

CIFST LAB SERIES

Exploring the Depths of Grain Chemistry & Processing Quality at the University of Manitoba

Welcome to the Grain Chemistry and Processing Quality Lab at the University of Manitoba! A dynamic research facility where, under the guidance of Dr. Maneka Malalgoda, a dedicated team of researchers is committed to exploring the field of grain chemistry and advancing processing quality. Here, in this collaborative setting, they engage in cutting-edge research and development, constantly seeking new insights and discoveries that contribute to the ever-evolving landscape of grain science.

About Dr. Maneka Malalgoda



Assistant Professor
 Department of Food and
 Human Nutritional
 Sciences

Dr. Maneka Malalgoda is an Assistant Professor in the department of Food and Human Nutritional Sciences at the University of Manitoba. She holds a PhD in Cereal Science from the North Dakota State University, US, and an MSc in Cereal Science from the same institution. She did her BSc in Medical & Pharmaceutical Biotechnology from the University of Applied Sciences, Austria. Dr. Malalgoda's research program examines the physicochemical properties of grain proteins and starch, functionality and processing quality of these components, and the biological activity of grain biomacromolecules. Her commitment lies in utilizing grain-based ingredients to produce healthy, high-quality, and safe food through innovative processing and analytical approaches. Her dedication to advancing knowledge is evident in her teaching portfolio, which includes courses such as addressing current issues in food and human nutrition, grains for food and beverage, bakery science and technology and advanced courses

LAB FACILITY

In the laboratory, in-depth analyses are conducted on the physicochemical properties of grain proteins and starch, utilizing advanced technologies for comprehensive assessments. This extends beyond precise chemical evaluations to encompass a thorough understanding of the functionality and processing quality of these macro molecules. The lab covers a spectrum of parameters crucial for both research and industry applications, with specialized facilities dedicated to milling and baking. Each step is meticulously designed to ensure optimal quality, fostering innovative research in grain science.

MEET THE RESEARCHERS



Anashwar M Valsalan is a second-year master's student, and his research focuses on underutilized wheat species, investigating their functional properties and developing nutrient-dense food applications.



Sathsara Deyalage is a second-year master's student, and she is investigating the nutritional potential and physicochemical properties of ancient wheat species, aiming to uncover their distinctive characteristics for both dietary and industrial applications.



Sachini Senarathna is a first-year master's student, and she is working on developing a validated tandem mass spectrometry-based method for the quantitative analysis of celiac epitopes in oat and determination of the variability of celiac antigenicity among diverse oat cultivars.



Mackenzie Furgeson is a first-year master's student, and he is investigating the environment effect on physicochemical and functional characteristics of intermediate wheatgrass and its impact on the quality of the final product.



Reyna Stefanson is a first-year master's student, and she is studying acrylamide formation in wheat-based products. Her research centres around determining the optimum acrylamide detection method with the most sensitivity, selectivity, and



Carly Isaak is a PhD student, and her research focuses in identifying key quality traits important to whole grain baking and the underlying biochemistry to provide guidance to breeders in selecting lines with superior whole wheat baking performance.



Dr. Indhurathna Swaminathan is a post-doctoral research fellow, and she is investigating the quality assessments and quantification of Asparagine in diverse wheat cultivars with a goal of developing a rapid and precise method for asparagine determination. She also mentors graduate students.



Jinghua (Alisa) Mao is a Wheat Quality Technician, and her primary responsibility involves conducting wheat quality experiments and devising test methods to support research projects. She plays a pivotal role in the laboratory by proficiently configuring, maintaining, calibrating, and troubleshooting a diverse array of analytical instruments to ensure precise data collection.

Thank you for being part of our journey through the Grain Chemistry and Processing Quality Lab. Stay tuned for the next section where we'll share exciting updates and more.

CIFST STUDENT COMMITTEE 2023/24

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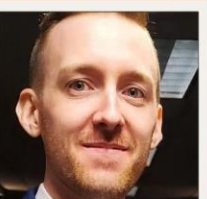
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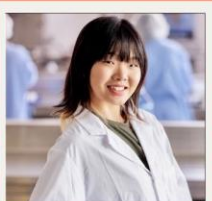
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UPCOMING EVENTS & SCHOLARSHIPS

The CSA Group Undergraduate Research Scholarship supports second-year or higher undergraduate students at Canadian institutions in conducting summer research related to standards. The scholarship spans various fields and encourages exploration of existing standards or areas for future development. Prior to applying, candidates are advised to review CSA Group's data collection process.

For further information, including eligibility criteria and application instructions, please visit the following link [CSA Group Undergraduate Research Scholarship - CSA Group](#).

CIFST website and LinkedIn page

Please visit our [website](#) for more updated information.

In addition to the online community, CIFST has a LinkedIn page, to which you can request access through the link [HERE](#).

CIFST Student members have a group on LinkedIn. Please use this [LINK](#) to join.