



Northern New York Agricultural Development Program
2025 Project Final Report

Establishing New Commercial Fruit & Nut Crops for Northern NY

Project Leader(s):

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Collaborators:

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- Myra Lawyer, Lake Champlain Basin Program Agronomist and NEIWPC (New England Interstate Water Pollution Control Commission) Environmental Analyst

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- Mark Kimball, Essex Farm, Essex County, NY
- Jenna Mulbury, Northern Orchards, Clinton County, NY
- John Bonaparte, Strong Roots Community Farm, Franklin County, NY
- Loren and Chris Bush, Bush Gardens, Jefferson County, NY
- Andrew and Dorothy Kramer, Cedar Knoll Farm, Lewis County, NY

Background:

The project goal is to increase the diversity of specialty fruit and nut crops available to Northern New York (NNY) farmers by evaluating varieties and production practices for four high value fruits: juneberries, aronia berries, honeyberries, and elderberries; and three nut crops: hazelnuts, chestnuts, and cold hardy pecans.

2025 Results:

JUNEBERRY (*Amelanchier* spp.)

Juneberry, with its sweet flavor and “superfruit” antioxidant content, has the potential to be a major novel fruit crop in Northern New York. These small, multi-stemmed shrubs or trees are native to every U.S. state except Hawaii, and wild-harvested Juneberry fruit were a favored food and medicine for Native American cultures and early European settlers.

Since the inception of NNYADP-funded Juneberry research in 2013, our objectives have been:

- to develop a living collection of Juneberry plants that includes wild-collected, novel lines native to the Northeast and that have commercial fruit production potential, along with all current commercially available fruit-producing cultivars
- evaluate the performance of commercially available cultivars and promising wild lines in replicated field trials
- promote the potential for Juneberry fruit production in orchards and market gardens

Juneberry Nursery Management

Nursery plantings at the Willsboro Research Farm were weeded, fertilized, irrigated as needed, and monitored for disease and insect issues during the growing season.

Juneberry Variety Trials

A1601 Commercial Fruit Producing Varieties: In 2023 and 2024, the two years following the 2022 spongy moth infestation that defoliated all the commercial Juneberry varieties, the plants produced few flowers (many didn’t flower at all) and almost no fruit. In 2025 there was a continued absence of spongy moths in the trials and almost all the plants flowered (Table 1), but fruit production remained minimal. While improved flowering suggests that the plants are continuing to recover, the lack of fruit production is problematic. All the plants in the commercial variety trial will be intensively pruned in 2026 in an effort to rejuvenate fruit production in future years.

A1702 Wild-Collected Lines: The wild-collected Juneberry lines were similarly impacted by the spongy moths in 2022 and have followed a parallel recovery trajectory to the commercial varieties (Table 1). As with the commercial Juneberry varieties, the wild-collected lines flowered profusely in 2025, but did not produce harvestable fruit yields. In 2026 at least two blocks (half the plants) in the wild-collected lines trial will be intensively pruned to evaluate the efficacy of the renovation strategy.

A1602 Ornamental Varieties: In contrast to the commercial fruit producing Juneberry varieties and the wild-collected Juneberry lines, the three ornamental varieties *Prince William*, *Princess Diana*, and *Autumn Brilliance* were not defoliated by the spongy moth caterpillars in 2022. It appears that the genetic backgrounds of the ornamental lines make the plants less attractive to or more resistant to spongy moth predation. All three ornamental varieties started flowering profusely on May 4, 2025 (Photo 1).

HONEYBERRY (*Lonicera caerulea*)

The blue honeyberry (*Lonicera caerulea*) is a perennial, fruit-producing shrub that is a member of the honeysuckle family and is native to cool temperate forests of western North America, Asia, and Europe. Domesticated subspecies of *Lonicera caerulea* have been cultivated in northern Japan for hundreds of years, and the Japanese refer to the fruit as “the elixir of longevity.” The current surge in commercial production of honeyberry in North America has been facilitated by breeders in Oregon and at the University of Saskatchewan who have produced numerous cultivars with large, exceptionally flavorful fruit.

