



Northern New York Agricultural Development Program 2013 FINAL REPORT

Developing *Amelanchier* into a Novel Fruit Crop for Northern New York

Project Leader(s):

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Background:

Amelanchier is an exceptionally flavorful and nutritious fruit that has the potential to be a major novel fruit crop in northern New York. The genus *Amelanchier* consists of small, multi-stemmed trees or shrubs that bear sweet, edible fruits. As members of the rose family, *Amelanchier spp.* are closely related to apples and pears, and the fruit is technically a pome. Wild harvested berries, sometimes referred to as ‘Indian pears’ or ‘sugar pears’, were a favored food of Native American cultures and early European settlers. Dried *Amelanchier* berries were an important component of pemmican. The fruits, which have a “sweet almondy” flavor, are similar to blueberries in size, color, and texture, and have an antioxidant profile comparable to blueberries and other “superfruits” such as pomegranate, cranberry, and acai.

Amelanchier spp. are widely distributed across North America, and common names for some members of this genus include shadbush, juneberry, serviceberry, and saskatoon. There are currently over 800 hectares of commercial *Amelanchier* plantings in the Canadian plains where the fruit are marketed as Saskatoon berries, but the crop is little known outside of that region. Varieties for established plantings were developed by making selections of wild *Amelanchier alnifolia* (a species native to the western plains of Canada and the US) that exhibited superior fruit size, taste, and yields. The crop has not been domesticated via traditional plant breeding methodology.

Objective:

The objective of this project is to build a living collection of *Amelanchier* plants that will serve as the foundation material for the identification of *Amelanchier* varieties that are well adapted to northern New York growing conditions.

Nursery Development:

Native *Amelanchier spp.* collections

Collections of promising wild *Amelanchier* specimens were made from eight northeast locations including Philadelphia, PA, Pocono, PA, New Paltz, NY, Massena, NY, Plattsburgh, NY, Barnet, VT, Portland, ME, and Kennebunk, ME (Figure 1). Plant collections at these sites involved harvesting mature fruit/seed, cutting new stem growth for rooting (Figure 2), and in some cases, digging and potting young plants on site.

Fruit/seed processing: Seeds were released by squashing the fruit and separating the pulp with fingers and repeated rinsing in a stainless steel strainer. Separated seeds were rinsed until free of debris, air dried, and then stratified at 4 degrees Celsius in moist perlite for 60-120 days (until seeds began germinating). Stratified seeds were sown in a Promix propagation medium that contained a biofungicide and mycorrhizae fungus. Seeds were germinated in the greenhouse at SUNY Plattsburgh (Figure 3). Germinated seedlings will be transplanted into larger pots, and then transplanted into the field nursery at the Cornell Willsboro Research Farm.

Stem cuttings: Cut stems of new growth were treated with a rooting solution and placed in a Promix potting soil in a misting/healing chamber. We were unable to get the stem cuttings to successfully set roots.

Dug plants: Small plants were dug with a shovel, placed in large pots with potting soil, and transported back to the greenhouse at SUNY Plattsburgh. We had a high survival rate with dug plants, and they will be transplanted into the Willsboro Farm *Amelanchier* nursery in 2014.

Commercial Varieties

Six Juneberry varieties that are currently being grown on commercial fruit farms in western Canada, were purchased from two nurseries specializing in the production of *Amelanchier* plants. Purchased varieties included Martin, Honeywood, Northline, JB30, Thiesen, and Smokey. All six of these Juneberry (called Saskatoon berries in Canada) varieties are classified as *Amelanchier alnifolia*, have a bushy growth form, and have been selected for superior fruit production. One year old plants were shipped from the nurseries after the plants had gone dormant in the fall of 2013, and planted in a high tunnel nursery site on the Willsboro Farm (Figure 4). These plants will be used for production trials scheduled to be established on the Willsboro Farm in 2014/2015.

Outreach:

Juneberry project goals were presented at the Willsboro Farm Open House/Field Day on July 10, and samples of Juneberry cobbler were well received. Additionally, we've partnered with Jim Ochtorski (Ontario County CCE) on our outreach efforts. Jim has been a pioneering proponent for Juneberry production in New York, and manages the www.juneberries.org website. The website will serve as a primary resource center for Juneberry production information in the northeast.

Next steps if results suggest continued work is needed in the areas of research, demonstration and/or education.

- Continue to build a living collection of *Amelanchier* plants that will serve as foundation material for the selection of high producing cultivars that are well adapted to northern New York growing conditions.
- Test promising selections for our wild collections along with currently available Juneberry varieties in replicated field trials.
- Develop and evaluate best management practices (BMP's) for Juneberry production including plant establishment techniques, fertility requirements, planting densities, and weed, insect, and disease control strategies.

Reports and/or articles in which the results of this project have already been published:

Kara Lynn Dunn's article *New Juneberry Nursery Supports "Super Fruit" Development in Northeast* in the January 2014 issue of *Growing* magazine has generated a lot of interest from commercial fruit farmers.

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Figure 1. 2013 wild *Amelanchier spp.* collection sites. Red dots indicate collections of *A. spicata*, blue dots correspond to collections of *A. Canadensis*, and green dots denote *A. arborea* collections.

