Ecological Farming in Ontario

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Parasite Management in Small Ruminants 2020 Research Highlights Cover Crop-Based Organic No-Till Soybean Production



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On the cover Winter growing in full swing in unheated high tunnels at Sideroad Farm in Grey County, ON.



What We Do

Established in 1979 by farmers for farmers, the Ecological Farmers Association of Ontario (EFAO) is a membership organization that focuses on farmer-led education, research and community building. EFAO brings farmers together so they can learn from each other and improve the health of their soils, crops, livestock and the environment, while running profitable farm businesses.

Vision

We envision an Ontario where thriving ecological farms are the foundation of our food system, and where agriculture protects our resources, increases biodiversity, mitigates climate change, and fosters healthy, vibrant communities.

Mission

EFAO support farmers to build resilient ecological farms and grow a strong knowledge sharing community.

Ecological Farming In Ontario

Ecological Farming in Ontario is published quarterly by EFAO as a benefit of membership to help keep farmers and supporters informed and in touch with one another through articles on relevant farming topics, current farmer-led research, upcoming events and other news of interest.

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Help make *Ecological Farming in Ontario* a farmer's journal! Submit articles, photos, opinions and news to editor@efao.ca. We reserve the right to edit submissions for space and/or clarity.

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A Message from the Board President

By Brent Preston

hope that winter is a time of optimism for most farmers. The endless hours of hard work, the bad weather and the exhaustion of the previous season start to fade from memory. The seed catalogues arrive. We start to get excited

about the possibilities of spring. After a year of unprecedented upheaval and a cascade of relentless bad news, it's especially important to look on the bright side and to stay optimistic.

There is plenty to be hopeful about from an EFAO perspective. Our organization has never been in better financial shape. We have diverse and stable sources



of funding that have allowed us to retain and recruit an incredible staff of dedicated professionals. We are launching into new areas of work, like incentive programs (through our Small Grains Program), and policy advocacy. Our membership is growing — during the last year we have had over 700 members across the province. The range and quality of our programming and services for members continues to grow. We have achieved all of this while maintaining what I think is the essence of the EFAO — an open and welcoming community of farmers with an engaged and passionate membership, staff and board.

There is one area of EFAO's work that I have been personally immersed in for the past year that I think should make us all a little more optimistic. In early 2020, the EFAO helped to found Farmers for Climate Solutions (FCS), a new coalition of farm organizations that believe that agriculture must be part of the solution to climate change. In less than a year, we have grown from seven member organizations to almost twenty, and we now represent over 20,000 farmers from coast to coast. The EFAO is far from the biggest organization in the coalition, but because we have farmers who can speak knowledgeably and forcefully about the need for climate action, staff who have a deep understanding of the science of climate and agriculture, and decades of organizational experience in farmer-to-farmer training and more recent expertise in farmer-led research, we have become a key player in all of the coalition's activities. FCS has met with dozens of senior civil servants in Ottawa, the Minister of Environment and Climate Change and had multiple meetings with the federal Minister of Agriculture. We have produced comprehensive policy proposals to incentivize

> and scale-up many of the practices that EFAO members have been employing for years, such as cover cropping and intensive grazing. FCS language was included verbatim in the Speech from the Throne last September, when the federal government committed to "support the efforts of farmers and ranchers to reduce emissions and build resilience as key partners in the fight against climate change." On February 23rd, FCS released a report that asks for \$300 million in the next federal budget to rapidly jump-start greenhouse gas emissions reductions in Canadian agriculture. Our recommendations have the potential to reduce CO2 emissions by over 10 million tonnes in the first year.

Every government representative we have met with so far has been positive and enthusiastic about our proposals. The so-called "mainstream" farm organizations we have consulted have been equally positive. Almost everybody seems to now realize that ecological farming practices are essential to combatting the climate crisis, and that they can bring numerous other benefits, like clean water, increased biodiversity and better livelihoods for farmers.

We all know that the problems with our food system are deeply rooted. Systemic racism and inequality prevail. Monumental environmental damage will take decades to undo. Powerful interests will defend the status quo. But I am still optimistic. I think the work that the EFAO is doing with Farmers for Climate Solutions has the potential to create meaningful change at a large scale. Our decades of community-building, training and collaboration among members has made the EFAO a trusted voice for progressive farming policies in Ontario and across the country.

We are all eternal optimists when it comes to our farms. Perhaps now we can be a little more optimistic about our food system, and our planet.

Brent Preston is the EFAO Board President. He and his wife Gillian Flies own and operate The New Farm, a certified organic vegetable operation near Creemore, Ontario, where they specialize in cut salads and cucumbers for wholesale markets.

LIVESTOCK

Parasite Management in Small Ruminants

By Dr. Mykolas Kamaitis

Whether you've been raising sheep and/or goats for many years, or have just taken the leap into the small ruminant world, parasites have the potential to seriously impact the health and productivity of your flock and to demoralize you along the way. Luckily, there are a number of steps that can be taken to manage parasites in your animals and on your farm.

deally, we will prevent serious issues from ever developing by employing specific grazing strategies as well as the responsible and prudent use of antiparasitic agents. In cases when there is a significant parasite infection impacting the health of your animals, there are still several treatments available to us, however there is real growing concern with the development of parasite resistance to these products.

The use of "integrated pest management" (IPM), a system used in agriculture and forestry, has been instrumental in addressing the increasing resistance issue. IPM is a multi-pronged approach to deal with pests, utilizing different treatment products combined with specific management strategies. Work with your veterinarian to develop an IPM strategy that is catered to your animals and your operation.

Perhaps the scariest parasite when it comes to small ruminants raised on pasture is *Haemonchus contortus*, also known as the "barber pole worm." It attaches to the stomach lining and feeds on blood, causing anaemia and potentially death in your animal if it is left unmanaged. In recent years, this parasite has become increasingly resistant to common treatments which we have started to address with IPM. Another parasite which is important to manage in your flock, particularly in youngstock is coccidia (*Eimeria*). Typical signs of infection include diarrhea (sometimes bloody), dehydration, inappetance, weight loss, and fever, which can eventually lead to death if left untreated. Although adult sheep and goats rarely get sick from coccidia, they can be infected and spread eggs to their young. There are several treatment options available, some which work as preventatives, while others treat active infections.

The following are some important considerations when it comes to deworming:

- Assess your flock thoroughly at least twice per year (ideally spring and fall) to determine if any of your animals require deworming.
 - Use the "Five-Point-Check" method (discussed below)
- Leave 10-30% of the flock untreated (select the healthiest looking animals).
 - Although this sounds counterintuitive, this strategy will maintain a population of "susceptible" parasites in your flock and on your farm and help prevent the development of resistance.
- Perform a "fecal egg count reduction test" at least once every two years.

- Fecal samples are collected from a subset of animals before treatment, and again 10 days after treatment.
 Parasite eggs are counted and compared to determine if the dewormer was effective, or if parasites are gaining resistance.
- Perform this fecal egg test on any purchased and/or incoming animals prior to mixing them with the flock.
- Ensure you dose your animals accurately, according to your veterinarian's directions, as an overdose of dewormer could be very dangerous, possibly fatal. Some products have different formulations and routes of administration (eg. one ivermectin product can be very different from another).

