

# AGRICULTURE AND AGRI-FOOD CANADA SCIENCE

2018–2019



Agriculture and  
Agri-Food Canada

Agriculture et  
Agroalimentaire Canada

Canada



Agriculture and Agri-Food Canada Science 2018–2019

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For more information, reach us at [www.agr.gc.ca](http://www.agr.gc.ca) or call us toll-free at 1-855-773-0241.



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## Who We Are

The Department of Agriculture and Agri-Food is the biggest single provider of agricultural research in Canada.

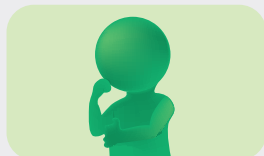
We work with industry, academia, provincial and territorial governments, international organizations, and others to support the growth and development of Canada's agricultural sector, and to create better opportunities for farmers and all Canadians through agricultural research and innovation.

Agriculture and Agri-Food Canada Science and Technology activities take place across a national network of 20 Research and Development Centres (RDC) with 30 satellite research locations.





# Key Figures 2018–2019



**2195**

Science and  
Technology staff



**740**

Science and  
Technology projects



**20**

Research and  
Development Centres



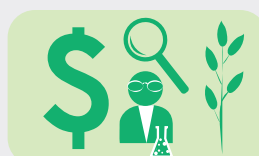
**30**

Satellite research  
locations



**\$259 M\***

2018–19 Science  
and Technology  
Branch budget



**\$269 M\***

2019–20 Science  
and Technology  
Branch budget

\* Science and Technology Branch approved funds only.





# Our Science

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Our science is guided by four strategic objectives that address major scientific challenges facing agriculture and agri-food sectors today:



**Increasing agricultural productivity**



**Improving attributes for food and non-food uses**



**Enhancing environmental performance**



**Addressing threats to agriculture and agri-food value chains**



Nine sector strategies guide our research, development, and knowledge and technology transfer activities in achieving the four strategic objectives.

This work is complementary to the scientific efforts by industry, other government organizations, and academia.



### **Agri-Food**

Addresses the sector challenges of enhancing food innovation for growth and strengthening food safety.



### **Agri-Ecosystem Resilience**

Focuses on agri-environmental challenges and opportunities within the context of integrated agricultural production systems.



### **Biodiversity and Bioresources**

Focuses on the study and preservation of biodiversity and bioresources as they relate to agriculture, agri-food, and agri-based industries (agrobiodiversity).



### **Cereal and Pulses**

Focuses on wheat (all classes), barley (malt and feed), oats, rye, triticale and corn for grain; dry beans (white and coloured), dry peas (green, yellow, and other), lentils, and chickpeas, and other cereals and pulses.



### **Clean Technologies**

Focuses on crop and livestock biomass feedstock opportunities for the agricultural sector that address agri-environmental challenges related to greenhouse gas and climate change mitigation, and includes the development of innovative processes and technologies such as precision agriculture, agricultural biologicals, and zero waste.



### **Dairy, Pork, Poultry and Other Livestock**

Focuses on dairy and pork production systems but also encompasses other livestock production systems such as poultry, goats, ostriches, ducks, geese, fur animals, etc.



### **Forages and Beef**

Covers production systems of native and tame forage species, including annual feed grain crops, for all livestock production systems.



### **Horticulture**

Focuses on horticulture, a highly diversified sector characterized by high-value crops and highly intensive complex crop production systems.



### **Oilseeds**

Focuses on oilseeds, including canola, rapeseed, mustard, soybeans (oilseed and food-grade), flax, sunflower, hemp and safflower, and provides direction for research, development, and technology and knowledge transfer activities related to the production of oilseed crops, for food, feed and industrial end uses, up to and including storage of harvested material.

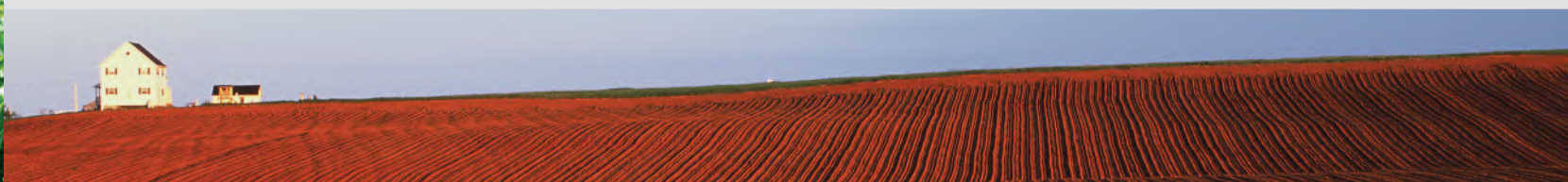








# Coastal Region







# AGASSIZ RESEARCH AND DEVELOPMENT CENTRE

AGASSIZ, BRITISH COLUMBIA

ESTABLISHED IN **1886**



Total staff: **52**

Includes: **14** researchers



Satellite location

CLEARBROOK SUB-STATION, ABBOTSFORD

A **MINOR USE PESTICIDES SITE** that conducts research trials on potential solutions to grower-identified pest problems

