

Cereal Science

Department Information

- **Department Chair:**
Richard Horsley, Ph.D.
- **Program Coordinator:**
Frank Manthey, Ph.D.
- **Department Location:**
Plant Sciences, Loftsgard Hall
- **Department Phone:**
(701) 231-7971
- **Department Web Site:**
www.ndsu.edu/agriculture/academics/academic-units/plant-sciences/graduate-programs (<http://www.ndsu.edu/agriculture/academics/academic-units/plant-sciences/graduate-programs/>)
- **Application Deadline:**
International applications are due May 1 for fall and October 1 for spring. Domestic applicants should apply at least one month prior to the start of classes.
- **Credential Offered:**
Ph.D., M.S.
- **English Proficiency Requirements:**
TOEFL iBT 71, IELTS 6; Duolingo 105

Cereal Science is a graduate program in the College of Agriculture Food Systems and Natural Resources and is administered by the Department of Plant Sciences. The Cereal Science graduate program offers graduate study leading to the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in Cereal Science. Advanced work may involve research in the areas of proteins, carbohydrates, enzymes, and lipids of cereals, legumes, and other northern-grown crops; barley malting and brewing; and wheat milling, baking, and pasta processing. Functional foods and stability of bioactive compounds in food systems are also predominant areas of research.

Research Facilities and Equipment

Faculty in the Cereal Science graduate program maintain specialized equipment that evaluates cereal and food quality, including laboratory equipment such as an ICP spectrophotometer, gas chromatographs, LC-MS, GC-MS, high-performance liquid chromatographs, various electrophoretic devices, a differential scanning calorimeter, and Rapid ViscoAnalyzer.

Flour mills, ranging up to pilot-plant size; two completely equipped bake shops; continuous bread-baking equipment; rheological instruments for dough testing; several pasta-processing units; malting equipment; Asian noodle making equipment; soy milk/tofu processing machines; a wet processing pilot plant; laboratory-scale UHT processing unit; HT/ST extruder; and a microbrewery are some examples of the specialized equipment.

The Cereal Science program has a close working relationship with both the Northern Crops Institute and the USDA Hard Red Spring and Durum Wheat Quality Laboratory. All three are located in the newly opened (June 2024) Peltier Complex. This 85 million dollar facility supports a wide range of research involving food science, meat science, muscle biology, food safety, nutrition, consumer sensory traits, and the development of new agricultural products.