# ONFARM Forum 2021

## Summary Report

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# Acknowledgements

## Project Oversight

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# 1.0 Introduction

The Ontario Soil and Crop Improvement Association (OSCIA) hosted the ONFARM Forum from 9 am to 12 pm on February 10, 2021, virtually via Zoom. In total, 195 attendees joined the event and the Forum saw a maximum of 139 concurrent attendees. These individuals had a wide range of professional backgrounds (See Figure 1). Government representatives accounted for 26% of participants and many non-profit/NGO representatives, farmers, researchers, and academics were also in attendance.

The purpose of the Forum was to inform participants about the successes and challenges faced in the first year of the On-Farm Applied Research and Monitoring (ONFARM) program and to enable farmers and applied researchers to share their experiences in on-farm research. The Forum provided an opportunity for presenters to transfer knowledge gained from their research to participants, to build the brand of the ONFARM program, and to inspire enthusiasm for on-farm research. Given the wide range of professional backgrounds present, the Forum also provided a chance to increase collaboration between farmers, agricultural and conservation organizations, government officials, industry associations, and other interested stakeholders, and generate collaborative opportunities for the program.

This summary report begins with an overview of the ONFARM program. Next, this report outlines the presentations and discussions which occurred during the Forum. Finally, the report summarizes the main takeaways from the event and next steps.

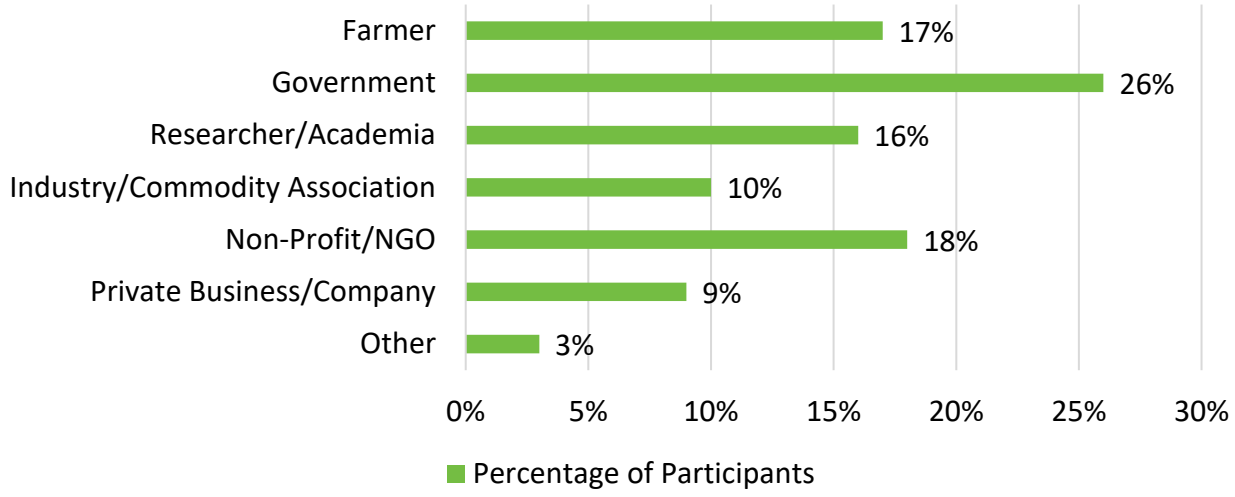



**Figure 1.** Percentage Breakdown of Participants by Professional Background

## 2.0 Context: ONFARM Program

The ONFARM program is a four-year applied research initiative that began in 2019. The project supports soil health and water quality research on farms across Ontario. This program is funded by the *Canadian Agricultural Partnership*, a federal-provincial-territorial initiative. ONFARM was developed by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and delivered by OSCIA with the support from various organizations including Agriculture and Agri-Food Canada (AAFC), five Conservation Authorities and the Soil Resource Group. ONFARM is also supported by a network of farmer cooperators, who are essential to the success of this program.

ONFARM builds on work completed under the Great Lakes Agricultural Stewardship Initiative's (GLASI's) Priority Sub-watershed Project (PSP). ONFARM supports Ontario's Soil Health and Conservation Strategy, and helps the industry meet commitments under the Great Lakes Water Quality Agreement.

The three pillars of ONFARM that will benefit Ontario's agricultural industry are:

1) Continuation of the monitoring and modelling established in the Priority Sub-watersheds,
2) Establishment of on-farm paired trials in-field to identify soil health indicators and test the effectiveness of best management practices in cooperation with farmers,
3) Enhanced engagement opportunities with stakeholders and farmers to foster a network of demonstration farms.

At the time of the Forum, stakeholders had established 8 edge of field sites in the PSP regions, and 25 soil health best management practice sites across five regions of the province (See Figure 2).

