

# MSc Student Position in Malt Microbiomes

**Research Topic:** Linking malting barley quality defects to traits of *Fusarium graminearum*

**Location:** Dept. of Microbiology and Dept. of Plant Science, University of Manitoba, Canada.

Co-supervisors:

Dr. Matthew Bakker (Microbiology; [https://www.researchgate.net/profile/Matthew\\_Bakker](https://www.researchgate.net/profile/Matthew_Bakker)), and

Dr. Dilantha Fernando (Plant Science; <http://home.cc.umanitoba.ca/~fernando/>)

**Start date:**

July 1, 2019 or thereafter.

**Description:** *Fusarium* head blight is a devastating disease of wheat and barley, caused primarily by *Fusarium graminearum* and its close relatives. A toxin produced by the fungal pathogen accompanies the disease and is responsible for much of its economic impact. There are unique aspects to this disease in malting barley, because *Fusarium* can resume active growth during the malting process, potentially resulting in new toxin production and other malt quality defects, such as premature yeast flocculation and excessive gushing in finished beer.

**The Position:** One MSc position is available for research connecting *Fusarium graminearum* to malt quality. With collaborators, we will produce barley infested with characterized strains of *Fusarium graminearum*, to be used in micromalting experiments. Strain-level traits of *F. graminearum* will be linked to particular malt quality criteria and to the success of *Fusarium* within the broader microbiome associated with malting barley.

**Required Experience:** Bachelor's degree in Plant Science, Microbiology, Biological Sciences, Plant Pathology, Agriculture or another related field. Experience in, or a willingness to learn, bioinformatics techniques related to genomics and microbiome profiling.

An excellent undergraduate student may start as an MSc student, with the possibility to transfer to the PhD program (to be determined on the performance & availability of funds).

**About Winnipeg:** Winnipeg, the capital of Manitoba, is a vibrant city with a population of about 800,000. Situated at the meeting of the Red and Assiniboine Rivers, this friendly city offers ethnic and cultural diversity and hosts many artistic, social, and sporting events and festivities throughout the year. Residents quickly become part of this prairie city's "home-town" attitude offering them a great place to live, work, and play!

**Departments:** For information about the Department of Microbiology and the Department of Plant Science at the University of Manitoba, please see:

<http://www.sci.umanitoba.ca/micro/>

[http://umanitoba.ca/faculties/afs/dept/plant\\_science/](http://umanitoba.ca/faculties/afs/dept/plant_science/)

**Contact:** Please send cover letter, curriculum vitae, unofficial transcripts & contact information of two references in PDF format to Dr. Matthew Bakker ([Matthew.Bakker@umanitoba.ca](mailto:Matthew.Bakker@umanitoba.ca)).



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