

LONG ISLAND VITICULTURE

Timothy E. Martinson
Senior Extension Associate
Statewide Viticulture Extension

Justine Vanden Heuvel and I just returned from a visit to Long Island, where hosts Alice Wise and industry host Larry Perrine of Channing Daughters Winery on the South Fork of Long Island organized an excellent tour of Long Island vineyards and wineries. Our visit to the Island highlighted some of the most advanced, meticulous viticulture and winemaking in NY, and also some of the unique opportunities and challenges that Long Island has to offer.

Geography. 33 of the 36 wineries on Long Island are situated on the North Fork, surrounded by Long Island Sound and Peconic Bay. Saltwater on both sides moderates the climate, providing the only grape growing region where winter injury is not a major management issue. The remaining three wineries - Wolffer Estates, Channing Daughters, and Duck Walk (a sister winery to Pindar's on the North Fork) are located on the South Fork, near the famous 'Hamptons' area frequented by well-heeled New Yorkers.

Long Island Viticulture Extension Program. Our tour started at the Long Island Horticultural Research and Extension Center, northwest of Riverhead, where **Alice Wise** and her research/extension technician **Libby Tarleton** work. Alice's program is part of Cornell Cooperative Extension of Suffolk County.

A major portion of Alice's program is the 2.5 acre research vineyard at the Center. Pictures don't do it justice, as Alice and Libby's viticulture is absolutely immaculate. It is a real showcase, and keeps Alice and Libby busy with shoot positioning, hedging, spraying, crop thinning, leaf pulling and bird netting (more on that later). The vineyard is planted to clones of Merlot, Cabernet sauvignon and Chardonnay, and several other varieties, including Syrah, Sauvignon blanc, Pinot noir, Malbec, Barbera, Semillon, Gewurztraminer, Petit Verdot, and



Pinot gris, Dornfelder, Aligote, Muscat Ottonel, Lemberger, Sangiovese, Viognier, Tocai friulani, Norton, Malvasia, and others. Planted 15 years ago at the industry's request, the vineyard is supported by direct funding through Cornell University with additional support from the industry.

This vineyard has served as a catalyst for helping the young Long Island industry decide what clones to plant, and (as importantly) what varieties and clones to avoid planting. For the first several years of production, Alice and her staff made experimental wines out of most of the varieties and clones in the vineyard. It was a huge amount of work. For the past few years, they have been more selective about making wines, and only make a fraction of what used to be the norm.

Among the major impacts of this planting was the realization that there were better Chardonnay clones out there than the 'UC Davis' clone planted in the early 80s. The UC Davis clone had large clusters, was prone to bunch rot, and ripened on the late side. Winemakers liked the select 'Dijon Clones' better. They had smaller clusters, better flavors, and more favorable ripening profiles. Several Merlot clones were also tested. They turned out to have more subtle - but important - differences in flavor profiles. Alice's trial has been instrumental in helping the industry make decisions about what to plant and how to manage it.

Finally, Alice's vineyard is and has been the site of numerous fungicide, weed management, and bird netting trials. According to Alice, her vineyard is one of the many 'bird magnets' in the region that get extraordinary pressure from migrating flocks of birds during harvest season. It's safe to say that 100% of LI vineyards are netted. If they weren't, birds would probably get close to 100% of the fruit. Preventing bird injury is a moving target, as birds have adapted to some of the earlier over-the-row nets. Cluster zone nets (shown in photo) tested by the program seem to have mitigated the problem somewhat, and simplified the process of installing them each year.

The Industry. Long Island has 2500 acres of grapes, the major varieties being Chardonnay and Merlot. I've always thought of Merlot as the 'signature variety' of the region, and many agree. An organization known as the Long Island Merlot Alliance has been formed to promote the variety and find out better ways of growing and vinifying it to produce unique LI 'styles'. Five wineries have banded together to produce a wine named 'Merliance', whose sales will support a joint research and marketing effort. But Long Island is about more than Merlot. Chardonnay is also a major variety. Producing balanced cool-climate styles that have less emphasis on oak-derived flavors and are more focused on flavors and a rich mouthfeel and structure seems to be a goal.

Along with Chardonnay, several wineries are making dry, food-friendly white blends a major part of their product portfolios. We tasted several well-made blends, incorporating Viognier, Sauvignon blanc, Tocai Friulani, Gewürztraminer, and others at Bedell cellars and Channing Daughters. Modest amounts of Riesling and Pinot noir are also planted. Along with direct, tasting-room sales, many wineries sell to the NYC restaurant market.

Viticulture. With low risk of winter injury, Long Island vineyards are able to produce permanent trunks, and support cordon/spur training systems that would be a challenge in the Finger Lakes. Standard spacing seems to be 8 or 9 ft rows by 4-6 ft in-row spacing. I admired the 2-5 inch diameter, straight trunks, with well-established and well-spaced spurs. VSP seems to be well-suited to the region's sandy soils and moderate vigor. Most of the region's vineyards have drip irrigation, which allows them to more precisely control water relations, and therefore manage vine vigor to a certain extent.