## RESEARCH FOCUSES ON:



SOIL HEALTH  
MANAGEMENT



BIODIVERSITY  
ENHANCEMENT



INTEGRATED PEST  
MANAGEMENT (IPM)



INNOVATIVE CROP  
PRODUCTION  
SYSTEMS

## IN SUPPORT OF **5** SECTOR SCIENCE STRATEGIES

### 1. AGRO-ECOSYSTEM RESILIENCE

Conducting research on precise and sustainable management of nutrients from manure, municipal waste and mineral sources to maximize production and prevent negative environmental impacts



### 2. BIODIVERSITY AND BIORESOURCES

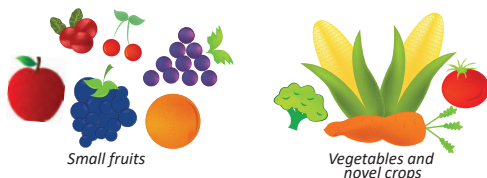
Conducting intensive surveying and developing detailed understanding of biodiversity for the development of biological control approaches for insect pests in horticulture crops



Small fruits and vegetables

### 3. HORTICULTURE

Developing integrated pest management strategies, improving crop production and enhancing environmental performance

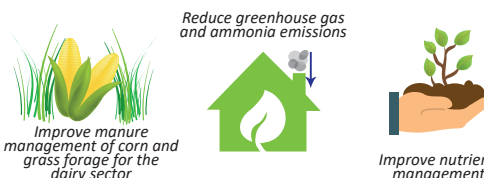


Small fruits

Vegetables and  
novel crops

### 4. FORAGES AND BEEF; 5. DAIRY, PORK, POULTRY AND OTHER LIVESTOCK

Reducing inputs and increasing the efficiency of intensive forage production for the dairy industry



Improve manure  
management of corn and  
grass forage for the  
dairy sector

Reduce greenhouse gas  
and ammonia emissions

Improve nutrient  
management

## CONTACT INFORMATION



604-796-6100



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6947 Highway 7, Post Office Box 1000, Agassiz, British Columbia V0M 1A0

# SUMMERLAND RESEARCH AND DEVELOPMENT CENTRE

## SUMMERLAND, BRITISH COLUMBIA

ESTABLISHED IN **1914**


**Total staff: 101**  
 Includes: **27** researchers

A **MINOR USE PESTICIDES SITE** that conducts research trials on potential solutions to grower-identified pest problems

Houses **THE CANADIAN NATIONAL COLLECTION OF PLANT VIRUSES**

### RESEARCH FOCUSES ON:



BIOTIC THREATS



ABIOTIC THREATS

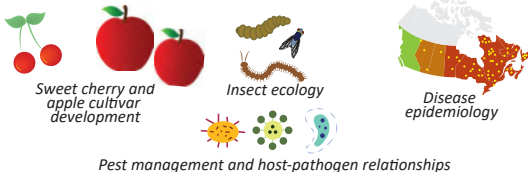


SOCIO-ECONOMIC THREATS

### IN SUPPORT OF **4** SECTOR SCIENCE STRATEGIES

#### 1. HORTICULTURE

Research enables the development of sustainable management strategies including studies on



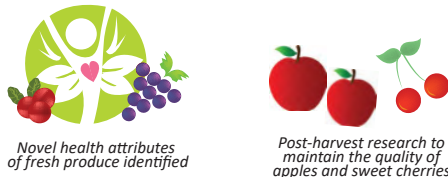
#### 2. AGRO-ECOSYSTEM RESILIENCE

Research is focused on



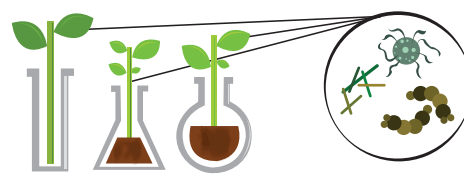
#### 3. AGRI-FOOD

The food microbiology program addresses contamination of fresh produce and sprouts with food-borne illness pathogens






