

4R Nutrient Stewardship

Right Source @ Right Rate, Right Time, Right Place®

Ontario 2016



4R Nutrient Stewardship in Ontario

2016 Report



More information about 4R Nutrient Stewardship in Ontario is available on Fertilizer Canada's website (fertilizercanada.ca).

4R Nutrient Stewardship in Ontario: Governance

4R Ontario Steering Committee

Chair: Jim Campbell, OABA member

OABA

OMAFRA

Fertilizer Canada & member representative

Grain Farmers of Ontario

Ontario Federation of Agriculture

Christian Farmers Federation of Ontario

Conservation Ontario

4R Ontario Science and Technology Working Group

OABA Crop Input Retailers

OMAFRA

IPNI

Livestock Ontario representative

Ontario CCA Board representative

AAFC

4R Ontario Communications Working Group

OMAFRA

OABA

Fertilizer Canada

4R Ontario Stakeholder Panel

Canadian East Equipment Dealers Association

Farm and Food Care Ontario

Ontario Forage Council

Ontario Fruit and Vegetable Growers Association

Ontario Greenhouse Vegetable Growers

Ontario Pork

Ontario Soil and Crop Improvement Association

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Introduction

In 2015, the Government of Ontario, the Ontario Agri Business Association (OABA) and Fertilizer Canada signed a 4R Nutrient Stewardship (Right Source @ Right Rate, Right Time, Right Place ®) Memorandum of Cooperation (MOC) to link the province's objectives for environmental action and agricultural sustainability with improved fertilizer use.

4R Nutrient Stewardship is a concept which was established in co-operation with government, researchers, farmers, and the public. 4R Nutrient Stewardship ensures that nutrients are applied using the right source of fertilizer, at the right Rate, at the right time and in the right place through the adoption of beneficial management practices (BMPs) by producers to achieve economic, social and environmental sustainability.

All signatories of this MOC are working in partnership with local watershed groups, farm groups and industry groups to support the adoption of sustainable 4R Nutrient Stewardship systems through the established committee.

Ontario represents over 9 million acres of Canada's most viable and productive cropland. Ontario's agriculture industry has been a leader in nutrient management planning for crop production using 4R Nutrient Stewardship as a method to improve the health of Ontario's watersheds.

Nutrient management is an integrated process that considers not only the agronomic aspects of soil and crop nutrition, but also the social, economic, and environmental relationships with the management system. 4R Nutrient Stewardship is being implemented world-wide by industry, researchers, government agencies, and farmers and their advisers. As there remains an increasing need to address water quality concerns in the Lake Erie Basin, of which agriculture is among the many contributing factors, it is important to ensure that 4R Nutrient Stewardship be recognized as a leading standard for on-farm nutrient management and overall sustainable environmental performance.

4R Ontario Objectives:

- To raise awareness and understanding of the productivity benefits of 4R Nutrient Stewardship for growers and the importance of proper nutrient management to protect Ontario's environment.
- To increase farmer adoption of 4R Nutrient Stewardship by providing farmers with relevant information/tools which are comprehensive and accessible.
- To generate positive awareness among the public concerning farm stewardship by communicating that farmers respect and protect the land and water resources that are integral to their livelihoods – for the benefit of all Ontarians.

4R Ontario Key messages:

- Fertilizer is food for plants. Farmers use fertilizer to grow nutritious food to feed Ontarians, Canadians and people around the world.
- The efficient use of nutrients from commercial fertilizers, manure or other sources, minimizes the risk of nutrient losses to ground and surface water sources.
- 4R Nutrient Stewardship provides farmers with practical, evidence-based solutions that benefit both the environment and their profitability.

Advancing Great Lakes Stewardship

4R Nutrient Stewardship helps Ontario farmers to increase production and while enhancing environmental protection and improving sustainability of the Great Lakes.

