



FERTILIZER CANADA

FERTILISANTS CANADA

A National Strategy to Reduce Nitrous Oxide Emissions

Canada has the opportunity to become a world leader in reducing greenhouse gas emissions on farms by helping growers become climate-smart.

Reconciling the dual objectives of increased food production and reduced emissions is a major challenge faced by the global agriculture industry today. Fertilizer consumption in Canada has remained on the rise over the past two decades in support of increased crop yields required to feed nine billion people by 2050. However, agriculture is also the largest contributor of non-carbon dioxide greenhouse gas (GHG) on the planet - 36 per cent globally.

Fertilizer Canada's Nitrous Oxide Emission Reduction Protocol (or NERP) has the potential to change that.

Canadian fertilizer production facilities perform in the top quartile globally for energy efficiency and GHG emissions. With a limited ability to further reduce emissions, Fertilizer Canada has led and continues to support the development of the world-leading NERP offset system on behalf of our members as a tool to ensure the economically efficient and environmentally responsible use of fertilizer on farm. NERP was developed using a consensus approach with input and review from Canada's top scientists in GHG emissions as well as leading agronomists from government and industry.

NERP incorporates 4R Nutrient Stewardship (Right Source @ Right Rate, Right Time, Right Place®), providing a framework for growers to reduce on-farm GHG emissions from nitrogen fertilizer in a quantifiable and credible way, and in return allowing growers to produce saleable carbon credits. While Canada is home to some of the most sophisticated growers in the world, the implementation of NERP will allow these growers to demonstrate it by having a verifiable system in place.

Research has shown that if the NERP were implemented across Western Canada, it would reduce nitrous oxide emissions by 1-2 MT CO₂e annually. In addition to these tangible reductions in GHG emissions, a carbon credit would be issued to reward farmers for their environmental stewardship and further incentivize these best practices.

Fertilizer Canada and its members have invested significantly in nitrous oxide research over the last decade and the institutional platform necessary for a national roll-out is in place – now the coordinated effort to unleash the potential must begin. Given that almost every province has identified an opportunity for the agriculture sector to participate voluntarily in generating carbon offsets under the Pan-Canadian Framework, the timing is right for agriculture to contribute to the low carbon economy and have the revenue from carbon pricing systems drive the needed implementation across the country.

Canada needs to have a nationally consistent NERP protocol, with common and comparable Canadian-based science, procedures, carbon accounting rules, data and supporting evidence driving its GHG metrics. 4R researchers, experts, 4R practitioners and stakeholders are

currently being mobilized across the country to develop a Pan-Canadian NERP and update the science in accordance with the most recent nitrous oxide research on 4R practices. This protocol will meet international standards and has the potential to affect millions of acres while reducing GHG emissions by megatonnes.

In addition to providing domestic emission reductions, contributing to Canada's Paris commitment, broad-scale implementation of NERP could:

- Increase food security and prosperity for the country by contributing to a national framework to grow the economy as outlined in the Dominic Barton report;
- Maintain and grow market access and market share for Canadian crops;
- Improve soil health and water quality through the application of regionally-specific BMPs; and
- Create shared-value partnerships with government, stakeholders and industry to further advance 4R implementation and achieve Fertilizer Canada's goal of 20 million acres under 4R Nutrient Stewardship by 2020 – 20 per cent of Canada's crop land.

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 Canada on implementing this Canadian-made solution and position Canada as a world leader in environmental sustainability on farms. We look forward to discussing this opportunity further.



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Canadian Fertilizer Industry Poised to Lead Agriculture Industry in Reducing Greenhouse Gas

4R Nutrient Stewardship framework helps farmers reduce environmental impacts

OTTAWA, ON – Canada has the opportunity to become a world leader in reducing greenhouse gas emissions on-farms by helping growers become climate-smart. As the federal, provincial and territorial Agriculture Ministers are set to meet next week, they have the opportunity to develop a Pan-Canadian framework for the Canadian agriculture sector contributing to the low carbon economy and creating revenue from carbon pricing systems across the country.

A national 4R Climate-Smart Protocol, also known as the Nitrous Oxide Emission Reduction Protocol, can achieve this. The 4R Climate-Smart Protocol is an easily adaptable, science-based solution for Canada's growers to optimize nitrogen management in their cropping systems and quantifiably demonstrate carbon reductions.

Implementing the 4R Climate-Smart Protocol, which incorporates 4R Nutrient Stewardship (Right Source @ Right Rate, Right Time, Right Place®), increases economic performance for growers while reducing the input costs per unit of crop yield produced.

“Research has shown that if the Protocol was implemented across Western Canada, it would reduce nitrous oxide emissions by 1-2 megatonnes of carbon dioxide equivalents annually,” said Clyde Graham, Sr. Vice President at Fertilizer Canada. “In addition to these tangible reductions in GHG emissions, a carbon credit would be issued to reward farmers for their environmental stewardship.”

Fertilizer Canada commissioned a report by Viresco Solutions to lay out a strategy for national implementation. The report indicates that the institutional platform necessary for a roll-out of this scale is in place – now the coordinated effort to unleash the potential must begin.

4R researchers, experts, 4R practitioners and stakeholders are currently being mobilized across the country to implement a Pan-Canadian 4R Climate-Smart Protocol and update the science in accordance with the most recent nitrous oxide research on 4R practices. In addition to meeting international standards, this protocol has the potential to reduce GHG emissions on millions of acres.



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“Fertilizer Canada stands ready to continue to work with the agriculture industry, as well as the Government of Canada on implementing this Canadian-made solution and positioning Canada as a world leader in environmental stewardship on-farms,” said Graham.

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***Fertilizer Canada** represents manufacturers, wholesale and retail distributors of nitrogen, phosphate, potash and sulphur fertilizers. The fertilizer industry plays an essential role in Canada’s economy, contributing \$23 billion in economic activity annually and over 76,000 jobs. The association is committed to supporting the fertilizer industry with innovative research and programming while advocating sustainability, stewardship, safety and security through standards and Codes of Practice. Please visit **fertilizercanada.ca**.*

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