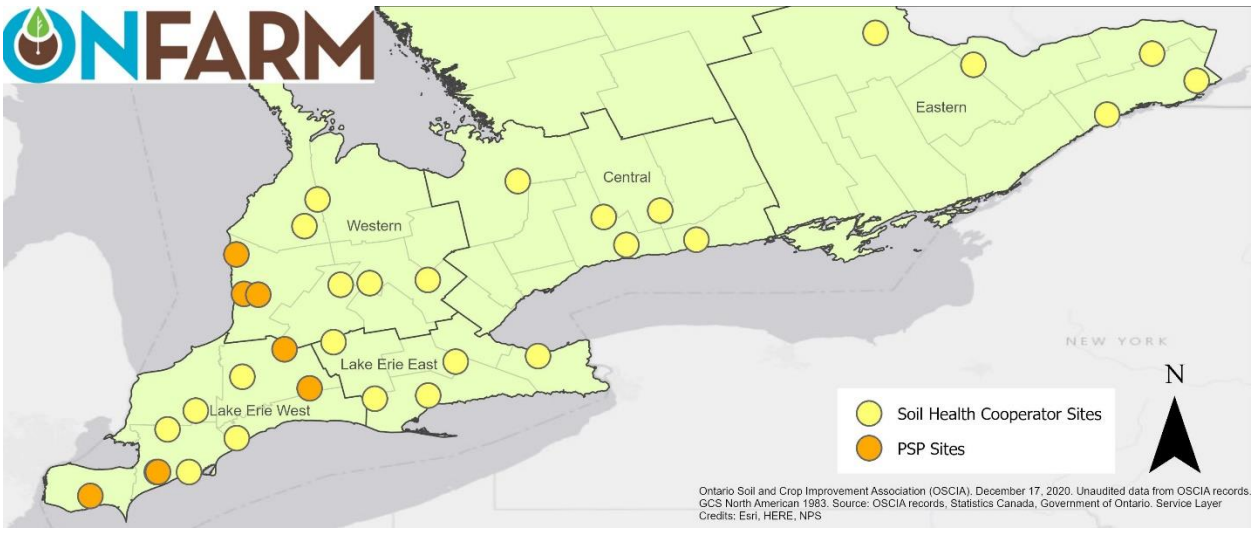



**Figure 2.** Location of study sites across Ontario

# 3.0 Summary of Forum Discussions

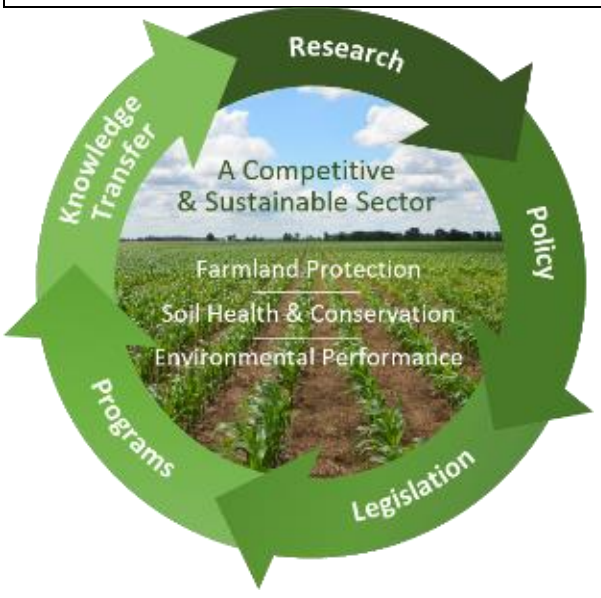
## 3.1 Welcome & Introductions

The Forum began with a welcome from Angela Straathof of OSCIA, and Andrew Jamieson of OMAFRA. Angela provided an overview of ONFARM and its goals and objectives, including what accomplishments were achieved in the first year. Andrew explained that ONFARM is a key initiative for OMAFRA, emphasizing the importance of research to fuel evidence-based decision making and policy.

**Speakers: Angela Straathof, Program Director, OSCIA and Andrew Jamieson, Manager, Innovation, Engineering and Program Delivery, Eastern Region, OMAFRA**

**Key Points:**

- Long-term monitoring is necessary to build evidence of environmental, economic, and agronomic implications. This long-term investment in soil health and water quality monitoring will support:
  - The development of provincial indicators to measure soil health.
  - Informed baseline measurements of soil heath across Ontario.
  - Further insights into the impact of land management on soil health.
  - The establishment of regional representative sites for farmer-led knowledge transfer.
  - The measurement of the impact of best management practices (BMPs), such as cover crops, fertilizer and manure incorporation and conservation tillage, in reducing phosphorus loadings at various scales.
  - Informed policy and programs targeting BMPs to address the Lake Erie and Lake Huron nutrient issues.
  - The quantification of the economic impact of stewardship.




**Andrew Jamieson outlined how farmland protection, soil health and conservation and environmental performance are key to a competitive and sustainable sector.**

Photo credit: OMAFRA

## 3.2 Keynote Speech: Farmer-Led Research Fosters Curiosity & Continuous Improvement

Dr. Stefan Gailans, the Research and Field Crops Director with Practical Farmers of Iowa (PFI), delivered the keynote speech. PFI partners with farmers to conduct on-farm research and increase producers' research capacity. Interested farmers approach the organization with an idea and can receive assistance to develop a research project and training on scientific methods. Participants meet annually to share their research findings.

| **Speaker: Dr. Stefan Gailans, Research & Field Crops Director, Practical Farmers of Iowa** |
|---|
| **Key Points:** |
| ▪ On-farm research empowers farmers to make decisions on their farms by enabling them to objectively weigh the costs and benefits of options.<br>▪ Apart from the specific project findings, the program educates farmers on the value of on-farm research to guide decision-making.<br>▪ Research projects are typically profitability studies (i.e., will it be cost-effective to use a different fertilizer), although some farmers conduct research on other subjects such as soil health.<br>▪ Most farmer participants say the results of on-farm research will inform changes in their operations, and they feel it is worthwhile to conduct trials.<br>▪ Producers must balance their research activities with their regular farm work. As a result, projects typically do not last longer than one year as farmers need to continue to evolve their production practices. These changes negate the ability to do longer-term studies. |

Forum participants had an opportunity for a question-and-answer period with Dr. Gailans. Highlights are outlined below.

| Question | Answer |
|---|---|
| How many cooperators do you have in a given year? | PFI typically has between 50 and 60 unique cooperators a year. Each cooperator might do two or three trials. |
| Where does funding originate to support staff costs at PFI? | Most funding comes from a combination of federal and state grants, as well as private donations from agricultural foundations. PFI charges membership fees but these fees are minimal to encourage participation. |

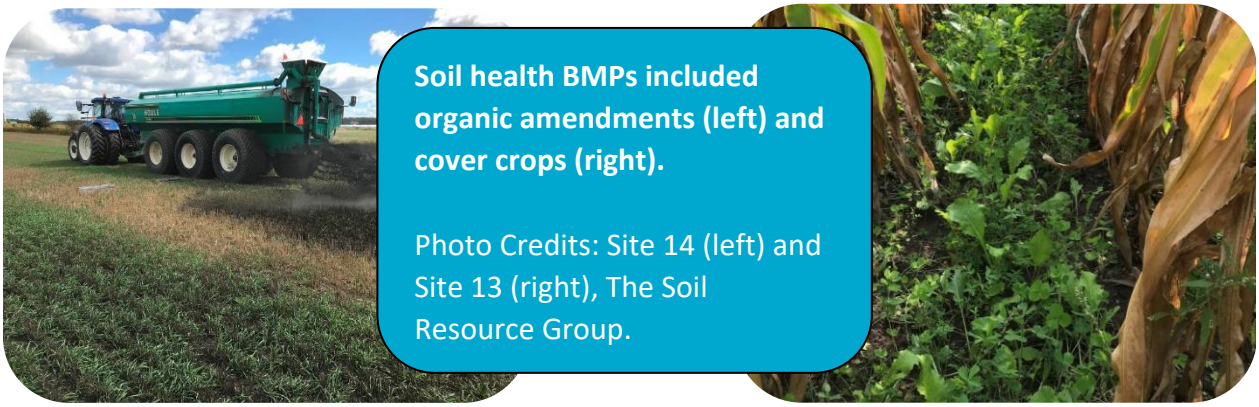
## 3.3 Highlights from ONFARM's First Year

Three researchers involved in ONFARM projects presented on some highlights from the first year of the program. Don King, Research Agronomist and Principal at the Soil Resource Group, provided a summary of Soil Health Cooperator Sites being examined in the first year of ONFARM and shared preliminary findings from the sites. Mari Veliz, Healthy Watersheds Manager at the Ausable-Bayfield Conservation Authority, discussed the edge-of-field BMP verification sites and some early findings from the project. Linsey van Koppen, an M.Sc. Candidate at the University of Guelph and Climate-Smart Soils Intern with OSCIA, provided an overview of the CREATE Climate-Smart Soils Initiative and her work with ONFARM.