#### 4. BIODIVERSITY AND BIORESOURCES

The Canadian Plant Virus Collection acquires and distributes plant viruses for research



#### CONTACT INFORMATION

 250-494-7711  
 [aafc.summerlandrc-crdsummerland.aac@canada.ca](mailto:aafc.summerlandrc-crdsummerland.aac@canada.ca)  
 4200 Highway #97, South, Summerland, British Columbia V0H 1Z0



# FREDERICTON RESEARCH AND DEVELOPMENT CENTRE

## FREDERICTON, NEW BRUNSWICK

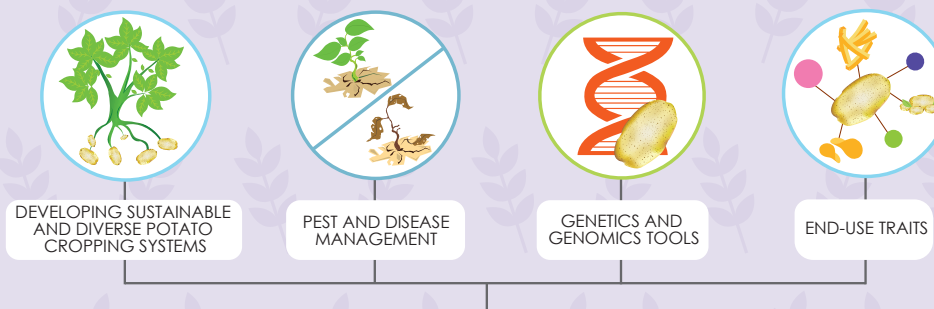
ESTABLISHED IN **1912**

 **Total staff: 69**  
**Includes: 15 researchers**


  
**Satellite location**

**BENTON RIDGE SUB-STATION**

### RESEARCH FOCUSES ON:



### IN SUPPORT OF **3** SECTOR SCIENCE STRATEGIES

#### 1. HORTICULTURE

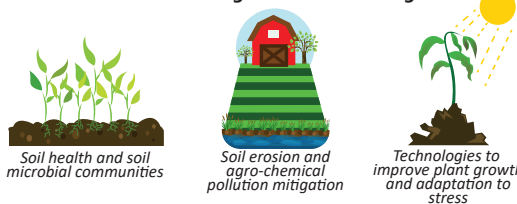
Developing potato germplasm for different production areas of Canada



New varieties include traits for enhanced yields, disease resistance, environmental sustainability, health benefits, and use in bioproduct applications

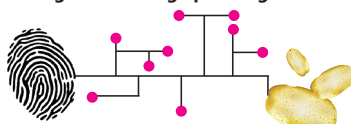
#### 2. AGRO-ECOSYSTEM RESILIENCE

Researching and understanding






#### 3. BIODIVERSITY AND BIORESOURCES

Developing DNA fingerprinting and genotyping technologies to manage potato genetic resources



The Potato Node of Plant Gene Resources of Canada maintains and characterizes potato germplasm and wild relatives, and supports Canada's International Treaty commitments to global biodiversity preservation

#### CONTACT INFORMATION

 506-460-4300  
 AAFC.FrederictonRDC-CRDFredericton.AAC@canada.ca  
 850 Lincoln Road, P.O. Box 20280, Fredericton, New Brunswick E3B 4Z7

# KENTVILLE RESEARCH AND DEVELOPMENT CENTRE

## KENTVILLE, NOVA SCOTIA

ESTABLISHED IN **1911**

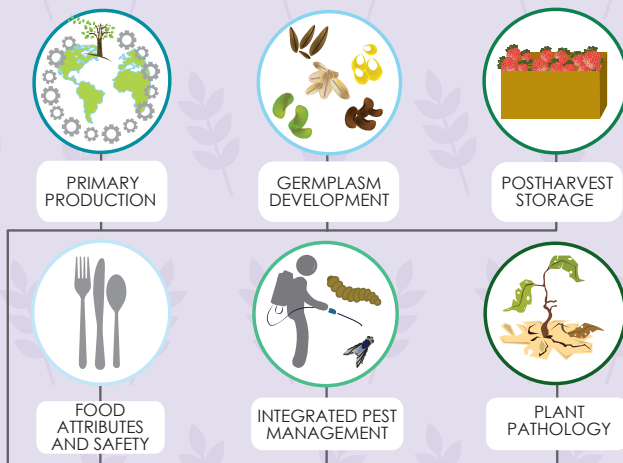
A **MINOR USE PESTICIDES SITE** that conducts research trials on potential solutions to grower-identified pest problems

