



Another project brought to you by **GenomeCanada**

Total Utilization Flax Genomics

Status	Approved
Competition	Applied Genomics in Bioproducts or Crops
Sector	Agriculture - Crops
Genome Centre	Genome Prairie
Project Leaders	Gordon Rowland, U. of Saskatchewan / Sylvie Cloutier, Agriculture & Agri-Food Canada

Project Description

Flax is becoming a very popular food ingredient. For example, flax seed is rich in omega-3, which is implicated in human brain functions, reducing “bad” cholesterol, and moderating the risk of heart disease. Flax seed is also a rich source of plant-estrogens, which are associated with reduced risks of some cancers. Flax seeds are used in many industrial processes, including linoleum, solvents, paints, car panels and composites. Flax is an unusual crop in that it yields two different kinds of product—seed and fibres. The straw produces a strong and long-lasting fibre that is used to make linen cloth, one of its ancient applications; flax fibre is also used to replace fibre-glass in composites, and in the manufacture of fire logs, paper and other similar products.

Our project—Total-Utilization Flax Genomics—aims at enhancing the usefulness, and versatility of flax by developing strong genomics research as a base for enabling flax breeding and improvement. Canada is the world’s largest producer of flax, which places the onus on us to lead flax research and development. Our goal is to help develop flax as a dual-purpose crop providing both seeds and straw products of unmatched quality and high value.

Our project will develop genomic research methods that will be used to study important questions regarding the biology and technology of flax growth. We will determine the DNA sequence of the entire flax genome, the largest such contribution by any Canadian research team. We will develop genetic and physical maps outlining the position and relationship of genes that are important for improved flax usefulness. This research will be conducted by a team of experts located across Canada. A second team will perform data analysis and management, and will develop software to preserve and present the new data, which will be made available to the international research community in order to foster and stimulate flax research all over the world.

We expect that this research project will create information and genomic tools that will accelerate flax research and create opportunities for advancements on flax yield and applications that were undreamt of only a short while ago.