**Speaker: Don King, Research Agronomist and Principal, The Soil Resource Group**

**Key Points:**

- In the priority sub-watersheds, partnered conservation authorities are conducting edge-of-field water monitoring, soil health assessments, profitability mapping, and water quality modelling.
- In the soil health paired BMP trials, The Soil Resource Group is conducting soil health assessments by soil landscape, management, and degradation type. The team is also developing soil health indicators, researching the effect of BMPs on soil health and productivity in applied environments, and analyzing BMP cost effectiveness.
- BMP trial sites reflect the distribution of soil texture classes within a region and predominant livestock sectors are represented across the sites.
- The sites focus on three soil health BMPs: cover crops, organic amendments, and reduced tillage.
- Soil health measurements include chemical, physical, and biological measures.
- The completion of sampling of baseline datasets in 2020 represents a great starting point for measuring and tracking soil health indicators.



**Soil health BMPs included organic amendments (left) and cover crops (right).**

Photo Credits: Site 14 (left) and Site 13 (right), The Soil Resource Group.

**Speaker: Mari Veliz, Healthy Watersheds Manager, Ausable-Bayfield Conservation Authority**

**Key Points:**

- Veliz's presentation centered on **3 Ps** of evaluation: **perspective** (which includes ecological, social and economic components), **patience** and **people**.
- Longer-term studies are necessary to understand changes in water quality. So, stakeholders need patience as they set up the studies, gather the data and study the trends.
- All the watersheds have some edge-of-field studies to monitor water quality.
- We need increased adoption of BMPs like cover crops across more fields to see results at the watershed outlet level, rather than just at the field edge level.
- We must collect more comprehensive regional data (e.g., soil, weather, slope, and land management data) to gain good insights at the watershed level.
- Cooperation between landowners, conservation authorities and other stakeholders is key to conduct these water quality studies.

**Longer-term studies are necessary to understand how agricultural BMPs affect changes in water quality.**

Photo Credit: The Soil Resource Group

**Speaker: Linsey van Koppen, M.Sc. Candidate, University of Guelph and Climate-Smart Soils Intern, OSCIA**

**Key Points:**

- It is important to mobilize knowledge on soil microbiology, since soil microorganisms play an important role in processes related to soil heath. Soil microorganisms are also at the forefront of soil sustainability.
- A survey of cooperators showed most have not incorporated biological tests into their regular soil health testing. The two main reasons why cooperators have not done this work are they do not know what options are available and they do not know how to interpret the results. The cost of these tests was not necessarily a barrier, however.
- Based on the survey results, OSCIA created four soil microbial health modules to help producers learn more about the topic. The modules are as follows: introduction to soil microbiology, cropping systems, organic versus inorganic fertilizers, and soil microbial health testing. The modules will be posted to the program's website.

| Question | Answer |
|---|---|
| Do we really know what a good microbial test result is? | Good question. There is still a lot of research needed here. I think tracking results of these tests over time is a great way to monitor soil health but might be best used in tandem with other soil health indicators that can better inform management practices. |
| Would you consider smelling the soil in your list of soil microbial health testing? | Kind of! A lot of a soil's smell is related to moisture, and to soil microorganisms. That classic, rich, earthy smell is made by soil bacteria and fungi breaking down organic matter. A bad-smelling soil might also indicate poor drainage! |
| Has nutrient quality or feed value been considered as an indicator to determine if a relationship exists between soil and plant health to nutrition? | This is an exciting area of research, especially with micronutrients and organic matter cycling. Personally, I think we're at a critical point in soil research where we are shifting from yield-based soil science to quality-/productivity-/profitability-based soil science. |

## 3.4 ONFARM Rapid Research Pitches & Moderated Discussion

Several researchers conducting on-farm research on initiatives with similar goals to the ONFARM program presented rapid research pitches and participated in a moderated discussion about what they are researching, why it matters, and how well it is working. Researchers included Dale Cowan (the Senior Agronomist at AGRIS Co-operative Ltd. & Wanstead Farmers Co-operative Ltd.), Sarah Hargreaves (the Research Director at the Ecological Farmers Association of Ontario), Kelsey Hill (the Nutrient Stewardship Coordinator at Fertilizer Canada), and Lindsay Nash (the Quinte Farm Research & Stewardship Collaboration Coordinator at Quinte & Crop Improvement Association).

**Speaker: Dale Cowan, Senior Agronomist, AGRIS Co-operative Ltd. & Wanstead Farmers Co-operative Ltd.**

**Key Points:**

- AGRIS Co-operative Ltd. & Wanstead Farmers Co-operative Ltd. run MyField, which is a field-testing program that supports proof-of-concept work on products, services and practices with the co-op's owners and customers.
- Typically, this program focused on more traditional products and questions, such as nitrogen rates, and the use of nitrogen stabilizers or fungicides, etc. Lately, the program has supported the renewed interest in biostimulants.
- A 2021 trial will study the use of Envita, which is a nitrogen-fixing bacteria, in corn, soybeans and wheat. The goal is to understand how much nitrogen is fixed by using this product and under which conditions it is maximized.

**Speaker: Sarah Hargreaves, Research Director, Ecological Farmers Association of Ontario**

**Key Points:**

- The Ecological Farmers Association of Ontario has supported over 60 farmers in conducting more than 70 trials in the past five years.
- Farmer-led research matters because farmers' most trusted source of information is other producers. Farmer-led research allows producers to tackle on-farm problems and challenges. This type of research gives farmers the tools to innovate effectively, and to assess economic and ecological impacts of different practices and methods.
- Through the EFAO program, farmers are connected to a network of peers and other support systems, which they can use to disseminate findings for rapid adoption.
- On-farm research leads to improved fertilizer use, improved variety selection, increased cover crop use, increased weed control, reduced tillage, improved pasture management, and improved yields and profitability.
- Farmer-led research helps producers with on-farm decision making and helps them adopt or adapt ecological farming practices.

**Speaker: Kelsey Hill, Manager, Nutrient Stewardship, Fertilizer Canada**

**Key Points:**

- From 2016 to 2018, through the 4R Research Network, ten Canadian researchers qualified the economic, social, and environmental benefits of advanced fertilizer management systems under the 4R Nutrient Stewardship.
- In collaboration with partners and local Certified Crop Advisors, Fertilizer Canada ran trials on farms across Canada to demonstrate the benefits of using 4R BMPs, such as variable-rate technologies, split applications of fertilizer, and the banding of nutrients.
- Fertilizer Canada is working with researchers to finalize 2021 plans to expand 4R research and is also exploring the possibility of developing a 4R advocate program.
- Fertilizer Canada, through Status Ag Research, also runs the annual Fertilizer Use Survey, which provides insights into the current state of fertilizer management in Canadian crop production.

**Speaker: Lindsay Nash, Quinte Farm Research & Stewardship Collaboration Coordinator, Quinte Soil & Crop Improvement Association**

**Key Points:**

- Quinte Soil and Crop Improvement Association has a collaborative network of six partners (including farmers, university researchers and conservation authorities) conducting seven projects in the Quinte area.
- The Quinte Farm Research and Stewardship Collaborative (QFRSC) examines soil health and water quality.
- QRFSC focuses on establishing a network for modern agricultural practices, BMPs, and their effects on water quality and soil health/conservation.
- In terms of the implications for local farmers, the goal is to create community capacity for research, new technologies, networking and information sharing that is Quinte-specific.