114

respondents

113,000

acres of
cropland

10

Certified Crop
Advisors

3

Professional
Agrologists

2 of 3

practicing
4R Nutrient
Stewardship

A presentation highlighting 4R Nutrient Stewardship principles, practical on-farm approaches to 4R Nutrient Stewardship, and the Great Lakes Agricultural Stewardship Initiative (GLASI) was delivered to audiences in March 2016, including meetings with Halton Region Conservation Authority and the Grain Farmers of Ontario at their semi-annual meeting, as well as a webinar. The attendees of the three presentations came from all across southern Ontario, with the majority coming from Southwestern Ontario. A brief survey assessing the audience members' knowledge of the 4R Nutrient Stewardship and their agricultural stewardship practices was distributed at each presentation.

Survey Highlights

- While farmers were the primary audience group, agronomists and agricultural sales people were the other two notable demographics, which also included 10 Certified Crop Advisors and three Professional Agrologists (P.Ag).
- The 114 respondents represented nearly 113,000 acres of cropland.
- Two-thirds of these respondents indicated that they are currently practicing some form of 4R Nutrient Stewardship in their current farming operation. Of these respondents, a fairly uniform distribution across each of the 4R Nutrient Stewardship principles of Right Source, Right Rate, Right Time and Right Place with more than half of respondents utilizing at least two 4R Nutrient Stewardship BMPs for each 4R principle within this framework. The survey respondents also showed a strong commitment to the continued use of 4R Nutrient Stewardship BMPs in their operations.
- Of the respondents that indicated they are using or intend to use 4R Nutrient Stewardship BMPs within the next few years, they will implement 19 out of 20 of the identified BMPs on more than half of their total acreage.
- The Farmland Health Check Up (FHCU) under GLASI proved to be a more contentious subject. More than 70 per cent indicated that they had previously heard about GLASI, and while only 16 per cent had

already completed a Farmland Health Check-up, over 65 per cent indicated that they intended to complete one soon. A great number of survey respondents chose to acknowledge on their survey forms that the GLASI program is not extended to all farmers throughout Ontario. There was a clear trend from growers outside of the GLASI implementation area indicating that they are not able to access the same guidance surrounding 4R Nutrient Stewardship BMPs and subsequent supplementary funding available through this program.

In summary, the findings show that there is an opportunity for 4R Nutrient Stewardship to play a role in the FHCU program. The farmers attending the three workshops were well informed on 4R Nutrient Stewardship initiatives, with 60 per cent saying that they learned a lot from the presentations. The high percentage indicating that they are currently, or intend to implement 4R Nutrient Stewardship on their farm, on more than 50 per cent of their total acreages shows that Ontario farmers agree: The Right Time for Nutrient Stewardship is Right Now.



4R Demonstration Farms Implementing 4R Best Management Practices

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Demonstration
Farm Participants

Charles Lalonde of CJ Agren Consulting was contracted by 4R Ontario to work with producers and demonstrate 4R Nutrient Stewardship Best Management Practices (BMPs) on farms in Southwestern Ontario in the Lake Erie and St Clair basins. The 4R Demonstration Farm project showcases how 4R Nutrient Stewardship can be incorporated into a variety of farm production systems, including grain crop production, vegetable production and livestock production. Six producers participated in the project, representing corn, soybean, winter wheat, field tomato, sugar beet and hog production.

60

Farm tour visitors

Through farm visits and interviews, Charles Lalonde worked with each farm to identify BMPs with respect to 4R practices including approaches to tillage, crop rotation and use of cover crops. On-site visits were further supported by CCAs working with individual producers. The project also included a soil health component by introducing these producers to the soil health test that supplements soil chemical analysis. Based on both the BMP selection and soil testing, producer CCAs were to be engaged in the farm discussion.

4.7/5.0

Ranked overall
quality and value
of 4R Farm Tours

Approximately 60 people participated in the two-day 4R Demonstration Farm tour in July 2016, featuring visits to each of the six locations. The farm tour was well received by government officials, environmental groups, conservation authorities, farm organizations and the fertilizer retail sector. Feedback indicated strong support to continue the 4R farm tour and practices, and participants were impressed with the depth of understanding the producers and support staff had on the principles and practices of 4R Nutrient Stewardship to optimize their nutrients to see the best benefits for their farm and their environment. The farm tour participants, surveyed after the event, ranked the overall value and quality of the 4R Farm Tour at 4.7 / 5.0.

