Science and Innovation

Brandon Research Centre

Brandon, Manitoba

The Brandon Research Centre (BRC) is one of Agriculture and Agri-Food Canada's national network of research and development centres. The Centre is located in the Parkland region of the Canadian Prairies in the city of Brandon, and is one of the original five experimental farms established by the Government of Canada in 1886 under The Experimental Farm Station Act.

There are 4 satellite locations associated with the BRC: the Cereal Quality Lab in Winnipeg, two sites associated with the Canada-Manitoba-Crop Diversification Centre (Carberry and Portage la Prairie), and the Development and Knowledge and Technology Transfer group in Winnipeg.

Research and development activities conducted at the Centre use expertise in agronomic, soil, water, organic and inorganic nutrients, invasive species, rangeland management, agroforestry, landscape based resource management and cereal breeding to develop and evaluate crop production systems, addressing the risk and opportunity in this sector. The result of this activity is to increase the efficiency and sustainability of farming systems to improve productivity, reduce economic risk, minimize the negative environmental impact of their production practices, and maintain access to international markets.

The BRC has a large collection of growth chambers and research greenhouses with a significant capacity to conduct field and laboratory research and develop best management practices (BMPs) to ensure environmental sustainability in the portion of the Prairie Boreal ecosystem. It operates a major Cereal quality lab providing end-use quality testing for cereal breeders and research centres in western Canada.

The BRC conducts research in two key areas:

- Sustainable and Profitable Agri-Systems and Agroecosystem Productivity and Health for the prairie climate focussing on systems which are economically viable and environmentally sound
- Cereal (wheat, barley and oats) germplasm enhancement

Specialists at the Centre also develop tools and information products to support resource management in agricultural landscapes.

Areas of Research

Scientists at the Brandon Research Centre conduct research on an array of agro-ecological processes that determine the sustainability of agricultural production, and the impact of crop and animal production on the quality of the environment, including land, water, and air resources.

The Centre's areas of core research are aligned with national priorities to help the sector adapt and remain competitive in domestic and global markets. Greater participation in research networks and industry-led partnerships expands the Centre's innovation capacity.

Environmental Stewardship

- Conducting research on manure management methods, including composting and rates of application to land, that permit producers to capture its beneficial nutrient properties as a fertilizer material, while avoiding, or minimizing, nutrient losses from the soil and greenhouse gas emissions
- Searching for innovative fertilizer management techniques that enable agricultural producers to avoid nutrient losses to the environment and maximize the efficient use of nutrients by crops
- Advancing knowledge on soil processes, particularly those that control emission of greenhouse gases, sequestration of carbon in soil organic matter, replenishment of exhausted nutrient supplying capacity, and improvement of soil physical properties
- Improving knowledge and understanding the effects of crop rotations and crop succession on carbon sequestration, of legume crop contributions to soil nitrogen accumulation plant diseases
- Developing and using information management tools to support range and other resource management in agricultural landscapes
- Applied research on the use of beetles to control leafy spurge
- Developing an edge-of-field data capture tool to gather field scale agricultural information for use in landscape and watershed based resource management

Farm Profitability through Innovative Systems

- Cereals (wheat, barley and oats) breeding and research on new varieties for western Canada that are more resistant to disease, have higher yield, better malting quality, and higher nutritive value for cattle and human consumption
- Evaluating wheat, barley and oat lines for milling and baking quality, and barley malting quality. Studying system for improving efficient use of land and water resources, including crop rotations, nutrient application to soils (commercial fertilizers, animal wastes, and other sources), weather conditions within the crop canopy (micrometeorology), and plant biochemistry and physiology. Knowledge developed in these studies forms the basis of management practices that minimize production cost, minimize risks, and stabilize returns at the farm gate
- Researching crop management methods that minimize the adverse effect of crop diseases through the adoption of crop rotations, and determining strategies to improve the efficient use of fungicides, or similar farm inputs

Facts, Figures and Facilities

- BRC is one of the five original Experimental Farms established by the Government of Canada in 1886
- Irrigation, Greenhouse and phytotron facilities
- Land base of 890 hectares plus 100 hectares leased pasture
- Facilities and equipment for seeding, management harvesting, grain drying and handling of seeds and biomass of grains and oilseeds
- Co-located with the
  - Canadian Food Inspection Agency
  - Manitoba Agriculture, Food and Rural Initiatives

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