2020 Was A Dream Come True

(If You’re a Grape)

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It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, we had everything before us, we had nothing before us, we were all going direct to Heaven, we were all going direct the other way...

-Charles Dickens, A Tale of Two Cities

I received a double “worst of times,” light on the “best of times,” and I’m sure that’s not what I ordered.

-Humanity, 2020

“About a week ago, some of my first-vintage cellar staff came up to me and asked when it gets “crazy” like I had talked about prior to their on-boarding,” relates Kris Kane from Lake Erie Winery 21 Brix, “and I stopped, and reflected on (2020) feeling like it was a relatively “easy” harvest.”

For most New York winemakers, it was better than relatively easy—it was a dream.

Of all the comparisons he uses in that magnificent opening line, Charles Dickens does not include good dreams and nightmares. Maybe it’s because there’s no equally evocative term for the opposite of a nightmare. “Pleasant dream” just doesn’t cut it.

But in a year that often felt nightmarish, the 2020 grape harvest was the opposite, and Kelby Russell of Red Newt Cellars and Dave Breeden at Sheldrake Point each independently referred to it as a “dream,” or “the kind every winemaker dreams of.”
In his search for explanations, Kris Kane landed on “maybe the pandemic gods felt bad and gave the New York wine industry a break knowing how bad people desperately need fantastic NY wine to continue to get through.”

It’s as good a reason as any, and it’s 100% accurate regarding what we should expect from 2020 New York wines. But first, let’s take a look at how we got here.

**Winter**

Most recently, winter has been going for quality over quantity. Efficiency is the name of the game. Instead of extended periods of resource-intensive frigid weather, winter saves its energy for making roads and sidewalks sketchy, attempting to ruin at least one day of B.E.V. NY, and encouraging the spread of viruses.

The good news for farm crops is that the conditions required to best sabotage humanity occur at about 31.5 degrees Fahrenheit, which is nowhere near cold enough to damage grapevines. Once again, winter lows were rarely if ever below zero F (see Figure 1), excluding the north country Winter was not too dangerous for grapes this year, and the cold damage happened much later, during the new perennial LVS (Least Valuable Season): spring.

**Spring**

Let’s just start calling it “winter light.” The winters have been so mild lately that now it’s really hard to tell the difference between December and April. I am not surprised when it’s 50 on New Year’s Day. I am not surprised when it’s snowing the last Sunday in April. The good news about a cool spring is that it keeps the vines dormant and prevents freeze damage. That’s the idea, at least.

In 2020, even though budbreak was significantly delayed in most places (10 days later than average in Lake Erie), the cold lasted so long that some vines gave up and started to push. Temperatures as low as 28°F around May 10 caused damage to primary buds, especially for labrusca grapes in the Lake Erie and Finger Lakes (see Figure 2).

As a result, some growers experienced significant crop loss come harvest. Matthew Schrader of Constellation Brands reports that “we were estimated to bring in 10,000 tons of Concord. We actually received 4,500 tons.” This is far from a dream scenario for the growers or the winery. Finally the pattern broke, the sun came out and the air became warm. And once it got warm, it stayed warm.

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![Figure 1. Daily minimum and maximum temperatures (blue lines) and range of temperatures that are associated with bud mortality (green zone). Note that data was discontinued in mid March with the onset of the COVID-19.](image1)

*Figure by Tim Martinson*

![Figure 2. Hourly temperatures in the Finger Lakes (red, 2 sites), Lake Erie (Yellow, 3 sites) and Eastern New York (blue, 2 sites) during two spring freeze events on May 8-9 and May 12-13. Reference lines at 32°F (black dotted line), and 28°F (red dotted line) indicate critical temperatures for severe bud injury during late budswell and budburst.](image2)

*Figures by Tim Martinson based on NEWA data*
Summer

Due to spring once again phoning it in from Daytona, the Growing Degree Day (GDD) meter was well behind the long-term average entering June. June had other ideas (see Figure 3). June was just one long hot sunny day, or at least that's how I'll remember it. By June 30, the GDD deficit had been made up and the season was now cruising ahead, all major indicators looking promising.

