

NYWGF RESEARCH - PROGRESS REPORT

Funding for fiscal year: 2024-2025

SECTION 1:

Project title: Evaluation of Hybrid Winegrape Varieties on Long Island

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New Research **Continued Research**

Amount Funded \$ 10,000

SECTION 2:

Project Summary Impact Statement: In 2024, 12 hybrid winegrape varieties were evaluated at the Long Island Horticultural Research and Extension Center in Riverhead. This information provides an overview of the potential for hybrid varieties in a maritime climate and sandy soils. Viticultural suitability is critical as the cost of both planting and management is high on Long Island. In order to gauge potential wine quality, fruit from several selections was provided to local winemakers for small lot winemaking. Vineyard data was presented to industry via several formats.

Objectives:

Nine bearing hybrid winegrapes were screened for their suitability to a northeastern, maritime climate. Three additional hybrid varieties were planted in spring 2023. Evaluation of hybrids reflects the NYWGF goal of encouraging grape varieties that can thrive in changing climatic conditions. It also addresses the desire of many growers to reduce pesticide use.

Activities/Methods:

In 2024, this vineyard consisted of 0.5 acres of disease resistant hybrids. Nine varieties were bearing; three were in second leaf. Several table grape varieties (a few vines of each) were planted in spring, 2024. The vineyard is planted on a well-drained sandy loam soil. Vines are spaced 8x6 with VSP training and drip irrigation. Canopy management practices include shoot thinning to 4-5 shoots/ft. row, cluster zone leaf removal, crop adjustment and canopy hedging. The area under vines was maintained with a combination of herbicide, hand weeding and/or under vine mowing. Each bearing vine was harvested individually to determine cluster number, crop weight per vine and average cluster weight. From each variety/clone, 100 berries were randomly sampled to obtain average berry weight, Brix, titratable acidity, pH.

Varieties:

Variety	Planting year	Original source	Background
Aravelle (NY81)	2010	Cornell	Cayuga White x Riesling
Itasca	2018	Minnesota	Frontenac gris x MN1234 [MN1095 x Seyval]
Fleurtai	2019	Rauscedo, Italy	Tocai Friulano x Kozma 20-3 ¹
Soreli	“	“	“
Regent	2017	German breeding program	Chambourcin , Silvaner and Müller-Thurgau in parentage
Sauvignon Kretos	2022	Rauscedo	Sauvignon Blanc x Bianca ²
Sauvignon Rytos	“	“	Sauvignon Blanc x 20-3
Merlot Kanthus	“	Rauscedo	Merlot x 20-3
Cabernet Volos	“	“	Cabernet Sauvignon x 20-3
Helios	2023	Germany; white	Complex cross, includes Müller-Thurgau
Muscaris	“	“	Solaris x Muskateller
Monarch	“	Germany; red	Complex cross, includes Muscat Ottonel + Dornfelder

1 – The variety Kozma 20-3 is used in breeding due to its good mildew resistance.

2 – Bianca is a white Hungarian hybrid known for its robust disease resistance.

In addition to the winegrapes, we have planted a half-row of table varieties. There are two table grape growers on Long Island. They both have farmstands to market their tree fruit, small fruit, selected vegetables and value added products.

Herbicide damage: The vineyard suffered widespread injury due to herbicide drift from a nearby property in May and then twice in June. All vines showed damage including the two outer rows of rootstock. Mature vines mostly outgrew the damage. Younger vines, particularly the table varieties, were more sensitive. The damage persisted throughout the season, severely stunting shoots.

Spring frost: Early morning April 26 saw temperatures ranging from 28-32°F. Earlier budding varieties suffered slight to substantial damage. In this hybrid block, Fleurtai and Itasca had an approximate 70% reduction in crop. Some of the clusters that remained were undoubtedly on secondary shoots. Other varieties were slightly damaged. The reds were not damaged at all. In the industry, many growers lost substantial crop in Chardonnay, Gewürztraminer, Sauvignon Blanc and Pinot Noir. There was variable damage from farm to farm and block to block. A big factor in the spring frost was a much warmer than average month of March. This pushed grapevine phenology.