**1** Satellite location

NAPPAN RESEARCH FARM, AMHERST  
Focus on forage and livestock management

**Total staff: 98**  
Includes: **26 researchers**

### RESEARCH FOCUSES ON:



### IN SUPPORT OF **5** SECTOR SCIENCE STRATEGIES

#### 1. HORTICULTURE

Developing new cultivated varieties of small fruits to optimize primary production techniques, increase yields, and minimize losses

- Sensory quality



#### 2. AGRI-FOOD

Research is conducted to develop opportunities related to

- Health-promoting phytochemicals in horticultural crops
- Mitigate microbiological contamination
- Investigate natural antimicrobials of bacterial and plant origin
- Develop postharvest technologies to maintain fruit and vegetable quality



#### 3. AGRO-ECOSYSTEM RESILIENCE

Identifying, monitoring, and integrating crop management strategies to

- Optimize agricultural inputs
- Enhance crop productivity
- Improve soil/water quality
- Manage nutrients in wetlands
- Reduce pest impacts
- Mitigate greenhouse gases and adaptation to climate change



#### 4. FORAGES AND BEEF

Developing new germplasm and utilizing novel technologies to understand forage/ruminant interaction at the molecular and metabolic level and their impact on the productivity of production systems






#### 5. BIODIVERSITY AND BIORESOURCES

Improving productivity, quality and resiliency of berry crops and tree fruits by identifying sources of genetic variability to support genetic improvement.



Modifying the landscape to enhance pollinator populations to support the productive capacity of the agricultural sector

### CONTACT INFORMATION

-  902-365-8555
-  aafc.kentvillerdc-crdkentville.aac@canada.ca
-  32 Main Street, Kentville, Nova Scotia B4N 1J5

# CHARLOTTETOWN RESEARCH AND DEVELOPMENT CENTRE

## CHARLOTTETOWN, PRINCE EDWARD ISLAND

ESTABLISHED IN **1909**


**Total staff: 64**  
 Includes: **13 researchers**

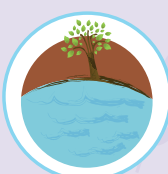

  
**1**  
 Satellite location

HARRINGTON RESEARCH FARM

### RESEARCH ON INTEGRATED CROPPING SYSTEMS WITH A FOCUS ON:



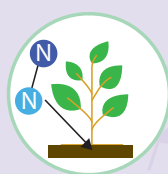
CROP ROTATIONS  
AND SOIL HEALTH



EFFECTS ON SOIL  
AND WATER QUALITY



AGRONOMY OF NEW  
CROPS/CULTIVARS



CROP NUTRIENT  
CYCLES

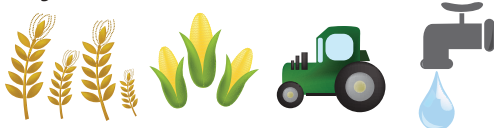


PEST AND  
DISEASE CONTROL

### IN SUPPORT OF **6** SECTOR SCIENCE STRATEGIES

#### 1. AGRO-ECOSYSTEM RESILIENCE

Developing best management practices for sustainable agriculture with a focus on soil and water conservation



#### 2. HORTICULTURE

Developing integrated cropping systems suited to the Atlantic Region with a focus on the potato crop



#### 3. BIOPRODUCTS

Conducting research in

- Natural products as biopesticides
- Bio-based materials
- Bioenergy
- Bioindustrial chemicals



#### 4. AGRI-FOOD

Identifying new food or feed bioactives with health and wellness benefits



#### 5. CEREAL AND PULSE; 6. OILSEEDS

Collaborating with cereal, oilseed and potato breeding programs in eastern and western Canada on evaluating cultivars and selections for vigour, yield and quality



#### CONTACT INFORMATION

902-370-1400

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440 University Avenue, Charlottetown, Prince Edward Island C1A 4N6