Except for rain. One of the popular topics of conversation over the hedge with neighbors was trying to remember the last good rain. Grass would get brown, people would become increasingly concerned, and then enough rain would arrive to make everything somewhat green again in most places. You could call it a sneaky drought. You could call it nature’s attempt at deficit irrigation (see Figure 4). Long Island seemed to get the least rain (7 inches from May through August), and growers with irrigation made plenty of use of it this summer.

Fall

In plenty of years, September weather is the key factor in determining the overall quality of the crop. 2018 and 2019 are key examples, but there are plenty of others where the spring and summer have left more questions than answers and it’s up to September to straighten things out. 2020 was not such a year.

While in previous years September has been tasked with pushing the unconscious pilot out of the seat and landing the plane, this year its only job was to remind people to
make sure their seats and tray tables were in the upright and locked position. September didn’t have to be extraordinary in 2020, but it was still pretty great.

“Warm, dry, and then really great diurnal temperature swings and cool nights in September and October to keep TAs higher than usual for a hot year,” as Kelby Russell puts it (See Figures 5 & 6). Grape growers called wine-makers to tell them it was time, and the answer was often something along the lines of “Riesling? It’s only October 1st.”

But it really was time, especially anywhere birds might be in residence. “If the birds were able to get a taste, you could not get rid of them,” said Michael Migliore of Whiteciff Vineyards & Winery in the Hudson Valley. “Even with netting and bird scare devices, losses were high.” Similar issues were reported on Long Island. In the middle of October the switch that had brought the sunny, warm weather in May finally switched back to cloudy and gray, but by that point we couldn’t really complain about a lack of ripening weather.

**Grape Quality**

While quantity has been an issue in some places, I have heard no complaints about the quality of any grape—red, white, labrusca, hybrid or *vinifera*.

Andrew Rockwell at Sparkling Pointe on Long Island was excited about Pinot Meunier, but “the truth is quality is high across the board for the base wines with slightly better flavor concentration than last year.” Matt Schrader of Constellation reports “we saw Aurores at 18 brix and Con- cords in the low 20’s brix,” which is stratospheric.

“Fruit maturity was good across the board and flavors above normal,” says Michael Migliore, and Dave Breeden adds “because there was no rain, there was no rot, so all the grapes were perfect. And great flavors.”

**Weather Notes**

2016 is the comparison year most people point to because it was also hot and dry. Fun fact: in Geneva, at least, 2020 actually saw less total rainfall than 2016 (see Figure 7). This fun fact is also a slightly misleading fact (it is 2020) because one third of the 2016 rain fell right at the end of October, too late to factor into the grape season. Kelby Russell thinks the 2012 comparison is best because every-thing went smoothly that year too. Returning to Figure 3, we remember that April and May trailed the long-term average, September and October trailed the 10 year aver- age, and it was June, July and August that really stood out. Everybody mentioned the acids being plenty high (pos-sible exception: those 20 brix Concord), shown in Figure 6, and it’s also worth noting that most people harvested most varieties a lot earlier than in 2016.

I already miss harvest. Some years I am more than ready for it to be over—occasionally as early as Labor Day—but not in 2020. In a year with its share of ups and downs (current score-Ups: 4, Downs: 6,743) the vintage quality is a huge “up.” As I said in the first article I wrote this year for *Veraison to Harvest* (see Issue #3), in a year where noth-ing has felt right or natural, the grape harvest was there for us, in all its beautiful normalcy. I would have felt this way even if the grapes were not spectacular, but hey: no complaints.

Sometimes the monumental chore of harvest can be too much to handle, and the single-minded focus required to manage it all can be isolating. This year the harvest re-minded us of the awesome joy of farming when nature smiles, the purity of hard work toward one purpose and just maybe the peace of mind available when you don’t see your phone for a few hours.

So a part of me already misses the sunshine and the beau-tiful grapes. But this harvest has provided another mir-acluous gift: hope. We can now anticipate some of the finest wines ever produced in New York. If there’s anything better than fond memories, it’s eager anticipation, meaning we are doubly blessed. Add one more “up” to the tally. Sweet dreams.
Lake Erie Update

Harvest Summary and Financial Year in Review

Kevin Martin, Extension Farm Business Management Associate

Lake Erie Regional Grape Program, Cornell and Penn State Cooperative Extension

The 2020 crop, at least for Concord, is in the books. From what I have heard, harvest was the most normal thing about 2020. We are happy that most growers had a safe and (mostly) successful harvest. Nothing surprising jumped out at me when seeing data from processors. This crop was not one for the record books—for many processors it was the smallest harvest since 2012.