Honeyberry is well adapted to cold climates, has few pests or diseases, produces the first mature fruit of the season (earlier than strawberries), and can therefore offer NNY growers an exciting new specialty fruit for fresh market sales.

2025 research objectives were to assess and revise our management practices in the honeyberry variety trial in order to reverse the downward trend in fruit yields.

2025 Honeyberry Results:

The 2025 honeyberry flowering period was condensed, and the timing was about average for this trial with most of the flowering occurring between April 30 and May 12 (Figure 1). As in past years, *Blue Pacific* and *Blue Moon* flowered later than all the other varieties.

Many of the honeyberry plants exhibited significant winter branch dieback in spring 2025 (Figure 2). Dieback in *Blue Moon* and *Blue Pacific* plants have been noted in previous seasons, but several other varieties exhibited dieback as well in spring 2025 as shown in Figure 2. While some plants appeared dead, we did not remove any plants and several of the individuals with dead shoots produced new sprouts from the base/roots during the growing season. We will track the productivity of those shoots in future growing seasons. It is notable that the top performing varieties, including *Boreal Beauty*, *Boreal Beast*, and *Boreal Blizzard*, had very little branch dieback.

Following up on suggestions from University of Saskatchewan Emeritus Professor Robert Bors, Ph.D, a renowned honeyberry breeder, during his 2024 visit to the Willsboro Farm trial, we revised our production bed/system. Renovation plans included removal of the black landscape fabric weedmat and the old drip irrigation lines (Photo 2), replacing old drip lines with thicker-walled irrigation lines, adding compost for organic matter, topdressing beds with pelletized chicken manure fertilizer in the early spring, and mulching the beds with wood chips. Wood chips should provide weed suppression, moisture retention in the shallow rooting zone, and moderation of root zone temperature fluctuations during the hot summer months.

ARONIA

Aronia is a genus in the Rose family that includes three species of multi-stemmed, deciduous shrubs native to the eastern United States. Commercial fruit cultivation of aronia in the United States began in 2007 in Iowa. Numerous scientific studies have documented exceedingly high antioxidant and other beneficial phytonutrient levels in

aronia, leading to the fruit being labeled a “superfood.” As a result, fruit production in North America has grown rapidly and has blossomed into a multi-million-dollar industry that includes more than 60 unique value-added products.

2025 research objectives were to manage the Willsboro Research Farm trial of commercially available aronia cultivars, and to collect another season of data on plant growth, flowering, and fruit yields.

2025 Aronia Results:

All the aronia varieties were in full bloom on May 20, 2025 (Photo 3). Most aronia plants yielded exceptionally well in 2025, with *Autumn Magic*, *McKenzie*, and *Galicjanka* producing their highest yields to date (Figure 3). The top yielding Viking plant produced 3295 grams of fruit. The aronia trial plants appear to be in a pattern where very low yield years are followed by excellent yields the next year. Members of Rosaceae family have a tendency toward this type of fruiting pattern, and we will work to even out the yield pattern with pruning in the future.

ELDERBERRY (*Sambucus spp.*)

Elderberries are very productive, widely adapted, native perennial shrubs that tolerate a range of soil types. As another member of the “superfruit” class, elderberries have traditionally been prized for their high phytonutrient levels, and they are an economically important fruit crop in Europe (greater than blueberries). While elderberry production is developing rapidly in the U.S., 95% of the elderberries consumed here are still imported from Europe, so the potential for domestic market growth is high.

The Willsboro Research Farm elderberry variety trial includes five American varieties (*Sambucus canadensis*): *Nova*, *York*, *Adams*, *Ranch*, and *John's*, and two European varieties (*Sambucus nigra*): *Samdal* and *Samyl*. The elderberry plants were heavily browsed by deer in 2023 and their development was severely set back. One *York* plant that escaped browsing in 2023 produced flowers and fruit in 2025 (Photo 4), while the rest of the trial plants produced vegetative growth and may start producing fruit in 2026.

