

Sur la Table: Fresh and Dried Table Grapes in Wisconsin (Ed. A. Maenner). Reindl Printing Inc. 2017. *Fresh: A Wisconsin Perspective*. Vol 8, Issue 2, pp6-8.

Seedless table grapes, also known as eating or dessert grapes, are becoming more than a backyard hobby in Wisconsin as growers seek to expand their fresh-market crop portfolio. Currently in Wisconsin, the majority of the products offered at fresh-markets are vegetables; and incorporating a range of seedless table grape varieties would provide a more diverse offer of products and certainly increase sales. In addition, table grape varieties with different ripening times can extend the harvest window enabling markets to supply fresh locally grown table grapes for several months during the fall.

One of the major limiting factors in producing seedless table grapes in any temperate climate has been the ability of the vines to survive the harsh winter temperatures of northern regions, as well as spring frosts. Preliminary research is being conducted at UW-Madison to screen varieties that have consistent winter survival, early to late harvest time, and outstanding flavor and aroma.

In the past several decades, breeding programs across the country, including University of Minnesota (MN), University of Arkansas, University of Guelph (Ontario), and Cornell University (Geneva, NY) have released new winter-hardy selections of seedless table grapes. University of MN and other breeders have also promoted several of the varieties that were developed by Elmer Swenson of Osceola WI, from hybrids of wild Wisconsin grapes.

Current research at UW-Madison has shown that there are a number of these new varieties that can survive Wisconsin winters, particularly southern Wisconsin; however, only a subset of these varieties has survived the extremely cold winters of 2014 and 2015. Twenty varieties were initially planted at UW West Madison Agricultural Research Station (WMARS) Verona, WI in 2007, and only seven varieties have survived: 'Einset', 'Himrod', 'Mars', 'Montreal Blue', 'Reliance', 'Somerset Seedless', and 'Trollhaugen'. At UW-Peninsular Agricultural Research Station (PARS) in Sturgeon Bay, WI winters were even more challenging and only three varieties survived: 'Einset', 'Mars', and 'Reliance'. Additional varieties tested at both research stations that suffered significant cold damage included the following: 'Buffalo', 'Canadice', 'Concord Seedless', 'Glenora', 'Jupiter', 'Lakemont', 'Interlaken', 'Marquis', 'Saturn', 'St. Pepin', 'Suffolk Red', 'Thomcord', and 'Vanessa'.

Despite the large losses, these especially cold-hardy seedless grapes that remain have quite an array of unique flavors and colors. Berry and cluster size also varies considerably, as well as storage properties, depending upon variety. In addition, some varieties are more vigorous; and thus require additional pruning and vine management. Bud break also varies slightly; but in general begins late April with most varieties breaking in early May. Last, these varieties ripen at different times and thus a varied selection can provide continual harvest for all of September.

A subset of these table grapes was surveyed in the fall of 2015 to evaluate flavor, texture, and color qualities. Sweetness, acidity, sourness, and astringency were evaluated for both fresh and dried grapes (raisins). Comments were also welcome in these surveys and some described these varieties as spicy, herbal, strawberry-flavored, or even having grapefruit tones. Fruits were also described as musky or fruity. The flavor complexity and texture of raisins generated considerable enthusiasm and interest. Taste tests will be conducted again this fall and survey results released.

A brief description of the seven cold hardy varieties currently growing at WMARS is provided below:



Einset was developed at Cornell University, NY, and released in 1985. Genetically, it is composed of *V. labrusca* and *V. vinifera*, and derived from a cross between 'Fredonia' and 'Canner'. Growth habit is semi-upright and the vines have moderate hardiness and vigor. The berries can be two-tone on the early side of the harvest window, with a rose-green color, becoming a deeper rose as they ripen further. Berry and cluster size are medium to large. It is a mid-season grape, and flavors are described as foxy and fruity and similar to strawberries. It is somewhat susceptible to powdery mildew but resistant to botrytis bunch rot.



