



# Accelerate Your Soil Health: Final Report

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**WILTON**  
CONSULTING GROUP

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## Executive Summary

Through the Reducing Barriers to Best Management Practices (BMP) Adoption – Soil Testing and Cover Crops applied research initiative, OSCIA developed the Accelerate Your Soil Health Pilot Project. The pilot project design was intended to enable producers to overcome:

- Financial barriers through the 60 per cent cost share
- Agronomic, farm management, information and knowledge barriers through the access to a local Certified Crop Advisor (CCA) or Professional Agrologist (P.Ag.), as well as the online suite of resources
- The administrative burden of traditional cost-share funding programs, as Expert Coaches completed the Meeting Forms on behalf of the farmers

In total, farmers completed 40 cover cropping projects and 55 soil testing projects in Lambton, Simcoe and Renfrew Counties. Producers enrolled a total of 5,222 acres in cover cropping projects and 15,175 acres in soil testing projects.

The innovative pilot project design offered opportunities for farmers to try these BMPs for the first time or to accelerate their use of these practices.

Participants shared the following key takeaways from their discussions with their Expert Coaches:

*Table 1. Main takeaways from discussions with Expert Coaches*

Cover cropping	Soil testing
Benefits of cover crops	Better understanding of the differences within and between farms
How to develop a successful cover crop program	Development of soil management zones

As a result of their experience in the pilot project, most participants were willing to incorporate cover cropping into their crop rotation in subsequent years and soil test every three to five years. The success of the pilot project extends beyond the completion of the individual projects, too. In total, 83% of participants are likely or very likely to recommend cover cropping to other farmers and 88% of participants are likely or very likely to recommend soil testing to others, according to a post-pilot project survey.

Participants also shared feedback on supports that would enable them to increase their adoption of cover crops and soil testing:

Table 2. Supports to increase the adoption of cover cropping and soil testing

<b>Supports to increase cover crop adoption</b>	<b>Supports to encourage regular soil testing</b>
Knowledge mobilization	Access to technology
Financial incentives or supports	Financial incentives
Other considerations	Access to local service providers

Future cost-share programming should consider several factors for program design related to communications and logistics, eligible expenses and the overall experience for farmers and coaches. More detailed recommendations can be found in Section 4.

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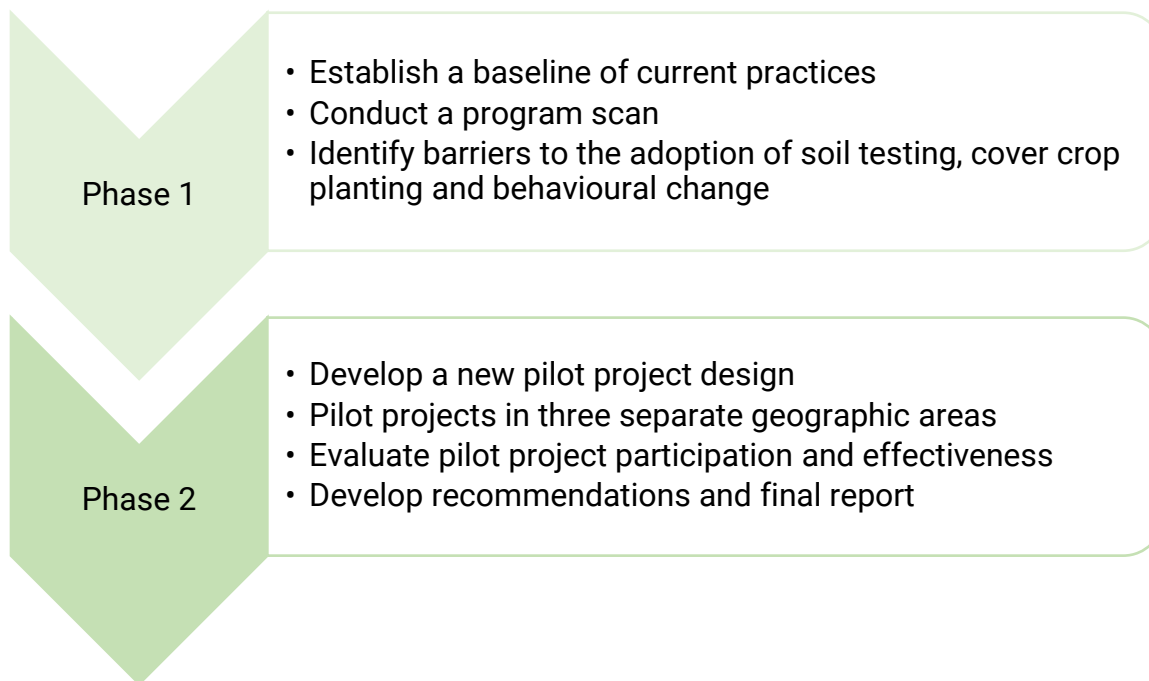
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# 1. Introduction

The Reducing Barriers to Best Management Practice (BMP) Adoption – Soil Testing and Cover Crops applied research initiative was intended to identify and address the key barriers for farmers in adopting the BMPs of soil testing and cover cropping. The three-year initiative began in 2019.

This project was funded by the Canadian Agricultural Partnership (the Partnership), a five-year federal-provincial-territorial initiative. The Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) identified the need for the project and contracted the Ontario Soil and Crop Improvement Association (OSCIA) for the delivery.

The project was divided into two phases:



## Highlights from Phase 1

The following barriers to cover cropping, soil testing, and BMP incentive programs were identified through Phase 1 of the project:

Table 3. Summary of barriers in Ontario

Summary of Barriers (with Examples) in Ontario <sup>1</sup>	
<b>Barriers to cover crop adoption</b>	<b>Financial barriers</b> <ul style="list-style-type: none"> <li>• Seed cost</li> <li>• Perceived risks of negative effects on cash crop yield</li> </ul>
	<b>Agronomic and farm management barriers</b> <ul style="list-style-type: none"> <li>• Climate and weather-related challenges</li> <li>• Real and/or perceived issues with weed control</li> </ul>
	<b>Information and knowledge barriers</b> <ul style="list-style-type: none"> <li>• Lack of local information and relevant technical guidance</li> <li>• Top-down approaches to messaging</li> </ul>
	<b>Structural/policy barriers</b> <ul style="list-style-type: none"> <li>• Less crop and livestock diversity</li> <li>• Unavailability of specialized equipment</li> </ul>
	<b>Socio-cultural barriers</b> <ul style="list-style-type: none"> <li>• Lack of support from broader industry</li> <li>• Negative peer pressure</li> </ul>
<b>Barriers to soil testing</b>	<b>Financial barriers</b> <ul style="list-style-type: none"> <li>• Soil test cost</li> </ul>
	<b>Information and knowledge barriers</b> <ul style="list-style-type: none"> <li>• Not understanding the need for soil testing</li> </ul>
	<b>Socio-cultural barriers</b> <ul style="list-style-type: none"> <li>• Lack of trust in government agencies such as Conservation Authorities</li> <li>• Resistance to change</li> </ul>
<b>Barriers to BMP incentive programs</b>	<b>Lack of awareness of cost-share programs</b> <ul style="list-style-type: none"> <li>• Among producers, seed dealers, and CCAs</li> </ul>
	<b>Lack of clear messaging</b> <ul style="list-style-type: none"> <li>• Particularly related to what programs are offered by which Conservation Authorities in which year</li> </ul>
	<b>Program administration</b> <ul style="list-style-type: none"> <li>• Too much paperwork and administrative burden for producers</li> <li>• Project and funding timelines do not fit with producers' schedules</li> <li>• Funding limitations</li> </ul>

The following opportunities were identified for BMP incentive programs:

- Create multi-year programs to “support early adopters through the first years of trialing a practice, rather than just first-time adopters”<sup>2</sup>

<sup>1</sup> Becky Swainson and Andrea Williams. Summit Consulting Co. (December 2020.) *Barriers to Adoption of Cover Crops and Soil Testing in Ontario*, p. 13, 18 and 83-84.

<sup>2</sup> Becky Swainson and Andrea Williams. Summit Consulting Co. (December 2020.) *Barriers to Adoption of Cover Crops and Soil Testing in Ontario*, p. 84.

- Leverage agri-businesses, including CCAs, seed dealers, soil testing labs, and agronomists
- Explore innovative incentive mechanisms, such as “offering carbon credits for cover crops, reducing taxes or insurance premiums based on BMP adoption, and social incentives”<sup>3</sup>

To build a successful program for influencing the adoption of cover crops and soil testing, delivery agents should:<sup>4</sup>

- Ensure the program messaging is accessible to applicants
- Build an effective communications plan, “letting farmers lead the conversation” and using digital and print outlets<sup>5</sup>
- Find the right incentives, in terms of cost-share percentages and blending both financial and non-financial incentives (e.g., personalized information)
- Support early adopters and innovators
- Work with established and trusted groups and professionals (e.g., OSCIA and CCAs)
- Keep the application simple
- Build in a system to monitor behavioural change

The reports from Phase 1 are available from OSCIA upon request.