Pasture Management

Pasture management is critical to managing parasites on the farm. An example of how this could be instituted at your farm would be to divide your pasture into 4-5 sections. Rotate your sheep/goats between the different sections weekly. Once you reach the last section, rotate the animals back to the first. This technique gives each section some downtime, allowing parasite levels to die off before your animals return to graze. If you have recently weaned animals, you can graze them one section ahead of the adults. Depending on the size and quality of pasture, you may need to supplement their diets.

"Five-Point-Check" Method

The following is evaluated to assess the health of your flock:

- 1. Eye: FAMACHA Score (see below).
- 2. Back: Body Condition Scoring free scoring charts available online.
- 3. Tail: Dag Scoring looking for clumps of manure dangling from the wool.
- 4. Jaw: Swelling presence suggests barber pole worm infection.
- Nose (sheep): Discharge can suggest nasal bot or lungworm infection. Hair coat quality (goats): Dull coat with and without hair loss can suggest external parasite infections, among other possible health issues.

FAMACHA Scoring

A very useful tool for any small ruminant producer is a FAMACHA score card. The basic premise is that you look at the colour of the lower eyelid conjunctiva (see photo) to identify anaemia due to blood-feeding parasites. The process includes:

- Closing the eye by rolling down the upper eyelid
- Pushing gently on the eye until the upper eyelashes start curling back
- Pulling down the lower eyelid
- Assessing the colour of mucous membranes of the lower eyelid which should pop out at you compared to your FAMACHA reference card

Other things to consider when conducting these scores is the scores of other sheep, consistency of manure, weight gain, fecal egg count, and risk of re-infection.

FAMACHA Decision Chart

Category	Colour	Treatment?
1	Red	No
2	Red-pink	No
3	Pink	Maybe?
4	Pink White	Yes
5	White	Yes



Figure 1: Performing a FAMACHA Score. Source: American Consortium for Small Ruminant Parasite Control (https://www. wormx.info/single-post/2018/05/15/ correlation-between-famacha-fec)

Raising sheep and goats can be a very fun and interesting endeavour, and if managed well, can be a lucrative one too. There are many benefits to having animals out on pasture, both for their own health and the quality of their meat. Pasture does present its challenges however, parasites not least of all. By employing some of what has been discussed in this article, including assessing the health status of your flock and managing your pasture rotations, you can help maintain excellent health in your animals, and know when there might be a problem which requires veterinary assistance. As the old adage goes: "An ounce of prevention is worth a pound of cure". Keeping this in mind when managing your flock will maximize your animals' health, welfare, productivity, and very likely your overall enjoyment and satisfaction with raising small ruminants.



Dr. Mykolas (Myk) Kamaitis grew up on a hobby farm in Flamborough Ontario and graduated from the Ontario Veterinary

College in 2016. He works as a food animal veterinarian at Upper Grand Veterinary Services in Guelph, with his main areas of interests including aquaculture, and small farms and homesteads. Myk and his wife Aurelija, along with their one year old son Antanas have a 10 acre farm in Rockwood, raising pastured poultry and pigs.



COMMUNITY

Unfolding Reciprocal Relationship – Keeping Bees on Someone Else's Farm

By Pia Marquardt and Val Steinnman

Val Steinmannof

Heartwood Farm & Cidery heartwoodfarm.ca/ | Instagram & Facebook: @heartwoodcidery



Heartwood Farm & Cidery is a regenerative, family farm in the Hills HEARTWOOD of Headwaters.

Heartwood is focused on increasing biodiversity and nurturing healthy cycles as they strive to mimic natural ecosystems in their farming. In addition to an on-farm craft cidery, they raise grass-fed livestock, produce maple syrup, and tend several unconventional, permaculture-style fruit and nut orchards. Heartwood Farm hosts four of Pia's beehives.

Pia Marquardt of Denbigh Farms

denbighfarms.ca/ | Instagram: @denbigh.farms

, ~ Denbigh Denbigh Farms is a

Farms Small family business that is split between

Guelph and Denbigh, Ont. The Marquardt Family produces maple syrup, honey, and bee products. Denbigh Farms currently has 41 hives in four locations: their main yard has 21 hives; another yard has 11; five are spread between three urban backyards in Guelph; and Heartwood Farm has four.

EFAO to Val EFAO: Why did you decide to host bees on your farm?

Val: We really value striving for the most diverse ecological farm system possible and we had a fledgling interest in having bees, especially because we saw the importance of pollinators' services to our

fruit tree orchard, but realized there was a steep learning curve and we weren't ready to learn beekeeping ourselves. Ten years ago, a friend approached us looking for space to keep bees and we welcomed her to establish hives on our farm. Building on that experience, we've made space for other beekeepers and we now have Pia's bees and a wonderful reciprocal relationship.

EFAO: What is your relationship with the bees and beekeeper? How involved are you in the beekeeping process?

Val: We're not very involved in the process, although we completely understand the integrity of keeping bees for the goals of our farm and are very interested in having them here. Pia comes and goes and does everything on her own time - it is a very relaxed and fluid relationship. We do some of the land maintenance in and around the bee yard, but Pia does all the work directly in front of the hive. It's not a heavy responsibility for us at all.

EFAO: Can you speak to the opportunities and challenges of hosting bees?

Val: One of the biggest opportunities is to have the bee pollinator services without the responsibilities of tending to the bees. We offer on-farm tours to the public and are so happy to discuss the role of the bees on the farm. It helps to make the connections between the plight of the bees and the responsibility of our farm to help mitigate that. The bees help to illustrate biodiversity on a regenerative farm and this is a great addition to our educational offerings.

Another one of the wonderful parts of our relationship is that the honey that is harvested on our farm is separated from the rest of the honey that Pia sells and we're able to offer that honey to our customers.

The challenges have mostly been theoretical for us. We're partly an educational farm so we need to consider the interactions between bees and the public as a potential hazard to both. I also have to consider the placement of my animals in relation to the bee yard. The challenges are minor and the opportunities far outweigh them.

EFAO: Is there any information you would share with someone who is considering hosting bees on their farm?

Val: One thing I would say to farmers who are considering hosting bees on their farm is not to assume that you're doing a favour to the beekeeper as the beekeeper is also offering a benefit to you. Some beekeepers do charge to keep bees on farms and one shouldn't assume that the arrangement doesn't involve some financial contribution from the farmer. I suggest getting clear on the arrangement with the beekeeper before the bees arrive. Asking questions like: will I get a percentage of the honey? Will there be any rental fees charged from the beekeeper? Is there an opportunity for the farmer to sell the honey? Is there a wholesale price vs a retail price?

It is also important to have an in-person conversation about beehive placement. Farmers know the patterns of usage on their farm, where equipment is stored, where animals are moved and a



Pia Marquardt bees located at Heartwood Farm & Cidery

farmer may consider different sites than the beekeeper would. The beekeeper will want to consider other factors for good hive placement like shelter, sun exposure, and how to access hives.

EFAO: Anything else you'd like to add?

Val: Having collaborative relationships on the farm is so important to us. It's not just what beneficial aspects that the bees bring, but also what other people bring to our farm; their dreams and passions and the care and love that comes with them. We're interested in bringing new relationships and friendships to the farm and we enjoy having people like Pia in our community. It is the unfolding reciprocal relationships that gives the opportunity to share passions together. It all adds to the richness of the farm and it is what makes farm life and a rural community rich.

EFAO to Pia EFAO: Why did you decide to host your bees on another person's farm?

Pia: I decided to expand my apiary and one bee yard can only hold so many colonies.

In certain cases the farmer might contact a beekeeper to have bees on their farm.