Despite harvesting the smallest crop in 7 years, overall crop size was nearly double that of the disastrous 2012 crop. And prices were higher. Payments are expected to continue to trend higher or at least stay high. Between the higher prices and Coronavirus Food Assistance Program 2.0 (CFAP 2.0), average net revenue for growers should beat many of the previous 7 years. 2020 was a reminder that successful vineyard operations require a comprehensive risk management strategy. In frost prone areas there is no replacement for crop insurance.

Crop size. Yields from processors reflect production beyond the Lake Erie Region as grapes are shipped in and around the entire tri-state area. Major processors have been averaging 185,000 tons. This year yields at the plants were down 15% to approximately 155,000 tons. In the context of last year, with more than 200,000 tons, this year felt rather light. Mostly favorable weather conditions and the lighter crop led to higher brix. Brix averaged 17.1 across the region. Brix were uniformly above minimum standards before October 1st.

The impact of spring frost. Mixed into these averages were some severe disasters for individual growers. Unharvested acreage, whole farms with yields below 2 tons, and significant acreage below 4 ton were all observed. At these levels of production higher prices provide little assistance. Frost events were most severe in the Finger Lakes, Cattaraugus County and the west side of Erie County, PA.

Yields of Concord, Niagara, and Catawba were down sharply in the Finger Lakes, due to two frost events on May 9 and May 13, when temperatures dropped to below 28°F for 3-8 hours. In all of the severely impacted areas substantial acreage was not harvested or yielded less than 3 tons per acre. While average yields were down by 15%, yields in severely affected regions were down by 70% or more.

Crop Insurance and Coronavirus Food Assistance Program reduced losses. CFAP 2.0 (Coronavirus Food Assistance Program) and crop insurance will keep most of these growers on track for profitability. However, that assumes CFAP eligibility and high levels of crop insurance coverage. With CFAP payments based on last year’s very successful crop, for most growers the real wild card will be how much risk was assumed on the insurance side of things. Premiums have been rising and with rising premiums (and 7 good years in a row) came policy cancellations. Given the trends of this most recent disaster to be focused on our most vulnerable areas, there is hope that risk management strategies were more robust than average sites. If you are not familiar with CFAP, visit farmers.gov/cfap. Nearly all grape growers are eligible for this program administered by FSA but the application deadline is quickly approaching.

Cash market prices and income higher this year. Cash market prices had a significant range this year. Growers receiving $300 per ton may see higher gross revenue than recent years with some record breaking yields. Average cash market prices should be approximately $285 per ton. Stacking
CFAP 2.0 on top of that income may create a temptation, or perhaps occasionally a valid reason, to accelerate some depreciation.

**Tax planning.** With two months to do some tax planning, take it slow. For tax purposes, major purchases made in December are just as effective as those made in November; so plan first and buy later. As you plan, keep in mind how historically low income taxes are right now. This provides an opportunity to affordably build cash reserves so long as modified adjusted gross income (MAGI) remains below $200,000. A MAGI target threshold could be adjusted upward for growers regularly having high levels of MAGI and adjusted lower for growers that regularly have lower levels.

**Financial planning for 2021 and beyond.** With income above comfortable levels, the first stop should be to investigate depreciated capital. With the number of challenging years strung together, growers should invest in capital that increases efficiency. While it normally does not make sense to purchase tractors early to increase tax savings, it may just simply be time to replace part of an aging fleet. Focus on increasing reliability and maintaining equipment is one area to invest.

While making capital purchases, take care to make sure they fit the future operation you plan on managing. The tractor or implement that best fit your operation in 2000 or 2005 may not be the equipment you need in 2025. As your operation grows, the efficiency of larger scale equipment is much greater when it is purchase is part of a replacement. It can be difficult to justify expensive multi-row equipment or even a larger fertilizer spreader if one is already owned and reliable.