## Setting the Stage for Phase 2

Phase 2 of the Reducing Barriers to BMP Adoption – Soil Testing and Cover Crops project built on this Phase 1 research through the development, launch, and delivery of a pilot project. It was to run over a minimum of one growing season in three geographic areas: southwestern, central, and eastern Ontario. Lambton, Simcoe, and Renfrew Counties were selected. The pilot project was supplemented with resources that supported the pilot project design and evaluated through a comprehensive process.

This report outlines the pilot project design and presents the pilot project evaluation and key findings.

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<sup>3</sup> Becky Swainson and Andrea Williams. Summit Consulting Co. (December 2020.) *Barriers to Adoption of Cover Crops and Soil Testing in Ontario*, p. 85.

<sup>4</sup> Becky Swainson and Andrea Williams. (March 2020.) *Review and Evaluation of Program Models for Increasing the Adoption of Cover Crops and/or Soil Testing*, p. 21-26.

<sup>5</sup> Becky Swainson and Andrea Williams. (March 2020.) *Review and Evaluation of Program Models for Increasing the Adoption of Cover Crops and/or Soil Testing*, p. 21.



## 2. Pilot Project Design

### 2.1. Overview

*Accelerate Your Soil Health Game* was developed as a targeted pilot project to assess a reduced barriers approach to cost-share funding. Successful applicants could increase their knowledge of the relevant soil productivity practices (i.e. soil testing and/or cover cropping) by accessing free, local advice and guidance from a participating CCA or P.Ag. Successful applicants were also eligible for 60 per cent cost share funding for their soil testing or cover cropping projects, up to \$2,500/project.

### 2.2. Eligibility

Producers needed to meet two criteria to be eligible to apply:

- Have a Farm Business Registration number
- Be in Lambton, Simcoe, or Renfrew Counties

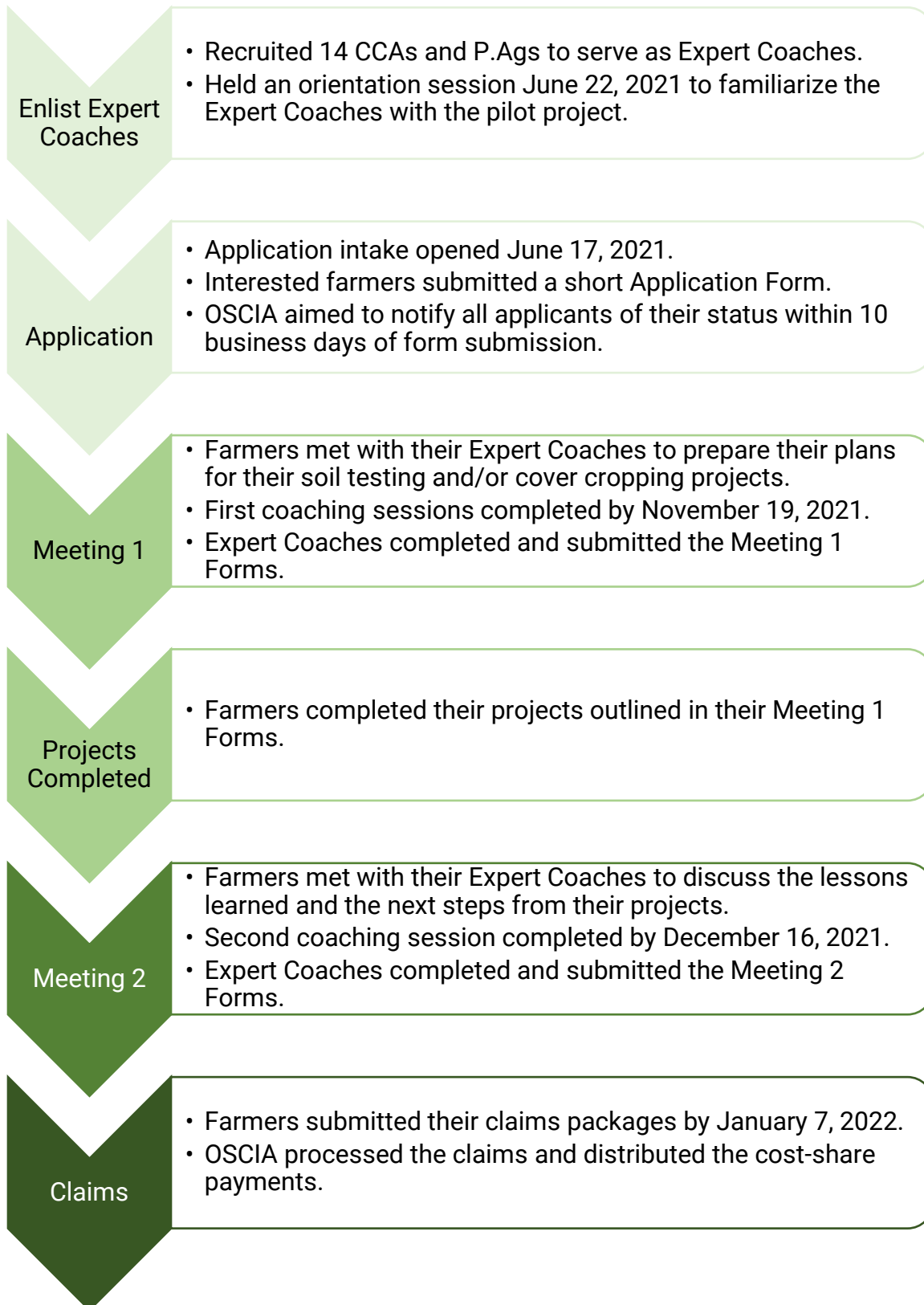
### 2.3. Streams

Participants could sign up for the *Cover Crops* stream and/or the *Soil Testing* stream. In either stream, participants could select from the *Basic* or *Up Your Game* levels.

Table 4. Details on cover cropping and soil testing streams

Cover crops	Soil testing
<i>Basic</i> Plant an over-wintering cover crop on this field for the first time (winter wheat and alfalfa were not eligible).	<i>Basic</i> First time since 2016: <ul style="list-style-type: none"><li>• Soil sampling by any method (e.g., bulk, grid, zone, or other smart technologies).</li><li>• Minimum analysis is the basic analysis package from an OMAFRA-accredited lab.</li></ul>
<i>Up Your Game</i> Plant a new type of cover crop on this field including: <ul style="list-style-type: none"><li>• First time for grazing.</li><li>• First time with a diverse mix (or a more diverse mix than normal).</li><li>• First time interseeding into corn or soybeans.</li><li>• First time growing a winter cereal including rye, triticale, barely or canola. (Winter wheat and alfalfa not eligible.)</li></ul>	<i>Up Your Game</i> For fields sampled between 2017 and 2021: <ul style="list-style-type: none"><li>• Soil sampling using grid, zone or other smart technologies to create management zones or enhanced mapping.</li><li>• Analysis must include the basic analysis package as well as parameters that will enhance management options, from an OMAFRA accredited lab.</li><li>• The technology or analysis must exceed previous sampling completed.</li></ul>

## 2.4. Process



## 2.5. Pilot Project Promotional Materials & Resources

Once the pilot project design was finalized, OSCIA needed to promote the pilot and assemble and develop resources to complement the pilot project design.

### Promotional Materials

OSCIA created a two-pager to provide a high-level overview of the pilot project. OSCIA announced the pilot project in a May 3, 2021 press release, and announced the intake for the pilot project in a June 14, 2021 press release. Then, OSCIA circulated e-blasts to its local associations in Lambton, Simcoe and Renfrew to support the regionalized sharing of information. OSCIA also shared an e-blast template with its Expert Coaches so they could conduct direct outreach to their current and prospective clients. These promotional materials are available upon request.

### Resources

As so many stakeholders across the province have created a range of practical materials related to cover cropping and soil testing, OSCIA created a “one-stop shop” to enable farmers to find:

- Local advice and strategies
- Tools and information
- Other financial assistance

The Local Advice and Strategies [content](#) is intended to enable farmers to find information specific to their areas so they can develop strategies for their farms. This webpage include lists of articles and videos of Ontario farmers sharing how they implement soil productivity practices in their operations. The webpage also specifies the farmers’ geographic region and commodities produced to enable readers to find local advice.

The Tools and Information [content](#) direct readers to articles, factsheets, videos and apps on how to:

- Soil sample
- Interpret soil test results
- Calculate fertilizer application rates
- Select cover crop species
- Incorporate cover crops into a crop rotation

The Other Financial Assistance [content](#) provides an overview of funding opportunities available at the watershed or county level for soil health productivity practices.

## 2.6. Pilot Project Goals

The pilot project design was intended to enable producers to overcome:

- Financial barriers through the 60 per cent cost share
- Agronomic, farm management, information and knowledge barriers through access to a local CCA or P.Ag., as well as the online suite of resources
- The administrative burden of traditional cost-share funding programs, as:
  - The application was simplified
  - Applicants could apply for both the cover cropping and soil testing streams on the same form
  - And Expert Coaches completed the meeting forms on behalf of the farmers

Although it was a pilot project, which necessitated a limited number of participants, the promotional materials and communications strategy were intended to increase local awareness of the pilot project and to ensure clear messaging.

### 3. Pilot Project Evaluation & Findings

This project used a mixed-methods approach for behavioural change and pilot project evaluation.