EFAO: Can you share some of the financial considerations of hosting your bees on another farm?

Pia: We have a good reciprocal relationship with Heartwood Farm & Cidery. They enjoy having the bees there to help pollinate their orchard and crops and it allows me another avenue to sell honey. We do rent hives to people who are not comfortable or don't have the knowledge to maintain their own hives but enjoy the idea of having bees on their property. In this case, typically we guarantee the landowner a certain amount of honey in exchange for a rental fee to have (and maintain) the hives on their property.

EFAO: Can you talk a bit about what needs to be considered when putting bees in a location that isn't your own, like someone's farm? What are the opportunities and challenges?

Pia: Typically, we want to make sure the hives are located somewhere where they

will be sheltered from the elements (high winds/ winter storms) but in an area that is relatively open so the bees have a good flight path. We also want to make sure that the hives have good access to the south so they can absorb the sun's heat during the wintertime. It is also important to make sure that the bees are not in a high traffic area on the property. Honeybees are typically pretty passive insects, however, they do not like constant human traffic (or other animals) in front of their hives.

Other than that, honeybees can forage as far as 6 km on any trip, so it's a pretty big area that they can cover to get access to nectar, water, or pollen. We also like to know what kind of land use is surrounding our hives. For example, the conditions at Heartwood Farm & Cidery are excellent for honeybees as there are no pesticides, herbicides, or GMOs used.

EFAO: Where and how do you sell your bee products?

Pia: I sell honey, comb honey, beeswax, beeswax candles, lip balm, and beeswax food wraps. There are a number of channels in which we sell our products. About 50% of our product is sold directly to consumers either through the farm gate, our website, other web-based platforms, or word of mouth.

We do sell some through seasonal markets, however, due to Covid-19, most of these have been cancelled in 2020 and we anticipate for the first part of 2021. Some specialty stores, convenience stores, artisan shops, and butcher shops carry our jarred product.

Some of our products are sold in bulk. We sell to bakeries who use it for cooking. There are also a few that use our products to make high-end facial creams, hair and skin products.

Take Advantage of Member Discounts!

Did you know EFAO members receive discounted rates at Dubois Agrinovation, Local Line, EF Sauder and Wellington Paper Products?

To access these exclusive rates, log into your member account at efao.ca and go to "Member Special Offers", or contact the office to find out more!

EFAO NEWS

A Big Welcome to Laura and Angel!

EFAO is very excited to welcome two new members to the team: Angel Beyde, as Anti-Racism and Equity Consultant, and Laura Northey, as Communications and Government Relations Manager.

Angel Beyde



Angel is supporting EFAO to increase its understanding and take action on antiracism towards Black, Indigenous and other people of colour, and to better meet the needs of members and farmers who are currently underrepresented in the organization and the ecological farming movement at large.

Angel is a Black / mixed race grower of food and flowers. An Organic Master Gardener, educator and facilitator, Angel has worked in Urban Ag, ecolandscaping and non-profits for many years. She is passionate about regenerative growing practices as key to food security and community abundance. Angel and her husband Raph are currently looking for rural land with a home to start their organic market garden Good Fortune Farmstead in 2021.

Laura Northey



Laura manages EFAO's web and print communications, and acts as a liaison between EFAO and the Farmers for Climate Solutions coalition. Prior to working for EFAO, Laura served as Communications & Membership Manager for the Organic Council of Ontario, where she gained in-depth knowledge of the organic sector, and became familiar with the diverse approaches that make up the ecological agriculture movement.

Laura holds a B.A. in English Literature from Carleton University and a Certificate in Corporate Communications & Public Relations from Seneca College. Over the course of her career, she has had a wide range of work experiences with public, private, and non-profit organizations, including a season as an apprentice on a permaculture farm in Nova Scotia, and one running a CSA and market garden on her family farm. Laura is passionate about environmental issues. and is thrilled to contribute to real-world solutions to climate change through EFAO's work with Farmers for Climate Solutions.

A New Board Member

We are thrilled to have Brett Israel joining the EFAO Board this year. Brett has been actively involved in EFAO's new Small Grains Program, and brings valuable experience in field crop production.

Brett Israel farms in Wellington County as part of 3Gen Organics Family Farm. Along with his parents and grandparents, Brett farms 750 acres of certified organic cropland and raises organic pigs as part of their farrow to finish swine herd. Brett is committed to biological, regenerative agriculture and is passionate about the interaction of livestock and diverse cropping systems.

To learn more about all returning Board members visit efao.ca/team



Highlights from the 2020 Annual Report

This past year has been one unlike any other, as we have all coped and adapted to the COVID-19 pandemic. As an organization it has been a year of adaptation, and one defined by new initiatives, collaboration and strategic planning. A few highlights from the year include:

- Over the past year EFAO has had a total of **720 members.** That is almost **200 new members** from the previous year!
- This year **74 members** taught **1212 people** at **80 events.** This included 69 virtual events, 40 of which were hosted in partnership with Ignatius Farm and Everdale as part of the Ignatius New Farmer Training Program.
- EFAO is in its fifth year of supporting members to answer their specific on-farm questions with farmer-led research. In 2020, **40 different** farmer-researchers conducted **25**

on-farm trials in cooperation with EFAO.

 EFAO's pilot Small Grains Program is supporting Ontario farmers to diversify their crop rotation by adding a new small grain followed by a legume cover or forage crop. In 2021 EFAO will be supporting
8 farmers to grow 600 acres of new small grain.

To read the full annual report please visit: efao.ca/annualreport2020/

2020 EFAO Carrot Cache \$1,000 Innovation Prize Winner

By Mill Valley Farm

I made this mobile produce stand with a fridge after deciding to sell a little more than just sweet corn out of the driveway this year. We had always sold our corn out of a John Deere lawn trailer beside the road, and if I was going to upgrade, I wanted it to meet a couple of important criteria.

- It had to have some form of refrigeration, I did not want to be tossing out veggies after a day or two. Not only would the veggies keep better, giving a better product, but I also would not have to spend as much time picking. I figured I would be money ahead even considering electricity.
- 2. It had to be mobile, to cut the grass around it and to tuck away for the winter (driveway space is a hot commodity), which meant the fridge had to be able to be raised up off the ground.

- It had to have space for a range of products (pickles/preserves, and to turn it around to use for pumpkins).
- 4. It had to look more inviting than a rusty garden trailer.

While it is unique as a whole, probably the most innovative part (I think) of the whole

thing is the platform for raising and lowering the fridge that I fabricated, which uses two screw jacks, suspending the whole fridge up to 10 inches up off the ground. It can easily be moved by one person. Overall I'm really happy with how it turned out. I thought the cost was reasonable considering what a big upgrade it was, and it should serve me well for a long time.



Dean Orr from Mill Valley Farm won the \$1,000 Carrot Cache Innovation Prize, offered annually at the EFAO Conference. Innovations are submitted and posted at the conference, then participants vote for the winner. Congratulations Mill Valley Farm! Stay tuned for information about how your innovation could win \$1,000 at next year's conference.

MEMBER PROFILE

Antonio Gomes, Cavaleiro Farm

Website: http://cavaleiro.farm/ Instagram: @cavaleirofarm Facebook: @cavaleirofarm

avaleiro Farm is an agroecological farm in Schomberg, Ontario, that produces vegetables, lamb, and eggs, and helps train food growers and people looking to live the farm life.

EFAO: When/how did you start the farm? What's different now than when you started?

