Performance of Selections in the Long Island Hybrid Winegrape Variety Trial

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2024-5 growing seasons

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Contact Information

Have questions?

Need assistance in viewing this presentation?

Please contact us

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Many thanks to the grape program crew !



Summer Field Assistant Sania Ilyas (2024) &
Grape Program Assistant Amanda Gardner

Part timers Mark Sisson (left, rear) &
Bill McGrath (left, front)



Long Island is a vinifera-based industry



Photo: CCE-SC Grape Program

Vitis vinifera

Most grapes worldwide
Thousands of varieties
Make the highest quality wines
Susceptible to winter injury (<0F)
Susceptible to fungal diseases



Photo: J.Russo, Cornell

American or native grapes

Varieties w/parentage native to No.America
Concord most widely planted native in U.S.
Juice, processing; lower quality wine
Hardier – less susceptible to winter injury
Sl. less susceptible to fungal diseases

Vinifera x Native = Hybrid grape varieties

Crosses are very complex and often involve varieties that are used solely for breeding purposes
There are hybrid breeding programs worldwide including at Cornell

Advantage of hybrids vs. vinifera

High wire training is lower maintenance
Often more productive
More winter hardy
Some resistance to DM & PM
decrease in pesticide use
Earlier harvest / machine harvest



Itasca grapes, early Sept. 2023
LIHREC vineyard
Photo: CCE-SC Grape Program

Concerns for Long Island Fruit quality and Economics

Quality – Hybrids historically have had variable fruit and wine quality.

- Winemakers are concerned about acceptance of hybrid wines by the wine drinking public.
- However, grape breeding programs across Europe and the U.S. are releasing new, potentially high quality selections.

Economics – Winemakers say ‘I can buy hybrid fruit from upstate NY cheaper than I can grow it here’. However, growing hybrids locally allows for more quality control in the vineyard. For example, crop level and canopy management can be fine tuned.

Bottom line - can we get a bottle price that makes the whole endeavor economically feasible?



Of particular concern to Long Island

VSP training system

For vinifera on Long Island



Training system

Some hybrids do well on VSP. Some hybrids are more productive on high wire training systems. If grown on VSP, productivity declines.

Vine spacing and equipment

Currently all vines on Long Island are VSP trained. Vineyard spacing and equipment is specific to VSP training.

Planting a high wire vineyard would require different vineyard spacing and different vineyard equipment.

High wire training system

Used for hybrids in upstate NY



Marquette harvest, 2008

Photos: CCE-SC Grape Program

Hybrid winegrape varieties:
Can they succeed on Long Island?