4R Nutrient Management Specialty Certification

To help meet the growing demand for qualified crop advisers with focused knowledge and skills in nutrient management, the Ontario Certified Crop Advisor (CCA) Association launched the CCA 4R Nutrient Management Specialist (NMS) certification exam and study resource guide in Ontario. The 4R specialty is intended for CCAs who work in nutrient management planning to advance their knowledge of 4R Nutrient Stewardship. Ontario is the only Canadian province where the 4R NMS certification is offered; the 4R specialty certification is also offered to CCAs in 17 states in the USA.

In August 2016, Ontario CCAs has the first opportunity to write the exam to obtain the 4R NMS certification. Forty-nine CCAs successfully passed the certification exam. These individuals are now equipped with recognized training to ensure Ontario farmers receive trusted information about 4R Nutrient Stewardship. The training provides a practical tool to enhance the profitability and environmental sustainability of Ontario agricultural production.

The study resource guide, Ontario 4R Nutrient Management Stewardship Guide, provides material on the five proficiency areas tested in the certification exam: nutrient management planning; nitrogen; phosphorus; potassium, secondary macronutrients and micronutrients; and manure management.

Local retail and agronomic providers are often a Canadian farmer's first choice for reliable resources and advice when making on-farm decisions. Providing formal, recognized training to CCAs will ensure that Ontario farmers receive trusted information about 4R Nutrient Stewardship as a practical tool to enhance profitability and environmental sustainability.

49

Certified Crop
Advisors
Successfully
passed
certification
exam

4R Designated Acres Pilot Program

The 4R Designation program is an opportunity for agri-retailers to proactively position themselves and their grower clients as global stewardship leaders. The 4R Designation program is a National effort to document cropland acres that operate with 4R consistent nutrient management plans.

In Year 1, Ontario agri-retailers piloted elements of the 4R Designation Program to assess feasibility in their businesses. Twenty agri-retail outlets in Ontario actively participated in the voluntary 4R Designated Acres pilot program, led by OABA. The retail sites were concentrated in Southern Ontario and the Great Lakes region, but also represented the Lake Huron watershed and Eastern Ontario.

At each of the locations, a minimum of one on-staff CCA completed 4R Nutrient Stewardship training courses (Parts 1, 2, and 3) offered through Fertilizer Canada's eLearning. This ensures that the CCAs are provided with credible, consistent training to facilitate their expert advice in 4R nutrient management. While working with their grower customers, the CCAs develop a 4R Plan to ensure economic, environmental, and social sustainability goals are guiding the 4R BMPs identified for each farm. Once 4R Plans are developed at each participating location, the CCA reports the acres under 4R Nutrient Stewardship as 4R Designated.

The participating retailers are in the process of completing and submitting their reports. The pilot program identified several challenges and opportunities for implementing the voluntary 4R Designation program in Ontario at the agri-retail level.

4R Retail Certification Pilot Program

The 4R Retail Certification pilot program investigated the 4R certification model implemented in other jurisdictions around the Great Lakes. The 4R implementation model that has been introduced into Ohio involves the voluntary certification of agri-retail facilities based on a series of 41 auditable criteria established by the program and based on the principles of 4R Nutrient Stewardship. The auditable criteria evaluate training and ongoing education, monitoring of 4R implementation, surface features related to nutrient movement and placement, and nutrient recommendations and applications. A third-party auditor evaluates compliance on a three year audit cycle. The Ohio 4R Certification standards were initiated to improve the conditions of the Western Lake Erie Basin and create long-term positive impacts on the water bodies associated with agricultural productions areas. The program encourages education and innovation in the area of nutrient stewardship.

The 4R Ontario Retail Certification Pilot was implemented to evaluate the validity, suitability and accountability of the Ohio 4R certification model for 4R implementation in the Ontario marketplace. Four agri-retail locations in the Western Basin of Lake Erie volunteered to participate in the audit program for the Pilot program: Thompsons Limited, Settrington's Fertilizer Service Ltd., Agris Co-operative Ltd., and South West Ag Partners Inc. Audits were conducted by the lead auditor from the 4R Ohio program in Fall 2016.

