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Volume 18 Issue 2

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Mulching with a Repurposed Feed Wagon at White Pine Berry Farm

by Chris McGuire, OFGA Coordinator

Andrew Zwald, together with his parents Greg and Irma Zwald, have operated White Pine Berry Farm in River Falls, WI since 2012. They raise certified organic strawberries, raspberries, blueberries, currants and vegetables, primarily for a U-pick market.

I recently spoke with Andrew about their methods for mulching berry crops. There's been discussion on the OFGA listserv recently about dedicated row mulching equipment, such as the mulchers produced by Millcreek Manufacturing in Pennsylvania. Andrew has been using a more economical but effective alternative, a repurposed Gehl 7190 feeder wagon. Gehl no longer

manufactures farm machinery, but used Gehl wagons, as well as new and used feeder wagons from other manufacturers, can still be purchased.

The Gehl 7190 is essentially a wagon with a metal box. PTO power turns an auger inside the wagon box which moves material forward towards the front of the wagon. In the front, a side discharge conveyer throws the material out to one side of the wagon. Andrew pulls the wagon down an aisle between berry rows and delivers mulch to the row on one side. Although he mulches berry rows with a continuous strip of mulch, Andrew notes that it is possible to mulch trees individually by stopping and starting the PTO and discharging mulch in a pile by each tree trunk.



For mulch, the Zwalds use fresh wood chips which a local tree service delivers to them (for free!). They fill the feeder wagon using a front end loader on one tractor; a second tractor pulls the feeder wagon and delivers the mulch to the berry rows. After spreading the chips, they make a quick pass with a pitchfork to manually distribute the mulch into a strip six to eight inches deep and twelve to eighteen inches wide.

They apply mulch every few years. Although the mulch does an excellent job of suppressing most weeds, they do need to do follow-up weeding, particularly for perennial weeds such as wild parsnip and stinging nettle. Generally one intense hand weeding per year before harvest and several additional passes with a weed trimmer are sufficient for weed control.

The Zwalds use the feeder wagon to spread mulch on their currants, Christmas trees, and established blueberries. For newly planted blueberries a hole is dug with an auger on a skid steer, landscape fabric is laid down, a 12 inch hole for each plant is cut, and then a small amount of wood chips is manually applied around the base of each plant from a tractor bucket.



Upcoming Events

[Preparing a Site & Planting Trees webinar](#) (Beginning Apple Grower Webinar series)

February 9th

This webinar will cover basic planting methods, using videos from an orchard planting at Ferguson's Apple Orchard in Lake City, MN. We will also discuss how to select a good site for an orchard and prepare it prior to planting.

[Fire Blight Webinar Series](#)

June 13, October 18

A webinar series to address new research on best management practices for fire blight control. Not exclusively aimed at organic growers, but the sessions do emphasize biological sprays as well as pruning and sanitation, techniques which are generally allowed in organic production. [Register here](#). Upcoming sessions are:

- June 13, 2023 - Pruning and sanitation strategies to reduce fire blight. Dr. Tianna DuPont, Washington State University
- October 18, 2023 - Using weather and environmental conditions to optimize biologicals and biopesticides for bloom production. Dr. Sara Villani, North Carolina State University

[Organic Production of Apple, Currants, and Gooseberries](#)

June 28 1-4 PM, Two Onion Farm Belmont, WI.

A field day sponsored by Marbleseed and the UW Extension Emerging Crops program. Tour a certified organic 3 acre apple orchard, ¼ acre of gooseberries, and ¼ acre of currants trialing trellis vs untrellised production methods.

[Ducks + Vineyard Field Day at Good Courage Farm](#)

July 6, Hutchinson, MN. Details to be announced

[Organic Management of Fire Blight and Cider Apple Production](#)

July 12, The Cider Farm, Mineral Point, WI

An OFGA field day – see next page for details!

Organic Management of Fire Blight and Cider Apple Production

July 12, 10 am - 3 pm
The Cider Farm, 7258 Kelly Rd, Mineral Point WI 53565

Learn about organic management of fire blight and tour an 18 acre high-density organic apple orchard of cider varieties. Deirdre Birmingham and John Biondi have grown organic apples and crafted ciders and brandy for almost 20 years at The Cider Farm. Their orchard primarily consists of heritage cider varieties. In addition to the orchard, they also operate a tasting room in Madison, WI. Fireblight is a potentially devastating disease of apples and pears which can be difficult to manage organically. At the field day, Leslie Holland, UW Extension fruit crop pathologist, will present on organic options for fireblight management and Deirdre will discuss how she has managed this disease in an orchard with many susceptible varieties and a long history of fire blight infections.