**Through QRFSC, Karen Thompson of Trent University is researching soil microbial activity in fields. University researchers will analyze and aggregate the data for reporting. Farmers will receive the results for their fields.**

Photo credit: The Soil Resource Group.

| Moderated Discussion |
| --- |
| **Key Points:** |
| ▪ On-farm research should focus on what the farmer wants to achieve, as well as on building relationships and opportunities for collaboration. Farmers should have the opportunity to share information.<br>▪ Projects should be targeted and simple so participants can gather actionable results.<br>▪ On-farm research advances knowledge – whether it be in terms of the findings from the trial or learning how to conduct research.<br>▪ On-farm research takes commitment to carry the trial through the season and flexibility to "roll with the punches," in terms of how the growing season unfolds. |


**Figure 3.** Dr. Bronwynne Wilton leads the moderated discussion with the researchers.

## 3.5 On-Farm Research: Triumphs & Tribulations

A panel of farmers and researchers discussed the opportunities and challenges associated with on-farm research. Panelists included Eric Barnhorst (a Farmer-Researcher at EFAO and a farmer at Eva Mae Farm), Jenn Doelman (an ONFARM Cooperator and a farmer at Bonnechere Haven Farms), and Dr. Laura Van Eerd (a Professor in the School of Environmental Sciences at the University of Guelph Ridgetown Campus).

| Panelist | Bio |
|---|---|
| **Eric Barnhorst**<br><br>EFAO Farmer-Researcher and Farmer, Eva Mae Farm | ▪ Barnhorst operates a small, diversified vegetable farm in Northumberland County.<br>▪ He sells his produce via a farmers' market, community-supported agriculture and directly to restaurants.<br>▪ Barnhorst has participated in three research projects via the EFAO's Farmer-Led Research Program and serves on the EFAO's research advisory committee. |
| **Jennifer Doelman**<br><br>ONFARM Cooperator and Farmer, Bonnechere Haven Farms | ▪ Doelman farms with her family in the Upper Ottawa Valley in Eastern Ontario. She has a diverse rotation as a seed grower: corn, soybeans, small grains, sunflowers, "peola" (the intercropping of peas and canola), etc.<br>▪ With a decline in OMAFRA extension services in the area, she sought ways to grow on-farm research – with a particular focus on the costs and rewards of various treatments.<br>▪ Doelman's family seeks ways to build organic matter, soil structure and soil health.<br>▪ She is an ONFARM cooperator. |
| **Dr. Laura Van Eerd**<br><br>Professor, School of Environmental Sciences at the University of Guelph Ridgetown Campus | ▪ Dr. Van Eerd's research is based in Kent County and the surrounding five counties, focusing on processing vegetables and low-acreage crops such as sugar beets and seed corn.<br>▪ Her work aims to optimize nitrogen programs and explore the use of cover crops. |

**Panel Discussion**

**Key Points:**

- It is important to do both research on working farms as well as at controlled test sites at a university, for example. On-farm research is valuable for the farming community to continue to test methods and treatments to make objective production decisions. At a controlled test site, researchers can conduct longer-term studies and limit the variables in the study. It is important to translate the findings from academic research to the practical farm level, though.
- Speakers attested to the importance of keeping on-farm research studies as simple as possible.
- Panelists discussed the importance of connecting with people outside of their local networks. A silver lining of the pandemic is that people can attend events further afield.
- Farmers have a desire to connect with other producers and researchers to discuss techniques and practices.
- Speakers discussed the need for industry experts to reach areas, such as the Ottawa Valley, which are underserved by researchers and extension workers.
- Presenters highlighted the need to have fun with research and engage neighbours and local community. On-farm research provides value for the farmer-researcher as well as their neighbours.


**Figure 4.** Eric Barnhorst has participated in three research trials via the EFAO's Farmer-Led Research program including the two trials in the above image. Photo credit: Eric Barnhorst

## 3.6 Closing Remarks

The forum ended with remarks from Jo-Anne Rzadki, the Vice Chair of the ONFARM Stakeholder Engagement Working Group and Business Develop & Partnerships Coordinator at Conservation Ontario.

| **Speaker: Jo-Anne Rzadki, the Vice Chair of the ONFARM Stakeholder Engagement Working Group and Business Develop & Partnerships Coordinator at Conservation Ontario** |
|---|
| **Key Points** |
| ▪ The ONFARM project helps to continue work begun under the Great Lakes Agricultural Stewardship Initiative (GLASI) in priority sub-watersheds. The project enables stakeholders to get the information needed to analyze the effectiveness of BMPS, and continues knowledge transfer and peer-to-peer learning to inform producers' decisions. These efforts will help to advance the adoption of soil health and water quality BMPs.<br>▪ ONFARM also supports the Lake Erie Action Plan, Lake Huron initiatives, soil health and the Made-in-Ontario Environment Plan. |

Photo Credit: The Soil Resource Group

## 4.0 Main Takeaways

The Forum provided a strong venue in which to share successes of the ONFARM project since its launch. Panelists and Forum participants expressed clear enthusiasm for collaboration within existing networks and expanding to new networks. Collaboration can occur between multiple stakeholder groups, such as the private sector, academic institutions, government, farm organizations, research institutions, conversation authorities, local soil and crop improvement associations, and producers. The networks for collaboration can stretch across broad geographies, too, as people were pleased to connect with other agri-food stakeholders from across Ontario.

| Enthusiasm from the chat |
| --- |
| "Great forum this morning! Fantastic speakers and I really enjoyed the informative panelists. Well done ONFARM and kudos to all the organizers." |
| "Thank you for great sessions and information!" |
| "A field without a trial in it is a lost opportunity to learn." |

All speakers clearly demonstrated the benefits of on-farm research. Significant value exists in building farmer capacity to critically assess their practices and conduct research. On-farm research can help to inform farm management decisions with objective findings. Presenters also discussed how on-farm research can be fun and spark conversations with neighbours. Peer-to-peer learning among farmers was recognized as a valuable way to share knowledge and expertise.

The Forum demonstrated the benefits of research on both active farms and test plots. Research within farm operations tends to be shorter-term and projects evolve as farmers continue to fine-tune their management practices. Research on test plots can be longer-term as researchers can limit variables more so than on a working farm.

A theme that was evident throughout the Forum was the importance of coaching farmers to analyze data. Farmers can access so much data but need advice and direction on how to analyze that data, especially for more complex subjects like micronutrient testing. As Angela Straathof, Program Director at OSCIA, said in the chat, "All the data in the world is only as informative as the types of analysis performed and capacity for interpretation!"

Based on the post-Forum survey results, comments made in the chat box during the Forum, and the level of attendance, a lot of enthusiasm exists for the ONFARM project and for on-farm research in general. This enthusiasm should be leveraged in the next years of the project. Hopefully, the significant level of engagement in the Forum will help to spark interest in new and continued collaborations to support the viability of ONFARM beyond its current funding cycle.

