AFC Member Profile: The Bio-Industrial Opportunities Branch

The Bio-Industrial Opportunities Branch of the Food and Bio Processing Division of Alberta Agriculture and Rural Development plays a significant role in developing Alberta's bio-economy. The Branch is a unique, integrated team of highly dedicated technical and business development professionals. The primary objective is to support the agriculture industry for diversification, new opportunities and new markets.

The Branch:

- Connects business to networks and services, and helps with supply chain development,
- Works with companies to develop solutions for industry problems for product/process development,
- Has a significant and very unique technical infrastructure with the capability for processing a wide range of agriculture crops; over 30,000 sq. ft. of bench and pilot scale facilities with state-of-the-art processing equipment to support industry.

Through value chain development, investment attraction, innovation and commercialization activities, the Bio-Industrial Opportunities Branch is helping to shape the growth of a competitive, diversified bio-industry sector in Alberta in the fields of bio-based energy, bio-based chemicals, nutrient recycling, and other areas.

Bio-Based Energy

Alberta is well-positioned to be a bioenergy leader in the coming years. Crops and forest resources are produced in abundance here, along with large volumes of livestock, providing ready feedstocks for ethanol, biodiesel and biogas. The bio-based energy team is fostering the development of new capabilities in bio-based energy through cross-ministry cooperation, financial sourcing and policy creation.

Bio-Based Chemicals

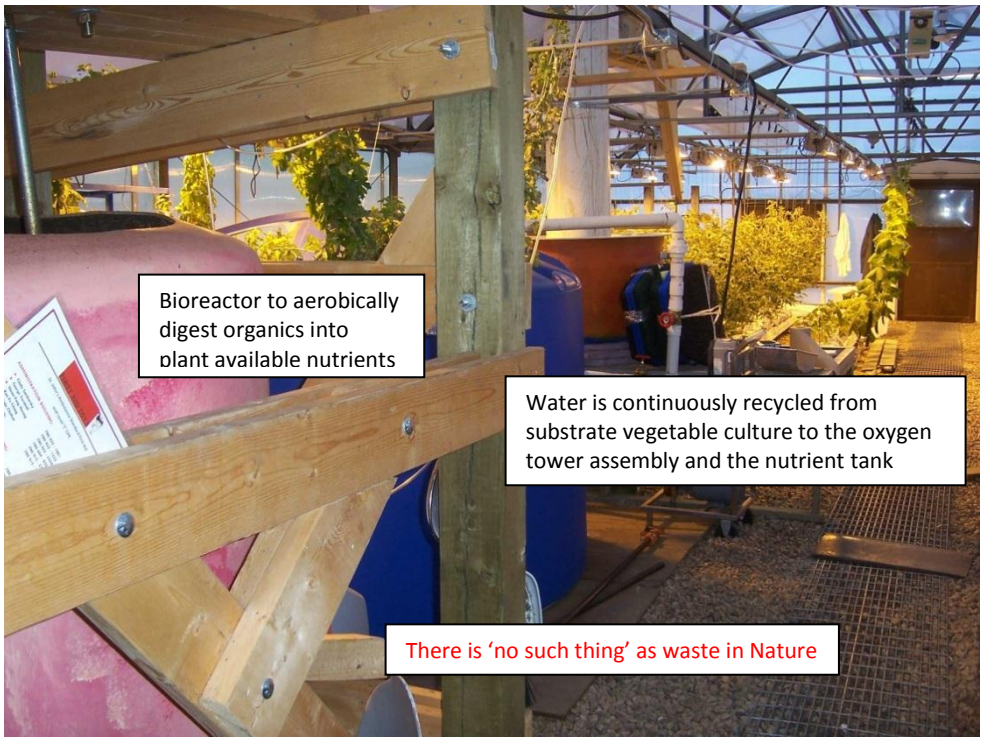
As a collaborative value chain initiative, the bio-based chemicals team connects researchers, manufacturers, service providers, farm producers and others supporting the development of Alberta's bio-based chemicals industry. One area of focus is to use traditional and non-traditional Alberta-grown crops and other plant biomass to make a wide variety of chemicals and related products. These include drop-in chemicals, biofuels and green building materials. The second area of focus relates to specialty chemical ingredients for cosmetics and personal care products. This initiative seeks to capitalize on a rapidly increasing consumer preference for plant-based ingredients within this multi-billion dollar market.

Polyol Pilot Plant

Bio-Industrial Opportunities Branch is one of several stakeholders involved in the operation of a $2 million polyol pilot plant (*see photo*) located at Agri-Food Discovery Place in Edmonton (AFDP). The plant enables focused research into the ozonolysis and hydrogenation processes required to turn canola oil into a diverse class of chemicals known as polyols, as well as industrial acids.

Waste Utilization

Agriculture is facing ever-increasing challenges and struggling to sustainably supply food for an ever-growing world population. The ARD team has developed a unique zero-waste nutrient recycling technology, which may revolutionize food production. The technology uses a highly efficient microbial mineralization process to generate nutrient-rich solutions from so-called 'organic wastes'. Greenhouse crops have a tremendous capacity to absorb minerals and nutrients, easily exceeding field crop uptake by 20 to 30 fold. This high nutrient demand makes greenhouse food production an ideal means to remediate water and utilize manure from intensive livestock operations. Food is produced while eliminating potential soil and water harm from excessive manure applications.

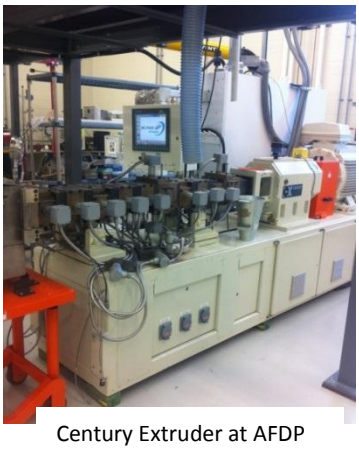


Biomaterials

The Alberta Biomaterials Development Centre (ABDC), a cross-ministry initiative, is taking the lead in developing biomaterials capabilities to diversify and sustain the economy, while improving market opportunities for producers of crop and forest resources in Alberta. By working closely with companies that are interested in biomaterials, identifying and then overcoming their technical and business challenges, ABDC is helping to catalyze Alberta's biomaterials economy. A key focus is the development of agricultural supply chains for feedstock crops like hemp, flax, cereals and canola.

Operations and Facilities

The Branch's operations and facilities team provides essential operational support through a world-class, unique bio-processing pilot plant facility, along with equipment for grain fractionation, separation, solvent extraction, polymer reaction, extrusion and other processes.


Century Extruder at AFDP

The Bio-Industrial Opportunities Branch values our AFC membership as a means to strengthen our connection within Alberta's agricultural community. We greatly appreciate the Featured Member article as a way to highlight our troubleshooting talent and commitment to agriculture.

Contact the Bio-Industrial Opportunities Branch for more information by email biobranch@gov.ab.ca or phone (780)644-8118.