Agenda

10:00-10:30 am Registration

10:30-11:00 am Introduction to The Cider Farm. Deirdre Birmingham, The Cider Farm

11:00 am-Noon Organic Management of Fire Blight. Leslie Holland, UW-Madison Department of Plant Pathology.

Noon-1:00 pm. Catered Lunch (Sandwiches, sides, and dessert provided)

1:00-3:00 pm Orchard tour and discussion. Deirdre Birmingham

-Cider varieties

-Trellising and training

-Understory management

-Insect and disease management

-Orchard equipment, including electric pruners, side-mower, mulch-spreader, and side cultivator

Registration: Pre-registration is required!! OFGA Members pay only \$15 to attend this event; the cost for non-members is \$40. If you're not a member, or you have not renewed your membership for 2023, join or renew [here](#).

Members, click [here](#) to register for \$15

Non-members, click [here](#) to register for \$40

Organic Management of Anthracnose Leaf Spot in Gooseberries

Chris McGuire, Two Onion Farm

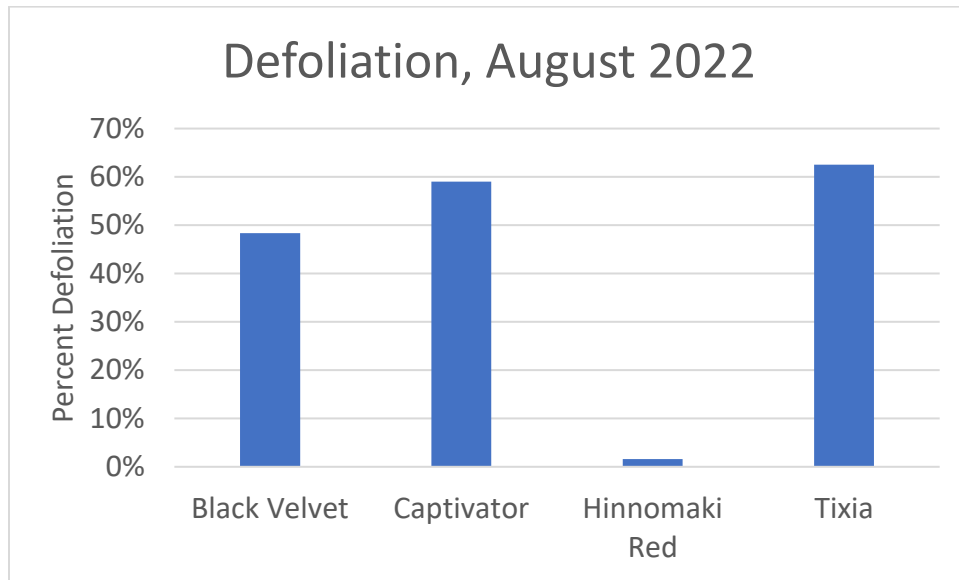
As the popularity of alternative healthful and flavorful fruits has increased, growers are increasingly raising gooseberries for local markets. Gooseberries can be used by small-scale processors in preserves and baked desserts and the fresh berries are popular with some consumers. Growers can select varieties and manage harvest timing to suit different markets: tart, underripe berries are well suited for many processing uses, and riper, sweeter, and highly flavored fruit are best for fresh eating. In the Upper Midwest, we've found that prices typically range from \$6-\$8 per pint for fresh berries sold at retail and \$4-\$4.50 per pound for berries sold wholesale to processors.

In the Upper Midwest, many growers have struggled to control Anthracnose leaf spot. This troublesome fungal disease infects leaves repeatedly beginning in late spring, causing dark purple spots on the leaves, followed by massive defoliation as early as late June. Over several years, defoliation presumably reduces plant health and yield. Without access to synthetic fungicides, organic growers can be particularly hard-pressed to manage Anthracnose leaf spot.