Aravelle, 2024, LIHREC vineyard

Photo: CCE-SC Grape Program

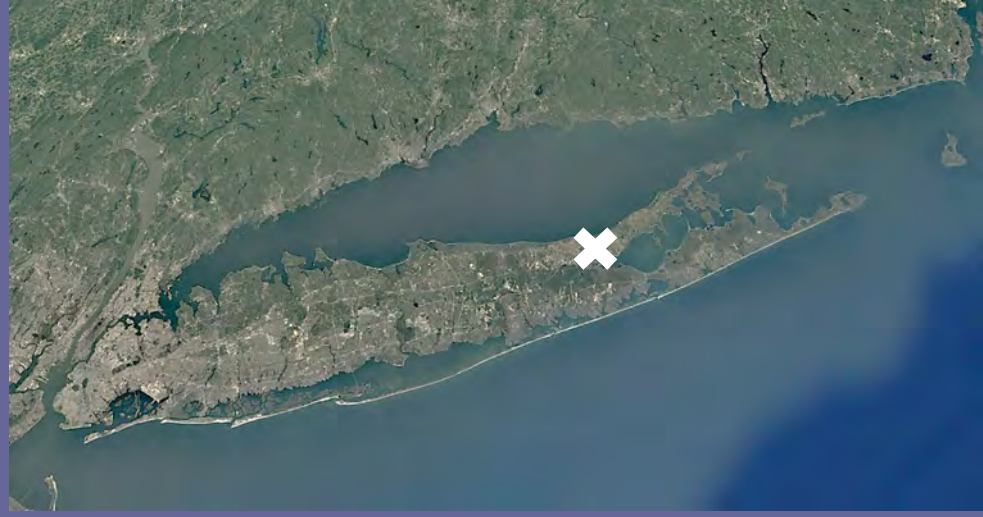
LIHREC Hybrid Trial

0.5 acres
8x6 spacing
All VSP trained
101-14 & 3309 rootstocks; one own-rooted



LIHREC vineyard, 2024 Photo: CCE-SC Grape Program

Cornell University Long Island Horticultural Research and Extension Center



- This vineyard is located at LIHREC, Riverhead, NY on the East End of Long Island, NY.
- Long Island has a maritime climate with sandy, well-drained soils.
- Winter low temperatures rarely dip below 0ºF.

Under different climatic and soil conditions, the varieties discussed herein may behave differently.

Hybrids in LIHREC vineyard – 2024-5

Bearing

White: Aravelle, Itasca, Fleurtai, Soreli, Sauvignon Kretos, Sauvignon Rytos

Red: Cabernet Volos, Merlot Kanthus, Regent

First crop in 2025

White: Muscaris, Helios

Red: Monarch



Regent, 2022 Photo: CCE-SC Grape Program

2024 Season

- Itasca and Fleurtai – frost damage - < 1 ton/acre
- No rain mid-Aug – early Nov.
- Drought stress, especially on younger vines
- Heavy raccoon pressure forced early harvest



Raccoon damage, 2024 Photo: CCE-SC Grape Program

2025 Season

- Phomopsis infections and poor bloom weather limited fruit set in most varieties
- No fruit set in Fleurtai, Soreli and Itasca
- Heavy yellow jacket pressure forced harvest. Fine mesh side nets, which worked well in past years, did not prevent YJ infestations.



Yellow jacket damage, 2025 Photo: CCE-SC Grape Program

Aravelle /3309

Riesling x Cayuga White

Cornell University selection



Photo: CCE-SC Grape Program

Year	2024	2025
Harv.date	Sept. 24	Sept. 23
ºBrix	21.8	20.0
TA, g/l	8.7	6.3
pH	3.18	2.99
Clust.wt.-lbs.	0.34	0.21

Consistent, productive on VSP

Yields higher on high wire in upstate NY

Of 12 hybrids, has the most pest challenges

Requires extra N, no weed pressure

Unlike its vinifera parent, no cluster rot

Floral, spicy, light muscat

Helios

Merzling x (Sevye-Villard 12-481 × Müller-Thurgau)

Merzling is a first-generation hybrid created from Seyval Blanc × Riesling.

German breeding program



Photo: CCE-SC Grape Program

Year	2024	2025
Harv.date	No Data	Sept. 19
ºBrix	No Data	17.2
TA, g/l	No Data	7.2
pH	No Data	3.01
Clust.wt.- lbs.	No Data	0.19

3rd leaf in 2025

Very light crop

Vines did not fill the trellis

Floral, fruity flavors

Itasca /own-rooted

Frontenac Gris x MN1285
University of Minnesota release



Photo: CCE-SC Grape Program

Year	2024	2025
Harv.date	Sept. 5	No Data
ºBrix	23.5	No Data
TA, g/l	9.0	No Data
pH	3.23	No Data
Clust.wt.-lbs.	0.16	No Data

Floppy shoots, vigorous canopy
Better suited to high wire training
Very disease resistant
No cluster rot
Pear, gooseberries, melon

Fleurtai /101-14

Tocai Friulano x Kozma 20-3
Italian breeding program



Photos: CCE-SC Grape Program

Year	2024	2025
Harv.date	Sept. 5	No Data
ºBrix	19.7	No Data
TA, g/l	8.4	No Data
pH	3.39	No Data
Clust.wt.-lbs.	0.25	No Data

