

4R Nutrient Stewardship

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

4R Ontario Update

Ag Sector Working Group

February 14, 2017



Ministry of Agriculture,
Food and Rural Affairs



FERTILIZER CANADA
FERTILISANTS CANADA

Bringing 4R to Ontario

- Memorandum of Co-operation signed (2015) between the Ontario Ministry of Agriculture Food and Rural Affairs, Fertilizer Canada, and the Ontario Agri Business Association



4R Nutrient Stewardship can **help** grow crops sustainably

The 4Rs work to increase production/profitability for farmers while ensuring the future of the agricultural industry



4R Ontario...

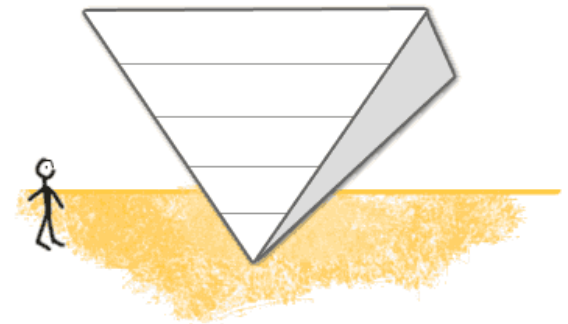
What are the key messages?

1. Crop nutrients are essential for the growth of nutritious food for Ontarians, Canadians and people around the world.
2. The efficient use of nutrients from mineral fertilizers, manure or other sources, can minimize the risk of nutrient losses to ground and surface water sources.
3. 4R Nutrient Stewardship provides farmers with practical, evidence-based solutions that benefit both the environment and farm profitability.



4R Ontario Activities to Date

- Partnered with 6 producers for 4R Demonstration Farm project and tours
- Fertilizer Canada sponsored development of 4R Specialty Designation for CCA's
 - 49 CCA's currently accredited.
 - 55 CCA's wrote the exam on February 3rd.
- Two Pilot Projects:
 - Voluntary designation of 4R acres
 - 33,726 acres 'designated' in pilot.
 - Crop input retailer certification





4R Retail Certification Pilot Program

- The 4R Ag Retail Certification pilot program involves voluntary certification of agri-retail facilities that focuses on a series of 41 auditable criteria established by the Ohio program and based on the principles of 4R Nutrient Stewardship.
- **4** Ontario agri-retail locations in the South Western Ontario volunteered to participate in the audit program for the pilot program:
 - Thompsons Limited
 - Settingington's Fertilizer Service Ltd.
 - AGRIS Co-operative Ltd.
 - South West Ag Partners Inc.
- Exploratory audits conducted by the lead auditor from the 4R Ohio indicated that Ontario ag-retailers were very close to meeting the audit standards with their current “business as usual” practices.





4R Retailer Certification

- Based on pilot project results 4R Ontario Steering Committee has approved the development of a **voluntary ag-retailer 4R certification program**
- 4R Ontario Science & Technical Committee working on Ontario specific certification/audit standards



Learning from the “Ohio Experience”

37 Ag Retailers Certified
5,570 Farm Customers
2.8 M acres
32 Ag Retailers in Process





Ohio Retailer Certification Program Requirements

1. Training and Education
2. Nutrient Recommendation and Application
3. Monitoring of 4R Implementation

PROOF



The 4R Nutrient Stewardship Certification Program outlines an initial three-year plan for Nutrient Service Providers. A brief summary of standard requirements during the first three years is provided below.

YEAR 1

Nutrient Service Providers and their grower customers shall be educated and trained on the principles of 4R Nutrient Stewardship, and support the adoption of new research and technologies for nutrient management.

- Education of staff on 4R Nutrient Stewardship
- Maintain records with soil test at least every four years, recommendations based on university recommendations and actual applications reviewed with client
- Account for all sources of nutrient applied
- Identify sensitive areas of nutrient applied

YEAR 2

The implementation of 4R principles and practices are recorded and monitored. Records of implementation are checked by the Nutrient Service Provider to evaluate progress of the implementation of 4R principles and practices over time.