HAZELNUTS (*Corylus spp.*): Added to NNYADP trials in 2023-2024

Hybrid hazelnuts are multi-stemmed, woody perennials that are adapted to northern climate growing conditions. The nuts are high in protein and oil, and 81% of the oil profile is healthy monounsaturated oleic acid. Hazelnuts can be integrated into a range of cropping systems including orchard-style production, agroforestry, alley-cropping, and silvopastures. Incorporating nut-producing perennials onto NNY farms could diversify income streams while conferring significant benefits in terms of soil health, biodiversity, and water quality.

Working in collaboration with Myra Lawyer, an agronomist with the Lake Champlain Basin Program, we planted 116 American hazelnut (*Corylus americana*) seedlings in two 230' rows at the Willsboro Research Farm in 2023. Many of the American hazelnut seedlings planted in 2023 produced nuts in 2025 (Photo 5) with production per plant ranging from zero to 22 nuts.

In April 2024 a replicated hazelnut variety trial was established with seedlings of eight hybrid hazelnut varieties: *Aldara*, *Andrew*, *Dawn*, *Frank*, *Joanne*, *Kiara*, *Marion*, and *Northern Blais*; and three promising American hazelnut lines: *Buzz*, *Akiva*, and *Kilgore*. Variety trial plants grew well in 2025 and some of the *Buzz* and *Akiva* seedlings produced a few nuts.

CHESTNUTS (*Castanea spp.*): Added to NNYADP trials in 2024

Chestnut is a perennial crop that may adapt to NNY's cooler climate. In the spring of 2024, five seedlings for each of three chestnut lineages: *Hansen*, *AU Homestead*, and *R9* were planted at the Willsboro Research Farm. The seedlings were watered and weeded, and deer fencing was installed to protect the seedlings from browsing. All the chestnut trees appear to be establishing well and putting on new growth (Photo 6), but it will probably be 5 to 7 years before these trees start producing nuts.

HARDY PECANS (*Carya illinoensis*): Added to NNYADP trials in 2024

Cold-tolerant (hardy) pecans were added to the "New Commercial Fruit & Nut Crops for Northern NY" research trials in 2024. Six seedlings for each of two cold-tolerant pecan varieties: *Grimo Ultra* and *Michigan Prolific* were planted at the Willsboro Research Farm in fall 2024. Deer fencing was installed to protect the seedlings from browsing. The hardy pecan seedlings were very small when we planted them in the field in 2024, and several of them struggled to establish well. We will monitor their vigor in 2026 and decide if some need to be replaced.

Next Steps:

1. Maintain established research trials and collect performance data, including growth habit, flowering and fruiting times, disease incidence and susceptibility, and fruit yield to aid growers in selecting varieties well suited to NNY.
2. Fine tune pruning and fertility management practices to optimize fruit quality and yields.
3. Evaluate in-row mulch material options, and experiment with potential companion groundcovers.
4. Collect and analyze soil health samples from our hazelnut beds to characterize changes in soil health parameters that are expected to accompany the transition to a perennial crop.
5. Expand the hazelnut plantings to include additional new varieties that may perform well in northern New York.
6. Update and advance the resource information that growers need to successfully establish, manage, harvest, and market these specialty crops.

Outreach: Grower interest in juneberries and honeyberries continues to expand as we've fielded numerous requests for information. We continue to partner with extension specialists to provide juneberry, honeyberry, aronia berry, and elderberry production guidance to farmers and gardeners. We have also been communicating with the Tompkins County CCE agroforestry project, the New York Nut Growers Association, and the New York Tree Crop Alliance to further our nut trial contributions.

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For More Information:

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APPENDIX: Establishing New Commercial Fruit & Nut Crops for Northern



Photo 1. Ornamental juneberry cultivars in bloom at the Willsboro Research Farm on May 5, 2025; NNYADP Establishing New Commercial Fruit & Nut Crops for Northern NY project, 2025. Photo: Michael H. Davis.

Table 1. 2017 to 2025 mean flowering dates for commercial, ornamental, and wild-collected juneberry varieties, Willsboro Research Farm juneberry trials, Willsboro, NY, NNYADP project. (DNF=did not flower).

