson	73%	77%	91%	83%
Marechal Foch	90%	96%	98%	86%
Marquette	98%	98%	87%	78%
Prairie Star	83%	98%	78%	81%
Sabrevois	69%	83%	84%	58%
St. Croix	73%	83%	89%	86%
St. Pepin	90%	96%	78%	53%
Swenson Red	60%	81%	20%	N/A
Swenson White	88%	65%	60%	N/A
Valiant	92%	90%	89%	N/A
Vandal-Cliché	N/A	98%	N/A	N/A
	6 Canes 8 Buds	6 Canes 8 Buds	5 Canes 9 Buds	4 Canes 9 Buds
Total amt buds	48	48	45	36

### Other Varieties Considered Hardy

Briana	Petite Amie	Somerset Seedless
Concord	Petite Jewel	Zilga
Frontenac	Petite Pearl	
King of the North	Seyval	