Antonio: I started the farm six years ago. Back then, the land hadn't been farmed for 20 years, so a lot of the infrastructure was

deteriorated. But at the same time, the land was really healthy and clean.

At first, I spent a year just walking and being on the land. Then I had other farmers, gardeners, and community members visit the farm. Through observations and conversations, I better understood how to work with nature on my land. This is the approach I take with clients when they're building their own farms.



There's been a lot of changes since then. We've built ponds, fixed roads, put up fencing, and planted hundreds of trees. We've built four greenhouses and figured out where it's good (or not good) to grow veggies. We've learned which part of the land gets really wet in the spring, and which part dries out in a drought.

So what's changed is that we don't have an ignored farm

How to Place a Classified Ad

Send your ad (up to 40 words, plus contact info) to admin@efao.ca. Classifieds are \$15 for EFAO members and \$25 for non-members, and \$0.25 per word above 40 words.

Classifieds also appear on the Opportunities page of the EFAO website.





anymore. We have a working farm that's getting better and better every year.

EFAO: When/why/ how did you start the non-production parts (i.e. inviting other farmers and community members to have businesses and/or residences on the farm)?

Antonio: Early on, I was alone on the farm and had tools and infrastructure I wasn't using all the time. Since my farm is so big, I thought maybe I could leverage what I have and bring in other people who could help grow the farm faster or

complement what I was doing on the farm with their own projects.

I had worked on other farms where I saw the power of people learning and working together. It seemed a lot quicker





Cavalerio Farm breed ducks, chicken, and turkey.

and more fun than me trying to do it by myself. So from there, I started sharing the space and getting others involved with the farm.

EFAO: Have you come up against any regulations with this model and how have you navigated these?

Antonio: I've had the town come by my farm a few times over the years. One story has to do with the Toronto Zoo and pandas. The zoo was required to feed their pandas organic bamboo. But pandas are picky eaters and don't eat 100% of the bamboo, so the zoo was trying to figure out what to do with the big pile of leftover bamboo. I thought: well, nature doesn't create waste, it must be useful. So through the farming community, we got in contact with the zoo. They asked us, "What can you do

with the bamboo?" I said I'd make a berm with the bamboo where I wanted to plant trees and also use it as mulch.

But someone complained at the berm being "unsightly," and the town came by for months to harass me to move it. I overcame it by saying, "I'm an organic farmer, and I'm planting trees and making my land better." When the town comes around because of a complaint, they often expect to find folks just riding around on ATVs and having fun on the land. But when you show them you're growing food, they usually get on your side and try to

help. They left me alone after that.

EFAO: Can you talk about the role of trades and barters in your farm business plan? Why has this model been successful for you?

Antonio: The barter model became useful when farmers would approach me to do a project or farm on my land, but when we tallied up the costs associated with the

project, it just didn't make economic sense. It would cost the farmer more money than they'd make off of farming.

But aside from economics, the projects made sense to do. So how could we still make it happen? That's when we started taking this approach of barter and trades, upcycling and recycling, to reduce costs and take out some of the economic factors. That changed the bottomline for farmers, which made it worthwhile for them to pursue their farm projects (and dreams).

EFAO: What is your vision for this space and your business in five years?

Antonio: In five years, I want to have more workers as well as people learning here on the farm. They'd learn how to design and run farms, and gain farm life skills, so they could move on to starting their own farms. They'd use our farm not only as a place to learn but as a place from where to take plants, trees, and animals to start their own nurseries and flocks.

By then, our food production would also be an efficient, cost-effective system and I'd have food year round. The farm would be using its own resources and producing its own energy – just being more self-sufficient overall.

Also, I'd like to go on regular trips off the farm... to visit other farms.

EFAO: What advice would you give to someone wishing to share land in community this way?

Antonio: It's important to work through the personal and community dynamics, because it's such an investment. Also, be aware that everyone won't be the best fit for your community. There are many opportunities to work with different people, but it's kind of like serious dating: you want to get to know people and make sure your values are aligned, and also find out what each other's plans are to see if there's compatibility.

Also, don't reinvent the wheel. A lot of farms and folks have already developed great models and figured out how to do

> this. When newer farmers get into it, they often start from square one. That can be costly and waste time. A lot of the community skills are not as common as they used to be in our society in general, so I would learn from other great farms to speed up the process. And if you're really serious about it, come to us and we can help you do it faster. We provide different services to help landowners and farmers to give them patterns or processes that work. 🔳



PHOTO HIGHLIGHTS









2020 Virtual EFAO Conference

This year's Conference was like none this community has ever experienced before. In lieu of in-person meet-ups and a good old-fashioned hoedown, there was a virtual concert, Zoom meetups, and a selfie/ snapshot contest on social media! Thanks to all who participated – it was wonderful to see your faces.

- 1. Congratulations to our selfie/snapshot contest winners, Kim Barker from Mulberry Moon Farm and her little helper, Lark.
- 2. Angelina Reesor and Kyle Warren from County Left Farm, learning about seedling production with Trout Lily Nursery.
- **3. Tony and Fran McQuail** of Meeting Place Organic Farm labelling apple butter while attending the conference virtually.
- **4. Laura Boyle and Sandy** (the chicken) of High Spirits Farm, enjoying the conference together.



ADVERTORIAL

Creating Spectacular Customer Experiences with Good Design

By Krista Hulshof, Architect

VELD architect helps agritourism operators create functional AND memorable farm experiences! Go from offering good but unspectacular farm experiences to a remarkable farm experience that people can't help but talk about using VELD's AqVisioning Process.

GOOD DESIGN IS GOOD BUSINESS!

A customer who has a great experience will share that great experience with friends! So how do you create a great experience? I firmly believe it is with good design of the property, the buildings, the product, the branding, the story. All this is designed, it can't just happen, it has to be thought about and it has to be cohesive.

People use the visual cues on your farm to determine how to behave, where they can go, and where they should go next. You need to use these cues to help make people feel comfortable on your property, guide them to where they can be engaged, and give them the best experience possible!

FIRST IMPRESSIONS are important, we all know that, so don't underestimate the importance of entry to your property! Entry to your property is SOOOO important! A well designed entry is the difference between your customer feeling welcome, or wondering if they are in the right place. The clarity of entry will tell your visitors what's private and what is for them to explore. This is essential to protecting your personal privacy! It immediately shows your customer where to drive, park, and walk before they even leave their car. The following tools are all cues visitors will react to:

- Signage at the lane
- Fences



- Clear views of the public areas
- Clear parking areas
- Clearly marked building entrances (marked not with signage, but architectureal features to give clues; canopies, glass doors, etc.)

SITE FLOWS: After arriving you want to make the flow around your site clear, easy and comfortable. The site should have good flow so the customer doesn't miss any of the great things your site offers! If your property requires a site map, then it probably isn't working very well. Use these cues:

- Clearly maintained paths and lanes
- Fences
- Landscaping, tree lines

Visitors who go from simply coming, to participating in the farm life will be more connected to a place and will want to come back. Think about moments and places where your visitors can participate in your farm activities.

MAKING PLACES to be and reflect. When customers have a place to be, they will stay longer, they will reflect and connect with the experience and place. Places are made using

- Fireplaces and fire pits
- picnic tables and benches
- Shade
- Pavilions
- Animals
- Selfie spots

Create places and spaces with a WOW factor. Buildings and spaces that leave an impression on your visitors that they will remember and share. How do these spaces tell your farm story? How are they different from other farm stories? What are your farm's WOW moments?