The result of the exploratory audit process revealed that all four agri-retailers were very close to meeting the audit standards with business as usual practices. The positive feedback from both the auditor and the retailers that were evaluated offered a positive reception to the program. Within the certification program, documentation is collected at each step of the nutrient recommendations, soil data records, grower customer sign-off, etc. With the audit occurring at the retail level, there is a large capacity for capturing acres that are managed under the 4R program, demonstrating the commitment to nutrient stewardship.

“Overall, all dealerships are top of the line. The management, agronomic skills, GPS technologies and existing processes are easily of the quality to complete a 4R audit program. There are, of course, procedures that will need to be added for the dealerships to comply with a new program, but the ability to achieve this is within all the dealerships’ abilities.”

*Natalie Rector
lead Ohio auditor*

Getting the Message Out

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Workshops

4R Ontario Workshops

Grain Farmers of Ontario, March 23rd 2016

4R Ontario hosted a 4R Nutrient Stewardship Workshop at the Grain Farmers of Ontario semi-annual meeting of delegates in London, ON. Approximately 150 Ontario growers participated in the workshop. The event gave an overview of 4R Nutrient Stewardship across Canada, what it means for Ontario agriculture, and focused on the partnerships that are implementing the 4Rs in Ontario. Speakers and panelists at the workshop represented key stakeholders engaged in the Ontario 4R Memorandum of Cooperation (MOC). Ontario growers are eager to demonstrate their commitment to incorporating 4R Nutrient Stewardship practices on their farm.

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Presentations

Ontario Federation of Agriculture, November 21st 2016

Dr. Tom Bruulsema and Charlie Lalonde presented a workshop on 4R Ontario at the Ontario Federation of Agriculture meeting. The workshop highlighted how the 4Rs can be implemented and measured to effectively address sustainability concerns, with a focus on managing phosphorus loss and lessons learned from 4R trials in the field. Approximately 80 people attended the workshop.

147

eLearning
certifications
in Ontario

Presentations on behalf of 4R Ontario:

- Bonduelle Ontario, January 11, 2016
- Halton Region Conservation Authority, March 10, 2016
- Dundas Federation of Agriculture AGM, February 19, 2016
- Great Lakes Public Forum, October 6, 2016
- The Agromart Group (Growing Innovation Meeting) November 15, 2016

55

Certified Crop
Advisors
completed
eLearning in
Ontario

4R eLearning Ontario summary of completions

4R Nutrient Stewardship Parts 1, 2, and 3:

- Overall completions: 45
- CCAs: 31

4R Essentials:

- Overall completions: 37
- CCAs: 24

Government relations:

- Submission in response to consultations on Developing an Agricultural Soil Health and Conservation Strategy for Ontario, OMAFRA Sustaining Ontario's Agricultural Soils: Towards a Shared Vision
- Submission in response to Proposed Actions for Reducing Phosphorus to Minimize Algal Blooms in Lake Erie, MOECC Proposed Actions for CAN-ON for Lake Erie
- "Proposed Action: Support for the implementation of an Ontario industry-led 4Rs program (right time, rate, source and placement of nutrients), based on the internationally-recognized 4R Nutrient Stewardship system which helps farmers reduce nutrient losses into the environment through efficient nutrient application.
- 2016 Progress Report of the Parties Pursuant to the Canada-United States Great Lakes Water Quality Agreement:
 - "4Rs Nutrient Stewardship is an internationally recognized approach based on core scientific principles of applying the right source of plant nutrition, at the right rate, at the right time, and in the right place to improve nutrient use efficiency to reduce any potential nutrient loss into the environment. As a result of the partnership of the Ontario Ministry of Agriculture, Food and Rural Affairs, Fertilizer Canada, and the Ontario Agri Business Association, Ontario is piloting 4R initiatives ahead of broader implementation across the Lake Erie basin and has successfully:
 - Implemented 20 4R Demonstration Farms;
 - Reached more than 115 Ontario growers through 4R Nutrient Stewardship Workshops;
 - Enrolled 21 agri-retailers in the Ontario Agri Business Association's voluntary 4R Designated Acres pilot program; and
 - Launched the Ontario Certified Crop Advisor 4R Nutrient Management Specialty Certification; 65 of Ontario's Certified Crop Advisors are registered to write the certification exam in August 2016."

Notes

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Notes

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