



FERTILIZER CANADA
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Counting 4R Acres

The fertilizer industry, Canadian farmers, and Canadian agricultural researchers have worked proactively for decades to develop methods of reducing environmental impact, without compromising farmers' competitiveness. As part of this effort, Fertilizer Canada has been raising awareness and supporting the adoption of 4R Nutrient Stewardship, including collecting self-reported on-farm data and counting 4R acres through a voluntary, industry program.

Surveyed acres are collected through the annual Fertilizer Use Survey, which uses self-reported data from approximately 2,000 growers across Canada. Verified acres are counted through Fertilizer Canada's 4R Designation program. Designated 4R professionals, including Designated 4R Agronomists and/ or Certified Crop Advisors with specific 4R training sign off that the grower has a 4R compliant nutrient management plan in place and submits acres on behalf of their grower customers. The program is voluntary and includes all levels of 4R practices, from basic to advanced.

Fertilizer Canada has set a goal to reach 15 million verified 4R acres through the Designation and Certification programs and 30 million self-reported surveyed 4R acres by 2026.

Frequently Asked Questions

What is 4R Nutrient Stewardship?

4R Nutrient Stewardship is a science-based suite of best management practices for farmers that optimize nutrient uptake by using the right source of nutrients at the right rate, right time, and in the right place.

What are the Components of 4R Nutrient Stewardship?

Right Source – Select the right mix of nutrients for optimum uptake by the crop based on crop type, soil characteristics, and region.

Right Time – Apply the fertilizer at the right time of year, which could include more than one application, and not when the ground is frozen or covered in snow. As well as, implementing nutrient planning annually.

Right Rate – Apply nutrients to meet the crops' needs, considering nutrients already in the soil and all sources (e.g. livestock manures, commercial fertilizers and atmospheric nitrogen fixed by legumes). Complete soil testing to determine the nutrient balance the soil needs.

Right Place – Put nutrients in the optimal spot for crop uptake. Respect recommended setback distances for nutrient application near waterways.

What are the levels of 4R Nutrient Stewardship?



4R Nutrient Stewardship practices are categorized into three levels—basic, intermediate, and advanced—for each of the four R's (Right Time, Right Place, Right Rate, and Right Source). The suite of practices at a given level will depend on the region, crop, and soil. More advanced levels should result in greater reduction of nutrient losses and GHG emissions.

Practices are not stand-alone and should be considered as suites of practices that work together toward the goal of improving nutrient use efficiency and reducing nutrient losses from the cropping system. The general progression is based on the following concepts:

- **Basic** – Practices are generally consistent with 4R principles. A significant proportion of growers already have these in place or are willing to adopt them in the short term (1-2 years).
- **Intermediate** – Practices are fully consistent with 4R principles and may be transitional to advanced practices. Adoption of intermediate-level practices may occur over the medium term (1-3 years), particularly when they involve investment in new technology.
- **Advanced** – Practices are fully consistent with 4R principles and may be considered aspirational and/or best in class. Adoption of a full suite of advanced level practices may occur over a longer time frame (3-6 years), particularly when they involve investment in new technology.

Below is an overview of general practice changes from basic to advanced.

Level	Source	Rate	Time	Place
Basic	Measured or estimated nutrient content. Known mode of action.	Field-specific – the rate is set considering the unique factors in each field.	Reduce high-risk timings.	Exclude high-risk placement, low efficiency placements.
Intermediate	Enhanced efficiency sources (if available) in high-risk situations.	Rate adjusted for subfield variation in soil supply and risk of off-site movement.	Move application timing closer to period of highest crop demand.	Concentrate placement in subsurface bands.
Advanced	Enhanced Efficiency Sources in all but low-risk situations.	Rate optimized for subfield variation.	Multiple applications to synchronize timing with crop demand and growing season conditions.	Concentrate placement in subsurface bands in optimal configuration with rooting zone.

What level of 4R acre is counted by Fertilizer Canada?



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Both the surveyed acres and verified acres count all levels of 4Rs from basic to advanced.

Accurate, timely data is vital to understanding the state of 4R adoption across Canada and advocating for policies that support increased adoption. Fertilizer Canada is working on advancing our reporting structure to break out levels of 4R for data collection in the future.

What is the difference between surveyed and verified acres?

Surveyed acres are based on the Fertilizer Use Survey that uses self-reported data from growers across Canada. These acres are not verified by a third party. Verified acres are signed off on by a designated 4R Agronomist who confirms that the acres are being advised under a nutrient management plan that follows 4R Nutrient Stewardship principles.

Does Fertilizer Canada verify the acres?

No, Fertilizer Canada does not verify the acres. Designated 4R Agronomists are nutrient service professionals who verify the acres follow 4R principles and sign off on nutrient management plans through an Acre Report Form that is submitted to Fertilizer Canada for counting.

What is the Fertilizer Use Survey?

The Fertilizer Use Survey is a long-standing annual initiative that Fertilizer Canada and its stakeholders have completed since 2014 to determine fertilizer application practices of growers across Canada and 4R awareness. The Fertilizer Use Survey is an online survey fielded by Stratus Ag that provides self-reported data from Canadian farmers.

The most recent survey included canola and wheat in Western Canada (Alberta, Saskatchewan, and Manitoba), barley in Manitoba, grain corn and soybean in Ontario, grain corn in Quebec, and potatoes in P.E.I.

What is adoption of more advanced levels of 4Rs in Canada?

According to the Fertilizer Use Survey there is a gap between adoption of basic 4Rs and advanced practices based on the self-reported data. Increasing the number of growers working with a designated 4R Agronomist will help implement more formalized written plans. Although approximately 70 per cent of Canadian farmers believe they are implementing a basic, or near basic level of 4R Nutrient Stewardship practices, only 27 per cent reported working with a 4R Designated Agronomist and less than 5 per cent of Canadian growers are implementing the advanced, nitrogen-specific practices required by the 4R Climate Smart Protocol.

Does the 4R Designation Program Require a 4R plan?

Yes, the 4R Designation program operates on the basis that in order to guarantee appropriate implementation of 4R practices, 4R implementation on-farm is best through a Plan written by a Certified Crop Advisor or Professional Agronomist that has completed 4R training. These professionals provide rigorous, science-based agronomic advice to farmers across Canada.