ORGANIC Fruit Growers ASSOCIATION

Just Picked!

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From the Coordinator's Desk

Jenn Ripp

Thank you for the warm welcomes to this role. As the silver tips turn to green, and we button up our pruning and bench grafting, let us welcome these stormy days and cool rains as we patiently await the blossoms. We may be the only ones rooting for the cool temperatures to delay dormancy a bit longer, but luckily the inevitable length in daylight and coming warmer temperatures will surely bring spring to us soon.

Our Annual Meeting April 13th featured Tom Wahl of Red Fern Farm and a discussion about the strategic vision for OFGA. It was a time to talk of the exciting prospects for this organization and see some new and some familiar faces.

In the meantime I was able to share the skill of bench grafting to many young community members here in Decorah, Iowa (photo right). We gathered on the last weekend of March to fill my house with little wooden chips. Hundreds of practice cuts later I could see the joy in about a dozen peoples' eyes as they grafted their very first apple trees. Nothing can beat the happiness felt in sharing the gift of this skill.

Thank you to all who have contributed to this issue as we say goodbye, unexpectedly, to Michael Phillips. He has touch so many of our minds through his research and teachings. He will be so missing in the organic orchard community, and I hope we all do our best to keep his message of holistic management practices alive.

Liz Griffith Remembers Michael Phillips

By Liz Griffith, Manager of Door Creek Orchard Cottage Grove, WI

Photo by Ian Aldrich

The first time I sent Michael an email, I spent hours composing it before nervously hitting the "send" button. I had discovered him, like many people, via his books, which blew me away with their combination of encyclopedic knowledge and skillful, warm, and witty writing. I already considered him an apple grower/writer icon, and thought chances were slim to none that he would have the inclination or time to respond.

When I received a comprehensive reply the very next day, I was ecstatic. It was immediately apparent that here was an icon that wanted to connect with other orchard-loving humans. Over the following years of email correspondence, his dedication to educating, encouraging, and engaging people of all stripes to explore growing healthy fruit became clear. What an inspiration.

The beautiful tributes to him posted on the "In Memoriam" page are full of other folk who had similar experiences to my own. Michael was always generous with his incredibly valuable time and wisdom, engaging in a non-judgmental (and very well-written!) way with whoever wished to explore the holistic-growing knowledge base. "Maybe that was his actual super-power – so many people feel connected to Michael in some special way, myself included." says Tom Rosenfeld in his tribute on the Memoriam Page.

This super-power helped him to create and maintain the Holistic Orchard Network and Phorum, a community of like-minded growers who are committed to growing healthy fruit, and who are striving to find new, sustainable ways to do so. He was frequently a provoking presence on that forum, spurring us all into action, challenging us to push boundaries and to contribute more to the cause.

Of course, he was constantly researching and furthering the topic of holistic growing all on his own as well, and among the many things we lost when we lost him is that further research and work. A devastating loss for the world indeed. The folk that are part of his Holistic Orchard Network hope to honor his work by continuing on without our fearless leader. As Mike Biltonen said in his tribute on the Phorum and Memoriam Page, "It is up to us to honor and carry on his legacy – the earth, the people and the apples demand it. He is listening, floating in the stars and taking notes." We invite you to join us by contributing in any way you are able.

Though I only met Michael in person once, I counted him as inspiration, mentor, and friend. We will be planting a Michael Phillips memorial apple tree in our orchard this spring, and my guess is that the understory comfrey will be particularly lush under that particular tree.

Heartfelt wishes of love and peace to Nancy and Grace. My orchard family holds you in our hearts. And Michael, Was Hál in perpetuity. We will be raising a glass to you in orchards across the world.

Grower Research:

Growing Organic Apples in a High Tunnel

By Chris McGuire, Two Onion Farm, twoonionfarm@gmail.com

We raise organic apples and berries on our farm in Lafayette County, southwest Wisconsin. In the past ten years we have transitioned our farm from vegetable to fruit production. We had used high tunnels (unheated greenhouses covered with polyethylene film) to produce some of our vegetables and we wanted to repurpose these tunnels into a useful part of our fruit farm. We learned that the high tunnels work extremely well for growing grafted nursery stock, and we decided to also try raising fruiting dwarf apple trees inside tunnels. Other growers and researchers have found that tunnels work well for growing stone fruit, brambles, and grapes because the tunnels provide a good growing environment with reduced disease pressure and protection from excessive rains. In our case we were primarily interested in the potential for the tunnels to reduce disease. Controlling apple scab and other diseases in outdoor-grown organic apples requires resistant varieties and/or an intensive spray schedule. In high tunnels, the plastic cover keeps the foliage dry and should prevent infection by most fungal and bacterial diseases.