## 5.0 Overcoming Challenges

OSCIA is pleased to report that nearly 190 individuals registered for the Forum. Unfortunately, OSCIA faced a technical challenge at the start of the event resulting in a cap of 100 participants. As soon as OSCIA identified this issue, the team acted quickly to resolve the challenge. The organizers began recording the Forum to facilitate sharing the content via the ONFARM website. Concurrently, OSCIA adjusted the Zoom meeting capacity to enable up to 300 participants. Once the additional capacity was confirmed, Forum organizers sent an email to all registrants in fewer than 40 minutes after the start of the event to inform them the issue was resolved and they could join the meeting. After the solution was implemented, the maximum number of concurrent attendees rose to 139, demonstrating that industry stakeholders were eager to engage. OSCIA posted the videos of the Forum sessions on the ONFARM website on February 11. Although some participants expressed frustration about the technical challenges, many attendees recognized the difficulty with planning large virtual events and were thankful the issue was resolved quickly.

Aaron Bowman, an ONFARM cooperator, was scheduled to participate in the On-Farm Research: Triumphs and Tribulations panel but was unable to join the call. Jennifer Doelman, another ONFARM cooperator, graciously agreed to join the panel as a substitute. Jennifer provided a wealth of knowledge and enthusiasm about on-farm research during the discussion.

In both situations, Forum organizers reacted quickly to identify and implement solutions to the challenges, helping to ensure a positive and informative experience for all participants.

**Jennifer Doelman's soil health goals are to increase soil resilience and biological processes to reduce risk and improve profitability**.

Photo Credit: The Soil Resource Group

# 6.0 Next Steps

After the conclusion of any project deliverable, it is best practice to review opportunities to leverage the enthusiasm and learnings to advance the wider project. During this review, it is also helpful to consider ways to improve future project deliverables based on an assessment of successes and challenges in the concluded event. In this section of the Summary Report, Wilton Consulting Group provides some suggestions for the ONFARM team to consider regarding upcoming project years and knowledge translation and transfer (KTT) mobilization initiatives. These suggestions are grounded in information compiled from discussions during the event, the post-Forum survey, and the post-Forum roundtable discussions with the ONFARM Stakeholder Engagement Working Group (SEWG). (For a summary of the results of the post-Forum survey, please see Appendix B.)

As the ONFARM project continues to evolve, OSCIA and project stakeholders should consider ways to facilitate increased collaboration. As one attendee noted during the Forum, initiatives like ONFARM and Living Labs (AAFC) help to connect some producers with researchers. The nature of the close working relationships in these projects, however, necessarily limits the number of farmers who can be directly involved in the research.

ONFARM project organizers can continue to expand their KTT activities, as well as outreach activities, so more industry stakeholders can connect and learn from one another. As Forum participants and survey respondents suggested, these outreach activities could include engagement with peer networks or centres of excellence. ONFARM organizers already have plans to share tips and resources for on-farm research and disseminate information about BMPs and trials at all sites; perhaps project stakeholders could create industry-facing template protocols to share with farmers who are not officially involved in the program but would like to engage in some of the activities. Another survey respondent suggested project stakeholders could consider leveraging the expertise of graduate students – in both agricultural and environmental science – to support the project while enabling them to develop practical skills.

In subsequent ONFARM events, particularly the Forum, survey respondents and SEWG members suggested project organizers should consider involving more ONFARM cooperators as presenters. As ONFARM progresses, cooperators could discuss their experiences in implementing the BMPs and how industry stakeholders could support producers in overcoming barriers to adoption. As individual projects progress and data is captured, cooperators will also have results and lessons learned to share.

Perhaps some of the supporting organizations, such as The Soil Resource Group and conservation authorities, could outline the limitations of the research projects; as one attendee noted in the post-Forum survey, every project has limitations, and it is important to understand these limitations to avoid “over-interpretation” or “over-extension” of conclusions. Forum

organizers could also consider building in more time for audience engagement, as attendees at the 2021 Forum were eager to ask questions and receive more information from presenters.

A member of the Stakeholder Engagement Working Group suggested setting a higher target for the number of farmer attendees at the next ONFARM Forum. For example, OSCIA could encourage every cooperator to enlist two farmers to attend the event. The suggestion to increase farmer attendance aligns with the ONFARM Outreach & Engagement Strategy goals of advancing farmers' knowledge and implementation of BMPs to advance soil health and water quality outcomes.

Finally, although ONFARM organizers hosted the 2021 Forum virtually due to COVID-19, the online format allowed for increased accessibility for participants from a broader geographic area. One participant, for example, noted in the chat "If this wasn't digital, I would not be able to attend a half-day forum in Guelph. Having digital conferences has allowed underserved areas to learn from events like this and share their unique problems." Another attendee noted "I've attended many more meetings this year than I would have been able to do in person." While in-person events certainly provide strong networking opportunities, the ONFARM project team should consider ways to continue to include a virtual element in its KTT activities so more stakeholders can participate. Videos of the ONFARM Forum presentations are available on the ONFARM website to ensure anyone interested can benefit.

Photo Credit: OSCIA

# Appendices

A. Information Package for Attendees
B. Post-Forum Survey Summary

## A. Information Package for Attendees

# AGENDA

### February 10, 2021 via Zoom Videoconference

**OSCIA looks forward to welcoming you to the ONFARM Forum! This event will be a unique opportunity to hear about project activities, progress and results. Participants will learn about the successes and challenges faced in the first year of the ONFARM program and hear from farmers and applied researchers about their experiences in on-farm research.**

| Time | Activity |
|---|---|
| 9:00 AM | **Welcome & Introductions**<br>Angela Straathof, Program Director, OSCIA and Andrew Jamieson, Manager, Innovation, Engineering and Program Delivery, Eastern Region, OMAFRA |
| 9:10 AM | **Keynote: Farmer-led Research Fosters Curiosity & Continuous Improvement**<br>• Dr. Stefan Gailans, Research & Field Crops Director, Practical Farmers of Iowa |
| 9:35 AM | **Audience Q&A** |
| 9:45 AM | **Highlights from ONFARM's First Year**<br>Speakers:<br>• Don King, Research Agronomist and Principal, The Soil Resource Group<br>• Mari Veliz, Healthy Watersheds Manager, Ausable-Bayfield Conservation Authority<br>• Linsey van Koppen, MSc Candidate, University of Guelph and Climate Smart Soils Intern, OSCIA |
| 10:15 AM | **ONFARM Rapid Research Pitches & Moderated Discussion: "What We're Looking at, Why Does it Matter, & How Well is it Working?"**<br>Speakers:<br>• Dale Cowan, Senior Agronomist, AGRIS Co-operative Ltd. & Wanstead Farmers Co-operative Ltd.<br>• Sarah Hargreaves, Research Director, Ecological Farmers Association of Ontario<br>• Kelsey Hill, Nutrient Stewardship Coordinator, Fertilizer Canada<br>• Lindsay Nash, Quinte Farm Research & Stewardship Collaboration Coordinator, Quinte Soil & Crop Improvement Association |
| 10:50 AM | Break |
| 11:00 AM | **On-Farm Research: Triumphs & Tribulations.** *Panel Discussion*<br>Panelists:<br>• Eric Barnhorst, EFAO farmer-researcher and Farmer, Eva Mae Farm<br>• Aaron Bowman, ONFARM Cooperator and Owner, Bowmanview Farms Ltd.<br>• Laura Van Eerd, Professor, School of Environmental Sciences at University of Guelph Ridgetown Campus |
| 11:35 AM | **Audience Q&A** |
| 11:45 AM | **Survey** |
| 11:50 AM | **Closing Remarks**<br>Jo-Anne Rzadki, Vice Chair of the ONFARM Stakeholder Engagement Working Group and Business Development & Partnerships Coordinator, Conservation Ontario |
| 12:00 PM | **End of Forum** |

