

## LIBATIONS GO LOCAL: SUPPORTING NEW YORK'S WINE-MAKERS, BREWERIES AND DISTILLERIES

New York State's flourishing wine industry has long depended on the College of Agriculture and Life Sciences (CALs) for critical research and extension work in grape breeding, viticulture, food safety, and agricultural marketing. Now, with a craft beer industry that has doubled in size in just 10 years and many cideries and distilleries also joining the local food and drink renaissance, CALs experts are helping a new crop of entrepreneurs through all phases of making and selling their products.



From growing grapes, hops and barley to creating markets for new goods, growers and developing businesses need science to address the region's unique challenges. What fruit and grain varieties can thrive in New York's variable climate? What disease or pest management tools are needed? What factors increase the survival and growth of new beverage enterprises?

Through our upstate agricultural and technology campus in Geneva, our teaching winery on the Ithaca campus and extension programs that crisscross the state, Cornell scientists are helping to answer these questions, positioning the industry to produce quality crops economically and offer people the local products they desire.



### ON THE GROUND RESULTS

- CALs launched the first four-year undergraduate degree programs in grape growing (viticulture) and enology (winemaking) east of the Rocky Mountains.
  - New wine grape varieties like Aromella, Arandell, Noiret, Corot Noir, Valvin Muscat, Cayuga White and Geneva Red were first introduced by CALs grape breeders. These viticulture experts have also helped develop unique, high quality wines from signature varieties like Chardonnay, Riesling, Cabernet Franc and Lemberger.
  - CALs is leading a statewide effort to expand the production of hops, an essential ingredient in brewing that's responsible for shaping a beer's character. Meanwhile, CALs plant breeders are working to identify barley varieties grown in New York that could be used for malting.
  - Since new grape varieties can take more than 20 years to breed and evaluate and much longer to reach commercial success, CALs grape breeders are using genomewide DNA analysis and trait-screening to identify promising progeny and make grape breeding more efficient.
  - CALs scientists are exploring how to shape microbial communities in brewery waste to produce liquid biofuels and other useful products.
- CALs faculty have worked to identify and address challenges facing small- and medium-sized entrepreneurs in emerging cool climate wine regions like the Niagara Escarpment, Lake Champlain and the Thousand Islands.
  - Cornell plant pathologists have been on the forefront of research on grapevine diseases including those caused by fungi, bacteria and viruses, that frequently threaten our crops. Specific research outcomes are allowing growers to target disease management at specific 'disease windows' during the growing season, and integrate cultural practices such as leaf removal into disease management.
  - Working with the Northeast Hops Alliance, CALs researchers helped brew a beer from hops grown entirely in New York State—perhaps for the first time in more than half a century.



## RESOURCES FOR EVERY NEED

Whether it's maintaining quality from harvest through processing, linking plant physiology with flavor chemistry or providing marketing guidance, CALS helps growers, winemakers, brewers and other beverage makers overcome specific obstacles and solve problems. Here's a sampling of the world-class resources, facilities and programs available at Cornell.

The **New York State Wine Analytical Lab** at the New York State Agricultural Experiment Station in Geneva, N.Y. provides affordable analysis of juice, wine, and distillates, offering more than 25 different chemical microbiological and sensory tests that help beverage makers troubleshoot and assure quality. For new artisan distilleries, NYSWAL provides sensory evaluation and analysis of ethanol—the "good" alcohol—and methanol, a federally regulated fermentation byproduct.

The **Cornell Enology and Viticulture Program** is one of the top viticulture and enology programs in the world, and is internationally recognized for its expertise in breeding table, juice and wine grapes adapted to cool-climate growing regions. From developing innovative trellis systems to maximizing 'terroir', the program offers unsurpassed opportunities for grape growers and wine makers, as well as undergraduate and graduate students.

The **College of Agriculture and Life Sciences Teaching Winery** is the only university teaching winery in the eastern United States. In addition to its state-of-the-art fermentation tanks and a modern microbiologic and chemical lab, the 1,800-square-foot facility provides convenient access to three acres of hybrid wine grapes at Cornell Orchards and is near the program's Lansing vineyards, which grow more traditional varieties like Pinot Noir, Riesling and Chardonnay.

Cornell Cooperative Extension (CCE) and Finger Lakes Community College (FLCC) are establishing a 2.5-acre **teaching and demonstration vineyard** in Torrey, N.Y. that will facilitate applied research projects and demonstrations for current and prospective grape growers. Cornell also operates extension laboratories focused on grapes and wine in Highland, Riverhead and Portland, N.Y.

## AT YOUR FINGERTIPS

Cornell's College of Agriculture and Life Sciences [www.cals.cornell.edu](http://www.cals.cornell.edu)

Appellation Cornell <http://grapesandwine.cals.cornell.edu/newsletters/appellation-cornell>

Veraison to Harvest (late summer/fall) <http://grapesandwine.cals.cornell.edu/newsletters/veraison-harvest>

Where do I find grapes/wine/"stuff"? <http://flgclassifieds.cce.cornell.edu/>

What land is suitable for vineyards? <http://nyvineyardsite.org>

Sustainable viticulture practices <http://www.vinebalance.com/>

National Grape Genetics project <http://www.vitisgen.org/>

Grape growing issues (planting, cultural practices, IPM.) <http://www.fruit.cornell.edu/grape/index.html>

Enology (grapes and other fruit) <http://www.fruit.cornell.edu/shared/Enology.html>

## NEW YORK WINERIES, BREWERIES AND DISTILLERIES: BY THE NUMBERS

**\$20 million** in revenue produced annually in New York from Cayuga White, the first Cornell-produced wine grape, released in 1972.

**\$4.8 million** in economic impact of the wine and grape sector on the New York State economy, per a study commissioned by the Wine and Grape Foundation

**\$1.8 million** in annual savings from reduced fungicide sprays thanks to support from CALS research and extension specialists.

**90 percent** of hops produced in the U.S. prior to the Civil War were grown in New York.

**56** grape cultivars have been released by the Cornell grape breeding program since 1888.

**4,000** people are employed directly by New York's breweries, wineries and distilleries.

**321 ... 75 ... 58 ... 23** wineries, microbreweries, liquor distilleries and cideries in New York State (and counting).