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2020 Research Highlights

The virtual Research Symposium on November 20, 2020 was attended by over 100 participants. The highlight of EFAO's research year, the Symposium is a space for farmer-researchers to share and celebrate their findings. Although some adjustment was required, the digital format didn't disappoint and the online chat even brought unexpected energy to the Q&A.

You can read the full reports and listen to summaries by farmer-researchers at efao.ca/research-2020.

"The process of farmerled research helped me to evaluate my [chicken] system to make it more efficient and gave me a good platform to continue answering questions on my own."

> Heather Newman, D&H Newman Farm

Performance of Chantecler chickens on a reduced protein grower ration Heather Newman, D&H Newman Farm, Bruce County



^{m,} ALTERNATIVE LIVESTOCK FEED

■ Listen to Heather's summary online!

What Heather was curious about:

Heather was curious whether Chanteclers, a slow-growing dual purpose bird and one of Canada's only heritage breeds of chicken, grow well with less protein.

How Heather investigated this:

Heather compared a standard protein ration with 16% protein to a reduced

protein ration with 13% protein. She tracked the health and weight of three cohorts of chickens, taking more than 1,000 weight measurements of individual chickens during the grow-out period.

What Heather found:

- Reducing protein from 16% to 13% during the grow-out did not affect weight or health of pasture-raised Chantecler chickens in a noticeable way in this study.
- Using a reduced protein ration, Heather saved 4-5% on feed cost and also reduced her dependency on soybean as a protein source.

Efficacy of mycorrhizal inoculants on vegetable transplants Dianne Kretschmar, Grenville Farms, District of Muskoka



DISEASE & PEST CONTROL

What Dianne was curious about:

Given the incredible importance of fungi in our world, Dianne was curious if arbuscular mycorrhizal fungi (AMF) inoculants improved lettuce and onion yields.

How Dianne investigated this:

In 2019, Dianne used AMF inoculants for the first time and observed particularly large, healthy lettuce and onions. In 2020, she set-up a randomized and replicated trial comparing two inoculants to uninoculated controls for Ariana, Cantarix, Nevada and Skyphos lettuce and Patterson onion.

What Dianne found:

 Lettuce and onions plants were generally large and healthy, and Dianne detected no effects of the inoculants on yield.

• She wonders if the design of the trial was flawed because she unsuspectingly inoculated and/ or resuscitated the mycorrhizal community of her whole garden in 2019.

Assessing chronology of soil nutrient status in pastures across a topographic

gradient Andy MacDonald, Highland Farm, Wellington County



PASTURE REGENERATION

() Listen to Andy's summary online!

What Andy was curious about:

Since topography and animal behaviour exert differential effects on grazing and excretion behavior, Andy was curious to know whether he should amend new

BULK TREES

Bundles of 25 bare-root shrubs: Hazelnuts, Elderberries, Serviceberries



Seedling hybrid hazelnuts from robust, 20-year field-tested gene pool, blight resistant, hardy (Zone 4), early producing, good nut size, adapted to no-spray. Many more rare edible perennials - selling out fast.

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and old pastures differently across the hillslope.

How Andy investigated this:

Andy assessed soil nutrient status from the top slope, side slope and bottom slope of a 50-year old pasture and a hay field that he will start grazing in 2021.

What Andy found:

 Pasture age influenced the status of organic matter, potassium, phosphorus and iron, which were all higher in the older pasture. Topography influenced only potassium, which was higher on the top slope.

In search of short season northern grain amaranth varieties: A screening trial of grain amaranth (Amaranthus spp)

Ronaldo Eleazar Lec Ajcot & Myriam Legault, Ecology and Solidarity Council (ECOSOL), Wellington County



■ Listen to Ronaldo's summary online!

What Ronaldo and Myriam were curious about:

Ronaldo and Myriam were curious which varieties of amaranth are best suited for their region of southern Ontario.

How Ronaldo and Myriam investigated this:

They compared five varieties of amaranth in an unreplicated screening trial.

What Ronaldo and Myriam found:

They observed differences among the varieties in germination, flowering times, flowering pattern and yield. From their observations, they concluded that Grain Amaranth from Richters Herbs and Atitlan Dorado from IMAP Guatemala merit consideration for a replicated trial.

Ronaldo and Myriam are continuing their evaluation of amaranth in 2021.

If you are interested in participating in their multi-farm variety trial, please contact Rebecca Ivanoff, rebecca@efao.ca.

Also see Ronaldo's profile on page 10.

In search of short season northern sweet potatoes: Variety trials of new sweet potato (Ipomoea batatas) crosses

Kate Garvie, Heartbeet Farm, City of Ottawa | Erin Richan, Highland Gem, Lanark County | Lise-Anne Léveillé, BeetBox Cooperative Farm, City of Ottawa

■ Listen to Kate's summary online!

What Kate, Erin and Lise-Anne were curious about:

As demand for sweet potatoes grows in Canada, Kate, Erin and Lise-Anne are curious if they can breed sweet potatoes that are adapted to eastern Ontario.

How Kate, Erin and Lise-Anne investigated this:

To identify the best performing crosses of sweet potato for organic farming systems in the Ottawa area, Kate, Erin and Lise-Anne compared nine new crosses of sweet potato and one check variety (Covington) in a replicated and randomized trial across three farms.

What Kate, Erin and Lise-Anne found:

They identified three crosses that they think are definitely worth continuing to grow and observe, and another two "runner-up" crosses that are also promising. To keep the genetics of these unique crosses, Kate plans on producing and growing out slips from the five promising tubers this coming year. In future years, they are interested to know how environmental conditions and cultural practices affect the appearance (cracking, tuber size) and tuber habit (compact vs dispersed) of the crosses.

Grafting for organic low-tech greenhouse tomatoes

R. Victor & Nathan Klassen, Nith Valley Organics, Oxford County



Kate Garvie, of HeartBeet Farm in the Ottawa area, harvests sweet potatoes that she planted as a buffer around her sweet potato variety trial.

■ Listen to Victor's summary online!

What Victor and Nathan were curious about: As a follow-up to their 2019 multi-farm trial, Victor and Nathan were curious whether different rootstocks confer a production advantage for different tomato varieties.

How Victor and Nathan investigated this: They compared five large tomato varieties and four cherry tomato varieties grown by grafting onto four different rootstocks and an ungrafted control.



September 2020 planting of a spinach variety trial at Root Cellar Gardens. Results will be available later this year! (Credit: Evalisa McIllfaterick)

What Victor and Nathan found:

- The best choice of rootstock was specific to the scion.
- Compared to ungrafted plants, Caiman F1 tomatoes had great yield and profitability when grafted to DR0141TX rootstock.
- The value in grafting cherry tomatoes was relatively compelling for some varieties (Sakura on Fortanimo or Estanimo), but not others (Bartelly).
- There was no improvement to the "heirloom-like" hybrid varieties, but a significant (18%) improvement for open-pollinated Striped German grafted onto Fortanimo. Given the price advantage of these tomatoes, this may well be economically significant, if it is repeatable.

Regeneration of fallow fields for vegetable production Eric Barnhorst, Eva Mae Farm

Eric Barnhorst, Eva Mae Farm, Northumberland County



SOIL HEALTH

■ Listen to Eric's summary online!

What Eric was curious about:

Eric was curious to know the best way to raise soil organic matter and balance nutrient status before he starts growing vegetables in a degraded area on his farm.