V. early budbreak – susceptible to frost

Very low crop in 2024

Breaks down when ripe

Spicy aromas, pear, almond

Suited to early drinking wines





Muscaris

Solaris x Bronner

German breeding program

Year	2024	2025
Harv.date	No Data	Sept. 9
ºBrix	No Data	24.6
TA, g/l	No Data	5.7
pH	No Data	2.90
Clust.wt.- lbs.	No Data	0.23

3rd leaf in 2025, very light crop

Vines did not fill the trellis

Described as floral, having tropical notes

Photos: CCE-SC Grape Program







Photo: CCE-SC Grape Program

Soreli /101-14

Tocai Friulano x Kozma 20-3

Italian breeding program

Year	2024	2025
Harv.date	Sept. 9	No Data
ºBrix	19.8	No Data
TA, g/l	7.8	No Data
pH	3.19	No Data
Clust.wt.- lbs.	0.41	No Data

More productive vs. Fleurtai

Slightly later to break bud vs. Fleurtai so less susceptible to frost

Productive

Tropical fruit flavors


Photo: CCE-SC Grape Program

Sauvignon Kretos /101-14

Sauvignon Blanc x Kozma 20-3

Italian breeding program

Year	2024	2025
Harv.date	Sept. 9	Sept. 12
ºBrix	20.6	20.7
TA, g/l	9.3	7.5
pH	3.07	3.06
Clust.wt.-lbs.	0.45	0.23

First harvest in 2024

Breaks down when ripe

Earlier harvest vs. Sauvignon Rytos

Aromatics similar to S. Blanc

Suitable for early drinking wines

Sauvignon Rytos /101-14

Sauvignon Blanc x Bianca
Italian breeding program



Photo: CCE-SC Grape Program

Year	2024	2025
Harv.date	Sept. 17	Sept. 16
ºBrix	22.4	19.7
TA, g/l	9.9	8.1
pH	3.03	2.85
Clust.wt.- lbs.	0.36	0.22

First harvest in 2024

Bianca - Hungarian hybrid grape

Tropical, mineral scents, good aromatics

For early drinking or aged wines



Photo: CCE-SC Grape Program

Cabernet Volos /101-14

Cabernet Sauvignon x Kozma 20-3
Italian breeding program

Year	2024	2025
Harv.date	Oct. 15	Sept. 30
ºBrix	24.7	21.2
TA, g/l	7.5	4.5
pH	3.44	3.45
Clust.wt.- lbs.	0.30	0.22

First harvest in 2024

Similar to CS in flavors

Very darkly colored juice

Merlot Kanthus /101-14

Merlot x Kosma 20-3
Italian breeding program



Drought stress, Sept. 2024 Photo: CCE-SC Grape Program

Year	2024	2025
Harv.date	Oct. 8	Sept. 30
ºBrix	20.4	19.7
TA, g/l	6.0	4.2
pH	3.83	3.94
Clust.wt.- lbs.	0.45	0.24

First harvest in 2024
Floppy shoots like Merlot
Excellent color
Pyrazines higher vs. vinifera
Suitable for aging

Monarch

Solaris x Dornfelder
German breeding program



Solaris is a hybrid with Riesling, Pinot Gris and Muscat Ottonel in its ancestry



Year	2024	2025
Harv.date	No Crop*	Oct. 7
ºBrix	18.7	19.1
TA, g/l	7.5	6.3
pH	3.00	2.86
Clust.wt.- lbs.	No Data	0.43

*For the 2024 season Monarch vines were too young to carry a substantial crop, a few clusters were left in vigorous vines.

3rd leaf in 2025

Both canopy and fruit look similar to Dornfelder

Vigorous vines

Medium to large berries

Photos: CCE-SC Grape Program

Regent /101-14

(Silvaner x Muller-Thurgau) x Chambourcin
From Geilweilerhof Institute for Grape Breeding, Germany



The very start of veraison.