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Agroalimentaire Canada

Canada

## ST. JOHN'S RESEARCH AND DEVELOPMENT CENTRE

ST. JOHN'S, NEWFOUNDLAND AND LABRADOR

ESTABLISHED IN **1935**



Total staff: **20**

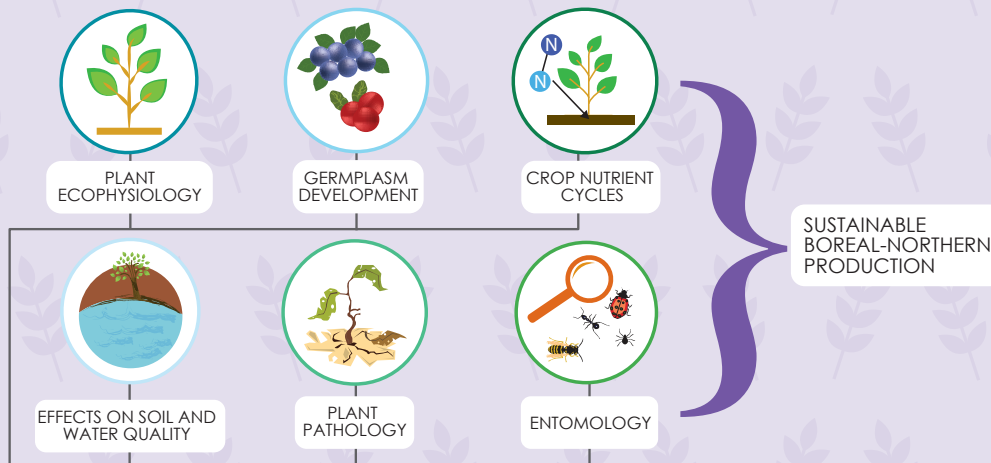
Includes: **6** researchers



**1** Satellite location

AVONDALE SUB-STATION

### RESEARCH FOCUSES ON:



### IN SUPPORT OF **6** SECTOR SCIENCE STRATEGIES

#### 1. HORTICULTURE

Developing sustainable berry and vegetable production systems for boreal-northern regions



Beneficial and pathogenic microbes and insects



IPM Control Measures

CULTURAL  
BIOLOGICAL  
MECHANICAL  
CHEMICAL

Sustainable pest control

#### 2. FORAGES AND BEEF;

#### 3. DAIRY, PORK, POULTRY AND OTHER LIVESTOCK

Developing cropping technologies for livestock feed to create profitable production systems in Northern Regions



Corn, forage, and cereal research

#### 4. AGRO-ECOSYSTEM RESILIENCE; 5. CLEAN TECHNOLOGIES

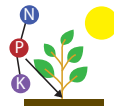
Research focusing on



Physical management of soils for crop growth



Nutrient sources (water quality)



Nutrient management



Management of organic and mineral nutrients

#### 6. BIODIVERSITY AND BIORESOURCES

Understanding native insects and microbes. Using wild berry germplasm collections to study biodiversity and perform genetic enhancement of northern-adapted berries



#### CONTACT INFORMATION



709-793-3186



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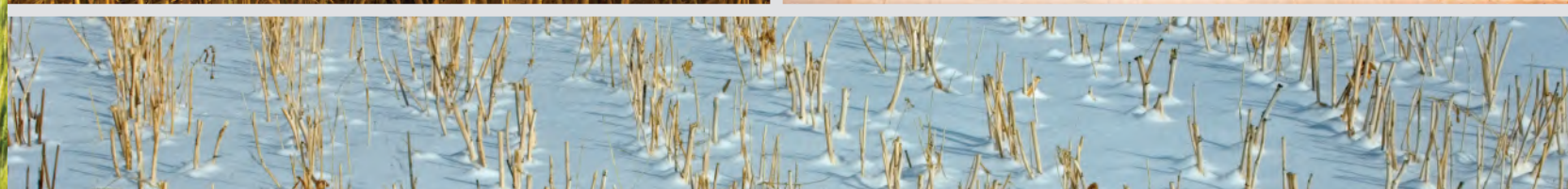