How Eric investigated this:

Eric assessed five methods for soil regeneration while balancing cost to implement, including mowing weeds (control), mowing + micronutrient amendments, mowing + micronutrients + diverse cover crop mix, mowing + micronutrients + cover crops + chicken manure, and mowing + micronutrients + cover crops + chicken manure + woody compost. He replicated the five treatments across four replicate blocks, for a total of 20 plots.

What Eric found:

 Cover crops with micronutrient amendments increased active carbon, a sensitive indicator of soil health and soil regeneration potential.

- Micronutrient amendment alone did not increase active carbon, and Eric saw no added soil health benefit when adding chicken manure or woody compost with cover crops.
- Balancing cost and soil health benefits, Eric will focus on micronutrient application and full season cover crops in areas that require regeneration.

Assessing methods for nutrient application to prevent chlorosis in chestnuts

Derick Greenly, Summergreen Tree Crops & Mushrooms, Northumberland County

What Derick was curious about:

Derick was curious to see the performance of different methods to prevent chlorosis in chestnuts.

How Derick investigated this:

On four replicate blocks with four trees per section, Derick compared broadcasting nutrients, localized application of nutrients and no amendment controls. After a year of growth, he measured tree height and leaf nutrient status.

What Derick found:

- No difference in plant health or leaf nutrient status between the two amendment methods. Given the extra labour involved with the localized treatment, he will not broadcast any amendments moving forward.
- Higher leaf potassium levels in the amended trees, which is important for iron availability in the plant.

Direct seeding into compost mulch

Jason Hayes, Burdock Grove Farm, Grey County

■ Listen to Jason's summary online!

What Jason was curious about:

To reduce tillage for crops that are direct-seeded, Jason was curious to compare lettuce and carrots using different composts in a no-till deep bed system.

How Jason investigated this:

For one planting of lettuce and carrots, Jason compared replicate 1×1 meter sections of different composts against a bare ground control.

What Jason found:

- Results showed that direct seeding lettuce and carrots into deep compost is possible, but efficacy depends on the specific compost.
- When considering a compost for direct seeding, Jason recommends a very fine particle size, and either a high clay content or a very mature compost, or both. Moisture holding ability is key where irrigation water, and the energy to pump it, are limited.

No-till tomatoes 3-ways

Matt Jones, Jones Family Greens, Hamilton-Wentworth County

■ Listen to Matt's summary online!

What Matt was curious about:

In this context, Matt was curious to compare three methods for no-till organic tomato production.





How Matt investigated this:

Matt compared six replicate blocks of notill tomatoes three ways using compost + landscape fabric, compost + cover crop + landscape fabric, and compost + cardboard + landscape fabric.

What Matt found:

- The three no-till methods for tomato production did not affect tomato yield or water infiltration (an indicator of soil health) differently.
- This data indicates that Matt's business-as-usual method for no-till tomato production that includes using compost and landscape fabric provides his tomatoes with sufficient fertility for full season growth.

Effects of liquid and biological amendments on emergence and yield of no-till planted spring cereals Ken Laing, Orchard Hill Farm, Elgin County

■ Listen to Ken's summary online!

What Ken was curious about:

To push the potential for no-till spring cereals further, Ken was curious whether different amendments hastened emergence and increased yields in notill planted oats.

How Ken investigated this:

Ken compared oat yields in five replicate blocks with a liquid seed amendment, biological seed amendment, a combination of the two, and a noamendment control.

What Ken found:

- Despite the ideal conditions to test amendments to hasten emergence, neither the addition of liquid or biological amendments led to increased yield.
- Soil drainage and soil quantity and quality were overriding factors affecting oat yield.

No-till fall broccoli in northern Ontario

Ryan Spence & Isabelle Spence-Legault, Field Good Farms / J'me Champ Bien, West Nipissing County

(1) Listen to Ryan's summary in english online

 Écoutez le résumé d'Isabelle en français en ligne

What Ryan and Isabelle were curious about:

Ryan and Isabelle were curious whether a crimped cover crop would work for their fall broccoli crop.

How Ryan and Isabelle investigated this:

They compared four replicate blocks of broccoli grown in a crimped cover crop of rye and hairy vetch to control plots of tilled broccoli.

What Ryan and Isabelle found:

• The rye and hairy vetch cover crop residue provided sufficient mulch to significantly reduce weeding time and increase soil moisture throughout the growing season by 11%.



Peas and oats off to a good start in early October in one of Ryan and Isabelle's control plots. (Credit: Ryan Spence)

- However, broccoli grown in crimped cover crop mulch had around half the marketable yield compared to the tilled plots.
- The yield loss, combined with no difference in total labour, made this



Ryan Spence and farm apprentice Becky seeding peas and oats in August 2019 as part of Ryan and Isabelle's randomized complete block research trial. (Credit: Isabelle Spence-Legault)

no-till system as tested unviable for broccoli production.

Coming this winter! Stay tuned for full reports on: Southern Ontario participatory pepper breeding project Annie Richard, Kim Delaney, Greta

Kryger, Rebecca Ivanoff and Kathy Rothermel SeedWorks Breeding Club

Summer and fall leaf lettuce variety trials

Angie Koch, Ann Slater, Laurie and Corey Ahrens, Jon Gagnon, Sarah Judd, Lise-Anne Léveillé, Hilary Moore, Harold Saunders and Martina Schaefer.

Funding for these projects was made possible by the **Robert and Moira Sansom Ideas Foundation**, a fund within the **London Community Foundation**; the **Brian and Joannah**

Lawson Family Foundation; the Canadian Agriculture Partnership, a five-year federal-provincial-territorial initiative; FedNor; and the Ontario Trillium Foundation, an agency of the government of Ontario.

Membership Registration

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The Maitland Valley Conservation Authority:

A Watershed Approach to Helping Farmers Improve the Resiliency of their Farms

By Phil Beard

The Maitland Valley Conservation Authority is one of 36 conservation authorities in the Province of Ontario. We were established in 1951 by the Province of Ontario and at the request of the municipalities in the watershed to further the conservation of non-renewable resources such as soil, water, forests and wildlife. We are governed and primarily funded by representatives appointed by the municipalities in the watershed.

The Maitland Valley Conservation Authority (MVCA) has a long history of working with the EFAO, and was in fact instrumental in the organization's operations and growth in its early years. To read more about the history of the relationship between EFAO and MVCA please visit efao.ca/mvca.

The Maitland watershed is primarily an agricultural watershed, with almost 80% of the watershed used for agriculture. One of MVCA's major services is working with farmers to help them keep soil and nutrients on the land and out of watercourses. We provide a number of services that help farmers to improve soil health, reduce erosion and improve the health of rivers and streams.

Our rapidly changing climate is dramatically changing our seasons. Summers are hotter and drier. Rainfall events tend to be restricted to localized intense thunderstorms. Our winters are warmer and wetter, with more frequent thaw events accompanied by rain. Over the past 10 years we have worked with groups of farmers in different sub watersheds to develop and test a number of changes to help them to improve the resiliency of their farming systems. The four key system changes that we are working with farmers on are:

- 1. Rural Storm Water Management: In order to reduce the impacts of rapid snowmelt and intense rainfall events, we work with farmers to incorporate conservation measures that will "slow the water down, spread it out and allow it to soak in." We encourage improving soil health through changes in rotation, tillage and the incorporation of cover crops, which helps to improve infiltration into the soil. Grassed waterways, storm water ponds or wetlands and berms help to slow down any runoff that cannot be absorbed by the soil. We have undertaken two major rural storm water management projects with farmers in the Port Albert and Belgrave areas.
- 2. Restoration of Flood Plain and River Valley Areas: Over the past 50 years many tributaries of the Maitland River have been straightened and deepened so that the flood plain can be cleared for growing crops or pasturing livestock. Changing precipitation patterns has increased the risk of flooding and loss of soil and nutrients in flood plain areas. MVCA is working with farmers in the headwaters of the Middle Maitland watershed upstream of Listowel to



restore these areas as either natural areas or permanent hay.