Chris and Juli McGuire raise organic apples, currants, and gooseberries on their farm in Lafayette County, southwest Wisconsin. Working with Leslie Holland at UW, we've just completed a two year on-farm research project evaluating organic methods for control of Anthracnose leaf spot. In a replicated, quarter-acre field trial, we compared three techniques for disease control:

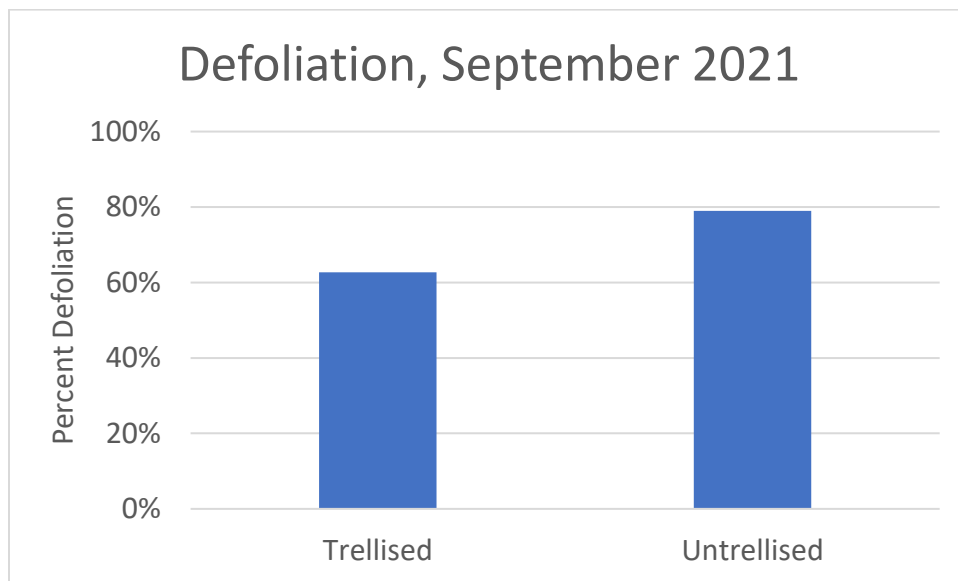
- (1) Variety: We measured disease susceptibility of Black Velvet, Captivator, Hinnomaki Red, and Tixia.
- (2) Trellising: We compared untrellised, bush plants to plants grown with the cordon trellis system, thinking that the trellised plants might suffer less disease because their sparse, narrow canopies would dry more quickly after dew and rain.
- (3) Organic sprays: We trialed three sprays allowed under the USDA organic standards: Cueva® (copper soap) tankmixed with Double Nickel 55™ (*Bacillus amyloliquefaciens* strain D747), Carb-O-Nator™ (Potassium bicarbonate), and Regalia® (Extract of *Reynoutria sachalinensis*), as well as an unsprayed control treatment. Sprays were made every ten days from June through August.

We measured early season disease incidence in June as well as late-season defoliation. Data collected in 2021 and 2022 showed clear, consistent patterns. Of the four varieties, Hinnomaki Red was most resistant and Tixia was most susceptible. However, disease resistance needs to be balanced with yield, flavor, and other factors. Hinnomaki Red, for example, is in our experience a very small, compact plant that produces modest yields and is difficult to harvest, and therefore may not be desirable despite its disease resistance.