#### A. Accelerate Your Soil Health Meeting 1 Forms

- In total, 104 first meeting forms were completed:
  - 43 for cover cropping projects
  - And 61 for the soil testing projects.
- Gathered information on previous experience with the BMPs and goals for their pilot project.

#### B. Accelerate Your Soil Health Meeting 2 Forms

- In total, 102 second meeting forms were completed:
  - 41 for cover cropping projects
  - And 61 for soil testing projects.
- Gathered information on participants' lessons learned and planned next steps.

#### C. Interviews with Expert Coaches

- Interviewed 13 Expert Coaches.
- Gathered feedback on which aspects of the pilot project worked well and which aspects could be improved for future programs.
- Discussed whether this pilot project helped participants overcome challenges to the adoption of soil testing and cover cropping.

#### D. Post-Pilot Farmer Survey

- Collected responses from 60 individuals.
- Gathered feedback on the helpfulness of the pilot project and if it influenced participants' use of soil testing and cover cropping.

#### E. Renfrew County Workshop

- Facilitated a virtual workshop with 11 pilot project participants (Expert Coaches and farmers). In total, 15 individuals (including organizers) participated in the session.
- Discussed lessons learned in the use of soil testing and cover cropping.
- Brainstormed tools and strategies to overcome any challenges to soil testing and cover cropping in 2022.
- Explored ways to improve future programming.

### 3.1. At a Glance: Pilot Project Participants

Most commonly, pilot project participants produced oilseeds and grains, beef cattle, and dairy cattle and milk production.<sup>6</sup> According to the 2016 Census, the oilseed and grain sector is the largest sector in Lambton and Simcoe counties, while beef cattle ranching and farming is the largest sector in Renfrew County. So, participating farm types match the general trends for the pilot counties. Participants also produced a range of other commodities, showing the pilot project was accessible to a diversity of operations. For example, other commodities produced included poultry and eggs, sheep and goats, and vegetables and melons.

Participants' farm size also varied widely, ranging from 70 to 129 acres to 3,520 acres and over. The breadth of farm sizes suggests the pilot project was accessible to small, mid-sized, and larger operations.<sup>7</sup> The pilot project was scalable to different types and different sizes of operations, ranging from market gardeners to livestock producers and cash croppers, workshop participants said.

In total, 40 participants completed cover cropping projects. Just over half (53%) of these projects were in Renfrew County, and the remainder of projects were split fairly evenly between Lambton and Simcoe Counties. A higher number of farmers (55) completed soil testing projects.<sup>8</sup> Again, Renfrew County had the highest representation, with 43% of these projects occurring in the county. Lambton County producers completed 35% of projects and Simcoe County producers completed the remainder (22%). So, while Renfrew County certainly had a high level of engagement in the Accelerate Your Soil Health Pilot Project, farmers in Lambton and Simcoe Counties were also involved.

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<sup>6</sup> The percentages for the cover cropping participants were 81% oilseeds and grains, 37% beef cattle, and 19% dairy cattle and milk production (19%). The percentages for the soil testing participants were 56% oilseeds and grains, 20%, beef cattle, and 12% dairy cattle and milk production.

<sup>7</sup> The smallest farm operations were between 70 to 129 acres in size, while the largest farm operations were 3,520 acres in size or larger.

<sup>8</sup> Six producers in Renfrew County were unable to complete their soil testing but they still had both meetings with their coaches. As all 61 producers fulfilled the educational component through the completion of both sets of meeting forms, their experiences are documented in this report.

Table 5. Number of farmers completing cover cropping and soil testing projects

County	Census farms (number) <sup>9</sup>	Number of farmers who completed cover cropping projects	Number of farmers who completed soil testing projects
Lambton	2,091	9	19
Renfrew	1,029	21	24
Simcoe	1,974	10	12
<b>Total</b>	<b>5,094</b>	<b>40</b>	<b>55</b>

In total, producers enrolled 5,222 acres in cover cropping projects and 15,175 acres in soil testing projects.

Table 6. Number of acres cover cropped and soil tested through the pilot project

County	Land in crops or pasture (Acres) <sup>10</sup>	Acres cover cropped	Acres soil tested
Lambton	531,313	1,078	4,962
Renfrew	230,953	2,197	6,834
Simcoe	422,795	1,947	3,379
<b>Total</b>	<b>1,185,061</b>	<b>5,222</b>	<b>15,175</b>

## Cover Cropping

Almost two-thirds (63%) of participants had cover cropped before, while the remainder (37%) did not have previous experience with cover cropping. Of those participants who had cover cropped before, half grew cover crops after wheat or another annual crop. Others who had experience with cover cropping used cover crops for grazing (15%), or grew winter cereals or winter canola (12%). A small number of participants had interseeded cover crops into corn or soybeans (6%) or tried another method of cover cropping.<sup>11</sup> Most participants who had previous experience cover cropping (89%) had grown cover crops in the last three years (2019-21). Thus, the pilot project offered

Most participants who had previous experience cover cropping had grown cover crops after wheat or another annual crop in the last three years.

<sup>9</sup> Statistics Canada. Census of Agriculture. Number of Census Farms and Number of Farm Operators, by County, 2016. Retrieved from: [http://www.omafra.gov.on.ca/english/stats/census/farm\\_ontario16.htm](http://www.omafra.gov.on.ca/english/stats/census/farm_ontario16.htm).

<sup>10</sup> Calculated based on land in crops, tame or seeded pasture, and natural land for pasture. See Ontario Ministry of Agriculture, Food and Rural Affairs. County Profiles: Agriculture, Food and Business. Retrieved from <http://www.omafra.gov.on.ca/english/stats/county/index.html>.

<sup>11</sup> Other methods of cover cropping included planting cover crops on acres that could not be planted in the spring and underseeding red clover in wheat.

opportunities for participants both to try cover cropping for the first time, or to “up their game” in their use of this BMP.

The participants who had not cover cropped before, or who had not grown cover crops in the last three years, shared why they had not incorporated cover crops into their rotations. These reasons are summarized in the table below. Generally, the barriers can be classified as financial, agronomic/farm management, and information and knowledge.

Table 7. Reasons for not cover cropping prior to the pilot project

<b>Reasons for not cover cropping prior to the pilot project</b>
<p><b>Financial barriers</b></p> <ul style="list-style-type: none"> <li>• Not sold on the perceived value</li> <li>• Concerns about cash flow</li> <li>• Concerns about return on investment</li> </ul>
<p><b>Agronomic and farm management barriers</b></p> <ul style="list-style-type: none"> <li>• Concerns about potential pest issues</li> <li>• Previous unsuccessful attempts or poor cover crop establishment (e.g., weather not conducive to cover crop establishment)</li> <li>• Growing season limitations (i.e., needing to get the beans off in a timely manner to allow for cover crop establishment)</li> <li>• Lack of time</li> <li>• Lack of experience</li> <li>• Lack of equipment</li> <li>• Felt a cover crop was “risky on high clay content soil when planting on wheat stubble”</li> <li>• Concerns about the impacts on the subsequent crop (particularly with a cover crop that would overwinter)</li> <li>• Concerns about drainage in the spring on heavier soils</li> </ul>
<p><b>Information and knowledge barriers</b></p> <ul style="list-style-type: none"> <li>• Concerns over adaptability to the region</li> <li>• Lack of knowledge</li> </ul>

## Soil Testing

Most (97%) participants had soil tested before; only 3% had no previous experience with soil testing. Most (91%) had soil tested between 2017 and 2021, suggesting they adhere to the BMP of soil testing approximately every three to five years.

A deeper dive into participants’ experience with soil testing, however, presents a more complex picture. Most participants (60%) had soil tested the fields in this pilot project in the past five years. Another 20% of participants had last tested these fields in the past six to 10 years, and 5% last tested these fields over 10 years ago. Finally, another 16% of participants had never soil tested the fields enrolled in this pilot.



In terms of their previous soil sampling packages, most participants (60%) used bulk or composite sampling, which is the most basic method of sampling. Another 22% conducted zone sampling, while 18% conducted grid sampling. In terms of the soil testing package, most (57%) used a complete (or a basic + micronutrients) package. Another 41% of participants simply used a basic package, while no one had conducted a soil health test.

So, in the case of the soil testing pilot project participants, most individuals had previous experience with soil testing but had opportunities to “up their game” in their use of this BMP – whether by conducting soil testing more regularly, using a more detailed sampling method (i.e., zone or grid sampling), and/or using a more detailed sampling package (e.g., a complete package or a soil health package).

Participants shared the barriers they faced regarding soil testing, or more detailed soil testing (e.g., zone or grid sampling methods with complete or enhanced analysis) in the past. These barriers included:

- Lack of time (e.g., for farmers who also work off farm)
- Lack of skilled labourers or local service providers to pull the soil samples
- Weather limitations (i.e., not enough time after harvest to soil sample properly)
- Costs of soil sampling
- Limited options (e.g., local service provider only offered bulk or composite sampling)
- Lack of knowledge of the return on investment and benefits of soil sampling

### 3.2. At a Glance: Pilot Projects

#### Cover Cropping

Participants sought to try a range of “methods” for cover cropping through their projects.<sup>12</sup> In descending order, the “methods” were as follows:

- Growing a more diverse cover crop (38%)
- Growing winter cereals or winter canola (28%)
- Growing a cover crop for the first time (23%)
- And growing a cover crop for grazing (11%).