# MEET THE SPEAKERS

## Keynote: Farmer-led Research Fosters Curiosity & Continuous Improvement

### Dr. Stefan Gailans, Practical Farmers of Iowa

Dr. Stefan Gailans is the research and field crops director at Practical Farmers of Iowa (PFI). This farmer-led, non-profit organization specializes in equipping farmers to build resilient farms and communities. Since 2013, Stefan has led PFI's Cooperators' Program – their vehicle for conducting on-farm research on the issues and concerns deemed most important by their farming members. With his teammates, Stefan strives to empower farmers to generate and share knowledge through timely and relevant farmer-led research.

## Highlights from ONFARM's First Year

### Donald King, The Soil Resource Group (SRG)

Don King, MSc., CCA-ON is the president, senior agronomist and a principal of SRG, a resource management consulting firm in Guelph that conducts applied research in the agricultural and environmental sectors. The firm has also provided land resource services to public agencies, government, private firms, and landowners for over 20 years. Don has extensive experience conducting on-farm projects to evaluate the environmental impact of agricultural production on soil, water, and air quality to help determine improved farming practices.

### Mari Veliz, Ausable-Bayfield Conservation Authority (ABCA)

Mari Veliz is the Healthy Watersheds Manager at Ausable Bayfield Conservation Authority (ABCA). She has worked at ABCA since 2000. Mari has managed water quality, bio-monitoring, agricultural and urban best practice evaluation, and community outreach programs.

### Linsey van Koppen, University of Guelph and OSCIA

Linsey van Koppen is a Graduate Student at the University of Guelph studying soil microbial ecology with Dr. Kari Dunfield. Linsey is interning with OSCIA to develop resources to help farmers better understand their soil microbial health. Her research uses emerging microbial techniques to explore the impact of management practices on below-ground drivers of nitrous oxide emissions in soil. Aside from her project, Linsey is part of NSERC Create Climate-Smart Soils, a multi-institutional program that addresses the need for leaders in sustainable agriculture.

## ONFARM Rapid Research Pitches & Moderated Discussion

### Dale Cowan, AGRIS Co-operative Ltd. & Wanstead Farmers Co-operative Ltd.

Dale Cowan, CCA-ON, 4 R NMS, graduated from the University of Guelph with a Diploma in Ag Business in 1975 and a Bachelor of Science in Agriculture in 1978.

Dale is the Agronomy Strategy Manager and Senior Agronomist for both AGRIS and Wanstead Farmers Cooperatives in Southwestern Ontario. His responsibilities involve training and supporting customer-facing staff in using technology, knowledge transfer in key areas of stewardship and effective product positioning to empower our customers and owners to make optimal decisions concerning their farming practices. Today's farmer is very goal-oriented and strives for efficiency and effective relationships. Our goal is to be the trust advisor for our farmers.

### Sarah Hargreaves, Ecological Farmers Association of Ontario (EFAO)

Sarah Hargreaves is the Research Director for EFAO. This membership-based non-profit organization supports farmers to build resilient ecological farms and grow a strong knowledge-sharing community. Five years ago, Sarah helped launch EFAO's Farmer-Led Research Program, through which she and her teammates support the curiosity and innovative spirit of ecological farmers in Ontario. Since 2016, 60 farmers have conducted over 70 practical, on-farm trials in cooperation with EFAO's Farmer-Led Research Program. The program received the inaugural Excellence in Agriculture award in 2019.

### Kelsey Hill, Fertilizer Canada

Kelsey Hill is the Nutrient Stewardship Coordinator at Fertilizer Canada. She supports the continued development and implementation of 4R Nutrient Stewardship initiatives and programs across Canada.

In her role, Kelsey supports Fertilizer Canada's Policy and Programs team through the coordination of the 4R Designation and Certification programs. She also provides support on provincial working groups and the Fertilizer Use Survey.

Kelsey grew up on her family's dairy, beef, and cash crop farm in the Ottawa Valley, where her passion for agriculture started. She holds a Bachelor of Agriculture Science with a major in Crop, Horticulture, and Turfgrass Science from the University of Guelph (2019).

### Lindsay Nash, Quinte Soil & Crop Improvement Association (QSCIA)

Lindsay Nash is the Quinte Farm Research and Stewardship Collaborative Coordinator. Lindsay grew up on a dairy and cash crop farm in Northumberland County. Lindsay has worked in the agricultural and environmental industries and is passionate about the connections that can be made between both groups. Lindsay is working with Quinte Soil and Crop Improvement Association to establish a Quinte Farm Research and Stewardship Collaborative (QFRSC). This collaborative is made up of farmers, researchers and conservation authorities. QFRSC focuses on soil health, water quality, new technology and research that is Quinte specific!

## On-Farm Research: Triumphs & Tribulations

### Eric Barnhorst, Eva Mae Farm

Eric Barnhorst grows vegetables at Eva Mae Farm in Northumberland County, near Brighton, Ont. The farm sells non-certified, ecologically grown produce through a variety of channels, including farmers' markets, CSA and to restaurants. Eric's interest in increasing ecosystem and soil health while maintaining a profitable operation led him to participate in several trials in EFAO's Farmer-Led Research program in the past few years.

### Aaron Bowman, Bowmanview Farms Ltd.

Aaron Bowman's farm is located outside the GTA. He has a mixed operation of livestock and cash crop with an on-farm store to market the operation's beef. Aaron presently has half of his land in organic production and continues to transition more acres as he becomes comfortable with the management system. Aaron feels on-farm research, either in collaboration with others or independently, is very important to his operation. He has made informed decisions from projects like these in the past. Aaron is an ONFARM Cooperator.

### Jennifer Doelman, Bonnechere Haven Farms

Jennifer Doelman is a farmer, beekeeper and independent Certified Crop Advisor. She farms with her husband Mike and her kids in the Upper Ottawa Valley. Farming heavy silty clay, the family have a diverse crop rotation with a focus on reduced tillage and rotation for better soil health and drought tolerance. Cover crops and soil amendments are part of their on-farm experimentation.

