

Phosphorus Dynamics in Perennial Grain Systems

Graduate Student (MSc) Position Announcement **Soil Fertility and Chemistry Lab, Department of Soil Science** **Perennial Grain Breeding Lab, Department of Plant Science** **University of Manitoba, Winnipeg, Manitoba, Canada**

We are seeking a highly motivated candidate for a graduate student position (MSc) in the area of soil fertility and plant nutrition of perennial grains. The student will work on a project entitled “Phosphorus dynamics in perennial grain systems,” investigating the phosphorus (P) nutrition of the perennial grain crop Kernza™, which is intermediate wheatgrass selected for grain production. Perennial grains are seen as an environmentally sustainable production approach, but little is currently known about optimal soil fertility management practices for these novel crops. Specifically, the graduate student will assess the productivity and the P acquisition mechanisms of Kernza when fertilized with different P sources in different soil types. The P fertilizers include the soluble fertilizer monoammonium phosphate, livestock manure, and the slow-release fertilizer struvite, which is a recycled fertilizer extracted from municipal wastewater. This research will include a field study, a controlled-environment plant growth study, and laboratory work such as quantifying mycorrhizal colonization of plant roots.

The position will be based in the Department of Soil Science, University of Manitoba with an anticipated start date of September 2023. The student will be co-supervised by Dr. Joanne Thiessen Martens, Dept. of Soil Science, and Dr. Doug Cattani, Dept. of Plant Science. A graduate stipend of \$21,000 per year for two years is available. The Soil Science department is based at the Fort Garry campus of the University of Manitoba, located in Winnipeg.

Candidates will have excellent oral and written skills in English and will have completed a 4-year equivalent B.Sc. degree in soil science, plant science, agronomy, environmental science, or a related discipline. A valid driver’s license or the ability to obtain one is preferred. The lab groups leading this research are committed to an equitable, diverse, and inclusive training environment. We especially welcome applications from women, racialized persons, Indigenous Peoples, persons with disabilities, persons of all sexual orientations and genders, and others who may contribute to the further diversification of ideas.

Interested candidates are asked to send the following application materials to Dr. Joanne Thiessen Martens (J.ThiessenMartens@umanitoba.ca):

- Cover Letter – include why you are interested in this position; a statement indicating the school, program and year in which you are currently enrolled; and a description of any previous research experience.
- Detailed CV
- Academic transcript(s)
- An example of your original science-related writing (lab report, term paper, etc.)
- The contact information for at least two academic referees.