Beyond equipment, employer (owner) sponsored retirement plans can be an easy way to decrease taxable income. These plans are not necessarily flexible if employers have a lot of employees but can certainly allow fairly large amounts of pre-tax savings.

Finally, supplies that can be used to replenish inventory and put into service may offset net income. This is certainly the most flexible option but does have its limits. While it typically makes sense to lower tax burdens whenever the opportunities arise, savings can be minimal whenever taxable income falls below $326,000. By overdoing purchases, one might decrease the flexibility of 2021 income and create a tax burden for 2021 that is harder to plan around.

Overall, these are great conversations to have with growers. This kind of strategic business planning is welcome after years of low prices and struggling with net income losses, rather than with taxes. With many growers producing acceptable yields, hopefully most growers that were hit hardest by return crop and frost can continue to avoid difficult conversations and remain successful with programs like crop insurance and CFAP 2.0.

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**LONG ISLAND: SOME LESSONS LEARNED IN 2020**

*Alice Wise, Senior Resource Educator*

*Long Island Grape Program, Cornell Cooperative Extension of Suffolk County.*

The 2020 growing season on Long Island had its challenges like every other season. Rather than recite temperature and rainfall data, here are a few points to ponder.

**Cool, cloudy and/or rainy weather during bloom really does interfere with set:** Berry set on sensitive varieties like Merlot can be profoundly impacted by cloudy bloom weather. This season, we had little rain in June (<1”) but there was a stretch of cloudy, very humid weather mid-month.

In the LIHREC vineyard, set was disrupted on some Merlot own-rooted and 101-14 vines. 3309 vines generally fared better. The impact was not across the board, just certain clone/rootstock combos. Yield component data will be published this winter on the CCE-SC grape program website.

**Drip irrigation is worth the investment:** Dry stretches during summer seem to be common nowadays. May and June had only 2.5” and 0.69” of rain, respectively. While ideal for winds associated with the August 4 tropical storm deposited a layer of salty soil on the west side of the vines.

Photo by Alice Wise
disease management, it stresses vines on sandier soils. The LIHREC vineyard, for example, sits on soil that is 70% sand, 20% silt and 10% clay. Irrigation commenced in mid-June. We fought drought stress all summer even with weekly irrigation. The presence of under vine green growth (due to under vine mowing) no doubt exacerbated the problem.

Clean, healthy grapevines are essential going into veraison: The period from veraison to harvest can be tricky. Ripening fruit is vulnerable to cluster rot. Downy mildew is often problematic.

Tropical systems can make life difficult. The August 4 tropical storm occurred in early veraison. There was very little rain but a lot of wind, with gusts up to 70 mph. Commercial vineyards were minimally impacted.

The LIHREC vineyard, very exposed as it sits among hundreds of acres of sod and row crops, fared the worst. The west side of the canopy was blasted with a layer of salt/soil. Vines in the western rows and on the south end of rows had some tattered leaves and salt damage. Subsequent rainfall washed off much of the salt/soil film. Within a month or so, the canopies had recovered amazingly well. Having a healthy vineyard going into this storm was an important factor in its recovery.

Yellow jackets like red wine: In the LIHREC vineyard, the yellow jackets and their other bee and wasp friends keyed in on Lemberger, Dornfelder and Pinot Noir and to a lesser extent the other reds. While the whites were also damaged, these critters really seem to prefer the reds. In past years, we have noticed the same thing about raccoons. They will pass by Chardonnay panels to ravage nearby Merlot.

Under vine management is not a straightforward issue for those trying to avoid synthetic herbicides: The LIHREC vineyard is mostly under-vine mowed. This works well in most years but it is a slow and laborious task. It is particularly unpleasant in a tractor whose AC regularly cuts out.

It was so hot and dry this summer that under vine green growth was too competitive, especially for younger vines. Weekly drip irrigation, hand weeding and spot use of an organic herbicide were all used.

While the organic herbicide provided immediate gratification (weeds became yellow very quickly), the period of control was short, ≤ 2 weeks. Repeated applications were necessary. This regimen would be difficult for a larger vineyard to implement. Cultivation is gaining favor in commercial vineyards but is also a time-consuming (expensive) practice.

