



Science and Innovation



Atlantic Food and Horticulture Research Centre

Kentville, Nova Scotia

The Atlantic Food and Horticulture Research Centre (AFHRC) is one of Agriculture and Agri-Food Canada's national network of 19 research centres. It is located in Kentville, in western Nova Scotia's Annapolis Valley. The Centre's programs are unique in addressing problems throughout the Canadian horticultural and food system, but with a focus on the regional needs of Atlantic Canada.

In the Centre's field and laboratory, work is conducted on primary production, crop protection, soil and water evaluation, post-harvest storage, food quality assessment, pilot plant processing of food and consumer safety. There is multi-disciplinary research at all levels from the field to the consumer.

In addition to its main office/laboratory in Kentville, the Centre manages the Nappan Research Farm, near Amherst, Nova Scotia, and a satellite research field site at Sheffield, Nova Scotia. The Nappan Research Farm is mainly involved with beef research for the Atlantic region, along with some forage and soils work. The Centre is also responsible for scientists co-located at the Nova Scotia Agricultural College, in Truro, Nova Scotia, working in poultry, forage breeding and soil science.

Areas of Research

Researchers at the AFHRC address problems throughout the entire horticulture and food system. The field and laboratory facilities allow multidisciplinary research at all levels. The Centre networks with other research centres, provinces, universities and the private sector to find solutions to challenges in Canada's agri-food sector.

Protecting our Food in a Sustainable Environment

- Reducing the impact of agricultural practices on soil health and water quality
- Finding methods to reduce the movement of pesticides, nutrients and other materials from agricultural lands into nearby waters
- Improving nutrient supply to organic cropping systems through use of composted solid wastes
- Studying crop production on dykeland soils (Nappan)
- Documenting the diversity and distribution of fungi and insects in Atlantic Canada for possible use in cropping systems
- Conducting research on pest management principles to control the threat to crops caused by insects, fungi, viruses and bacteria
- Studying international pest management programs and how they can effectively be applied to Atlantic Canada

Improvements in Crop Production, Handling and Storage

- Breeding strawberries, raspberries, blackberries and grapes; evaluating their properties and the quality of hybrids such as apples and pears
- Breeding forages – primarily red clover (Truro)
- Examining technologies for producing and managing tree fruits, berries and vegetables, including organic fruit; commercializing superior plants
- Extracting and characterizing bioactive components of fruits and vegetables
- Conducting research on technologies to enhance the storage of horticultural crops

- Finding new processes for handling and producing processed (or minimally processed) fruits and vegetables and analyzing the effects of processing on food microbes
- Evaluating handling operations for perishable foods during each step of the cold chain (eg. storage, transportation, retailing) and their effect on the quality and safety of food
- Studying methods to control microbes and decay in food that has been harvested

Safe, Nutritious Food – A National Priority

- Assessing the chemical, structural, nutritional, physical and sensory properties of food
- Conducting research on the molecular properties of food to improve quality
- Conducting research on food fermentation techniques to improve nutritional value
- Determining the impact of farm practices that might introduce disease-causing and antibiotic-resistant bacteria into food

Sustainable Production Systems for Livestock

- Conducting research on beef systems and nutrition programs for the Atlantic region (Nappan)
- Conducting research on poultry production and nutrition for Atlantic Canada (Truro)

Facts, Figures and Facilities

- 36 researchers and a total staff of 120
- Researchers co-located at
 - Acadia University (1)
 - Université de Moncton (1)
 - Nova Scotia Agricultural College (5)
- 188 hectare site
- Nappan Research Farm (240 hectares), located outside of Amherst, is the site of beef research for the Atlantic region. Field research is accommodated at the Sheffield Research Farm (74 hectares), which is 8 km north of the Centre.

- Team of statisticians supporting research activities in the Atlantic region
- Specialized laboratories and facilities including:
 - Small and large lab-scale food storage chambers with individual control and monitoring of modified atmosphere food storage conditions
 - Modern equipment for the determination of fry colour and tuber sugars in potatoes
 - Pilot plant (550 square meters) for fruit and vegetable processing
 - Laboratory robotics equipment
 - Electron and light microscopes
 - Quantitative Digital Image Analysis
 - Chemical analysis and identification of bioactive and other selected components using chromatographic, selective detectors, immunoassay and biochemical techniques
 - Geographic Information Systems Analysis (Arc-View)
- Growth cabinets
- Insect rearing rooms and greenhouse; insect collection; equipment for pollinator biodiversity studies with honey and alfalfa leafcutter bees
- Sensory testing facility equipped with computerized data collection
- Linkages and networking with provincial departments, universities and industry associations
- Co-located at the centre are:
 - Provincial offices for Agriculture and Fisheries
 - Federal representatives of the National Land and Water Information Service; the Canadian Food Inspection Agency; the Pest Management Regulatory Agency (Health Canada); the Industrial Research Assistance Program (National Research Council)
 - Offices for the Nova Scotia Tree Fruit Growers' Association and Horticulture Nova Scotia

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