

Sustainable Protein Production

Cluster Support program



Collaboration opportunities

Organizations from across the plant-protein value chain are welcome to express their interest in collaborating with the program. This may include Protein Industry Canada members or stakeholders from industry, academic institutions and other government departments. Potential collaborators should have an interest in the development of knowledge, datasets and technology to improve the competitiveness of the plant-based protein sector.

Pair your experts with ours and gain access to our facilities by collaborating on sustainable plant-protein projects that support technology development within these initial priority areas:

Advanced “omics” of seed-related traits

Develop advanced genomic resources and technologies to accelerate the design of next-generation protein crops with increased processability, protein value and potential utility in value-added products and applications.

- Generate foundational datasets and predictive analytics capabilities.
- Induce variation to produce a wider set of traits.
- Develop and implement cell technologies for protein crop improvement.
- Identify genome-wide associations between genotypes and heritable protein-related traits.

Compositional profiling of the plant-protein-based food system

Develop an integrated platform for mapping and characterizing the composition of the Canadian plant-based food system, from farm to fork, with the goal of improving decision-making that supports product quality, safety and traceability.

- Establish proof of concept for predictive models that link high-content compositional analysis with attributes of relevance to the industry.
- Study the seed protein matrix and fate of off-flavours during processing.
- Develop chemical markers, standards, certified reference materials and targeted analytical solutions tailored to specific industry needs.



Increasing the economic value and sustainability of protein processing

Create a roadmap for increased utilization of pea starch in higher-value products and applications. Assist industry in optimization and implementation of sustainable protein-processing technologies and practices.

- Conduct compositional and functional characterization of industrial pea-starch feedstocks.
- Enhance the value of pea starches and flours.
- Complete techno-economic assessments of protein and starch.
- Develop and optimize specific solutions to overcome protein processing barriers.

Phytobiome of pulse-root-rot diseases

Apply genomic resources and technologies to develop new solutions for controlling *Aphanomyces* root-rot diseases in pulses.

- Develop genomic and metabolomic platforms for profiling plant and microbiome traits for protein crops.
- Create microbiome-based biocontrol strategies.
- Identify genetics of host-resistance, including influence of microbiome.

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