### Dr. Laura Van Eerd, University of Guelph Ridgetown Campus

Dr. Laura Van Eerd grew up on a cash crop and finishing hog farm in near Ridgetown, Ont. She earned a triple crown (BSc, MSc and PhD) at the University of Guelph and is still there at Ridgetown Campus as a Professor in the School of Environmental Sciences. With a focus on nitrogen and carbon cycling in agricultural soils, her research program aims to better understand the role of cover crops and crop diversity on crop productivity and soil health.

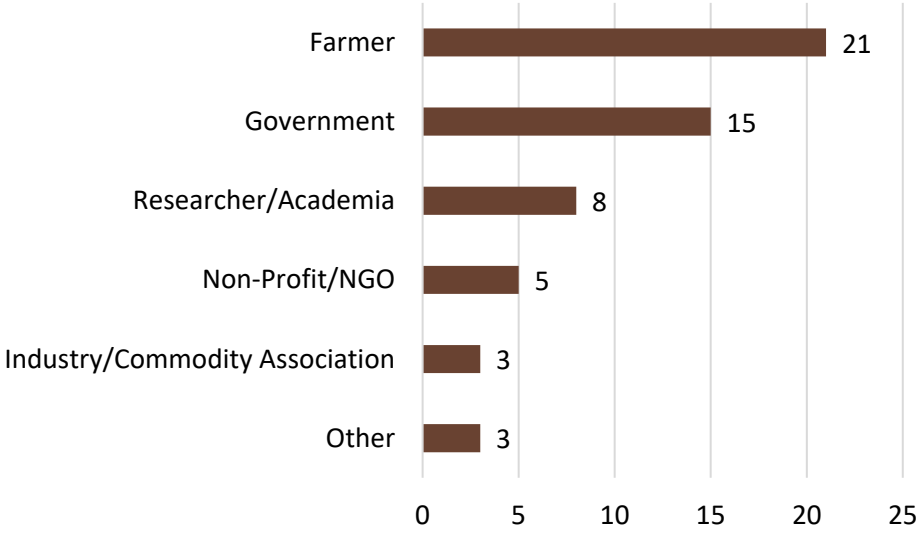
In addition to awards acknowledging her significant contributions to teaching, research and extension, Laura was recognized as one of six Influential Women of Canadian Agriculture in 2020.

*The On-Farm Applied Research and Monitoring (ONFARM) program is a four-year, applied research initiative that began in 2019 which supports soil health and water quality research on farms across Ontario. This program is funded by the Canadian Agricultural Partnership, a federal-provincial-territorial initiative.*

## B. Post-Forum Survey

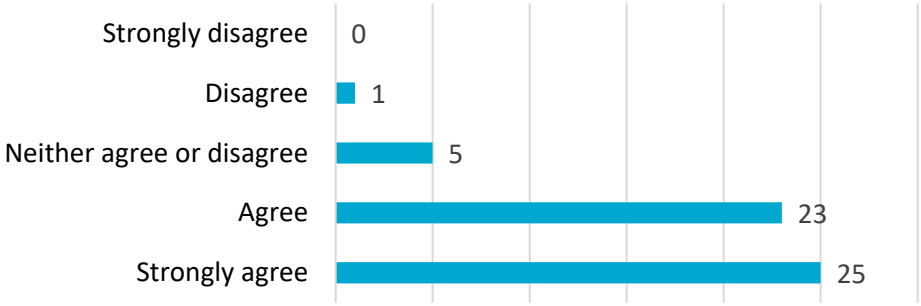
A survey was sent to participants after the Forum. The survey received 55 responses which equates to a response rate of just under 40% based on peak attendance.

Most survey respondents were farmers (38%), while government representatives also accounted for a sizable proportion of respondents (27%). The individuals who classified themselves in the "other" category" were a representative from the media, an ag retailer, and a staff member from a conservation authority.



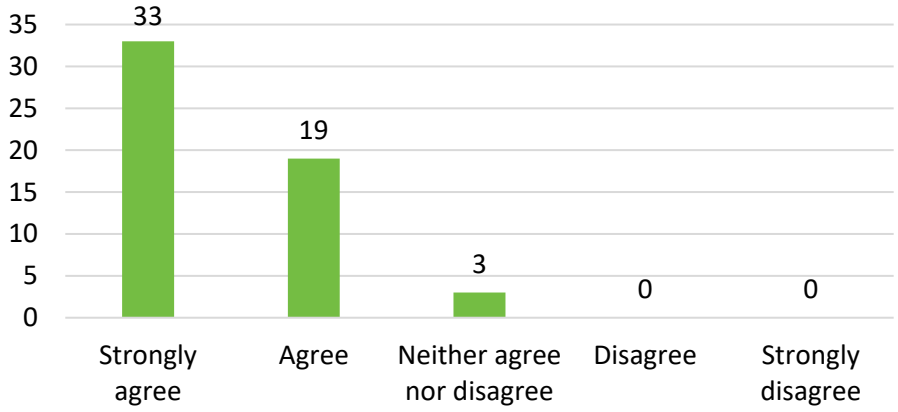

***Q1.*** *Please indicate your primary profession.*

Most respondents (89%) agreed or strongly agreed that the format of the Forum was an effective way to share ONFARM project information.



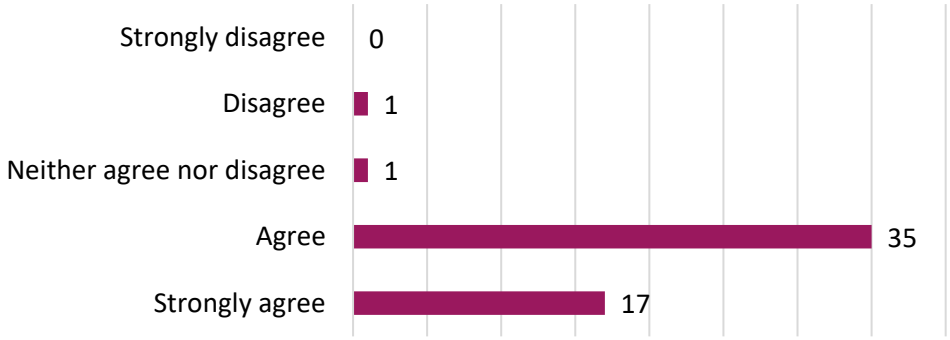

***Q2.*** *The format was an effective way to share ONFARM project information.*

Most respondents (95%) agreed or strongly agreed that the presenters were knowledgeable about the subject matter and content.