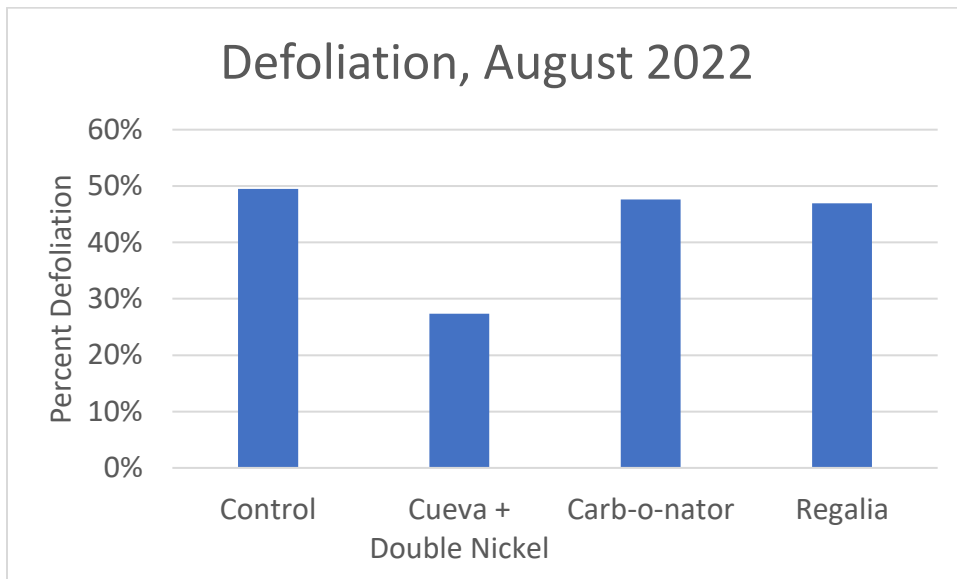
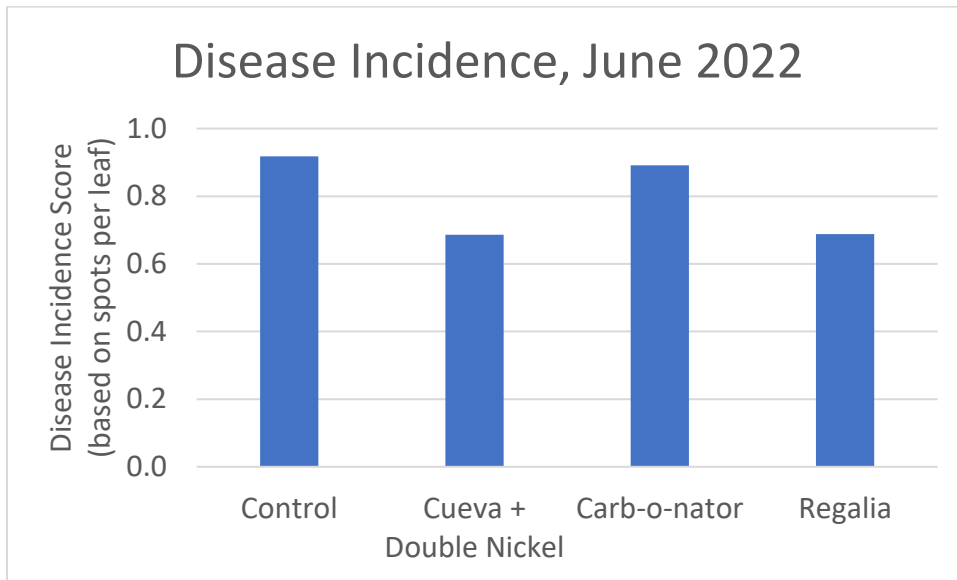
Fruiting branches of Hinnomaki Red (left) and Captivator (right) on July 8, 2022. Notice severe defoliation on Captivator, which is more susceptible to Anthracnose leaf spot.

Trellising reduced disease by a small but significant amount. Although trellising reduces disease, it may not be justified because of its high cost. At Two Onion Farm, a trellised planting requires approximately \$15,000 per acre in additional money for trellis materials and plants, as well as an extra 300 hour of labor per acre over the first two years of the planting. To justify those extra costs, trellising needs to have very substantial benefits such as faster harvest and improved fruit quality.



Trellised (left) and untrellised (right) gooseberry plants, July 8, 2022. Trellised plants suffer less disease, likely because of their narrow, sparse canopies.

Of the spray treatments trialed, Cueva® (copper soap) tankmixed with Double Nickel 55™ (*Bacillus amyloliquefaciens* strain D747) provided the most control, reducing early season disease and late season defoliation. Regalia® (extract of *Reynoutria sachalinensis*) provided a significant reduction in early summer disease, but did not affect late season defoliation. Carb-O-Nator™ (Potassium bicarbonate) gave no control. Growers will need to consider the materials and labor costs of spraying as well as the environmental impacts of repeated copper sprays. If gooseberries are a minor crop on a diverse fresh market farm, they may not merit the attention needed for regular timely sprays.



Tixia gooseberry plant sprayed with Cueva® (copper soap) tankmixed with Double Nickel 55™ (*Bacillus amyloliquefaciens* strain D747) (left) compared to an unsprayed, control plant (right)

This study did not reveal any methods of Anthracnose Leaf Spot control which were completely effective at eliminating the disease. Anthracnose symptoms occurred in all experimental treatments. However, we found clear and consistent evidence that variety selection, trellising, and organic sprays all provide some control of Anthracnose. Growers will have to select the mix of control methods that best fits their operation.

A detailed report of our results and a video summary are available online at www.twoonionfarm.com/research/ and Chris is available to answer questions by email: twoonionfarm@gmail.com.

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