Photos: CCE-SC Grape Program

Year	2024	2025
Harv.date	Oct. 15	Oct. 7
ºBrix	23.7	19.2
TA, g/l	6.3	6.0
pH	3.83	3.55
Clust.wt.- lbs.	0.19	0.18

Widely planted in Germany

Good disease resistance

Stem necrosis occurs

Full bodied, velvety tannins, cherry, red currant

Repeated overhead watering has affected yield and quality

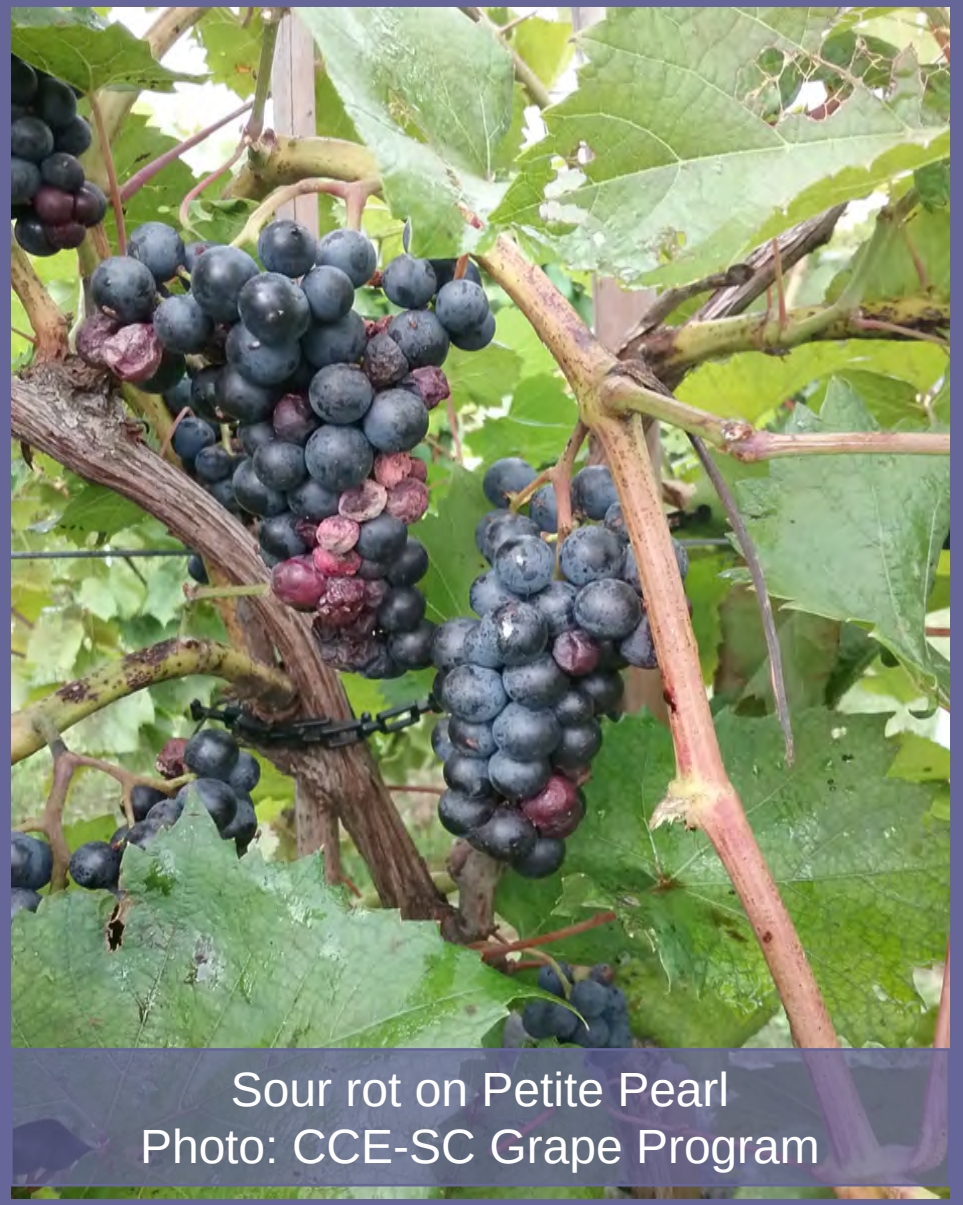
What hybrids have been removed?