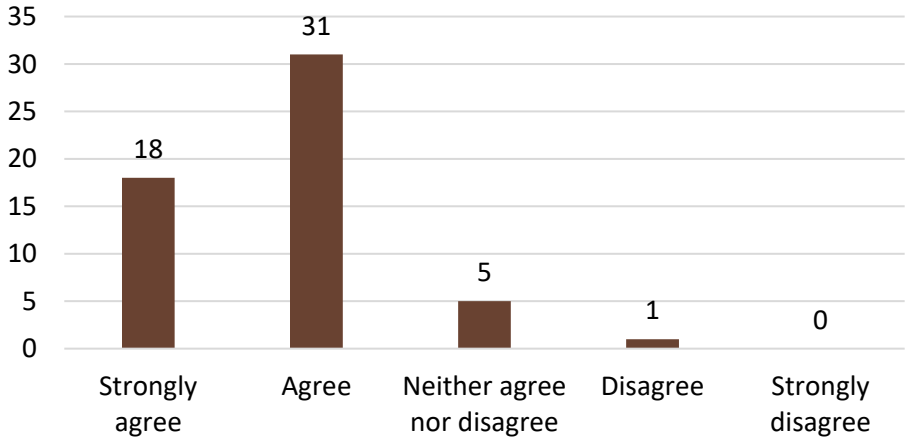

***Q3.*** *The presenters were knowledgeable about the subject matter and content.*

Most respondents (96%) agreed or strongly agreed that the presenters delivered content in an effective and engaging manner.



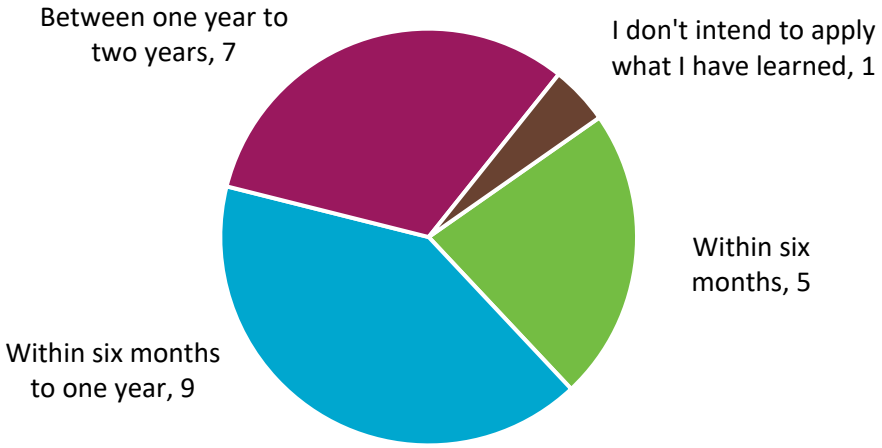

***Q4.*** *The presenters delivered content in an effective and engaging manner.*

Most respondents (89%) agreed or strongly agreed that the information in the Forum was presented in a clear and logical way.




***Q5.*** *The information was presented in a clear and logical way.*

A notable number of respondents (21) intend to apply what they have learned during the Forum to their own farm within the next couple years. Only one individual said they do not intend to apply what they have learned. The question was not applicable to government representatives, etc. who do not farm.




***Q6.*** *Do you intend to apply what you have learned during this event to your own farm property? (n=22)*

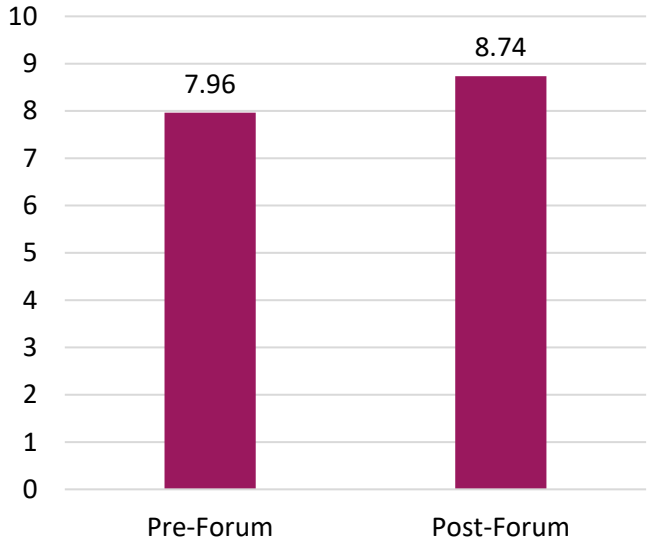
Twelve respondents intend to implement a new or revised practice on their farms after attending the Forum. As with the previous question, this question was not applicable to government representatives, etc. who work in the industry rather as primary producers.


***Q7.*** *Do you intend to implement a new or revised practice on your own farm property after attending this event? (n=20)*

Those individuals who answered yes provided the following additional information:

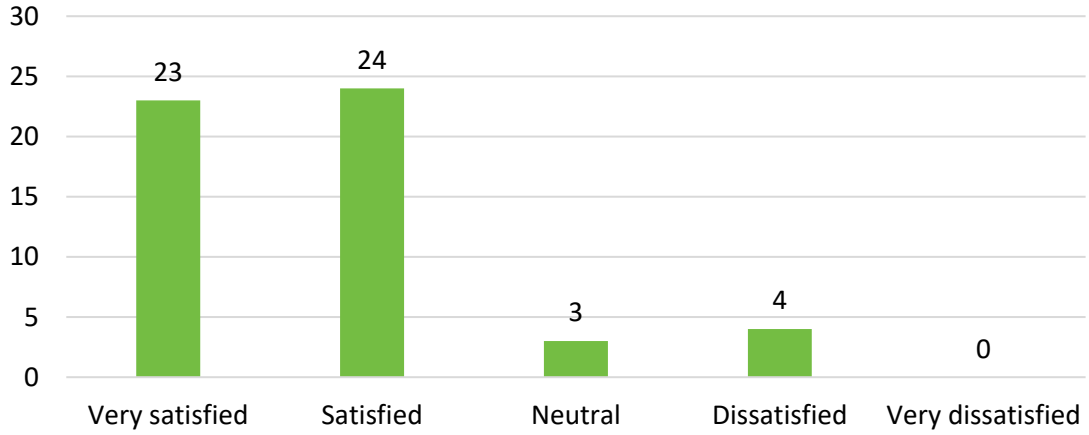
- We plan to create buffer zones around our fields in 2021 to reduce field loss of nutrients.
- I am a cooperator, so research is ongoing on our farm property. Have implemented cereal rye as a cover crop on more acres this year.
- After hearing Jenn Doelman's talk, I am going to try increase diversity in rotations although not with seed crops but cash crops.
- As a cooperator, our project includes biostrip planting which is new to our operation.
- Side-by-side comparison and paired studies.
- I'm keen to try to develop a Peer Group or regional 'node' if it's at all possible – maybe through Soil & Crop or the Ontario Soil Network?
- Do more comparison trials with checks.

Respondents were asked to rate their knowledge, before and after the Forum, of the benefits of on-farm research and how to conduct this work. The average rating before the Forum was 7.96/10 and the average rating after the event was 8.74/10. Prior to the Forum, 11 respondents rated their knowledge as being 6/10 or lower. After the Forum, only 4 respondents rated their knowledge level on the subject as 6/10. Thus, the Forum was educational.




***Q8 and Q9.*** *Rate your pre-Forum and post-Forum knowledge of the benefits of on-farm research and how to conduct this work?*

Most respondents (87%) were satisfied or very satisfied with the 2021 ONFARM Forum.




***Q10.*** *Overall, how satisfied were you with the 2021 ONFARM Forum?*