Not surprisingly, most participants (53%) sought to add cover crops to their rotations after small grains, including wheat, rye, barley, oats, and spring cereals. The earlier harvest window for these crops makes it easier to incorporate cover crops into the

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<sup>12</sup> Given the timing of the pilot project rollout, it was not feasible for farmers to interseed a cover crop into corn or soybeans in the 2021 growing season.

rotation. However, some farmers also sought to grow cover crops after soybeans, corn, corn silage, horticultural crops, and hay.

Participants shared their goals for their cover cropping projects. These goals are summarized below.

Table 8. Goals for cover cropping projects

Goals for cover cropping projects
<p><b>Improve soil health, including:</b></p> <ul style="list-style-type: none"> <li>• Soil biome diversity</li> <li>• Organic matter levels</li> <li>• Soil carbon</li> </ul>
<p><b>Improve soil structure</b></p> <ul style="list-style-type: none"> <li>• Reduce soil erosion</li> <li>• Reduce soil compaction</li> <li>• Improve drought tolerance</li> <li>• Increase water-holding capacity</li> </ul>
<p><b>Diversify crop rotation</b></p> <ul style="list-style-type: none"> <li>• Addition of winter canola</li> <li>• To increase yields and soil productivity</li> <li>• To diversify income streams</li> </ul>
<p><b>Produce livestock feed</b></p> <ul style="list-style-type: none"> <li>• For grazing or harvest</li> <li>• Spread risk and workload for feed production</li> <li>• In the process, use manure from grazing livestock to fertilize the fields</li> </ul>
<p><b>Create additional benefits for subsequent crops</b></p> <ul style="list-style-type: none"> <li>• Retain nutrients (e.g., nitrogen)</li> <li>• Improve weed control/reduce weed pressure</li> <li>• Support integrated pest management (i.e., to control diseases and weeds), making crops more resilient</li> </ul>

Participants tried a diversity of cover crop mixes, including:

- Cereal rye, oats, and tillage radish
- Timothy, white clover, and fall fescue
- Cereal rye, oats, peas, and tillage radish
- Oats, Austrian winter peas, millet, and oilseed radish
- Triticale and peas
- Oats, radish, crimson clover, vetch, and Austrian winter peas
- Winter canola
- 14-species mix including sorghum, millet, radish, and oats
- Oats
- Blend of 60% oats, 20% eco-till brand radish, and 20% crimson clover

- Rye and winter forage peas (Austrian)
- Spring wheat
- Cereal rye
- Three-way mix of oats, radish, and peas

Participants also shared their reasons for selecting their cover crop mixes. Generally, producers welcomed the opportunity to experiment with:

- More diverse cover crop mixes to better support their soil health and agronomic goals
- Cover crops to learn which species are best suited to their soils, geographic locations and crop rotations
- Finding budget-friendly mixes or mixes that provide a return on investment (e.g., forage and canola)
- Finding mixes that have a “high predictability of success”

### Soil Testing

Most commonly (42%), participants sought to complete an enhanced analysis of their soils. This enhanced analysis was largely [Soil, Water and Topography \(SWAT\)](#) mapping, although a few participants conducted [SoilOptix](#) scanning, opted for a larger micronutrient testing package, or completed soil health testing. Another third (33%) of participants planned to conduct zone sampling. Others (18%) opted for grid sampling, while the remainder (7%) opted for bulk or composite sampling. Overall, pilot project participants sought to better understand the variability in their soils.

Participants shared their goals for their soil testing projects. These goals are outlined in the table below. They can be summarized as a desire for increased knowledge, a commitment to protecting and improving soil health, an interest in fine-tuning crop input plans, and a desire to support herd health.

Table 9. Goals for soil testing projects

<b>Goals for soil testing projects</b>
<p><b>Increase knowledge of:</b></p> <ul style="list-style-type: none"> <li>• Soil health</li> <li>• Soil composition</li> <li>• Soil water availability and water movement in the field</li> <li>• Soil potential</li> <li>• Soil texture</li> <li>• Soil nutrient levels</li> <li>• Causes of crop variability within a field</li> <li>• Crop nutrient usage</li> </ul>
<p><b>Protect and improve soil health in the long term</b></p> <p><b>Fine-tune crop input plans</b></p> <ul style="list-style-type: none"> <li>• To ensure adherence to 4R Nutrient Stewardship Guidelines</li> <li>• To support more uniform yields across fields</li> <li>• To ensure fertilizer plans properly fertilize for crop removal and build fertility as necessary</li> <li>• To create or improve variable-rate application zones               <ul style="list-style-type: none"> <li>○ For seed, fertilizer (particularly phosphorous and nitrogen), and/or soil amendments (i.e., lime)</li> <li>○ Offers benefits from cost and environmental perspectives (e.g., reducing phosphorous load on the environment)</li> </ul> </li> </ul>
<p><b>Learn about factors influencing animal performance and herd health</b></p> <ul style="list-style-type: none"> <li>• E.g., to understand the soil pH and molybdenum levels in pastures, which can impact herd health</li> </ul>

### 3.3. Agronomic Lessons Learned

#### Cover Cropping

In their second meetings with their Expert Coaches, pilot project participants shared their main takeaways from their discussion of this BMP. These takeaways can be summarized as the many benefits of cover crops and how to develop a successful cover crop program.

Table 10. Main takeaways from cover cropping discussions

<b>Main takeaways from cover cropping discussions</b>
<b>Benefits of cover crops</b> <ul style="list-style-type: none"><li>• Improves soil health and soil structure</li><li>• Reduces soil erosion potential</li><li>• Helps to address compaction issues</li><li>• Potential for grazing or forage, which provides economic return</li><li>• Potential for double cropping</li><li>• Reduces disease pressure for subsequent crops</li><li>• Improves soil productivity and resilience, which ultimately should bring economic benefits</li><li>• Makes the no-till system work</li><li>• Suppresses weeds</li><li>• Holds nutrients</li><li>• Contributes organic matter to soils</li><li>• But it takes time to see benefits, and several up-front costs exist (e.g., cover crop seed and herbicides)</li></ul>
<b>How to develop a successful cover crop program</b> <ul style="list-style-type: none"><li>• Set a defined strategy and particular goal</li><li>• Plant the cover crop in a timely manner</li><li>• Develop a management strategy</li><li>• Apply nitrogen fertilizer, or manure as a source of nitrogen, to help with biomass accumulation</li><li>• Tailor the cover crop mix to your operation</li></ul>

Most survey respondents (n=28) agreed or strongly agreed they learned more about the benefits of cover cropping and how to incorporate cover crops into their rotations by working with their Expert Coaches. “The Coach was great at helping connect me to more resources for cover cropping. The general discussion and brainstorming helped make this project successful. I was very grateful for the coaching sessions,” one survey respondent added.

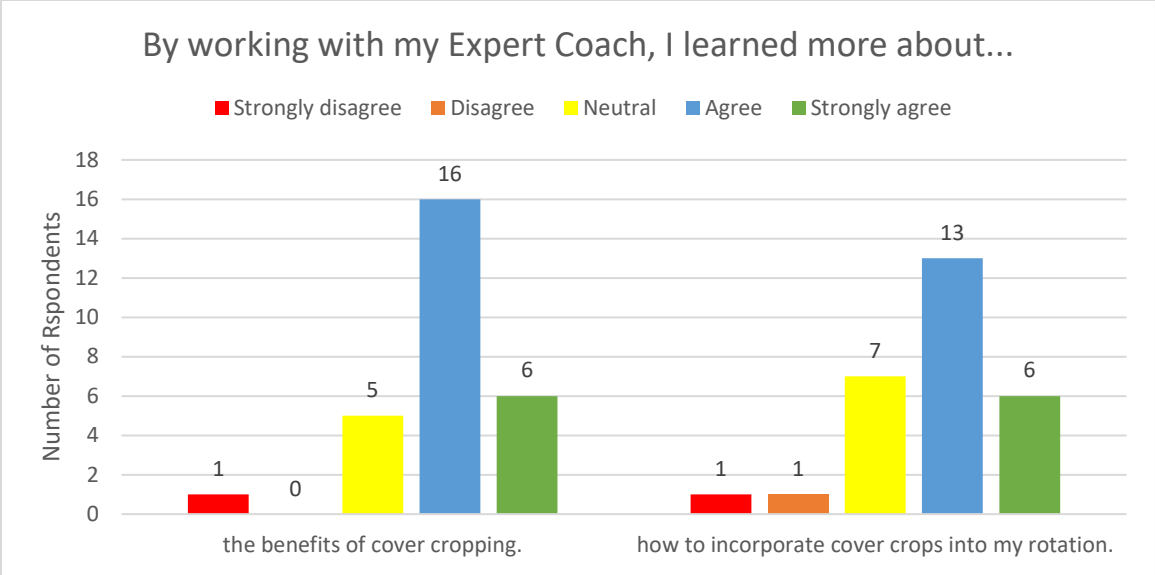


Figure 1. Responses to questions about information learned by working with Expert Coaches (n=28)

### Soil Testing

In their second meetings with their Expert Coaches, participants shared the main takeaways from their discussions of their soil test results and fertilizer plans. These main takeaways surrounded a better understanding of the differences within fields and between farms, and the development of soil management zones.

