

Micrometeorology and Net Greenhouse Gas Emissions of Two Long-Term Agricultural Study Sites

Graduate Student Position Available in the 4R Nutrient Stewardship NSERC Industrial Research Chair Program

Department of Soil Science, University of Manitoba, Canada

January 2024

We are currently seeking a candidate for training leading to an M.Sc. or Ph.D. degree in **Micrometeorology and Net Greenhouse Gas Emissions** of long-term agricultural study sites. Reducing greenhouse gas emissions from agricultural fields is an important step towards achieving 30% reductions below the 2005 level in Canada by the year 2030. Past research in Canada and globally have shown practices from the 4R Nutrient Stewardship framework can reduce emissions. One of these practices is applying fertilizer amended with a nitrification inhibitor.



The successful applicant will undertake graduate research to determine the extent to which whole-year N₂O and CO₂ net emissions reductions from long-term field study sites can be achieved through applying nitrogen fertilizer with a nitrification inhibitor. N₂O



fluxes are determined using the flux-gradient method. The two study sites are located on heavy clay soil and lighter sandy soil; the project will focus on comparing emissions from two contrasting soil types of the Canadian Prairies. The student will assist with experimental design, setup and maintenance, sample collection, sample analysis and processing. They will also report results to farmers and industry through field tours and presentations.

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. 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. Please use the subject heading “**TGAS Long Term Studies**”.

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](#).