Himrod is the oldest introduction that is grown in the UW trials, and a cross between 'Ontario' x 'Thompson Seedless' was developed at the University of Cornell, NY, and released in 1952. It is an interspecific cross between *V. labrusca* and *V. vinifera*. While the least hardy of these seven varieties that were included in our trials, it offers a colorful and flavorful option. It is considered a white grape, (it is green to golden in color). The flavor is regarded as excellent, and some say it is a honey-like flavor, with a juicy texture. It is a mid-maturing variety, with medium berries on large clusters.



Mars was developed by the University of Arkansas by crossing 'Island Belle' and 'Arkansas 1339', and has been available to the public since 1985. It is very vigorous and hardy in Wisconsin: attributed to its complex mix of genetics including *V. vinifera* and *V. labrusca*. The large dark blue berries are slip skin, meaning they have a tough skin that separates readily from the pulpy flesh. The clusters are medium-large. The flavor is mildly labrusca (Concord). Bud break is mid-season and Mars is the latest maturing variety grown at the West Madison research station, ripening several weeks after others. The vines are resistant to several major diseases, again probably due to its *V. labrusca* heritage.



Montreal Blue was developed by Elmer Swenson from a cross between 'Kandiyohi' and 'ES 24-52'. It is especially cold hardy and despite harsh winters, we observed very little winter kill. It produces deep blue medium-large berries on fairly large tight clusters. Montreal Blue breaks buds relatively early, but matures late in the season. The berries are high sugar content; but the flavor is often considered slightly tart. Although vines are quite vigorous with trailing habit, they are quite susceptible to multiple diseases. It is also sometimes sold under the name 'St Theresa'.



Reliance is a relatively old variety developed at the University of Arkansas in the 1960s and released to the public in 1983. It was selected from crosses between 'Ontario' and 'Suffolk Red' and genetically includes *V. labrusca* and *V. vinifera*; thus conferring both cold hardiness and moderately vigorous growth. Medium sized berries are rose colored, turning deep red late in the season and borne on medium to large clusters throughout September. Flavors can be described as sweet, fruity, concord-like and "melting". Although there are reports on berry drop, this grape holds well after harvest and be kept up to three months. It generally has a mid to late season harvest window. Unfortunately, Reliance is fairly susceptible to anthracnose and downy mildew; however, has moderate resistance to powdery mildew, *Phomopsis*, *Botrytis* and crown gall.



Somers Seedless was also developed by Elmer Swenson using Wisconsin grapes and released to the public in 2002. Genetically it is composed of *V. labrusca*, *V. riparia*, *V. vinifera* and small amounts of other wild *Vitis* species.. It has a vigorous vine and has performed consistently despite harsh Wisconsin winters. It is one of the earliest to ripen, in late August or early September and has small to medium rose-colored berries borne on medium sized clusters. Strawberry-like flavors are common, and the berries can be harvested early at the pink stage. It can be susceptible to downy mildew, but in general is considered quite disease resistant.

Somerset is also somewhat susceptible to shattering and sour rot; and although sweetness and colors will intensify in mid-September, delayed harvest can be risky.



Trollhaugen is another Elmer Swenson variety; released in 2000. It is a cross between 'MN#78' and 'Venus' and has *V. labrusca* and *V. riparia* background. It is one of our most cold-tolerant varieties and vines are moderately vigorous. The medium-sized clusters have small, blue slip skin berries, with concord-like flavor. This is one of the earliest maturing varieties, and stores well for weeks on the cluster with refrigeration. However, delayed harvest after heavy rains sometimes results in cracking. 'Trollhaugen' was quite popular among those partaking in taste evaluations.

Varieties tested	Maturity	Color	Berry size	Flavor	Other
Einset (NY)	Mid	Red	Med	Strawberry	
Himrod (NY)	Mid	White	Small	Honey like	
Mars (AK)	Late	Blue	Large	Concord like	Tart
Montreal Blue	Late	Blue	Med	Mild and fruity	Tart
Reliance (AK)	Late	Red	Med	Concord like	
Somerset (WI)	Early	Red	Med	Strawberry	
Trollhaugen (WI)	Early	Blue	Small	Concord like	A favorite