We provide farmers with an incentive of \$250 per acre for 10 years to restore flood plain areas as natural areas. MVCA also covers the cost of planting native trees, shrubs and plants in the area. If the farmer is interested in converting the area into permanent pasture, we provide an incentive of \$75 per acre for 10 years.

- Cover Crops: There is a renewed interest by farmers in planting cover crops in the Maitland watershed.
 Farmers understand the importance of keeping their soil and nutrients on the land and cover crops help them to do that. They also realize that cover crops help to improve the health of their soil, along with the use of conservation tillage and crop rotation.
- 4. Buffer Strips, Wind breaks and Reforestation of Marginal Farm Land: MVCA also works with farmers who are interested in developing buffer strips along their watercourses, windbreaks along their fence lines as well as to reforest marginal agricultural land.

One of the biggest challenges we face is the lack of long term programs to support farmers and landowners with these systemic changes across the



From the Middle Maitland Headwaters Restoration Project. Floodplain land where it is used for growing corn, wheat and soybeans. MVCA is working with this farmer to restore this flood plain area.

watershed. Given the speed and extent to which the climate is changing, we are unsure if these changes will provide enough resiliency to the impacts that scientists are projecting to occur.

Over the past 20 years MVCA has been working with Rod MacRae, Associate Professor of Food Studies at York University to research how farming systems will need to change so that they will be more resilient to the changes in climate that are expected to occur in the future. Rod is a long time researcher and supporter of ecological farming systems. Over the past 20 years, Rod has updated this report three times. The latest update to this report, titled How Will Your Farm Cope With a Changing Climate profiles farmers who have transformed their farming systems in ways that they think will make their farm more resilient as well as ecological. They are growing more perennial crops, and including livestock that they think will be better adapted to surviving in a hotter drier climate. The farmers profiled in the paper, are also focussed on eliminating their use of fossil fuels, restoring

degraded ecosystems as well as growing crops that are compatible with the ecology of the area they are located in. You can find a link to the full report at the bottom of efao.ca/mvca.

Rod's research has provided us with an opportunity to think about how we should transform our food and farming system so that we can eliminate our use of fossil fuels, restore our rivers, streams, forests and wetlands, identify crops and livestock that will thrive in

a more unstable climate as well as provide nutritious food that people need to be healthy.

Farmers are the ultimate innovators when met with a challenge however they will need to be proactive and have the support and leadership from government,



From the Middle Maitland Headwaters Restoration Project. A farm where the floodplain has been restored with native wildflowers and shrubs. The adjacent river valley lands have been converted to permanent pasture. This land had been used for corn, wheat and soybeans.

industry and society if we are going to be successful in developing a more resilient and ecological food system.

Phil Beard has been a member of EFAO since the mid 1980's. He served on the Board of Directors from 1986 to 1993. Phil lives in Wingham and is the General Manager-Secretary-Treasurer of the Maitland Valley Conservation Authority.



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FIELD CROPS

Cover Crop-Based Organic No-Till Soybean Production in Ontario

By Jake Munroe

Why organic no-till?

Organic soybean production relies on a significant amount of tillage for weed control. When done well, weeds are kept in check and growers get good yields. There are drawbacks, however, including a high labour demand in the spring and the potential for soil degradation over time.

Cover crop-based organic no-till soybean production has been developed in recent years. It uses a roller crimper to terminate and lay rye – or another suitable cereal – flat once it's flowered. Soybeans are seeded into the mulch, which, if thick enough, provides seasonlong weed suppression. The cover crop-based organic no-till system offers advantages of labour and fuel savings, as well as soil health improvements, but it is not without risk. Until now, the system had not been evaluated through research trials in Ontario.

Ontario research

As part of a two-year OSCIA Tier 2 trial in collaboration with EFAO's Farmer-Led Research Program, Heartland Soil and Crop Improvement Association compared cover crop-based organic no-till soybean production to standard practices. The goals were to evaluate performance, identify barriers to success and develop Ontario-specific recommendations.

A total of seven replicated strip-trials across four counties were conducted in 2019 and 2020. On-farm trials were managed organically. Herbicides were used for weed control in "standard practice" strips of small plot trials. In addition, nine observational organic notill fields were followed closely. Rye was drilled in September or early October across the sites and seeded at a rate of 3 bushels/acre (168 lbs/acre) for the striptrial sites.

What did we learn? Seed rye early

A thick, competitive stand of rye is critical for the cover crop-based organic no-till system to work. The most consistent observation made across project sites was the importance of early rye seeding. All trial sites seeded before September 22nd achieved more than 5,500 lbs/acre dry matter, while those seeded after were consistently below that threshold (Table 1). In nearby New York state, achieving >6,000 lbs/acre of rye biomass has been identified as critical for successful weed suppression¹. Rye was seeded following early-harvested crops such as small grains, sweet corn and corn silage.



Figure 1. Cereal rye biomass at crimping vs. rye seeding date listed by Julian Date, or number of days since January 1st.

Early seeding and background soil fertility were also critical to achieving a thick, competitive rye stand in the spring. Figure 2 shows the difference between an early seeding on soil with good fertility and later seeding on a low fertility soil. The late seeding did not provide adequate weed suppression and resulted in a very weedy soybean crop.



Figure 2. Thick cereal rye stand at the Drayton site on April 18, 2020 (left) compared to a thin stand at the laterseeded Elora plot on April 8, 2020 (right).

Use appropriate soybean seeding equipment

Another major finding was the importance of appropriate soybean seeding equipment for the high-residue conditions of this system. We had success using a planter set up for no-till conditions: sufficient down-pressure, sharp openers and appropriate closing wheels. Although no-till drills were generally successful as well, one site had a patchy stand because the drill could not effectively cut through the mulch. Planters are more likely to be effective in high rye biomass conditions and when the rye is crimped before soybean seeding.

Rye affects soybean development

Roller crimped rye creates a cooler, darker environment at the soil surface that reduces weed seed germination. Those same conditions also slow the



Figure 3. Solid-seeded soybeans in the cover crop-based organic no-till treatment at a trial site near Seaforth in 2020. Photos taken on July 6th (left) and August 13th (right).

early growth and development of soybeans in the organic no-till system. Soybeans were typically slow to emerge from the mulch (Figure 3A). They lagged one full growth stage behind the no-rye control strips, reached only half to threequarters the height and canopied late in the season (Figure 3B).

Cereal rye can also greatly affect soil moisture conditions. Data loggers monitored conditions at three trial sites over the two years. While rye reduced evaporation and kept the soil surface wetter during the soggy conditions of 2019, it can transpire large quantities of water. In 2020, it significantly reduced soil moisture in the drier-than-normal spring conditions. This created a moisture deficit that we believe severely stunted soybeans at several sites.