Some varieties may make life easier: Albariño and Petit Manseng are two white vinifera varieties in the LIHREC vineyard that do not seem to get cluster rot. Going forward, the industry should take a good hard look at disease resistant hybrids.

Breeding programs around the world, including Bruce Reisch’s program at Cornell, are working hard to create new disease resistant selections (resistance is to DM & PM). There are a few high quality varieties available now, such as Marquette and NY 81 (Cayuga White x Riesling).

We have found that hybrids require fewer fungicides (up to 50% fewer) including few to no botrycides. They also ripen earlier than vinifera. Marquette ripens right around Labor Day every year. NY81 was picked on Sept. 24 this season at 22°Brix. Currently, we have NY81, Itasca, Regent and two Tocai Friulano hybrids.

Additional thoughts ...

Pleased with: How canopies recovered from Aug. 4 wind storm.

Aggravated by: The heat. It was draining to work all day in hot weather.

Surprised at: Growing 23°Brix Pinot Noir, though we had to share it with the yellow jackets.

Worried about: The encroaching spotted lanternfly populations.

Wonder why: For years, Sauvignon Blanc has been a sour rot magnet. Now that it is being used for cluster rot trials, the fruit has been clean as a whistle.

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For several years, we have included measurements of yeast assimilable nitrogen (YAN) every two weeks in Veraison to Harvest samples. A general rule of thumb is that 150-200 ppm (or mg/l) is the minimum needed to avoid N starvation of yeast and potential stuck fermentations. But what factors contribute to high or low YAN levels has been elusive. Numbers tend to vary even at the same site from year to year - and variety to variety.

The three years of YAN at ~60 vineyards, shown below, show some consistent differences by variety. For example, MN cultivars Frontenac and Marquette (blue ovals) tend to have high YAN numbers, while Cabernet Franc and Riesling (red ovals) tend to have low YAN. Keep in mind that each dot represents one vineyard block in these figures - and the number of sites of each variety sampled varies from 1 to 15.
It's hard to remember 2019, but last year we reported that soluble solids started out lower than average, and TA’s also were high at the start of our sampling season. I characterized it as a ‘delayed start but average finish’.

Our five-year average starts in 2016 (most similar to this year, warm and dry), includes the heavy-yielding 2017 and soggy, rot-infested 2018 season, as well as 2019 (delayed but extended season).

This year was another warmer-than-average and dry year, much like 2016, but even earlier and more compressed. We started sampling on August 24 – one week before our normal starting date – and so this year the first sample date is ‘week 0’ – to allow comparison across years. We stopped sampling on October 5 – two weeks earlier than average.

**Berry weight:** Berry weight was average, except in Traminette and Cabernet Franc. Not big (2017) or small (2016). Anecdotally, lower-than-average fruit set (see Alice Wise’s article) may have resulted in looser clusters - less prone to cluster rots.

**Soluble Solids.** Sugar accumulation was 2-3 weeks earlier than 2019. Notably, Concor dots hit 16° Brix by the second week of September, and ended up above 18° Brix at harvest. Chardonnay also hit 22° Brix 2 weeks early.

**Acids.** Titratable acids (TA) also dropped fast until mid-October, when they leveled off. Notably, Riesling TAs dropped below 10 g/l by week 3 (mid September) – but didn’t drop much further, in contrast to 2016. Cabernet franc acids dropped to 6.0 g/l by week 2 (9th of September) – a full 4 wk ahead of last year – and then flat-lined thereafter. Juice pH remained ‘average’, unlike 2016 where juice pH was high - for Cab Franc the average approached 3.6 at harvest (~3.2 this year).

**Overall:** It was an early-ripening year, fast sugar accumulation, and initial drops in acidity. Yet by the end of the season, the warm days/cool nights helped retain acidity.

Although yields were down, everything got ripe early – and nobody can complain about fruit quality this year. The weather was nice, rains came late, and harvest - though compressed - was not ‘rushed’. Great year.
Merlot
Top to Bottom: Berry Wt, Brix, pH, TA

Chardonnay
Top to Bottom: Berry Wt, Brix, pH, TA
Marquette
Top to Bottom: Berry Wt, Brix, pH, TA

Concord
Top to Bottom: Berry Wt, Brix, pH, TA
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