Table 1. 2017 - 2025 Mean Juneberry Flowering Dates									
Trial A1601	Commercial Varieties								
<u>Variety</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Honeywood	May 5	May 14	May 17	May 17	May 1	May 11	May 10	May 6	May 12
JB30	May 4	May 14	May 14	May 17	May 1	May 11	May 10	May 6	May 5
Lee #8	May 5	May 14	May 17	May 18	May 3	May 11	May 10	DNF	May 12
Martin	May 6	May 13	May 14	May 17	April 29	May 11	May 10	May 6	May 5
Nelson	May 8	May 14	May 17	May 19	May 5	May 11	DNF	DNF	May 12
Northline	May 8	May 15	May 16	May 17	May 5	May 11	DNF	DNF	May 12
Parkhill	May 2	May 11	May 12	May 17	April 28	May 10	DNF	May 6	May 5
Pembina	May 6	May 13	May 15	May 17	May 3	May 11	May 10	DNF	May 12
Regent	May 4	May 15	May 17	May 18	May 3	May 11	May 10	DNF	May 12
Smoky	May 7	May 14	May 15	May 17	May 3	May 11	May 10	DNF	May 12
Thiessen	May 4	May 13	May 14	May 17	April 29	May 11	May 10	May 6	May 5
Trial A1602	Ornamental Varieties								
<u>Variety</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Autumn Brilliance	May 2	May 10	May 12	May 14	April 26	May 8	April 28	May 4	May 4
Princess Diana	May 2	May 10	May 12	May 14	April 26	May 8	April 28	May 4	May 4
Prince William	May 2	May 10	May 12	May 14	April 26	May 8	April 28	May 4	May 4
Trial A1702	Wild Collections								
<u>Collection ID</u>		<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
13-451		May 10	May 10	May 14	April 25	May 8	May 10	May 4	April 30
13-Burgess		May 10	May 10	May 14	April 25	May 8	May 10	May 4	May 5
13-Laevis		May 10	May 8	May 4	April 23	May 5	DNF	May 1	April 30
13-449		May 10	May 10	May 14	April 25	May 8	May 10	May 4	May 5
Hudson		DNF			April	May	DNF	May	May

			DNF	DNF	25	8		4	5
13-472		May 10	May 8	May 3	April 19	May 5	April 28	May 1	April 30
Greenhouse morph		DNF	May 10	May 14	April 25	May 8	DNF	May 4	April 30
13-473		May 12	May 12	May 16	April 29	May 11	May 10	May 6	May 5
Gaspensis		May 10	May 10	May 14	April 25	May 8	May 10	May 6	April 30