Table 11. Main takeaways from soil testing discussions

Main takeaways from soil testing discussions
<p><b>Better understanding of the differences within fields and between farms</b></p> <ul style="list-style-type: none"> <li>• Correlation between soil test results and yield maps</li> <li>• Yield-limiting factors in specific fields</li> <li>• How soil test levels have changed over time because of management practices               <ul style="list-style-type: none"> <li>○ Crop rotation, fertilizer and soil amendment programs, manure applications, etc.</li> </ul> </li> </ul>
<p><b>Development of soil management zones, which allow for:</b></p> <ul style="list-style-type: none"> <li>• The development of targeted fertilizer programs               <ul style="list-style-type: none"> <li>○ To address deficiencies and avoid over-application of nutrients</li> <li>○ To protect the environment</li> <li>○ To manage costs and improve return on investment</li> </ul> </li> <li>• Variable-rate applications of fertilizer, soil amendments and/or seed</li> <li>• The prioritizing of nutrient inputs</li> <li>• The prioritizing of locations for manure applications</li> </ul>

Most survey respondents (n=42) agreed or strongly agreed that, by working with their Expert Coaches, they learned more about:

- The benefits of soil testing
- How to interpret a soil test report
- How to develop a fertilizer program based on a soil test report

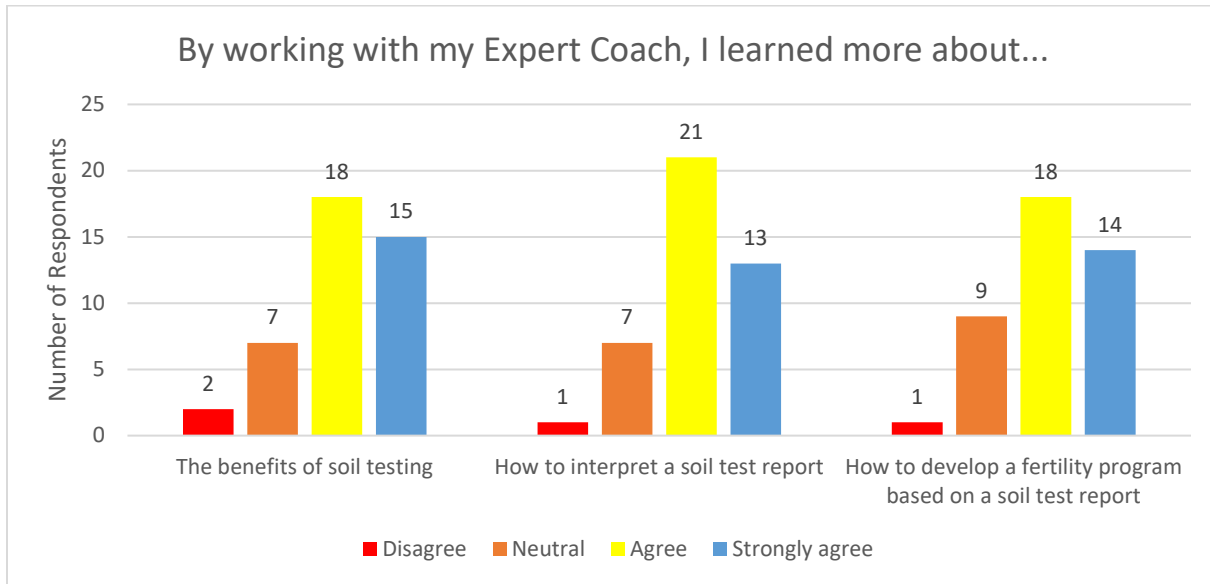


Figure 2. Responses to questions about information learned by working with Expert Coaches (n=42). Note: No respondents strongly disagreed with any of the statements.

### 3.4. Behavioural Change Assessment

#### Cover Cropping

Overall, through both their meetings with their Expert Coaches and their survey responses, farmers had positive responses about their continued use of cover crops after this pilot project. In their second meeting with their coaches, most participants (93%) said they would grow cover crops again in the next growing season. The remaining 7% said they would consider growing cover crops. Only one producer shared they were “not sure the outcome warranted the effort. Still have doubts.”

The responses were a little less clear-cut in the survey results; 39% of respondents (n=28) said they definitely plan to regularly use cover crops in their rotations, while another 39% said they probably would. A further 18% said they would possibly use this BMP, while the remaining 4% said they probably would not cover crop. The greater range of responses in the survey compared to the meetings suggests participants may have felt more comfortable sharing their opinions through an anonymous survey, rather than in direct conversation with their Expert Coaches.

The survey also underscored some broader-reaching positive outcomes from the pilot project. For example, because of their experiences in the pilot project, eight survey respondents (n=28) said they cover cropped additional acres that were not covered

under the cost-share funding. In total, these survey respondents cover cropped an additional 963 acres.

Pilot project participants are also likely to recommend cover cropping to other farmers; 54% of survey respondents said they were likely to recommend the BMP, while another 29% said they were very likely to recommend it. The remaining 17% were neutral on the subject; no respondents said they were unlikely or very unlikely to recommend cover cropping. “I think cover cropping is finally catching on in Renfrew,” one respondent added.

Overwhelmingly, then, participants were willing to incorporate cover crops into their crop rotations in subsequent years.

Participants shared some suggestions on the supports that would encourage them to increase the number of acres they cover cropped. These supports included knowledge mobilization and financial incentives.

#### Highlights from the meeting form question “Do you plan to use cover crops next year”

- “Yes, I see the potential it has. Anytime I can do double cropping I consider it to be a win, especially in our short growing season.”
- “Yes, they will be part of the strategy for the farm for the future, no matter how the crop turns out this year.”
- “Yes – big time! I know these will still be alive and this grant has allowed me to access more expensive seed than I would normally use. This has let me explore expensive seeds like buckwheat.”
- “Yes, absolutely. And will be experimenting more with different species before different crops.”
- “Yes, I see the potential it has. I think it’s ‘perfect stewardship.’ I think it makes economic sense – resiliency, water management, biodiversity.”



Table 12. Supports to increase cover crop adoption

Supports to increase cover crop adoption
<p><b>Knowledge mobilization</b></p> <ul style="list-style-type: none"> <li>• Recipes for success (e.g., for red clover in wheat, for affordable cover crop mixes)</li> <li>• More information on cover crop mixes, rates, and benefits</li> <li>• More information on how to manage the cover crop so it does not negatively impact the subsequent cash crop</li> <li>• Peer groups to support knowledge exchange</li> </ul>
<p><b>Financial incentives or supports</b></p> <ul style="list-style-type: none"> <li>• Continuation of cost-share programs (to enable farmers to reduce financial risks and experiment to fine-tune their systems)</li> <li>• Crop insurance for establishment coverage (premiums could be adjusted based on seed cost)</li> <li>• Carbon credits</li> </ul>
<p><b>Other considerations</b></p> <ul style="list-style-type: none"> <li>• Continued support to assist with grant applications</li> <li>• Local rental options for specialized equipment to seed cover crops (e.g., for interseeding)</li> </ul>

Survey respondents (n=28) shared the concerns that prevented them from cover cropping before beginning this pilot project. The top concerns were the cost and/or the return on investment (61%), agronomic challenges (61%), lack of time (36%), and uncertainty in how to incorporate cover crops into their rotations (36%). After completing the pilot project, the same percentage of respondents still identified the cost and/or the return on investment (61%), and lack of time (36%) as key barriers. Notably, however, the percentage of respondents who saw the following barriers as challenges after completing the pilot project decreased:

- Uncertain how to incorporate cover crops into my rotation (36% pre pilot versus 14% post pilot)
- Agronomic challenges (61% pre pilot versus 54% post pilot)
- Judgement from neighbours (4% pre pilot versus 0% post pilot)
- And short-term farmland rental agreement (14% pre pilot versus 7% post pilot)

While participation in the pilot project certainly did not remove all barriers to cover cropping, the experience helped to reduce the barriers.

## Soil Testing

Overall, most pilot project participants will continue soil testing on a regular basis.<sup>13</sup> In their second meetings with their Expert Coaches, most participants (92%) shared they plan to continue regular soil testing in their operations. The remaining 8% of respondents said they would consider completing regular soil testing.

As with the cover cropping stream, the responses varied more in the survey (n=42). Most (52%) said they definitely plan to soil test all acres every three to five years and 31% said they will probably adhere to this BMP. The remaining answers were possibly (12%), probably not (2.5%), and definitely not (2.5%).

However, the success of the pilot project is underscored by the fact that, because of their experiences in the pilot project, some participants soil tested additional acres that were not covered under the cost-share funding. In total, 17 survey respondents said they soil tested an additional 2,503 acres, equating to an average of 109 acres/respondent.

Survey respondents (n=42) noted the continued barriers of soil testing costs and/or the return on investment, a lack of time, and short-term farmland rental agreements. The issue of time limitations was also underscored in pilot project completions; a total of six applicants were unable to collect their soil samples in time to complete the pilot project, even though these farmers completed both coaching sessions and sought more knowledge. Mother Nature, competing priorities, and the lack of available service providers can provide significant constraints to the consistent use of this BMP.