Whites

- Aromella – good flavors but berries shelled badly at harvest

Reds

- Marquette – did well, no industry interest at the time (removed 2009); other regions have produced high quality wine
- Arandell – vines had leaf roll virus
- Norton (American type) – grew and yielded poorly on VSP
- Petite Pearl – sour rot, fruit flies
- Regent – removed 12/2025 due to repeated overhead watering from adjacent plot



Sour rot on Petite Pearl
Photo: CCE-SC Grape Program

Marquette

V.vinifera, V.riparia, other Vitis x
Ravat 262 (Frontenac, Pinot Noir)

University of Minn. release

Harv. Sept. 5, 2018

23.9°, pH 3.07, 14.0 g/l

(high sugar, high acid is common)

Clusters avg. 0.23 lbs.

Early budbreak – frost susceptible
Susceptible to sour rot
Cherry, black current, black pepper
Good quality wine
Vigorous vines
Yields declined on VSP
More productive on high wire



Photo: CCE-SC Grape Program

Thoughts on hybrid pest management

Fungal diseases

- These hybrids are somewhat resistant to downy and powdery mildew though degree of resistance varies among the hybrids.
- Powdery and downy mildew fungicides can be reduced, particularly later in summer.
  - If fungicides are minimal or eliminated in the second half of the season, downy and/or powdery can become established.
  - Aravelle is the first to show downy and powdery in pre-harvest period.
  - If PM, DM become well-established, this creates an environment conducive to development of resistant fungal strains.
- Still must control black rot & Phomopsis, susceptibility varies.
- Little to no cluster rot in the vineyard – no botrycides have been used.

