

Grape Update 2011-12

2011 was a spring that required hard work in the vineyard as we continued with our 'de-vigoring' plan (see 2010). We waited quite a while for the snow to melt that year. Considering the weather, it took one month of work to select and retrain the multiple canes to the trellis. We trained several times that summer to try to keep the plants somewhat on the trellis. That summer the plants were huge. In fall, I 'pre-pruned' canes that I knew would be removed anyway, in order to reduce the trellis load in the snowy season ahead.

However, winter 2011-12 was a warm, dry non-event here and in most of the country. The grape buds were starting to swell, but had not broken in early April when temperatures dropped to 24, 16 and 18 degrees for three nights in a row. My notes on the day before the expected freeze said: "All buds pretty small (apx 1/8") except Valiant – fuzzy inside has just cracked the brown scale."

On May 11, with corrections on May 17, I evaluated the extent of damage that may have occurred during the warm winter or the April freeze period.

Summary of Winter Damage to Grapes 2011-12 (warm winter)

Sort by Name		Sort by Damage	
Blue Bell	0.84	Valiant	0.00
Brianna	0.88	Clinton (12 plants)	0.17
Clinton	0.17	MN 1200	0.38
ES 6-16-30	3.00	Frontenac Gris	0.69
ES 8-2-43	1.00	King of the North	0.81
Frontenac	1.16	Blue Bell	0.84
Frontenac Gris	0.69	Brianna	0.88
King of the North	0.81	ES 8-2-43 (4 plants)	1.00
LaCrescent	1.06	LaCrescent	1.06
Louise Swenson	2.06	Marquette	1.13
Marquette	1.13	Somerset Seedless	1.13
MN 1200	0.38	Frontenac	1.16
Petite Amie	1.69	Petite Amie	1.69
Prairie Star	2.59	Louise Swenson	2.06
Sabrevois	2.34	St Croix	2.12
Somerset Seedless	1.13	Sabrevois	2.34
St Croix	2.12	St Pepin	2.56
St Pepin	2.56	Prairie Star	2.59
Valiant	0.00	ES 6-16-30	3.00

Key:

0 = Canes seem fine

1= Some cordon ends are dead

2= Plants are mostly good on lower half of trellis

3= Very dead above ground

Of note in this grape variety damage summary is:

- ES 6-16-30 - Every plant was killed to the ground and regrowth was recorded as having low vigor in the fall evaluation.
- Prairie Star has never been very vigorous. It seems to be fading away.
- St. Pepin and St. Croix are known to be marginal or not suited for our area.
- Sabrevois grows with very large internodes. Early frost affects this variety and stops ripening.
- Frontenac and Frontenac Gris had very little winter damage recorded despite green, vigorous growth into late fall.
- King of the North is very hardy but the fruit is so high in acid that it is hardly palatable.

When pruning in May 2012, I assessed the plants for vigor in the previous year by considering the amount of growth they had produced in 2011. If all growth and internode length was moderate, I removed a lot of the extra material and trained them to a high-wire, 2-arm cordon. If growth was assessed to be more vigorous, I removed fewer old canes so that more fruit could form and help de-vigor the plants in the 2012 season.

Despite the records of pretty high winter damage in many of the varieties, almost all of the plants produced fruit, thanks to the survival of buds on canes which may have been tied to the lower part of the trellis, or the production of fruit from secondary or tertiary buds. As the season moved along, I could see how the shoots were growing (long, short, or good internode length) and I further removed canes or fruit to match that growth.

The summer and fall had very little rain though what did fall was in larger amounts like 0.5 to 1.5 inches. The growing season was long, but temperatures were average. Despite the longer season, grapes still seemed quite sour and the flavor just did not seem to be quite right. Sugar levels were high enough. Long season red grapes like Frontenac and Marquette began to shrivel on the vine despite high acid levels.

White grape varieties were most successful, with ES 8-2-43 and Somerset Seedless ripening early. They are both very delicious and Somerset Seedless is particularly beautiful. (*right*)



In 2012, I applied Agro-K products for enhancing the ripening of fruit. On August 17th, I applied VCP, Cal-Mag and KDL products with a hand sprayer. I applied it to half of the variety trial and tried to collect and analyze separate samples. The recommendation is to apply these products about 10 days before harvest to raise the sugar content in the fruit.

For the grapes samples I collected, this treatment did not seem to affect Brix levels, but it did seem to raise the pH. I was not able to complete titratable acidity measurements a second time. For the samples, I collected random grapes from both sides of the trellis, trying to pull from different areas of the cluster as consistently as possible. Please see the table below for results.

Variety	Date	Brix	TA	pH
MN1200	8/23	20.1	1.49	2.75
	8/31	21.5		2.93
MN1200 + KDL	8/23	19.8	1.45	2.83
	8/31	21.3		2.81
LaCrescent	8/23	21.0	2.11	2.78
	8/31	23.8		2.75
LaCrescent + KDL	8/23	20.6	2.13	2.84
	8/31	23.4		2.87
Marquette	8/31	22.2		2.72
Marquette + KDL	8/31	22.1		2.82
Valiant	8/23	18.6	1.63	2.91
	8/31	20.8		3.00
Valiant + KDL	8/23	19.0	1.50	2.98
	8/31	20.0		3.01
<i>Grapes were rinsed prior to crushing.</i>				
<i>Sample size may influence results.</i>				

I was surprised to see that the difference was in pH, as I was expecting the difference to be in sugar content. I regret that I was not able to complete the TA measurements. I had reordered titration solution for our titrator, but it was out of stock – for several weeks.

All in all, I feel like the grape plants are finally settling down and starting to behave in a moderate manner. The temperature is such a factor here in ND as our growing season is already shorter than is required for optimum ripening of the northern hardy varieties available. On March 19, 2013, as I write this, we've just had -12°F, about 10 inches of snow in the past week and a blizzard to blow it all around. The average snow depth in our area is 20 inches and temps won't get above 32°F for another five days. Spring will be late but at least we will get moisture from the melting snow.

Here is a screen shot of the NOAA National Operational Hydrologic Remote Sensing Center's Interactive Snow Information page: 3/19/13

