

# A Prairie Assessment of Nitrogen Stabilizers and Split Fertilizer Application in Sustaining Spring Wheat Yield, Protein, and Production Economics While Reducing N<sub>2</sub>O Emissions

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Graduate Student Position Available in the 4R Nutrient Stewardship NSERC Industrial Research Chair Program  
Department of Soil Science, University of Manitoba, Canada  
January 2024  
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We are currently seeking a candidate for training leading to an M.Sc. or Ph.D. degree in **Sustainable 4R Wheat Production**. Spring wheat is Canada's second most valued export grain commodity and restrictions in nitrogen (N) fertilizer use to significantly reduce nitrous oxide (N<sub>2</sub>O) emissions would severely impact sustainability of farms across the Prairies. Past research in Canada and globally have shown practices from the 4R Nutrient Stewardship framework can reduce emissions.

The successful applicant will undertake graduate research to determine the benefit of combinations of 4R practices including split application, inhibitor-treated urea, and reduced rate urea addition to agronomic performance of and reduced N<sub>2</sub>O emissions from Canadian Western Red Spring Wheat. The student will assist with experimental design, setup, sample collection, sample analysis and processing. They will also report results to farmers and industry through field tours and presentations. Ph.D. candidates will also be responsible for synthesizing results from data collected at four additional sites in Alberta and Saskatchewan.

Students must have excellent oral and written skills in English. If an M.Sc. student, a 4-year equivalent B.Sc. in agriculture or the natural sciences is required and course work and field experience in agriculture or soil science an asset. If a Ph.D. student, a research-intensive M.Sc. with at least one resulting publication in English in a peer-reviewed journal is required. If the research was in the field of agriculture, the paper must be from a reputable [agronomy, crop or soil science journal](#). Stipends of \$24,000/yr for two years to M.Sc. students and \$28,000/yr for four years to Ph.D. students are available. Training is funded by several government and industry sources supporting projects led by the 4R Industrial Research Chair Program.



Interested in this opportunity? Send a detailed CV, statement of relevant experience, availability, and list of three referees and their contact information to Dr. Mario Tenuta, Professor of Applied Soil Ecology, at [mario.tenuta@umanitoba.ca](mailto:mario.tenuta@umanitoba.ca). Please use the subject heading "**Sustainable 4R Wheat Production**".

The laboratory is committed to a training environment with gender equality, diversity, and encouragement of participation of Indigenous and Metis peoples and minorities. Learn more about the [4R Industrial Research Chair Program](#), the [University of Manitoba](#) and the [City of Winnipeg](#).