308 Brookfield Road, BLDG 25, St. John's, Newfoundland and Labrador A1E 0B2

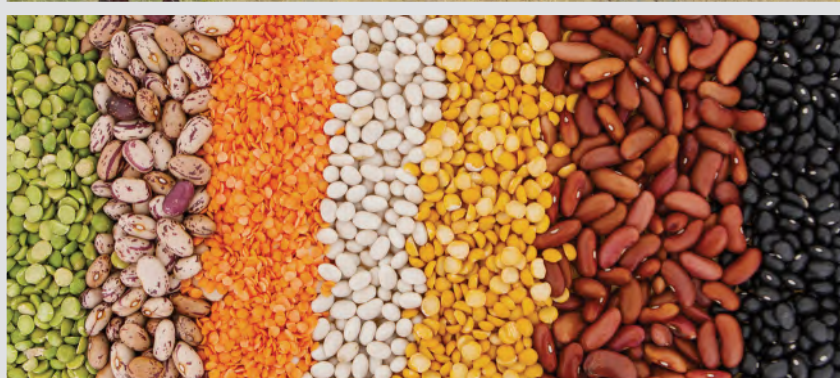








# Prairie Region





# LACOMBE RESEARCH AND DEVELOPMENT CENTRE

## LACOMBE, ALBERTA

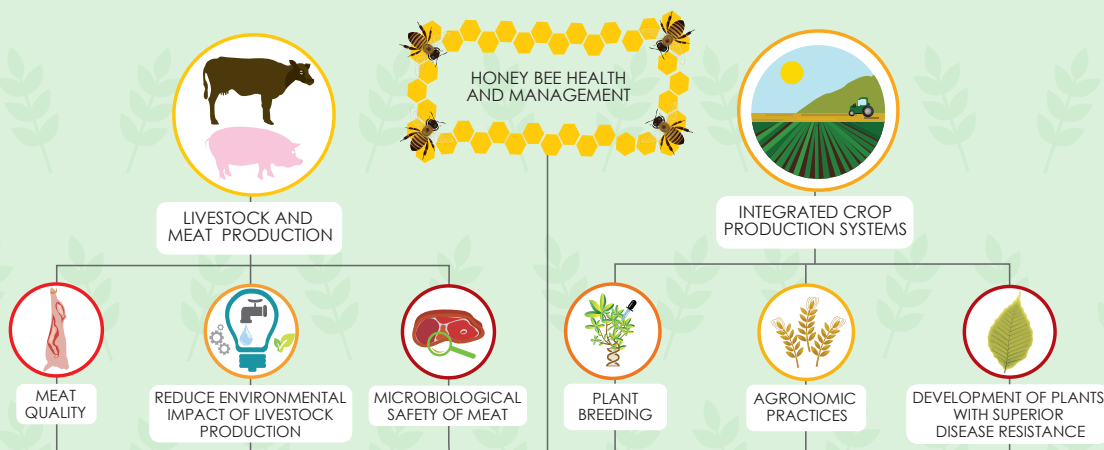
ESTABLISHED IN **1907**


**Total staff: 103**  
 Includes: **25 researchers**


**1** Satellite location

BEAVERLODGE RESEARCH FARM


### RESEARCH FOCUSES ON:



### IN SUPPORT OF **6** SECTOR SCIENCE STRATEGIES

#### 1. FORAGES AND BEEF; 2. DAIRY, PORK, POULTRY AND OTHER LIVESTOCK

**Livestock research is improving the economic stability of beef and swine production by**


 Increasing the value, yield and quality of pasture and forage resources  
 Enhancing Canadian pork competitiveness through the value chain


 While lowering production costs

#### 3. AGRI-FOOD

**Developing sustainable meat production systems by**



Conducting research on meat production, quality, preservation and safety



Enhancing microbiological safety and storage stability of meat

#### 4. CEREAL AND PULSE; 5. OILSEEDS; 6. AGRO-ECOSYSTEM RESILIENCE

**Scientists are evaluating**



Canola, cereal and field pea breeding lines and germplasm with improved disease resistance, adapted to Northern and Parkland short-season environments of Western Canada



Northern and Parkland agriculture focuses on integrated field crop, forage, weed, plant disease, insect pest management strategies and field pea breeding

### CONTACT INFORMATION

403-782-8100

aafc.lacomberdc-crdlacombe.aac@canada.ca

6000 C and E Trail, Lacombe, Alberta T4L 1W1

# LETHBRIDGE RESEARCH AND DEVELOPMENT CENTRE

## LETHBRIDGE, ALBERTA

ESTABLISHED IN **1906**


**Total staff: 226**  
**Includes: 48 researchers**


**1** Satellite location

VAUXHALL RESEARCH FARM

### RESEARCH FOCUSES ON:



ONE HEALTH



FEEDLOT FINISHING OF BEEF CATTLE



FORAGE AND CROP BREEDING AND SUSTAINABLE PRODUCTION



CROP AND LIVESTOCK BIOTECHNOLOGY

### IN SUPPORT OF **7** SECTOR SCIENCE STRATEGIES

#### 1. FORAGES AND BEEF; 2. DAIRY, PORK, POULTRY AND OTHER LIVESTOCK

National mandate for research on feedlot finishing of beef cattle with a focus on:



Enhancing productivity



Reducing adverse environmental impacts



Beef production systems



Animal health and welfare

#### 3. BIODIVERSITY AND BIORESOURCES



Lethbridge RDC's germplasm and rumen microbe collections support research programs by providing a long-term repository of microbial diversity

Collection includes anaerobic rumen fungi, a broad representation of rumen bacteria, and plant-associated fungi and bacteria