Vineyard managers attempt rigorous crop control, with shoot thinning and cluster thinning (often 2 passes) being standard practices. Yield targets are in the 2.0 to 3.5 T range, with many 'Merlot' blocks targeting about 2.5 T. Standard canopy management practices include shoot tipping and aggressive leaf removal in the cluster zone.

The extent of leaf removal was the most notable difference to me from practices used in the Finger Lakes. Several vineyards had a 100% leaf-free zone extending up a foot or so above the clusters. Too much of a good thing? Maybe. But in talking to vineyard managers, there seem to be two compelling reasons to do so: disease and a desire for maximum sunlight exposure for fruit quality reasons. Which brings us to climate and topography, and how these might influence disease pressure and fruit ripening.

Climate and Topography. It was suggested to me that the unique maritime climate is a big influence on these practices. With most vineyards within a mile or two of Long Island Sound or the Atlantic Ocean, what sets Long Island apart is that daytime temperatures are more moderate, while nighttime temperatures are warmer. The largely flat topography (compared to the Finger Lakes) is less conducive to air drainage. This proximity to the water and flatness means that relative humidity is more consistently high. Bottom line is that clusters are more often in a humid microclimate, dry slower (air movement), and are therefore more prone to disease development on clusters. Add to that Chardonnay's extreme susceptibility to powdery mildew and *Botrytis*. This all makes it more imperative to use practices that promote rapid drying and allow for maximum fungicide penetration. This was underscored by an active *Botrytis* infection we saw in one vineyard, a full two weeks before veraison.

The maritime climate also is thought to influence ripening profiles. Warmer nights (temperatures above 50 degrees F) promote more respiration at night, allowing acid levels to drop more rapidly than in the Finger Lakes. I've often thought that these warmer nights also help explain why the same varieties tend to ripen and are harvested earlier in the Finger Lakes, despite the greater accumulation of growing degree-days in Long Island. Since more of the LI degree-days occur at night (without sunlight for photosynthesis), perhaps the vines respire away at night some of what they produce during the day, while the Finger Lake's cold nights help retain compound produced during the day, and also higher relative acid levels. Just a thought. The maritime climate also delays fall frosts, so growers can let fruit hang into November, if necessary. This helps particularly with Merlot and other late-ripening varieties.

Challenges. Long Island viticulture takes place in a densely populated suburban region, underlain by a shallow single-source aquifer that provides drinking water for the region's inhabitants. This means that vineyards and their inputs are under intense scrutiny by the general public - along with other agricultural enterprises. This scrutiny was a strong motivator for widespread adoption of recirculating 'tunnel' type sprayers. At least 18 vineyards have used Lipco recirculating sprayers, which capture spray runoff and limit drift, for at least the last 10 years.

Environmental stewardship is an important aspect of Alice's program, as well as Cornell Cooperative Extension of Suffolk County's Ag program. Alice Wise's program has been in the forefront of testing alternative practices that might reduce inputs, and has led the NY industry in developing a comprehensive Sustainable Vineyard Practices workbook promoting environmental stewardship among growers. The recently-completed *New York Guide to Sustainable Viticulture Practices* (www.vinebalance.com) developed jointly by industry and extension programs across New York grew directly out of Alice's efforts in the early 2000s.

Long Island and Suffolk County have also been in the forefront of efforts to preserve open space and agriculture through purchase of development rights. Many of the 2500 acres of vineyard have participated in this program, funded by Suffolk County and New York state, which can serve as a model for other areas (notably the Finger Lakes) just starting to come under increased development pressure. With land values in excess of \$50,000 per acre, this program has preserved the land base necessary to develop vineyards, while also providing some of the capital needed to develop them.

Long Island's wine industry shows what is possible with attention to details of viticulture and winemaking in New York. Its close-knit community of thoughtful, highly trained vineyard managers and winemakers produces wines that are among the highest quality produced in Eastern North America. Alice Wise's extension and research program has been instrumental in supporting development of the industry over the past 15 years.

From my perspective as someone most familiar with the Finger Lakes wineries and vineyards, visits to Long Island are always thought-provoking. Long Island vineyardists have achieved a striking degree of vineyard uniformity and fruit quality through careful management in a unique environment. Finger Lakes vineyards are notably more variable. While some of that is attributable to the challenges of coping with winter injury and highly variable soils, it's clear that management plays an important role. What practices could growers from other areas learn to raise the quality bar in their vineyards? A lot. Most winegrape growers in NY are aware of the importance of light exposure to fruit and canopy and cropping level management in their vineyards. But the best Long Island growers have been in the forefront of consistently applying these principles to improve their vineyards. Check it out. A visit to the Island will be repaid with many ideas on improving your vineyard, regardless of where you live in NY or what types of grapes you grow.