

## **4R NUTRIENT STEWARDSHIP MEMORANDUM OF UNDERSTANDING**

**THIS MEMORANDUM OF UNDERSTANDING** made this 26th day of November, 2018.

**BETWEEN:**                **GOVERNMENT OF MANITOBA**, as represented by the Minister of Agriculture and the Minister of Sustainable Development

**AND:**                    **FERTILIZER CANADA**, a corporation incorporated under the Canada Not-for-profit Corporations Act, having its head office located in Ottawa, Ontario

**AND:**                    **KEYSTONE AGRICULTURAL PRODUCERS INC.**, a general farm policy organization that works to ensure primary production in Manitoba remains profitable, sustainable and globally competitive

(hereinafter referred to as "KAP")

### **Background and Purpose**

The parties have previously entered into two (2) 4R Nutrient Stewardship Memorandum of Understandings, the first dated January 15, 2013 and the second dated June 16, 2015. The parties wish to enter into this new Memorandum of Understanding (MOU) with respect to 4R Nutrient Stewardship.

The purpose of this MOU is to link the Government of Manitoba's objectives for environmental performance with the nutrient stewardship programming developed by Canada's fertilizer industry. The parties agree that the *Right Source @ Right Rate, Right Time, Right Place*® approach to nutrient management (commonly referred to as *4R Nutrient Stewardship* or the 4Rs) established by Fertilizer Canada provides the framework for meeting the shared goal of sustainability outlined in this MOU.

### **Commitment to Sustainability**

Canada's fertilizer industry is committed to achieving sustainability in partnership with its stakeholders. The fertilizer industry continues to strengthen environmental stewardship by supporting the implementation of Beneficial Management Practices (BMPs) by agricultural producers. It is also committed to promoting the measurement of impacts of these efforts on the economy, society and the environment.

## **Right Source @ Right Rate, Right Time, Right Place® Nutrient Stewardship**

The fertilizer industry has established the *Right Source @ Right Rate, Right Time, Right Place®* (4R) Nutrient Stewardship system in cooperation with government, researchers, customers and the public. This approach ensures that nutrients are applied using the right source at the right rate, time and place through farmer adoption of BMPs to achieve economic, social and environmental sustainability. The 4R framework recognizes that BMPs must be customized to fit each farm's unique combination of climatic, soil, landscape, cropping and operational conditions. This principle of customized implementation is applied with input from Certified Crop Advisers, professional agrologists and government extension specialists who work with farmers, as needed, to assess their situations and develop management plans. All sources of crop nutrients (commercial fertilizers, livestock manure, biosolids and compost) are integrated into the *4R Nutrient Stewardship* system.

Continuous improvement can be achieved by employing metrics that assess the impacts of source, rate, time and place BMPs on environmental, economic, and social variables. Based on this feedback, adjustments can be made to practices and policies, as well as research and extension programming, to further enhance sustainability. Progress continues on the establishment of science-based metrics.

### **The Manitoba Approach**

**Policy and Legislation** – Over the last decade and a half, the Government of Manitoba has taken action to reduce nutrient loading to watersheds, which includes education of youth, teachers and the public; extension to producers, agronomists and agri-retailers; incentives to producers and landowners; investments in infrastructure, science and research; new and modernized legislation.

The Government of Manitoba has also committed to reducing greenhouse gas emissions, including those from the agriculture industry. To achieve this goal, legislative and financial initiatives continue to be undertaken to facilitate adoption of particular BMPs meant to reduce emissions. The principal piece of provincial legislation targeting this issue is *The Climate Change and Emissions Reduction Act*.

A *Made-in-Manitoba Climate and Green Plan* ('*The Plan*') identifies agriculture as a critical land use and *4R Nutrient Stewardship* as a means for addressing agriculture's role in water quality concerns. KAP is identified as one of the partners with whom the Government of Manitoba will work in the implementation of BMPs. Additionally, *The Plan* notes that documentation of 4R practice adoption could be used as a potential indicator for water quality protection and improvement in Manitoba.

The agriculture-related pieces of Manitoba legislation most pertinent to *4R Nutrient Stewardship* are:



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- the Livestock Manure and Mortalities Management Regulation, under *The Environment Act*, passed in 1998;
- the Nutrient Management Regulation, under *The Water Protection Act*, passed in 2008.

**Extension** – Environmental farm planning is the flagship extension vehicle for environmental stewardship in Manitoba. Completion of an Environmental Farm Plan (EFP) informs producers about the assets and risks in their operations and encourages them to take action to address any concerns. The EFP recognizes nutrient management planning through the 4Rs as one of the key practices that producers can adopt to optimize production and minimize environmental risk.

Through ongoing information exchange and training at conferences, workshops and field tours, industry staff, agronomists and government specialists maintain high levels of knowledge and skills in nutrient management, including the principles of *4R Nutrient Stewardship*. Such continuous upgrading equips professionals to provide advice to Manitoba growers regarding their nutrient management decisions.

On behalf of its members, KAP has played a leadership role in promoting environmental stewardship by Manitoba farmers. KAP is an important partner in the evolution of the voluntary adoption of nutrient management practices in Manitoba.

**Management Principles** – Managing nutrients properly offers both economic and environmental benefits to farmers and the general society. Efficient use of nutrients from commercial fertilizers, manure or other sources reduces input costs for crop production and minimizes the risk of nutrient loss to ground and surface water as well as atmospheric emissions of ammonia and nitrous oxide.

*4R Nutrient Stewardship* is based on an understanding of how the various nutrients behave in different soils and landscapes, how they are taken up by crops and how to minimize their loss to the greater environment. Adjustments to the crop nutrient source as well as the application rate, timing, and placement method may greatly reduce the risk of nutrient losses.