In spring 2019, we planted almost 200 trees, representing seven varieties, on dwarfing G.41 and G.11 rootstocks inside two tunnels. Tree spacing was 3 feet within rows and 11-12 feet between rows. Trees were trained on a trellis using the tall spindle method.

Tunnel	Width	Length	Number of Tree Rows	Trees Per Row	Total Trees	Border Trees[1]	Experimental Trees[2]	Year Constructed	Initial Construction Cost (Materials Only)
1	34'	102'	3	33	99	8	91	2017	$9,643
2	24'	148'	2	49	98	7	91	2018	$9,955

We have now grown the trees for three years and picked fruit in both 2020 and 2021. Here are some of our key observations and conclusions:

The apple trees grew vigorously inside the tunnels and readily filled their space. Timely notching of the leader and branch training was needed to develop trees with numerous calm branches. As expected, the trees suffered virtually no disease damage, except for powdery mildew, which appeared in the 2021 growing season. Powdery mildew is able to infect in the absence of water on the leaves and thus is common in high tunnel cultivation of many crops. The disease-free foliage in the tunnels, even in late summer, was remarkable - and frankly unprecedented in our ten years of growing organic apples outdoors.

Numerous insect pests did attack the foliage and fruit in our tunnels, including mites and aphids (which rarely or never cause significant damage to our outdoor trees) as well as typical apple pests such as codling moth, plum curculio, and leafrollers. Overall we feel that high tunnel apples would require a similar insect pest control regime as outdoor grown apples.

One important consideration in high tunnel fruit production is to avoid drastic temperature fluctuations on sunny winter days. In a tunnel covered with clear plastic, daytime winter temperatures can soar into the 50's or above, but then crash below zero during the nighttime, which wreaks havoc with trees' cold hardiness and makes them susceptible to winter injury. Two strategies for avoiding these drastic temperature fluctuations are to uncover the tunnels in winter or to cover them with an opaque cover (a method popularized by orchardist Dan Sheild at Stone Creek Farms in Minnesota). We uncovered our tunnels in winter 2019-2020, but covered them with opaque black and white silage tarp in winter 2020-2021. We preferred the later, silage tarp technique because recovering tunnels on a tight deadline in windy spring weather was difficult and stressful, and because repeated removal and reinstallation exposes the delicate and expensive greenhouse film to damage.

Purchased bumblebee colonies placed inside the tunnels provided excellent pollination and fruitset was generally high, although June drop of fruitlets was also high, possibly exacerbated by the warm temperatures and reduced light levels in the tunnels. There was significant frost damage inside the tunnels during bloom in 2020, and we recommend that growers consider an "emergency" heat source to keep tunnel temperatures above freezing on cold spring nights.

Heat-related damage was a major issue in our tunnels even though we ventilated the tunnels through rollup sides and used Klerks brand koolite plastic, which lowers temperatures inside the tunnels compared to traditional polyethylene covers. Many fruit suffered sunburn, soft flesh, and off-flavors. The extent of the damage varied by variety: Suncrisp and Hudson's Golden Gem were notably unaffected.

Average yield per tree was about 7 lbs in 2020 and 25 lbs in 2021, and almost 70% of the fruit were our "#1 grade", saleable to our grocery store accounts. Yields varied greatly between varieties. In one of our tunnels, e.g., Suncrisp trees have so far almost 100 lbs fruit per tree over two years, whereas Ashmead's Kernal trees produced only 3 lbs!

Overall, we feel that it is difficult to recoup the costs of constructing and maintaining the tunnels by growing apples inside. It would certainly be essential to select high yielding and heat-tolerant varieties for tunnel cultivation. A detailed report of our results including growing methods, expenses, and yields, is available online at www.twoonionfarm.com/research/ and I am happy to answer questions by email: twoonionfarm@gmail.com.

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Agroforestry Based Control for Cedar-Apple Rust Disease and Browsing Deer in Organic Apple Orchards

Dan Kelly, Blue Heron Orchard in Canton, MO

My SARE grant proposal, SARE FNC20-1227 *Agroforestry Based Control for Cedar-Apple Rust Disease and Browsing Deer in Organic Apple Orchards,* opened new opportunities for creating more sustainable practices than I had originally realized.

As many apple growers know, sharing the landscape with the Juniperus virginiana, the Eastern Red Cedar tree is a contentious issue, Cedar Apple Rust/ CARs (Gymnosporangium juniperi-virginianae). For example, the Purdue Extension bulletin BP-132-W, Disease Susceptibility of Common Apple Cultivars, lists thirty-four out of ninety varieties are susceptible to CARs. Chances are fair that you may have at least one or two in your block or yard.

White-tail deer (Odocoileus virginianus) are no stranger to anyone of us in most any part of the Midwest. Deer cause damage to newly planted trees, making it impossible to plant new varieties or replace missing trees. Deer winter-browse the mature tree's fruiting buds on branches up to five feet, often killing the branch. And during pre-harvest, they waste apples by eating, nibbling, knocking and stomping them.