Weather: Rainfall was abundant until late August. September through mid-November saw almost no rainfall. Temperatures were above the long-term average in March, below average April – June, about average July – September and again below average October – December. It was an unusual season weather-wise.

Pest management:

Harvest: Despite a rainy summer, *Botrytis* bunch rot and sour rot were non-existent at harvest. Itasca and Fleurtaï were picked Sept. 7, Soreli the next week and Aravelle, the week after that. Regent was picked Oct. 5. Brix were modest throughout the vineyard, 19-20°. Acids were slightly higher on Itasca, 9.3 g/l. Fleurtaï and Soreli had low acids, in the 4's. Others were intermediate. Harvest was based on ripeness, fruit integrity and scheduling. Historically, harvest of the hybrids has been somewhat dictated by the much larger adjacent vinifera block. With that block removed in early 2024, we will have more flexibility with harvest date.

Results/Progress/Next Steps:

Yield component results and brief descriptions of performance are included in attached files. These results, along with a more descriptive PowerPoint presentation, will be posted to the CCE-SC grape program website in 2024.

Currently just one local business has a few small hybrid plantings, primarily Vidal. However, several growers have expressed an interest. Hybrids may well represent the future of viticulture in the eastern US due to their resistance to downy and powdery mildew. Hybrids in this vineyard were successfully managed with a 40% reduction in fungicide use. They have generally required more nitrogen fertilizer than vinifera, approximately 20-30 lbs/a actual vs 0-10 lbs. Compared to vinifera, hybrids are earlier ripening thereby reducing the risk of losing fruit to bad weather or animal depredation. The major concern among stakeholders is wine quality potential and market acceptance. This is undoubtedly due in part to simply being unfamiliar with hybrid varieties. Breeding programs in Europe, the US and in fact at Cornell are producing new, high-quality selections. Hybrids are slowly being embraced by many European winegrowers with a goal of producing quality fruit while reducing pesticide use. It is therefore incumbent upon eastern US winegrape industries to understand the viticultural and enological potential of these varieties.

Technology Transfer Plan:

Data and articles/data from the trial appeared in the technical publications Long Island Fruit and Vegetable Update (circ. 220) and the Feb. 2024 issue of Suffolk County Agricultural News (circ. 330). An updated article will be published in 2025. The trial was repeatedly referenced in the statewide Veraison to Harvest newsletters (<https://grapesandwine.cals.cornell.edu/newsletters/veraison-harvest>). Research reports and yield component results are posted annually on our website - <http://ccesuffolk.org/grape-program> (1400 hits in 2024). A PowerPoint presentation on the 2024 season results was posted in february, 2025. Fifteen growers attended the annual LIHREC Plant Science Day for a vineyard tour/discussion on held July 18, 2024. Presentation have been given at the 2023 and 2025 Long Island Agricultural Forum Viticulture Session (28 and 40 attendees, respectively).

Attachments: The 2024 yield components chart and Cabernet Volos at harvest, 10-15-24.

SECTION 3:

Project objectives:

In 2024, 12 hybrid winegrape varieties were evaluated at the Long Island Horticultural Research and Extension Center in Riverhead. Data was collected on all aspects of vineyard performance including growth habit, pest management, yield and fruit quality characteristics. This information assists growers in the selection of varieties, an important decision given the expense of planting

and the long-term nature of a vineyard. Planting varieties that perform poorly in an eastern maritime climate or are not suited to the winemaking or marketing goals of a business can be a costly mistake. This work also gives reluctant vinifera growers a preview of hybrids – their vineyard performance, fruit quality and wine quality potential.