Despite the continuation of some barriers to soil testing, survey respondents indicated a reduction in other barriers. For example, while 10% of survey respondents did not see the need or value in soil testing before beginning the pilot, no survey respondents identified this concern after completing the pilot. Fewer survey respondents saw how to interpret a soil test as a continuing barrier; while 17% identified this concern before

### Highlights from the meeting form question “Do you plan to continue regular soil testing on your operation”

- “Definitely. We want to track levels long term to monitor changes to our fertility program.”
- “Yes, soil sample each year after wheat so there is time to incorporate the results into a fertility plan for the next season.”
- “Yes, absolutely. It's just a matter in making it a habit – and having time to get it done.”
- “Yes, adopting the new grid sampling as the new normal.”
- “Yes. Soils are much more variable than we thought. This process permits making improvements by zone.”

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<sup>13</sup> Regular soil testing was defined as soil testing completed every three to five years.

beginning this pilot, only 7% identified this concern after completing the pilot. Thus, the pilot project helped participants to recognize the value of soil testing and to learn how to interpret a soil test.

Notably, too, most survey respondents said they were likely (55%) or very likely (33%) to recommend soil testing to other farmers. The remaining 12% of respondents were neutral on this question, and no one said they were very unlikely or unlikely to recommend the practice. “We have shared our experiences, especially with regard to the fields that required different applications than we thought,” one respondent added.

Pilot project participants shared some suggestions on supports to encourage them to increase the number of acres they regularly soil sample. These supports included access to technology, financial incentives, and access to local service providers.

Table 13. Supports to encourage regular soil testing

Supports to encourage regular soil testing
<p><b>Access to technology</b></p> <ul style="list-style-type: none"> <li>To enable producers to better manage where their soil samples are taken</li> </ul>
<p><b>Financial incentives</b></p> <ul style="list-style-type: none"> <li>Cost-share programs</li> <li>Rebate programs or subsidies for soil testing when producers purchase fertilizer</li> </ul>
<p><b>Access to local service providers with:</b></p> <ul style="list-style-type: none"> <li>The capacity to pull the samples</li> <li>The equipment and technology to do variable-rate fertilizer applications</li> </ul>

Expert coaches also highlighted the importance of farmers’ advisory networks in helping to ensure they continue to soil test. “If you are working with someone who helps you use the info (i.e., the soil test reports), you’re more likely to stay the course and keep soil testing on a more consistent basis,” one coach said. Another Expert Coach noted broader market conditions can help to drive the adoption of this BMP; with rising fertilizer costs, farmers may be more likely to soil test to help better manage their crop input costs and ensure the money they spend will provide the most return on investment.

### Overall

The pilot project enabled farmer participants to build their confidence in the use of these BMPs, according to Expert Coaches in interviews and workshop participants. For example, the pilot project “helped the farmer build more confidence in soil sampling and build an understanding of how to build it into the farm business,” one Coach said.

The level of supports producers would need to continue the use of these BMPs would vary by the person, Expert Coaches said. For example, the more experience the producer

has with the BMP, “the less coaching they need. ... If it’s a new practice for them, more time in coaching is required to overcome some of the barriers,” one Coach said. Producers will be motivated to continue soil testing and cover cropping when they see a successful year as an outgrowth of these BMPs, other coaches said. For example, advisors can collaborate with producers to use the information from the soil test reports to developed targeted fertilizer and soil amendment programs. If the weather cooperates, “I think (this participant will) notice a more profitable year and convert to being a soil sampling believer. I think 90% of my clients keep sampling once they see the benefits,” an Expert Coach said.

### 3.5. Pilot Project Design

#### Barriers to Accessing Cost Share

In addition to overcoming the financial, agronomic, farm management, and knowledge barriers to cover cropping and soil testing, the pilot project sought to overcome administrative barriers. The latter barriers related to eligibility requirements and the application and claims processes.

In total, 68% of survey respondents (n=53) had Environmental Farm Plans (EFPs), which are traditionally a requirement to access government cost-share programs for agri-environmental projects. The remaining 32% of respondents did not have EFPs. Only a small segment (13%) of respondents (n=53) saw the lack of a current EFP as a barrier for accessing other agricultural or environmental cost-share programs, although another 42% were uncertain if the lack of a current EFP was a barrier.

The pilot project attracted farmers who had not participated in another agricultural or environmental cost-share funding program in the past ten years; 38% of respondents (n=53) said they had not applied for other programs within this timeframe, while another 13% were uncertain.<sup>14</sup> “We applied for something to help with renovations, but the time (the application) required was huge and I needed (many) quotes. We were turned down. After all the work, it was very frustrating,” one survey respondent added.

Of those respondents (n=26) who had applied for cost-share funding, most (92%) had applied for funding through OSCIA; another 23% had applied for funding through their local Conservation Authority. One respondent noted OSCIA is their “only source of environmental cost-share funding,” as they “do not have a Conservation Authority or Alternative Land Use Services (ALUS) available locally.”

Respondents (n=26) shared the challenges they faced with submitting previous funding applications. While almost a quarter (23%) said they did not face any challenges, the most common hurdles were:

- The timing of the application window (i.e., the application window was too short or at an inconvenient time of year) (58%)
- The length of the application (42%)
- The lack of help for the application process (31%)

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<sup>14</sup> Most (70%) survey respondents (n=27) said they did not apply for cost-share funding before because they did not know of funding opportunities. The other most common responses were: the application window was too inconvenient (22%), the funding opportunities did not meet their needs (19%), and they did not meet application requirements (19%).

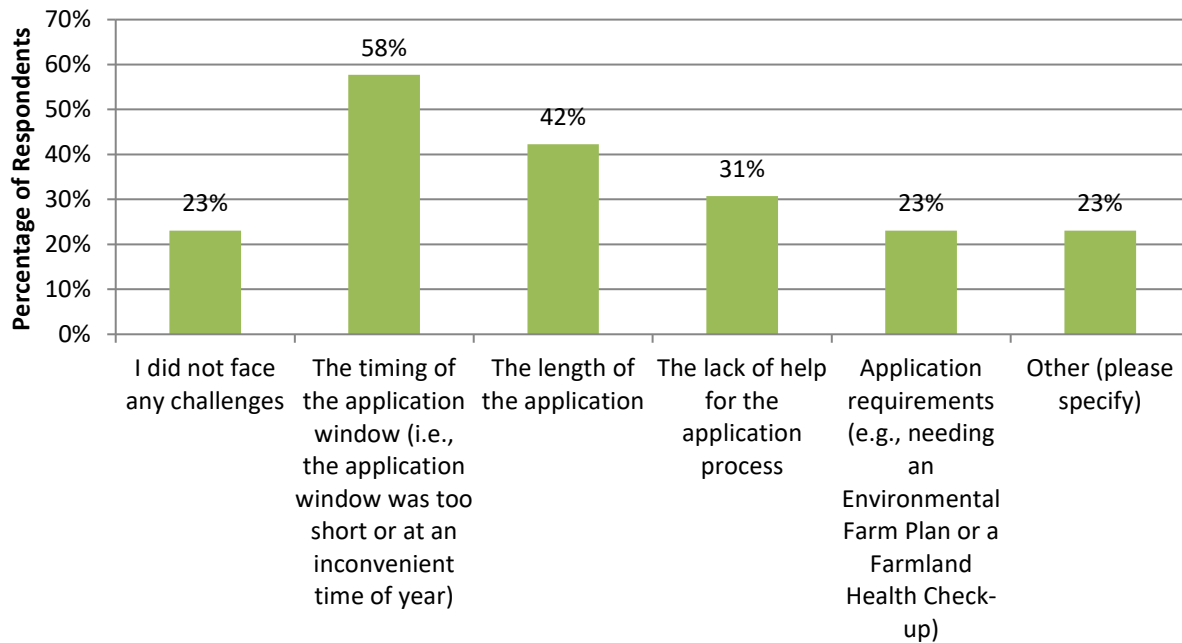


Figure 3. Challenges respondents faced in submitting funding applications (n=26)

Respondents also shared “much of the applications seem more relevant to larger operations,” and the applications are not accessible to many producers from a technological, literacy, or administrative perspective. The programs are inflexible and do not “adjust to poor weather or supply chain issues,” another respondent noted.

Significantly, most respondents (n=26) said the Accelerate Your Soil Health Game application process was significantly less demanding (46%) or slightly less demanding (27%) than other cost share programs. “This grant was fairly quick and easy and got to the point. The Coach made it very smooth and assisted so well with the applications. I feel like the main goal was accomplished with ease – get farmers using cover crops. Very attractive program that I would like to see continue,” one respondent added.

Thus, the pilot project met one of its key goals of reducing the administrative burden and paperwork for farmers.

## Pilot Project Design Strengths

### *Structure of Coach-Farmer Relationships & Associated Paperwork*

The process of meeting with Expert Coaches and completing meeting forms was met with overwhelmingly positive feedback from farmers and Expert Coaches alike. Farmers appreciated not having to complete administrative tasks related to filling out and submitting project forms through the pilot project. Many farmers lose interest in funding programs simply due to the amount of paperwork, and this pilot project eliminated that barrier, Expert Coaches said. This structure allowed farmers to invest their time in learning through the pilot project, instead of completing administrative duties.