#### 4. CEREAL AND PULSE; 5. OILSEEDS; 6. HORTICULTURE

Developing new varieties and sustainable crop production and protection technologies for crops on irrigated and dry lands



Beans, potatoes, rye, triticale, wheat

#### 7. AGRO-ECOSYSTEM RESILIENCE

Researching  
Cropping and livestock production



Monitoring crop and environmental health using remote sensing and imaging technologies



Ecological modeling to understand various impacts

### CONTACT INFORMATION

403-327-4561

aafc.lethbridgerdc-crdlethbridge.aac@canada.ca

5403 1st Avenue South, Lethbridge, Alberta T1J 4B1



# SWIFT CURRENT RESEARCH AND DEVELOPMENT CENTRE

## SWIFT CURRENT, SASKATCHEWAN

ESTABLISHED IN **1920**


**Total staff: 138**  
 Includes: **22** researchers

**2** Satellite locations

INDIAN HEAD RESEARCH FARM

PRAIRIE DIRECTORATE REGINA OFFICE

### RESEARCH FOCUSES ON:



GENETIC ENHANCEMENT OF SPRING WHEAT AND DURUM



PULSES AND SPECIALTY CROPS



ENVIRONMENTALLY SUSTAINABLE PRODUCTION PRACTICES

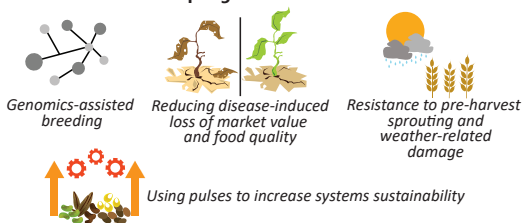


FORAGE AND RANGELAND MANAGEMENT

### IN SUPPORT OF **3** SECTOR SCIENCE STRATEGIES

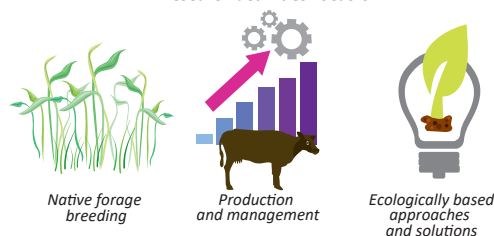
#### 1. CEREAL AND PULSE

Research on spring wheat and durum includes



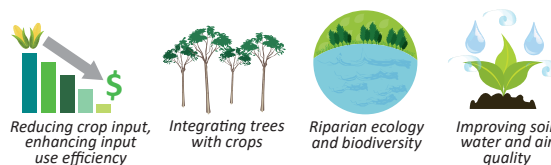
#### 2. FORAGES AND BEEF

Research activities focus on






#### 3. AGRO-ECOSYSTEM RESILIENCE

Enhancing environmental performance and sustainability by



#### CONTACT INFORMATION

 306-770-4400  
 [aafc.swiftcurrenttrdc-crdsiftcurrent.aac@canada.ca](mailto:aafc.swiftcurrenttrdc-crdsiftcurrent.aac@canada.ca)  
 1 Airport Road, Post Office Box 1030, Swift Current, Saskatchewan S9H 3X2

# SASKATOON RESEARCH AND DEVELOPMENT CENTRE SASKATOON, SASKATCHEWAN

ESTABLISHED IN **1917**


**Total staff: 201**  
 Includes: **36** researchers

## 3 Satellite locations

MELFORT RESEARCH FARM, MELFORT

SCOTT RESEARCH FARM, SCOTT

CANADA-SASKATCHEWAN IRRIGATION DIVERSIFICATION CENTRE (CSIDC), OUTLOOK

Saskatoon RDC-Scott is a **MINOR USE PESTICIDES PROGRAM SITE**

## RESEARCH FOCUSES ON:



CROP MANAGEMENT DEVELOPMENT



AGRO-ECOSYSTEM RESILIENCE



BIODIVERSITY AND BIORESOURCES

## IN SUPPORT OF 4 SECTOR SCIENCE STRATEGIES

### 1. OILSEEDS

Researching agronomy, crop management and variety development fosters new areas of opportunity and keeps the oilseed sector competitive



*New crops adapted to the Prairies (Brassica carinata and Camelina sativa) are creating novel products and expanding markets for oilseed crops*

### 2. AGRO-ECOSYSTEM RESILIENCE

Enhancing environmental performance and sustainability of oilseed production systems through:



Development of land



Crop management



Improved productivity and efficiency

### 3. BIODIVERSITY AND BIORESOURCES

Acquiring and characterizing plant and animal germplasm to identify characteristics for science and breeding programs



Agricultural crops

Home of:

- National headquarters - Plant Gene Resources of Canada (PGRC)
- Canadian Animal Genetic Resource (CAGR)


### 4. CLEAN TECHNOLOGIES

Contributing to clean growth and a reduction in Canada's GHG footprint by:



- Adding value to crop biomass feedstock;
- Developing and evaluating microbial agents for biological control of weeds, pests, and pathogens;
- Supporting climate change mitigation through application of precision agriculture.