**MOU Principles:**

1. The parties understand that economic, social and environmental performance improvements must be undertaken in relation to each other to achieve overall sustainability.
2. The parties acknowledge that there is a need to manage the application of nutrients to land to reduce nutrient loading to waterways across Manitoba, including Lake Winnipeg.



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3. The parties agree that agri-environmental sustainability is achieved in part by the adoption and maintenance of farm-specific BMPs that follow the principles of applying nutrients in the right forms at the right rate, time and place.
4. The parties acknowledge that *4R Nutrient Stewardship* has been recognized as an essential part of environmental farm planning through inclusion of the 4Rs in the Environmental Farm Plan workbook. The parties agree that strategies for promoting the adoption of BMPs are often most effective when based on voluntary action by farmers encouraged through extension and incentives developed in cooperation with farmers.
5. The parties recognize that BMPs must be science-based and that ongoing research is essential to validating the efficacy and feasible adoption of BMPs, such as those associated with *4R Nutrient Stewardship*.
6. The parties recognize the critical role of the private sector in the development and implementation of on-farm solutions to ensure sustainability. In particular, trained professionals such as Certified Crop Advisers (CCAs) and members of good standing with the Manitoba Institute of Agrologists (MIA) work directly with producers and are well positioned to facilitate adoption of BMPs to achieve sustainability goals.
7. Fertilizer Canada and the Government of Manitoba recognize KAP as the main farm advocacy group to be involved in following and carrying out provisions of this MOU.

#### **Action Items:**

1. Fertilizer Canada and the Government of Manitoba will work together with KAP to undertake various activities to promote the adoption of the ***Right Source @ Right Rate, Right Time, Right Place®*** Nutrient Management system.
2. The various activities to be undertaken may include:
  - (a) the creation, printing and web-posting of technical information and instructional materials supporting a variety of 4R programming;
  - (b) the development of farmer-targeted extension materials, accessible via the Fertilizer Canada website, to encourage farmer adoption of BMPs within the performance areas of the 4Rs;
  - (c) the delivery of 4R nutrient management training programs, in cooperation with professional associations (e.g. Prairie CCA Board and the MIA),



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directed towards qualified professionals who can then formally offer 4R nutrient management planning services to producers;

- (d) outreach and engagement with agri-retailers to participate in Fertilizer Canada's national 4R Designation program, to track acres adopting 4R Nutrient Stewardship which help demonstrate how Canada is a leader in sustainable farming;
  - (e) field extension events, catering to producers and/or agronomists, that illustrate and promote the concepts and details of nutrient management according to the 4Rs;
  - (f) projects that compile data from all suitable studies to refine nutrient uptake and removal values for Western Canadian crops;
  - (g) additional collaboration with the research community to explore potential measures that would validate and improve the effectiveness of the **Right Source @ Right Rate, Right Time, Right Place®** system of fertilizer use; agronomic measures could include soil and crop parameters in research trials that confirm improved efficiencies with adoption of superior practices; environmental measures could include soil, water and air parameters examined in nutrient fate studies that track the transformation and movement of nutrients.
3. The parties acknowledge that these various undertakings are subject to future circumstances (e.g. weather conditions, site suitability, expertise availability) that are unforeseeable and that may impede the completion of certain tasks (e.g. establishment of field demonstrations, delivery of field extension events, development of individual extension projects) necessary for the success of the activities. As such, the parties are not committed to any specific undertakings by signing this MOU.
4. The 4R Implementation Committee (the "Committee") established under the former MOU and which is comprised of members from each of the parties to this MOU will continue to:
- (a) select which activities will be undertaken by the parties to enable the pursuit of this MOU's objectives;
  - (b) coordinate, organize, plan and oversee the implementation of each activity to the degree necessary and appropriate for each activity; and
  - (c) interface with the Manitoba Soil Fertility Advisory Committee.



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5. Fertilizer Canada will provide financial support of up to \$20,000 annually for three years beginning at the onset of Fertilizer Canada's new fiscal year (January 1, 2019) to enable pursuit of this MOU's objectives. In particular, Fertilizer Canada will provide funding to third-party entities that incur expenses while undertaking the activities that support the objectives of this MOU. Such third-party entities may include researchers, producer groups and consulting agronomists as appropriate for each activity. Fertilizer Canada will contract with and make payments directly to those third-party entities. Fertilizer Canada will not be obligated to advance any funds hereunder until such advance has been approved in writing by the Committee.
6. In addition, the parties will make in-kind contributions in the form of staff time (e.g. staff participation on the Committee and in select activities) and will cover each of their own operating expenses, such as travel costs.



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**Term of MOU and Renewal:**

The term of this MOU shall commence on the 1<sup>st</sup> day of January, 2019, and end on the 31<sup>st</sup> day of December, 2021. This MOU shall supersede and replace the previous 4R Nutrient Stewardship Memorandum of Understanding dated June 16, 2015. The parties may extend this MOU for an additional term of three (3) years by written agreement prior to the expiration of this MOU.

**Termination:**

The parties may terminate this MOU at any time by written agreement. Any individual party may terminate its participation in this MOU at any time upon providing six (6) months advance written notice to the other parties.

 Date: NOV 26 2018  
**Steve Biggar**  
Executive Board Member, Fertilizer Canada

 Date: NOV 26 2018  
**Minister Ralph Eichler**  
Manitoba Agriculture

 Date: NOV 19 2018  
**Minister Rochelle Squires**  
Manitoba Sustainable Development

 Date: NOV 26 2018  
**Bill Campbell**  
President, Keystone Agricultural Producers Inc.