Importance of research to the NY wine industry:

According to the NY Wine & Grape Foundation, the NY grape and wine industries generate >\$6.5 billion in direct economic activity and \$2.4 billion in total taxes. Clearly the industry is a critical part of the NY economy. Modest investment in research programs helps to ensure its continued success. The cost of establishing a vineyard on Long Island represents a major investment in time and money (\$30,000+/acre). Information generated from other regions is helpful but inadequately addresses the challenges of grape growing in a northeastern maritime climate. In keeping with the environmental stewardship goals of local growers, hybrids can be managed with approximately half of the fungicides required for vinifera. However, local winemakers are concerned about wine quality and marketability. By generating local data on yield, fruit quality, vine management, susceptibility to pests and nutritional requirements, growers can gauge both vineyard suitability, fruit and wine quality and potential market acceptance.

Project Results/next steps:

Disease resistant hybrids were successfully managed with a substantial reduction in pesticide use. This project reflects the interest of both growers and consumers in products that support environmental stewardship goals. Continued evaluation is necessary to assess the degree of resistance to downy and powdery mildew as well as degree of susceptibility to black rot and Phomopsis under different climatic conditions. It is essential that these varieties demonstrate they are capable of consistently producing high-quality fruit.

Supporting attachments:

1. Yield components chart - 2024
2. Cabernet Volos at harvest, 10-15-24. Additional photos available upon request.

Harvest Data – LIHREC Research Vineyard, 2024

White Hybrids

Variety-clone/ rootstock	Harvest Date	°Brix	pH	TA (g./L)	Cluster #/vine	Crop Weight (lbs./vine)	Cluster Weight (lbs.)	Berry # /Cluster	Berry Weight (g.)	Tons/acre equivalent	Pruning Weight (lbs./vine)	Pruning Weight (lbs./ft. of row)	Crop: Pruning Weight
Aravelle/09*	9/24	21.8	3.18	8.7	19.3	6.6	0.34	104.2	1.96	3.0	Coming Soon	Coming Soon	Coming Soon
Fleurtaï/14	9/5	19.7	3.39	8.4	10.3	2.6	0.25	No Data	1.97	1.2	Coming Soon	Coming Soon	Coming Soon
Itasca/own	9/5	23.5	3.23	9.0	10.7	1.7	0.16	No Data	1.62	0.8	Coming Soon	Coming Soon	Coming Soon
Sauvignon Kretos/14	9/9	20.6	3.07	9.3	11.1	5.0	0.45	134.6	1.79	2.2	Coming Soon	Coming Soon	Coming Soon
Sauvignon Rytos/14	9/17	22.4	3.03	9.9	19.6	7.1	0.36	134.5	1.35	3.2	Coming Soon	Coming Soon	Coming Soon
Soreli/14	9/9	19.8	3.19	7.8	18.6	7.6	0.41	135.0	1.57	3.4	Coming Soon	Coming Soon	Coming Soon

Red Hybrids

Variety-clone/ rootstock	Harvest Date	°Brix	pH	TA (g./L)	Cluster #/vine	Crop Weight (lbs./vine)	Cluster Weight (lbs.)	Berry # /Cluster	Berry Weight (g.)	Tons/acre equivalent	Pruning Weight (lbs./vine)	Pruning Weight (lbs./ft. of row)	Crop: Pruning Weight
Cabernet Volos/14	10/15	24.7	3.44	7.5	15.3	4.5	0.30	98.9	1.76	2.0	Coming Soon	Coming Soon	Coming Soon
Merlot Kanthus/14	10/8	20.4	3.83	6.0	13.0	5.9	0.45	101.9	2.23	2.7	Coming Soon	Coming Soon	Coming Soon
Monarch/09	No Data	18.7	3.00	7.5	No Data	No Data	No Data	No Data	1.99	No Data	No Data	No Data	No Data
Regent/14	10/15	23.7	3.83	6.3	28.0	5.3	0.19	83.7	2.21	2.5	Coming Soon	Coming Soon	Coming Soon

Vines are trained to VSP; spacing is 8' x 6'.

*Aravelle was formerly known as NY 81

The yields for Fleurtaï and Itasca were reduced due to a frost the morning of April 26th.

First harvest: Sauvignon Kretos, Sauvignon Rytos, Cabernet Volos and Merlot Kanthus

Monarch vines were too young to carry a substantial crop, a few clusters were left on vigorous vines

Long Island Grape Research Program

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**Cabernet
Volos**