Organic no-till produced lower yields

Soybeans in the organic no-till system yielded significantly less than soybeans grown using standard practices. The average yield across all strip-trial sites in 2019 and 2020 for organic no-till soy was 29.2 bushels/acre, which was nearly 22 bu/ac less than the no-rye control yield of 50.9 bu/ac. Among onfarm organic sites, the no-till soybeans yielded 28.2 bu/ac vs. 42.5 bu/ac for 30inch, tillage-based beans.

Conclusions

Large yield reductions, despite good weed suppression at most sites, highlights the risk associated with organic no-till. We believe that the

1 References

Personal communication with Dr. Matthew Ryan, Associate Professor of Sustainable Cropping Systems, Cornell University. system is particularly vulnerable to dry conditions in May and June – an observation shared by researchers at Cornell in New York state¹. Despite this, we have learned important lessons on the fundamentals of organic notill soybean production. Given the interest in its soil health benefits and reduced labour requirements, we will continue with further investigation of the system. Two additional strip-trials were seeded this past fall to improve our understanding of its performance over a broader range of weather conditions.

Further resources

To watch a video series featuring farmer cooperators from the project, view the Cover Crop-Based Organic No-Till Soybean Production in Ontario article on the Field Crop News website.

To read the full project report, visit Ontario Soil and Crop Improvement Association's Crop Advances webpage later this winter. A summary will also be posted on the Field Crop News website under the Cover Crops page.

This is a continuation of results and information that Jake shared in the fall 2019 issue on page 16 of *Ecological Farming in Ontario*.

Jake Munroe is a Soil Management Specialist for Field Crops with OMAFRA. He has expertise in soil health, cover crop management and soil fertility. Through on-farm trials, plot demonstrations and presentations, Jake shares information with Ontario farmers on best management practices to improve soil health, nutrient management and crop production. He is a Certified Crop Advisor.



Topic: Good Advice

was trying to decide if I should leave my farm. I had had many conversations with non-farming friends and peers, some of whom had been through a divorce, some of whom had parted ways with business partners etc. What lacked in these conversations was the lived experience of a farmer. Farming, as many readers will know firsthand, is an endlessly challenging and rewarding endeavour. The dedication to a piece of land and its cultivation, transformation and regeneration can get into your bones. Feeling deeply connected to a piece of the earth is a natural side effect of doing this work.

So when debating whether I should leave the farm, I thought to reach out to a farmer mentor, someone who has been doing this work longer than myself and will have seen other farms come and go.

The nutshell of his advice was this: "You've done an incredible job, the things that you are about in the world would go WITH you. You do not have to be entirely defined by a piece of land. In the end, it's JUST a farm."

While some may see this as reductive, it really landed powerfully for me, I do not have to be defined by what I have done, what I am currently doing, but rather by what I am choosing to give myself to.

I decided to leave my farm.

What I appreciated about his advice was that it was solicited, which made it great advice. Really, anyone can take what they see of your personal situation and give you their opinion without the nuance and complexity of being inside your lived experience. "You know what you should do is..." While sometimes bringing a different perspective, it can also be frustrating to hear and doesn't give the receiver of the information a need to work for, or gain their OWN understanding.

What is next for me? While it's not entirely clear, what is clear; is that I will be there, doing what I do, wherever I am.

Seb Ramirez Co-founder of Zocalo Community Farm

Farmers Write is an opportunity for EFAO members and friends to share real-life short stories on topics inspired by life as a

farmer.

The topics are intentionally broad – please feel free to express in a way that makes sense for you and your story. We aren't as concerned about style and perfect writing, as we are about great stories that others might find truth in as well. We suggest a word limit of 250 to 350 words but are happy to help edit a story. We are able to publish stories anonymously if that allows you to be freer in your writing.

To submit your story, please visit efao.ca/farmers-write or send your typed, double-spaced submission to EFAO 5420 Hwy 6 North Guelph, Ontario N1H 6J2. Please include your email address and phone number. If you cannot type, please print clearly.

Upcoming Topics

Spring 2021 – Winging It Deadline April 1

Summer 2021 – Unlearning Deadline July 7

Fall 2021 – Very Neighbourly Deadline October 15



BOOK REVIEW

Farming While Black: Soul Fire Farm's Practical Guide to Liberation on the Land

A "real talk" book review, by Angel Beyde

History, despite its wrenching pain / Cannot be unlived, but if faced / With courage, need not be lived again. – Maya Angelou

As a person doing Anti-Racist consulting for EFAO, I felt enormous responsibility when I was invited to do this review. *Farming While Black* is an incredible book to which I want to do justice. Farmer and author Leah Penniman, brilliant, strong, fair-minded and deeply wise, feels like family to me, though we've never met. This farming manual brought me to tears (relief, recognition, grief, inspiration) more than once, covering everything from land access, business plans, healing from trauma, crop planning to seed keeping, youth on the land, and raising animals.

This book has supported my quest to liberate myself from the confines of a city life which has been a purposeful one of service (in Urban Ag, community work, mental health social enterprise) - but it's a life I've outgrown. I long to return to the earth. In every cell of my body, I crave access to the soil and open horizons. Every. Single. Day. With a fierce longing, I study others' ecological farms, I grow food where I can, I buy other farmers' CSA shares and appreciate every last leafy green and soil-flecked root veg, knowing how much love, sweat, tears and blood goes into every precious calorie. I'm working like mad to realize my dream to steward my own small patch of land with devotion, dignity and freedom.

For a long time, I used to battle depression, trauma, anxiety and host of other challenges. They were not my burdens to



carry, but I didn't know any better: most were burdens that landed on my shoulders because of systemic racism and what our culture expects from women, especially women of colour, especially Black women. Since the first days we were brought to this continent in chains (yes, there was slavery in Canada), Black women have had to be enduring bastions of strength, nurturing and technical know-how. We have endured every manner of violation and exploitation, but learned the hard and often fatal way, not be angry or critical or openly grieving.

The invitation to review Farming While Black included the sentence: "We thought it would also be such a great opportunity to share why the chapter on how to be a good ally is important for everyone to read?" This refers to chapter 16, "White People Uprooting Racism," and it's a powerful, compassionate, unflinchingly practical, brave, thought-provoking and generous gift to those who wish to work as allies – in a modest 15 pages that could change your life. For weeks I struggled with this very well-intentioned invitation to explain the importance of "White People Uprooting Racism," feeling increasingly stressed, writing and erasing this review. Today my white husband said, somewhat impatiently: "You shouldn't have to tell white people why or how to be allies. It's not your job. Either they are on board – they want a just food system – or NOT. You can point the direction to the path, but we all have to walk it ourselves."

So I'm pointing to the path, my fellow growers, eaters, free-rangers and lovers of the earth. If you want to free yourself from the perennial scourge of systemic racism in agriculture (and those nasty

roots run super deep!), Farming While Black has some great suggestions to get you walking and bravely uprooting those weeds from your fields, to unleash the most bountiful abundance you could ever imagine.

Bindweed: 7.5 ft roots Common thistle: 9 ft roots Images from https://images. wur.nl/digital/collection/ coll13/search/



Angel is a Black / mixed race grower of food and flowers who has worked in Urban Ag, eco-landscaping and non-profits for many years in many guises: Organic Master Gardener, educator, facilitator, consultant and business manager. Angel and her husband Raphaël are currently looking for rural land with a home to start their organic market garden Good Fortune Farmstead in 2021. (goodfortunefarmstead.com)

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