*"The paperwork was perfect. Just enough info needed; but not too much. I've been involved in so many funding projects that collect way more information than needed and it really puts participants off – this model removed those barriers."*

- Expert Coach

"It's not that much funding needed" to try soil testing and cover cropping projects at the farm level, one Expert Coach said. So, the trade-off between administrative time commitments and funding provided may play a larger role in participation in programs with lower-cost projects.

The questionnaires included "really good questions" and, because of that, it was "easy to develop a plan from those questions," Expert Coaches said. They valued compensation for the time they committed to completing the paperwork.

Participants liked that the Expert Coaches were not retailers. The Coaches had no additional "motive" and had more time to dedicate to one-on-one support. Farmers felt comfortable asking their Expert Coach questions and were open to conversations about current practices and opportunities for change, Expert Coaches said. They also believed farmers were more comfortable asking questions one-on-one, rather than in front of their peers. The coaching format eliminated the "stigma" around asking questions on topics farmers felt they needed to be experts on.

*"A lot of the time farmers notice they have a challenge, but they don't know what to do and where to start. It can be too much trouble to get started. Having a Coach, someone who isn't trying to sell you anything, brings a lot of value. The Coaches don't manage, but can guide (farmers) and be there to answer questions. The farmer has to recognize the value and learn how to do it. This program is set up in a way to help do that."*

- Expert Coach

Most survey respondents (n=53) agreed or strongly agreed that:

- The application process was straightforward.
- They could access the help they needed to complete their applications.

- The benefits of participation justified the amount of time they spent on the application process.

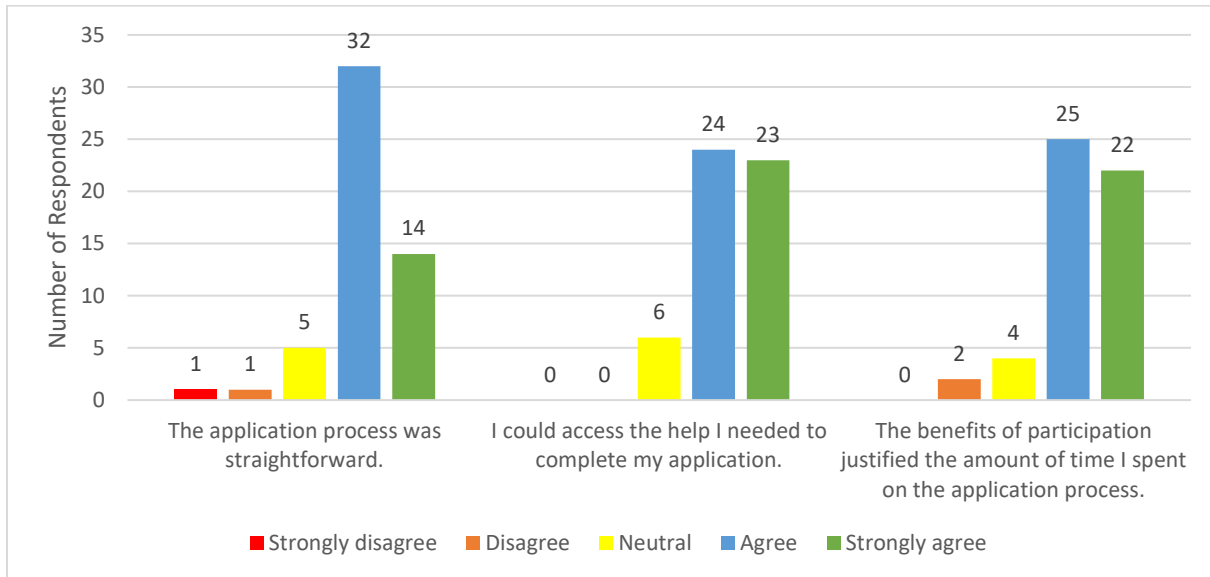


Figure 4. Respondents' level of agreement to three statements about the application process. (n=53)

The Accelerate Your Soil Health Pilot Project was the “best grant program I’ve participated in yet in terms of the application process,” one survey respondent added.

Overwhelmingly, survey respondents (n=53) agreed or strongly agreed that:

- Their Expert Coach was knowledgeable about the subject matter (98%)
- Their Expert Coach helped them advance their knowledge about soil testing and/or cover cropping (96%)

The strength of the pilot project design is further underscored by the fact that 53% of survey respondents (n=53%) said they are very likely to apply for another cost-share program after completing this pilot project, and another 43% said they were likely to apply. Only 4% said they were neutral about the statement, while no respondents selected unlikely or very unlikely. Thus, the pilot project can be seen as a positive experience for most participants.



### ***The Approach to Pilot Project Design is Scalable Across Agricultural Systems***

Participants felt as though the pilot project was structured in a way that made it easy for farmers of varying production systems – from market gardeners to livestock producers and cash croppers – to participate.

“I liked how this allowed for folks to work with a Coach to evaluate their current situation and establish goals within their own capacity – I had growers ranging from market gardeners, farmers with full-time off farm income (only able to crop on weekends and evenings) all the way to full-time growers. Each found a way to attempt cover crops and improve soil sampling within their capacity,” an Expert Coach added.

*“It was great to help get us motivated to get the soil tests done. Several fields yielded different results than we expected. It came at a good time as we did extra fertilizer and lime applications this year ... before the price increase. Thanks to all the volunteer Coaches!”*

- Farmer

### ***Farmers can Leverage Opportunities to ‘Level Up’***

The pilot project provided farmers with an incentive to try new methods of soil testing and/or cover cropping. One comment from an Expert Coach encapsulates feedback gathered from several other Coaches:

*“We need to find a way to reward growers who are doing the best management practices, and make it so that people want to follow in their footsteps, instead of giving out money to people who will only do projects once when they get funding. This way, practices can actually change over time. ... This (pilot project) is reverse engineered; (farmers) can choose management practices, learn about them and be rewarded. The flipside with other programs is (farmers) are just told what to do and get funding. Totally different approach.”*

- Expert Coach

The pilot project placed more emphasis on learning about opportunities to “level up” soil health productivity practices, contrary to other funding programs where practices are prescribed, Expert Coaches said.

### ***Other Pilot Project Design Strengths***

- Offering the pilot project in underserved areas was beneficial for communities that, for example, do not have Conservation Authorities with similar opportunities. Future OSCIA projects should build off this pilot’s success and incorporate considerations of the limitations of different communities related to funding access.
- OSCIA staff support was helpful for participants in terms of:
  - Reminders regarding deadlines and activities
  - Response time

- The application form was easy for farmers and Expert Coaches to complete.

*"It was really nice to see a (pilot project) that finally allowed for a 'systems approach' of building onto your knowledge base and experience instead of the standard 'one-and-done' type of project. I think it encourages progressive thinking."*

- Expert Coach

## Opportunities for Improvements to the Pilot Project Design

### *Timing*

The most common feedback from pilot project participants regarded the timing of the pilot. For future iterations of this pilot project, OSCIA should consider the following:

- Make "teaser" announcements leading up to the next project intake to build anticipation and enable future applicants to prepare and line up service providers.
- The timeline should be extended to allow for a full season of results to be realized; 15 months would allow for more follow up between Coaches and farmers, and enable Coaches to ensure they have adequate staff capacity to conduct soil testing. An extension of the timeline would also enable farmers and Expert Coaches to reconnect in the late winter/early spring to discuss how the cover crop overwintered. They could also fine-tune the strategy for how to prepare the seedbed for the next crop.
- A late winter start time would enable farmers and Expert Coaches to plan projects in advance of planting season.
- An option should exist to carry projects forward multiple years.

*"Farmers were busy with harvest during the time we were supposed to (review soil test results). We didn't get as long to talk as we wanted; we gave them the Coles Notes. Now, we're going over (the results) in more detail with them since they have a bit more time. We're using this info in fertilizer plans for 2022 with our existing clients."*

- Expert Coach

Participants would like to see the pilot project extended to a three-year timeframe. Three years of soil testing and cover cropping projects can allow farmers to see more tangible results. Another benefit to a three-year timeframe is that farmers can learn about incorporating cover crops into multiple points in their crop rotation, as cover cropping strategies vary for by the crop (e.g., corn, soybeans and wheat).

More one-on-one time is needed for producers new to soil sampling, as producers can experience an initial learning curve, one Expert Coach said. Additional longer, structured meetings between Coaches and participants new to soil sampling would be beneficial.

### ***Marketing, Communications and Collaboration***

Pilot project participants mainly heard about the pilot project through social media. Several of the Expert Coaches felt that, if the pilot was advertised through local OSCIA and CCA offices, as well as through print and advertising media, uptake would have been even greater.

An opportunity exists to expand the pilot project to include opportunities for collaboration amongst participating farmers. Photos of the various cover cropping projects could showcase the “good the bad and the ugly” to facilitate further knowledge exchange, some coaches suggested. An annual meet-up (either virtually or in person) between farmers would provide an opportunity to share information.

