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Volume 19 Issue 1

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Elderberries: Exploring the functional berry market for organic fruit growers

by Amy Bacigalupo, OFGA Board Chair

In August 2023 I represented the Organic Fruit Growers Association at a meeting about expanding the production of North American elderberries, *Sambucus nigra ssp canadensis*, for the functional food market. The meeting was hosted by Renewing the Countryside and the Food Finance Institute. Much of the information shared in this article is from Chris Patton's presentation on scaling up the cultivation, processing, and sales of elderberries in the US for the functional berry market. Chris Patton is the founder and current Chair of the Board for the Midwest Elderberry Cooperative (MEC). Some of this information is posted on [MEC's website](#). To learn more about cultivating elderberries and direct sales either of the berries, the

flowers or value-added products, Savanah Institute's Elderberry Growers Guide for the Midwestern US is a [good resource](#). My article is focused on the functional elderberry market in the US, logistical challenges, and considerations for future research.

Functional Berry Market. The [Food and Agriculture Organization of the United Nations](#) defines functional foods as food that contain in addition to nutrients, other components that may benefit health. According to the National Library of Medicine '[Review of Functional and Pharmacological Activities of Berries](#)', the primary phytochemicals in berry fruits are phenolic compounds including flavonoids, tannins, and phenolic acids. The global market for functional elderberries is estimated at \$350 million per year. Most of the cultivated elderberry production is in the EU with an estimated 30,000 acres of cultivated elderberries and with many more pounds harvested out of the wild. The functional elderberry product market in the US is estimated at \$75 million in sales annually. Only 5%

of the supply for the US market is domestic. The US currently is estimated to have 2000 acres of cultivated elderberry production with the largest cluster of growers located in Missouri producing 350 acres. The current price for Individually Quick Frozen (IQF) elderberries in the wholesale functional berry market is \$3.00 - \$3.50/lbs. established by EU production. The process used to preserve elderberries for the functional berry market is IQF, a freezing method that maintains the shape, color, smell, taste and biochemical properties after defrosting, to a far greater extent than other preservation methods.

Challenges of scaling up for the functional elderberry market.

MEC's vision is to increase the Cooperative's production of elderberries for the functional market to 2,250 acres by 2025 reaching annual sales of 10,000,000 lbs. A main challenge to reaching this goal is coordinating the harvest and IQF process using shared equipment. Elderberries must be harvested and frozen within 24 hours to preserve the beneficial activities of phytochemicals.

Coordinating the availability of shared equipment amongst a group of growers

is a challenge. Patton estimates that a cluster of growers producing on combined acreage of at least 60 acres and a maximum of 250 acres is needed to make efficient use of the IQF equipment, aggregated frozen storage and transportation to market. For organic fruit growers the harvest of elderberries would be simultaneous with the timing of the harvest of other fruits and berries, July through September. Additionally, elderberries require a destemming step prior to IQF processing. According to the MEC website, another challenge is that the \$1/lb premium for organic elderberries is set by the production in the EU which accepts wild collected as 'certified organic.' Cultivated organic elderberries cannot recoup the annual cost for organic production with this level of premium. Given these challenges interested growers would be taking a risk in planting elderberries for the functional berry market. Establishing elderberries requires three years from planting to production. MEC is researching ways to address these challenges for growers.



Future Research. When considering the challenges and opportunities for cultivated elderberry production for the functional berry market in the US more research is needed to make it feasible for growers. Patton is exploring a mobile processing option for IQF equipment that could be shared between growers within a region. The coop is looking for financial backing to provide working capital for growers to finance the upfront costs for establishing elderberries and investing in a de-stemmer, freezer and irrigation and mulching equipment in the first 3 years. In 2023 the Elderberry Cooperative received a [Continuous Living Cover promotion grant from the MN Legislative Citizen Commission on Minnesota Resources](#) (LCCMR) to design, build and test a prototype destemmer for elderberry growers. Combined with access to a mobile IQF unit this could make it more feasible for

growers to get started. Another option to research is for elderberry growers to develop cooperative efforts with vegetable and other berry growers in their community to share IQF equipment. Utilizing IQF processing would allow vegetable and other berry growers to preserve their harvests from the growing season to be available for sale and further processing during the off season. This could expand markets into institutions including schools and colleges. The timing of the processing could be spread out since the vegetables could be in cold storage until the IQF unit is available.

Based on the work of MEC and others, I am interested in learning more about elderberry production and the IQF process. I appreciated the work of MEC and other growers and groups of growers who are breaking ground on new markets for organic fruits and berries in the US.



Meet Ari Abbrescia

Ari is the new Organic Transition Outreach Specialist at UW-Madison Extension. She is working to support growers in organic production and transition by creating organic resources and programs, supporting organic research, strengthening organic networks, and fielding questions for all-things-organic. With a background in organic fruit and vegetable pest management, Ari is especially eager to work with growers to build more resilient on-farm systems.

Ari is hoping to hear from you - what kind of resources would you like to see? What topics would you like us to focus on? To share ideas and connect, her email is ariana.abbrescia@wisc.edu, and her phone is 608-263-1054.



OFGA Winter Gathering Recap

by Chris McGuire, OFGA Coordinator

OFGA members enjoyed good food, grower presentations, and networking time at OFGA's Winter Gathering, held at the Four Sisters event center in La Crosse on February 22nd.