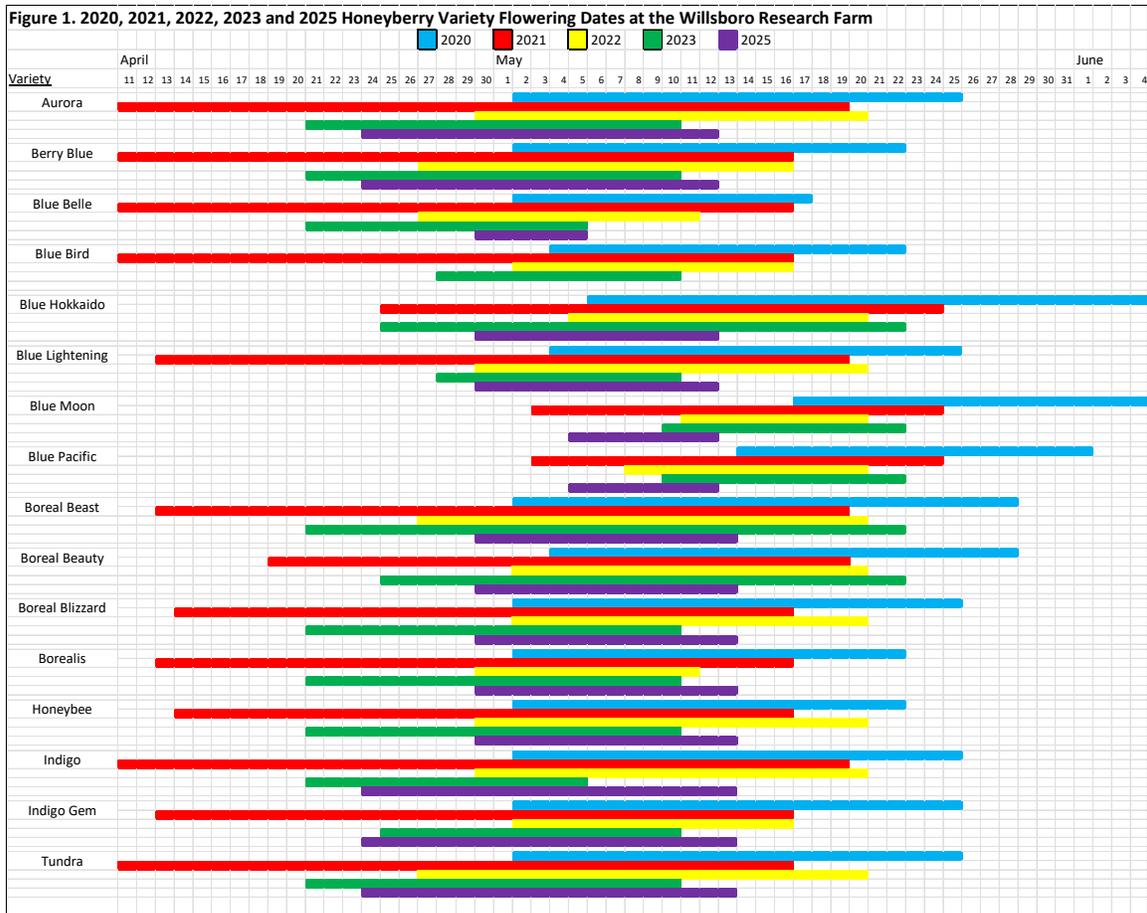


Figure 1. Trial H1801 Flowering Dates for 16 honeyberry varieties in 2020, 2021, 2022, 2023, and 2025. Willsboro Research Farm Trials, Willsboro, NY, NNYADP, 2025

Figure 2. Trial H1701 Honeyberry Varieties Mean Branch Winter Survival in 2025. Willsboro Research Farm Trials, Willsboro, NY, NNYADP, 2025.