- Continued education on 4R Nutrient Stewardship internally to staff and to growers through meetings or materials
- Maintain records of conditions at time of application and consider pre-application weather conditions
- Have digital field boundary maps and identify sensitive features with soil tests and yield maps
- Soil test no larger than 25 acres

YEAR 3

Nutrient recommendations and application are made with the goal of maximizing crop uptake (with goals for crop yields calculated and included) and minimizing nutrient losses to the environment. Records are maintained for customers and their nutrient recommendations. Soil testing must be based on appropriate sampling frequency and intensity. Recommendations and application must be consistent with the Tri-State Fertilizer Recommendations or other recommendations recognized and supported by a land-grant university, allowing for adaptive management based on documented on-farm data showing reasonable expectations of improved crop yield without increased risk of harm to water quality.

Nutrient recommendations and application must observe setbacks to water bodies and other features. Nitrogen and phosphorus must not be applied on frozen ground. All sources of nutrients must be accounted for in the recommendation and must be reviewed by a certified professional. Variable Rate Application is used when justified. Nutrients are not applied at more than a two-year application rate.

- Field records include watershed information for fields
- Customer signature on 4R Nutrient Stewardship support
- Geo-referenced soil testing
- Include weather criteria as part of application planning
- Use of variable rate planning
- Use of variable rate technology

Download complete requirements and details at 4Rcertified.org/how



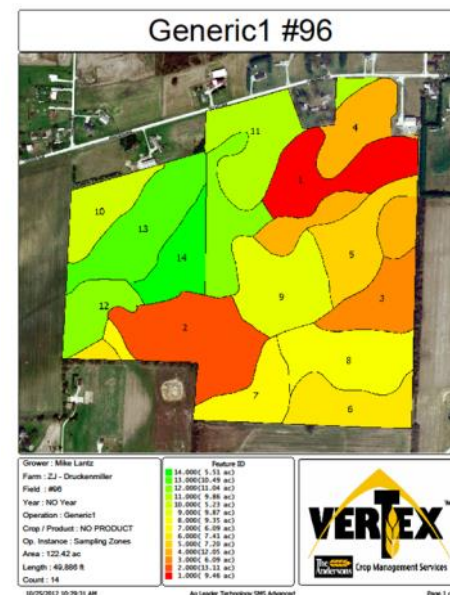
Ohio - Training & Education

- Basic 4R Training for all staff
- CCA's on Staff
- 4R plans signed off by CCA with 4R Specialty
- Producer Training



Ohio -Nutrient Recommendations

- Soil Test – 4 year minimum interval
- Nutrient Recommendations:
 - provided by certified professional
 - science-based
- Utilize crop history and yield goals





Ohio - Nutrient Application

- Annual calibration of equipment
- Nutrient application consistent with recommendations
- No application to **frozen or snow-covered** soil
- By year 3 of audit cycle - no surface application without immediate incorporation if NOAA weather forecast exceeds a 50% chance of one inch or more of rain
- By year 3 - utilize GIS and VRT of custom application acres





Validation by Third Party

Third party retailer audits conducted by Ohio's
Nutrient Stewardship Council

Nutrient Stewardship Council (NSC)

Agricultural Business

Grower Organization

Government

Environmental NGO (Nature Conservancy)

Universities / Researchers

4R Ontario is Moving Forward in 2017!

- Continue to promote increased adoption of 4R; provide general agri-retailer staff and farmer training; and develop affiliated resources
- 4R Retailer Certification – focus on building capacity, industry accountability, relevant targets & establish program audit standards
- Identify research and science gaps
 - Nutrient Use Survey – 500 farmer sample size
- Increase communication efforts with all stakeholders, including grower organizations, government and environmental NGO's