Board chair Amy Bacigalupo and I summarized OFGA's recent work, including three field days in 2023, a recently completed project on [organic management of fireblight](#), and two potential new projects which we are seeking funding for:

- On-farm trials of organic spray products for control of fruit rots, cedar apple rust, and fungal leaf spots in apples, working together with Leslie Holland at UW-Madison.
- Facilitated training and visioning for organic fruit growers to help growers select strategies which will make their farm more resilient in the face of climate change, combined with cost share grants to help farmers pay for implementing these practices (e.g., hail netting, irrigation, wind machines, etc.)

Stay tuned for more information on these projects!

Two new OFGA board members were elected: Ben McAvoy from Blue Fruit Farm (who will be co-hosting an OFGA field day in June), and Madeline Wimmer, University of Minnesota Fruit Crops Extension Educator.

Educational presentations at the winter gathering included:

- On-farm research results on trellising currants and gooseberries (Chris McGuire, Blue Roof Orchard) and high tunnel peach culture in cold climates (Dan Sheild, Stone Creek Farm)
- Liz Griffith from Door Creek Orchard and Ed Callahan from DreamApple Farm presented on applying for small farm grants, including the USDA Value-Added Producer Grants, Buy Local Buy Wisconsin grants, and others.
- Andrew Zwald (White Pine Berry Farm), Aaron Wills (Little Hill Berry Farm), and Rachel Henderson (Mary Dirty Face Farm) shared their experiences in an Organic Berry Panel. Panelists and attendees delved deep into marketing berries, including U-pick, value-added products, social media, and email lists.

Feedback from an OFGA member on the event: "A great meeting. It was a great balance of structured and unstructured time. Got to learn some things from the presentations and then also just chat with other growers as well. It was really nice to have food taken care of. That was a real treat."

OFGA Summer Field Days

More information coming soon!

Blue Fruit Farm, Winona MN: Organic berry production.

June 14, 2024, 10 am.

Ben and Natalie McAvoy will lead a tour of their farm, where they raise certified organic aronia berries, black currants, blueberries, elderberries, honeyberries, grapes, apples, pears, and plums. They market their fruit as U-pick, pre-picked fresh, frozen, and processed into jams and juices. Founded by Jim Riddle and Joyce Ford in 2008, Blue Fruit Farm is an inspiring example of a diverse and long-running organic fruit operation.



Dream Apple Farm, Grafton, WI. Organic apple production

Summer 2024.

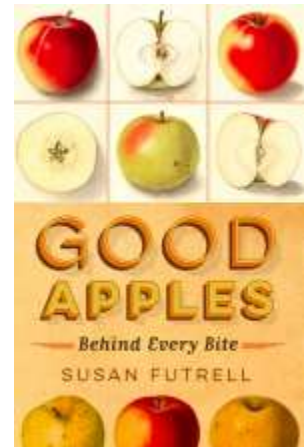
Peggy & Ed Callahan raise thirty-five varieties of organic apples on seven acres near the shores of Lake Michigan. The field day will showcase their methods for growing high-density, dwarf apples, including their new hedging machine. We will also tour their high tunnel planting of organic raspberries. In addition to the farm, Peggy & Ed also manage DreamPort Harvest Market, a retail store in Port Washington, WI which specializes in local, organic and sustainably grown foods.

Common Sense Apple Growing in the Upper Midwest

by Sam Kedem, retired from Sam Kedem Nursery and Garden, Hastings, MN.

Most U.S. organic apple production is concentrated in the desert northwest, due to the dry climate, reduced damage from pests and diseases, and well-established infrastructure. In the humid eastern U.S., pest pressures and limited resources lead to inferior growing conditions for organic apple growing, and thus less competitiveness.

At a recent meeting of apple growers, organized by Practical Farmers of Iowa, this issue was raised by [Susan Futrell](#) and several growers. Susan is the author of “[Good Apples - Behind Every Bite](#)” and has worked in the sustainable food sales, distribution and marketing for 25 years. The discussion centered on practical, economical means to address potent pests or diseases not controlled well by organic means. Attendees suggested two options for local organic apple growers confronted with untenable adversity:



1. ‘[EcoCertified](#)’ is a third-party certification program aimed at finding the most ecologically friendly way to grow wholesale tree fruit in the northeastern and eastern United States. Ecocertified practices include supporting pollinators; maintaining beneficial insects; controlling pests with trapping, physical barriers, and pheromones; and promoting soil and tree health. Human intervention is justified only where other means are ineffective; and control methods are limited to methods that do not interfere with natural balance. EcoCertified does allow some use of pesticides which are not allowed in organic production. The IPM institute of North America manages the growing protocol, audits, and certification standards for EcoCertified.
2. A hybrid of organic and conventional/IPM methods, based on growing environment. This option addresses the shortcomings of organic systems while offering flexibility to growers.

Both alternatives require educating local consumers about the benefits to them, the community & the environment, compared to local fruit grown using conventional practices and compared to non-local organic fruit grown in the northwest. For Midwest growers who are unable to address issues related to pests or diseases, or other limitations, these options can mitigate economic woes.

The afternoon session at the PFI workshop demonstrated management of a non-organic modern high-density orchard system, including orchard layout, irrigation, support, training, and labor. Unfortunately, no financial data was presented, which kept the discussion abstract. To some growers, however, the demo may have helped conceptualize modern systems. A summer follow-up would be beneficial, looking at crop load, summer pruning and other aspects of this system.