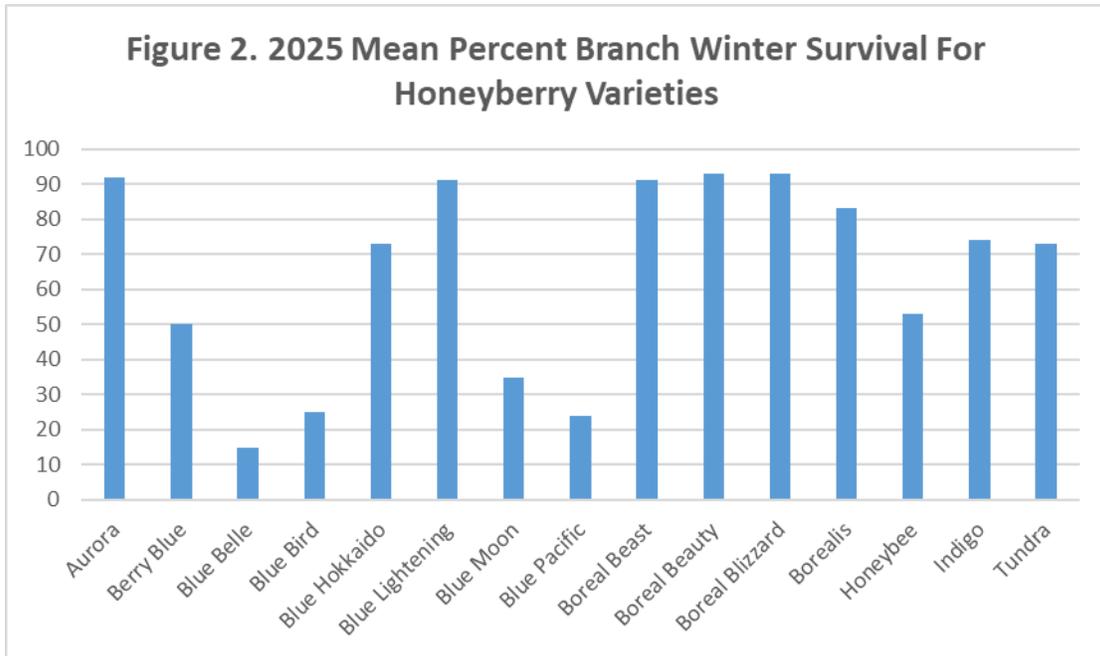




Photo 2. Honeyberry variety trial beds following the removal of landscape fabric weedmat at the Willsboro Research Farm on May 5, 2025; NNYADP Establishing New Commercial Fruit & Nut Crops for Northern NY project, 2025. Photo: Michael H. Davis.



Photo 3. Aronia variety trial bushes flowering on May 5, 2025 at the Willsboro Research Farm; NNYADP Establishing New Commercial Fruit & Nut Crops for Northern NY project, 2025. Photo: Michael H. Davis.

Figure 3. Trial A1701 Aronia Per Plant Fruit Yields in 2021-2025. Willsboro Research Farm Trials, Willsboro, NY, NNYADP, 2025.

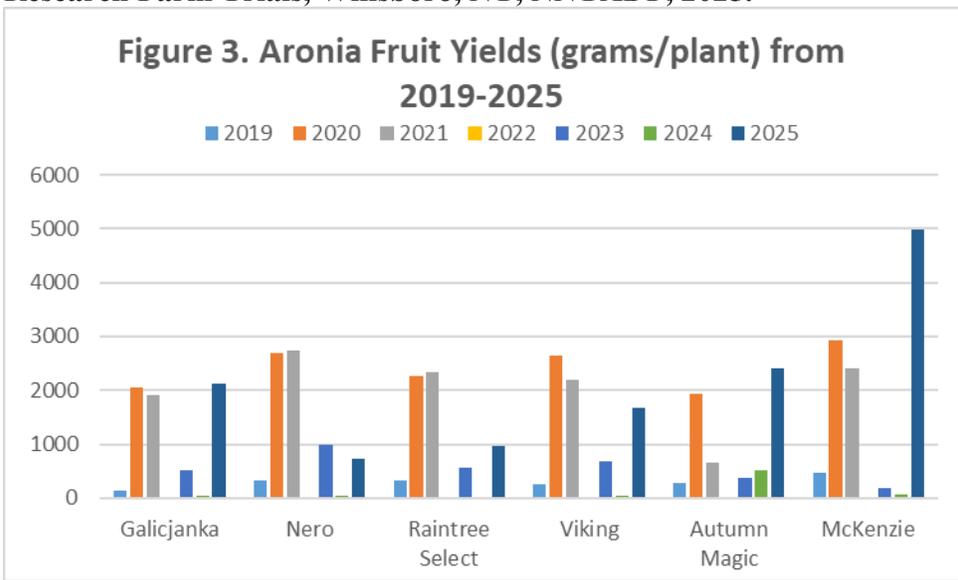




Photo 4. *York* elderberry plant with protective bird netting at the Willsboro Research Farm in 2025; NNYADP Establishing New Commercial Fruit & Nut Crops for Northern NY project, 2025. Photo: Michael H. Davis.



Photo 5. Hazelnuts harvested October 21, 2025, Willsboro Research Farm; NNYADP Establishing New Commercial Fruit & Nut Crops for Northern NY project, 2025. Photo: Michael H. Davis



Photo 6. Chestnut trees growing at the Willsboro Research Farm on October 19, 2025; NNYADP Establishing New Commercial Fruit & Nut Crops for Northern NY project, 2025. Photo: Michael H. Davis.