Due to the pandemic, many of the meetings between Coaches and farmers happened virtually. It would “have been better to see (participants’) locations, especially for the cover crops projects. As an agronomist, it's always easier to see it in person,” an Expert Coach said. For future iterations of this pilot, OSCIA should consider offering mileage to Expert Coaches to facilitate on-farm interactions and help build relationships between farmers and Expert Coaches.

### ***Meeting Forms and Claims***

Despite ample positive feedback about the process for completing and submitting meeting forms, participants suggested that the meeting forms should be available in an online format that allows for virtual signatures. One Expert Coach noted they had to email the form to farmers, who then had to print the form, sign it, and send it back.

While 51% of survey respondents (n=53) were very satisfied with the claims process and 28% were slightly satisfied, another 11% were neutral and 10% were slightly dissatisfied. “Getting paid was way too complicated,” one respondent said. The claims process could be simplified and streamlined so participants could receive their reimbursements more quickly, others added. The claims process, of course, is an administrative process that requires due diligence. Perhaps OSCIA could improve messaging in future programs so participants have a clear sense of how long the reimbursement process will take, from the time they submit their claim forms until the time they receive their payments.

*“The 4H model is learn to do by doing; I think this (pilot project) captured this well. I shared lessons learned between my farmers – anonymously of course. That was helpful for them.”*

- Expert Coach

*“It's difficult to parachute into their farm lives and offer specific field and nutrient advice without walking the field. I had to pull up the air photo and soil maps to get a better idea of the farm. It's hard to offer specific advice without walking the field.”*

- Expert Coach

### *Other Opportunities for Improvement*

While one Expert Coach suggested the pilot project should cover the fertilizer and herbicides needed for cover crops, other Expert Coaches disagreed. OSCIA will have to carefully consider eligible expenses for cover crop projects in future programming.

Expert Coaches and participants also noted the significant range in seed costs for cover crop mixes; OSCIA will have to continue to assess the cost-share cap to ensure it aligns with the realities of seed costs.

## 4. Conclusions & Next Steps

As the OSCIA continues its program development and delivery, it can leverage the lessons learned through the Reducing Barriers to BMP Adoption – Soil Testing and Cover Crops applied research initiative.

Future cost-share programming should consider several factors for program design related to communications and logistics, eligible expenses and the overall experience for farmers and coaches.

### 4.1 Communications and Logistics

- ✓ Simplify the application process to ensure farmers must only provide the necessary information for program completion and evaluation.
- ✓ Structure the program so that advisors, rather than farmers, are responsible for most of the paperwork.
- ✓ Leverage a broad communications plan, including digital and print media and involving multiple stakeholders (e.g., OSCIA, Ontario Certified Crop Advisors Association).
- ✓ Offer forms that can be completed and submitted digitally.
- ✓ Provide clear messaging about the processing time for claim forms.

### 4.2 Eligible Expenses

- ✓ Include mileage reimbursement for advisors to enable in-person meetings with farmers and field visits.
- ✓ Regularly review and update the list of eligible expenses and the cost-share cap to ensure the program continues to provide the desired level of financial support.

### 4.3 Overall Experience

- ✓ Leverage advisors (e.g., CCAs, P.Ags) who can provide one-on-one advice based on local growing conditions and the farmers' individual management systems.
- ✓ Ensure the programming is scalable for different types and sizes of operations.
- ✓ Enable participants to "accelerate" their use of a BMP so early adopters can also advance their practices.
- ✓ Ensure a sufficient program length (e.g., 15 months) to ensure participants have plenty of opportunity to plan, implement, and assess their project. The planning and assessment phases should, ideally, occur after harvest and before planting (i.e., between November and March).
- ✓ Extend programming over multiple years so participants can implement the BMPs at various stages in their crop rotations and analyze the multi-year and/or compounding benefits of these BMPs. The cost-share structure could shift over time so that the government contribution decreases as the BMP becomes

incorporated into the operation's standard farm management practices. A proposed cost-share structure is outlined below:

Year	Government Contribution	Producer Contribution
1	60	40
2	50	50
3	25	75

- ✓ Offer opportunities for knowledge sharing between participants (e.g., summer meet-ups or field days).

By maintaining its commitment to continuous improvement in program development and delivery, OSCIA can ensure its programming is accessible for producers across the province. In the process, can achieve its mission of facilitating responsible economic management of soil, water, air and crops through the development and communication of innovative farming practices.



## 5. Appendix

### 5.1. Overview of Three Initial Pilot Project Pitches

On February 17, 2021, the Advisory Team was presented with three initial pilot project pitches. OSCIA, the Advisory Team, and Wilton Consulting Group collaborated to select the most promising pitch and fine-tune it to best help pilot project participants overcome the barriers to soil testing and cover cropping.

#### Overarching Context

- Each pilot project pitch will be accompanied by additional targeted online educational materials
- Local/regional OSCIA associations would be key in promoting the pilots
- Each pilot project pitch includes a soil testing stream and a cover cropping stream
  - Farmers could participate in one or both streams
- All soil sampling pitches involve:
  - Coverage for both the labour for pulling the samples and the soil testing
  - Grid sampling or zone sampling
  - A complete soil test, a soil texture test, SoilOptix, and/or a soil health test
  - Testing in fields that have not been soil sampled in at least three years

#### Pilot Pitch 1: The Full Experience

- Fertilizer dealers and independent CCAs could promote the pilot and support farmers with the completion of their paperwork
- Participating farmers would be eligible for a 50% cost-share through OSCIA for soil sampling
- Suggested maximum of 250 acres/farmer; this corresponds with the average Ontario farm size

#### *Cover Cropping*

- Participating farmers would be eligible for a 50% cost-share through OSCIA for one of the following streams
  - First time growing a cover crop after corn and/or soybeans
  - First time growing a more diverse cover crop
- Participating farmers would be eligible for a 25% cost-share through OSCIA for one of the following streams:
  - First time growing winter barley
  - First time growing winter canola
  - First time growing a cover crop for grazing
- Seed dealers and independent CCAs could promote the pilot and support farmers with the completion of their paperwork

- Maximum number of acres/farmer: 75
- Participating farmers must attend a one- or two-hour webinar to learn about a “subtheme” in cover cropping
- The seed dealer or independent CCA could make more targeted cover crop recommendations to suit the farmer’s needs

### *Soil Testing*

- Participating farmers must attend a one- or two-hour webinar to learn how to read their soil tests
- The fertilizer dealer or independent CCA could use the soil test results to make more targeted fertilizer program recommendations

### **Pilot Pitch 2: Bundle Up**

#### *Cover Cropping*

- OSCIA would provide a rebate for farmers who worked with their seed dealer or independent CCA to develop a multi-pronged cover crop program
- Farmers would need to have 75 acres in cover crops
  - Half of these acres must be in either a post-wheat, cover-crops-for-grazing, winter barley, or winter canola program (Category A)
  - Half of these acres must be in either a post-corn or a post-soybean program (Category B)
- Farmers would have to get a sign-off from their seed dealer or independent CCA that they met these requirements
- Farmers would receive a 25% rebate on their cover crop seed in Category A and a 50% rebate on their cover crop seed in Category B
- Seed dealers and independent CCAs could help to promote
- Enrolled farmers must participate in a one- or two-hour webinar on “steps to success” for cover cropping after corn and soybeans

#### *Soil Testing*

- OSCIA would provide a rebate for farmers who worked with a lab to set up their total acres on a three-year rotational plan for soil sampling
- In the pilot year, farmers would have to sample some acres early in the season and more acres in the fall (to inform their fertilizer program for 2022)
  - Farmers would receive a 25% rebate on their first “batch” of soil sampling and a 50% rebate on their second “batch” of soil sampling
  - Farmers could have a maximum of 250 acres enrolled in the pilot program, and could have a maximum of 125 acres sampled in early in the season and 125 acres sampled in the fall
- Alternately, farmers who collected (x) tissue samples in season for testing to inform foliar fertilizer programs would unlock 50% rebate on all 250 acres of soil sampling in the fall
  - Potential modification given the tight timelines in 2021 for this project



- Enrolled farmers must also participate in a one- or two-hour webinar on how to read a soil test
  - The webinar would also include examples of how soil tests results can change over time on the same farm
  - Soil test companies, fertilizer companies and independent CCAs could help to promote

### **Pilot Pitch 3: In-field Support**

#### ***Cover Cropping***

- Rather than cost sharing the seed, cost share could be offered for the custom seeding of the cover crop
- Participating producers would be eligible for a 50% cost share for seeding a maximum of 75 acres of cover crops
- Eligibility criteria:
  - First time growing a cover crop after corn and/or soybeans
  - First time growing a cover crop for grazing
  - First time growing a more diverse cover crop
  - First time growing winter barley or winter canola

#### ***Soil Testing***

- OSCIA will provide 50% cost share on wages for 2 interns per contracted cooperating partner (i.e., ag retailer or soil test company)
- These interns would focus solely on completing grid or zone soil sampling and meeting with farmers (via video platform or phone) to interpret the soil test results
- Partner ag businesses would be expected to offer the services of these students at a discounted rate of 60% of the usual price
- Partner ag businesses would be committed to sample (x) acres during the year