Downy mildew at top of Aravelle canopy. Photo: CCE-SC Grape Program

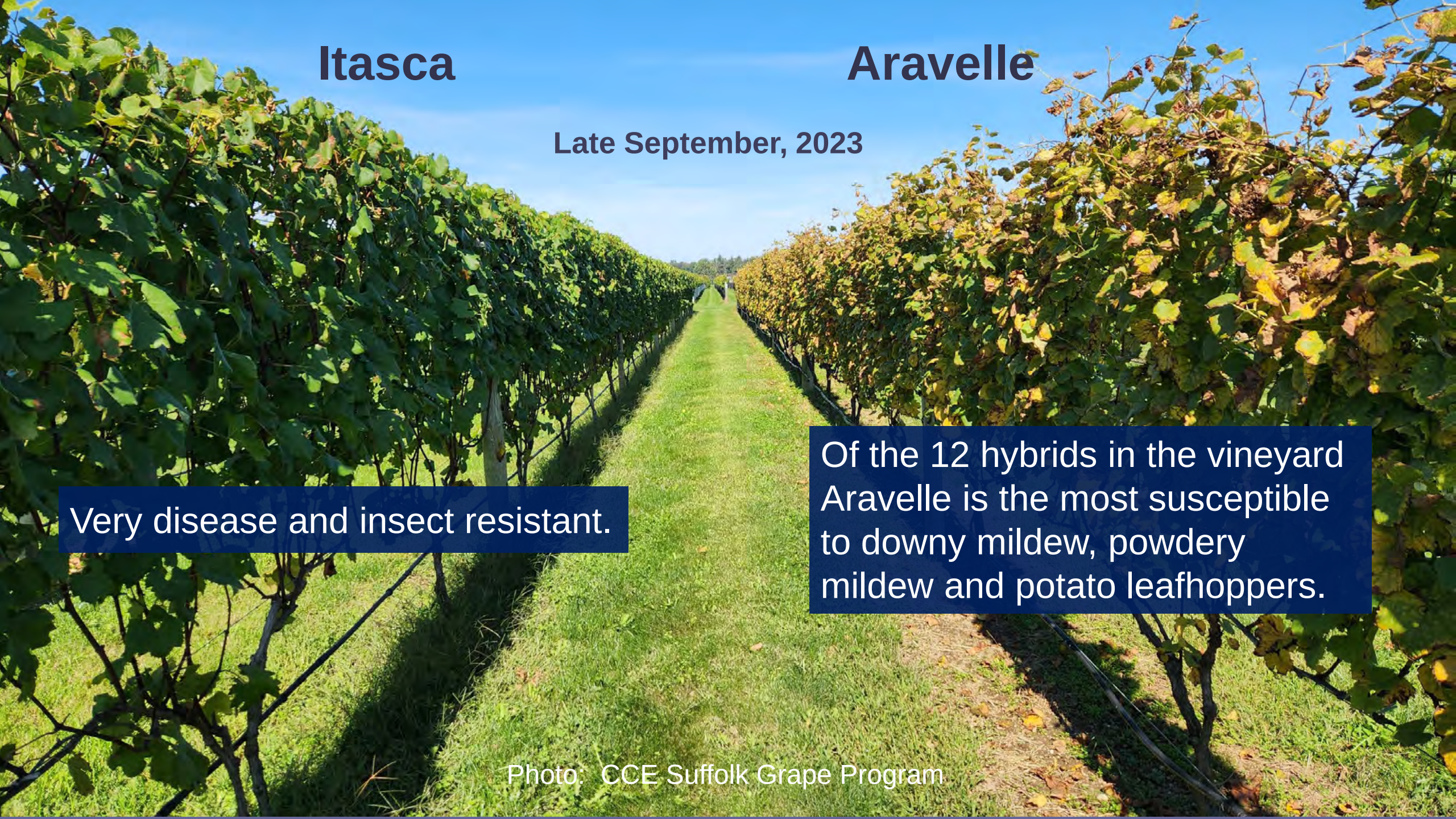
Thoughts on hybrid pest management

Insect pests

- No insecticides have been used.
- Potato leafhoppers – Most cvs. tolerate due to vigorous canopy; however, Aravelle is particularly susceptible due to its Cayuga White parentage. PL's persist on Aravelle all season.
- Grape berry moth and Japanese beetles – Low infestations in this block, varies year to year.



Potato leafhopper damage at top of vigorous hybrid canopy
Photo: CCE-SC Grape Program


Itasca
Aravelle
Late September, 2023
Very disease and insect resistant.
Of the 12 hybrids in the vineyard Aravelle is the most susceptible to downy mildew, powdery mildew and potato leafhoppers.
Photo: CCE Suffolk Grape Program





Photos: CCE-SC Grape Program

Monarch, late Sept. 2024

Two year old vines with powdery mildew and drought stress.

Harvest of Sauvignon Rytos, Sept. 2022



Photo: CCE-SC Grape Program

Where can I find more information on the trial?



Newsletters

Weekly - LI Fruit & Vegetable Update
Quarterly – Suffolk County Ag News
Harvest-time – Veraison to Harvest

https://cals.cornell.edu/viticulture-enology/research-extension/veraison-harvest

CCE-Suffolk County

Grape Program website

yield component data & PP presentation

https://ccesuffolk.org/agriculture/grape-program/grape-research-and-extension

LIHREC Plant Science Day

July – August

Individual visits

Members of the industry are welcome to visit by appointment.

Acknowledgements and thanks

- Grape Research Advisory Committee
- NY Wine & Grape Foundation
- Long Island winegrowers
  - matching funds for NYWGF and for supplies & services
- CU Federal Capacity Funds
- Many other companies donated products.



Slate, the grape program frog, hung out with us for several harvests.
Photo: CCE-SC Grape Program