Basidiospores on Eastern Red Cedar

Laying waste to cedar trees when they were tall enough to be seen would have been a good time for control. However, I did not have any 'skin-in-the-game' until noticing those beautiful evergreens along the creek in spring, oozing their telial horns (photo right) following a warm spring rain in April, then in May, releasing basidiospores into the air to infect apple trees.

Shou Sugi Ban wood

This confluence of the above mentioned 'natural forces' brought an opportunity, harvesting the cedar and turning the naturally rot-resistant logs into line and corner posts for fencing to exclude deer from the orchard. A twist on 'treated' (chromated arsenical) post is the use of pyrolyzation, as treated wood is not allowable for organic production.

Shou Sugi Ban is wood (photo left) that has been exposed to fire long enough to leave a layer of charred wood, but not long enough to burn the wood or damage its structure, pyrolyzation. The process leaves a layer of char on the surface, which is essentially a layer of carbon protecting the wood. Since carbon does not rot, this layer shields the wood underneath from rot. The carbon layer makes the wood water-resistant when compared to regular timber. Less water penetrating the wood, combined with a protective shield of carbon, dramatically improves the overall resistance. (Degmeda)

Pile of cleared cedars

I really like cedars, yet I cut and cleared during 2020 and 2021 around eighty trees with growth rings, that go back to when I moved to my property in 1983. This harvest yielded trees, some with a base girth up to sixteen inches and heights of up to twenty-seven foot for posts. And our non-destructive clearing of cedars allowed us to created habitat as described in: "Structures for Wildlife & Upland Wildlife Habitat Management": NRCS Practice Code 649-645. (photo right)

Forestry-mulcher

We discovered that as we harvested cedars, among them were deciduous tree species, that because of the density of cedars never realized they existed. This gave way to a savannah-like effect in that landscape, also good for upland-wildlife.

Preparation for some sections of the fence line was to employ a bulldozer to clear twenty inch trees and brush. But before this began, I realized that the messy piles of trees, etc. and gouges in the soil would be a pain to rectify in order to install the fence. I change course and brought in a track-hoe with a forestry-mulcher attachment (photo left). The mulcher shredded everything in place and allowed for zero hassle for fence installation.

Rainwise weather station

We installed a Rainwise degree-day data field recorder/ weather station in the orchard designed to specifically support the local agricultural community, determining conditions that precede a CAR outbreak in the orchard. Also purchased were annual subscriptions to NEWA Network for Environment and Weather Applications . This program automatically calculates and displays weather data summaries and IPM forecasts. It has an apple crop production tools for insects, diseases, apple thinning and irrigation. It also has programs for berries, grapes, blueberries and other field crops along with a few commercial vegetables. (photo right)

As yet NEWA, does not have a model for CARs, but following a scab regime may provide control of CARs. In a publication from 1994 Management Guide for Low-Input Sustainable Apple Production (LISA) by Lorraine Burkett, page 49 is described how to manage CARs. "Infection requirements for cedar apple rust are similar to those of apple scab, so no special rust sprays are required if fungicides applied for apple scab are also active against rust." (BTW, this book is still available and rudimentary for a grower's library.)

The hope going forward is to be vigilant about a zero tolerance for red cedar, within a minimum of 500 feet. As for the deer, they are welcome to look in at the orchard and garden…. from outside the fence.

FNC 20-1227 has been my third grant experience with SARE. These grants have given me the flexibility and allowed creativity to guide best practices to achieve goals of sustainability. I encourage the curious to look into SARE.

Check out this 12 minute video of what went into the planning and construction of the fence for this grant: https://vimeo.com/702609145/eec29d548e

Upcoming Events:

Designed for anyone considering an agroforestry farming system on their land, hosts Tom Wahl and Kathy Dice, along with SILT Farm Services Coordinator Shannon Moeller, will explain how to make agroforestry work for landowners, farmers and the planet.

The field day is part of an NRCS Conservation Innovation Grant to give landowners the tools they need to estimate a bottom line that includes qualified conservation tax incentives for permanent protection. (SILT does not give tax advice. Landowners should discuss their situation with their advisors.)

Red Fern's case study and online calculator are in the works! We're working hard to debut them at this field day so don't miss out! RSVP to Shannon@**silt**.org.

About OFGA

ORGANIC Fruit Growers ASSOCIATION

The Organic Fruit Growers Association is a not-for-profit organization formed exclusively for charitable, scientific and education purposes. We share information and encourage research to improve organic production and marketing of fruit and represent the interests of organic fruit growers.

For more information, contact coordinator Jenn Ripp at *ofgacoordinator@gmail.com*

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