



**FERTILIZER CANADA**  
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Attn:  
Government of Ontario – Ministry of the  
Environment, Conservation and Parks  
900 Bay St, Toronto, ON M7A 2E3

**Re: A Made-in-Ontario Environment Plan**

On behalf of Fertilizer Canada and our members, I would like to thank you for the opportunity to comment on *A Made-in-Ontario Environment Plan*. Our industry continues to collaborate with a diverse group of Ontario stakeholders to proactively develop and implement industry-led programming that aims to reduce nutrient loss and protect our environment, while simultaneously considering the economic and social impacts of such practices.

Fertilizer Canada represents manufacturers, wholesale and retail distributors of nitrogen, phosphate, potash and sulphur fertilizers. As the unified voice of the Canadian fertilizer industry, we strive to promote safe, responsible and sustainable, globally competitive fertilizer production, distribution and use. Fertilizer Canada has partnered with agri-retailers, farm organizations, government and conservation authorities to form the the 4R Ontario Memorandum of Cooperation (MOC). Members the 4R Ontario MOC are working to accelerate the on farm adoption of new technologies and scientifically-based management practices for agricultural cropping systems in Ontario.

Fertilizers play an essential role in replenishing nutrients in the soil that are used by plants each growing season, raising soil productivity, and improving soil health; but incorrect nutrient use may lead to negative impacts on a grower's return on investment and risks increased impacts on the environment. In order to have this downstream assurance of responsible farming, growers will require a framework for understanding and implementing the principles and practices of sustainable agriculture.

4R Nutrient Stewardship is seen as an international standard for nutrient management. The 4R approach brings together universal principles of nutrient management with local evidence-based agronomy. The result is best management practices (BMPs) that make sustainable agriculture a reality on the farm. The 4R Nutrient Stewardship framework encompasses the four main principles of fertilizer application and is designed to link the practices used to manage nutrients in the cropping system to an integrated approach.

- The **Right Source** means ensuring a balanced supply of essential plant nutrients including granular or liquid fertilizers or manures.
- The **Right Rate** is applying just enough fertilizer to meet the needs of the plant while accounting for nutrients already in the soil.
- The **Right Time** means applying fertilizer when the plant will get the most benefit and avoiding times when fertilizer can be lost to the environment.
- The **Right Place** is applying fertilizer where the plants can easily access the fertilizer and where it is less likely to be lost to the water or air.

Ontario represents a portion of the Canada's most viable and productive farmland and has been a leader in nutrient management planning for crop production. We are encouraged to see that 4R Nutrient Stewardship has been embraced as a valuable tool for meeting agricultural and environmental goals as referenced in the *Canada-Ontario Lake Erie Action Plan*. In addition, we are pleased that the Action Plan references and supports the 4R Ontario Steering Committee efforts to help farmers reduce nutrient losses into the environment.

*“4R Ontario will lead the implementation of a voluntary 4R Nutrient Stewardship program based on the internationally-recognized 4R Nutrient Stewardship system. The program will promote the adoption of nutrient management in Ontario to help farmers reduce nutrient losses into the environment and improve productivity through efficient nutrient application.”*

We recognize the importance of advisors as a trusted source of fertilizer management and 4R Nutrient Stewardship planning. To help meet the growing demand for qualified crop advisors with focused knowledge and skills in nutrient management, the Ontario Certified Crop Advisor (CCA) Association offers a 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. Fertilizer Canada believes Certified Crop Advisors play an integral role supporting Canadian growers to achieve productivity goals for safe and nutritious food.

In close collaboration with the Nutrient Stewardship Council, the Ohio Agri-Business Association and The Fertilizer Institute in the U.S., the 4R Certification program was developed for Nutrient Service Providers in Ontario. Members of the 4R Ontario MOC oversee the program and represent a diversity of stakeholders including Fertilizer Canada; the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA); the Ontario Agri Business Association (OABA); the Grain Farmers of Ontario; the Ontario Federation of Agriculture; the Christian Farmers Federation of Ontario; Conservation Ontario; The Nature Conservancy – Ohio; the Ministry of the Environment and Climate Change; the International Plant Nutrition Institute; the Ontario Certified Crop Advisor Board of Ontario; and Ontario agri-retailers.

The 4R Certification Program and Standards were developed as part of a voluntary initiative to improve the watershed conditions of the Western Lake Erie Basin and reduce greenhouse gas (GHG) emissions by optimizing crop nutrient uptake and reducing nutrient losses.

In addition, the 4R Ontario Steering Committee supports 4R Nutrient Stewardship research in Ontario. Researchers have recently proven several benefits from implementing 4R practices on Ontario farms, such as:

- Reducing GHG by up to 75 per cent by combining the use of urea-ammonium nitrate (UAN) with nitrification inhibitors at the eighth-leaf growing stage of corn;
- Increasing corn yields by as much as 20 per cent and eliminating harmful ammonia loss to soil by combining injection placement with UAN fertilizer, compared to broadcasting;
- Reducing phosphorus runoff by 60 per cent by subsurface banding instead of broadcasting.


The members of the 4R Ontario MOC will continuously work with the research community to help identify the most effective conservation and nutrient management practices to ensure the standards stay up to date and provide the most current research available.

While there is no one right answer to the BMP question, Fertilizer Canada in consultation with industry experts from across Canada has developed science-based, 4R Guidance Tables. The purpose of this document is to provide guidance as to what might be considered 4R consistent practices in different Canadian cropping systems.

Key information on crops and fertilizer practices is captured in the Fertilizer Use Survey as they relate to 4R Nutrient Stewardship. The survey aims to build a national database of fertilizer management practices from 2014-2018, including source, rate, time and place of fertilizer applications, general fertilizer practices, and demographics. Since the development of the survey in 2014, 1,940 growers nationwide have participated. In Ontario, grower familiarity with 4R Nutrient Stewardship increased by 30 per cent from 2014-2016 which directly relates to the growers likeness to adopt 4R BMPs. Specific to fertilizer application, the survey found that over 60 per cent of Phosphorus fertilizer applied for corn (in Ontario and Quebec) was placed in subsurface bands, and only nine per cent was broadcast without incorporation.

Agriculture has a role to play in efforts to limit the negative impacts of climate change. Fertilizer Canada stands ready to continue working with the Government of Ontario to implement these Canadian-made solutions and position Ontario as a national leader in environmental sustainability on farms. We look forward to discussing this opportunity further.

Kind regards,



Cassandra Cotton  
Vice President, Sustainability  
Fertilizer Canada