## CONTACT INFORMATION


 306-385-9301


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 107 Science Place, Saskatoon, Saskatchewan S7N 0X2



# BRANDON RESEARCH AND DEVELOPMENT CENTRE

## BRANDON, MANITOBA

ESTABLISHED IN **1886**


**Total staff: 112**  
 Includes: **22** researchers

**2** Satellite locations

CANADA-MANITOBA CROP DIVERSIFICATION CENTRE, CARBERRY

AGRICULTURE AND AGRI-FOOD CANADA, PORTAGE LA PRAIRIE SITE

### RESEARCH FOCUSES ON:

CROP BREEDING AND GENETICS

FIELD AND LANDSCAPE RESOURCE MANAGEMENT



BIODIVERSITY



WATER



PLANTS



PASTURE AND RANGELAND



RIPARIAN ECOLOGY AND AGRO-FORESTRY



SOIL HEALTH AND NUTRIENT MANAGEMENT



FORAGES

### IN SUPPORT OF **4** SECTOR SCIENCE STRATEGIES

#### 1. AGRO-ECOSYSTEM RESILIENCE

Developing crop management strategies to help farmers



Improve production



Respond to weather and climate events

#### 2. CEREAL AND PULSE; 3. OILSEEDS

Conducting research on



Developing improved crop germplasm in wheat, oats, and barley



Improving efficiency of nutrient and water utilization



Integrating crop management practices

#### 4. HORTICULTURE

Focusing potato research on developing



Improved nitrogen and water management practices



New chemical and agronomic practices

#### CONTACT INFORMATION



204-578-6500



aa.fc.brandonrdc-crdbrandon.aac@canada.ca



2701 Grand Valley Road, P.O. Box 1000A, RR#3, Brandon, Manitoba R7A 5Y3

# MORDEN RESEARCH AND DEVELOPMENT CENTRE

## MORDEN, MANITOBA

ESTABLISHED IN **1915**


**Total staff: 116**  
**Includes: 25 researchers**


### 4 Satellite locations

CEREAL QUALITY LABORATORY, WINNIPEG

CANADIAN CENTRE FOR GRAIN STORAGE RESEARCH,  
UNIVERSITY OF MANITOBA, FORT GARRY CAMPUS

CANADIAN CENTRE FOR AGRI-FOOD RESEARCH IN HEALTH AND MEDICINE (CCARM),  
ALBRECHTSEN RESEARCH CENTRE

RICHARDSON CENTRE FOR FUNCTIONAL FOODS AND NUTRACEUTICALS (RCFFN),  
UNIVERSITY OF MANITOBA, FORT GARRY CAMPUS

### RESEARCH FOCUSES ON:



### IN SUPPORT OF 4 SECTOR SCIENCE STRATEGIES

#### 1. CEREALS AND PULSES; 2. OILSEEDS

Increasing the productivity of cereal, pulse, and oilseeds crop throughout the value chain by



- Developing enhanced germplasm
- Improving food quality
- Mitigating crop losses due to diseases

#### 3. AGRI-FOOD

Identifying Canadian crops and agri-food products with bioactive or functional properties of economic interest by studying their



Nutritional and physiochemical properties



Bio-functional health and wellness benefits

#### 4. AGRO-ECOSYSTEM RESILIENCE

Improving soil and water quality to increase crop production

Forage and cropping systems



Soil nutrient transport




Soil moisture and salinity

Irrigation and drainage management




Nutrient and manure management

### CONTACT INFORMATION

 204-822-7556

 [aafr.mordenrdc-crdmorden.aac@canada.ca](mailto:aafr.mordenrdc-crdmorden.aac@canada.ca)

 Route 100, Unit 100-101, Morden, Manitoba R6M 1Y5









# Ontario-Quebec Region





# HARROW RESEARCH AND DEVELOPMENT CENTRE

## HARROW, ONTARIO

ESTABLISHED IN **1909**



IT IS THE **LARGEST GREENHOUSE RESEARCH FACILITY** IN NORTH AMERICA

### 3 Satellite locations

CLAY-LOAM SOILS AT THE HONOURABLE EUGENE F. WHELAN EXPERIMENTAL FARM

DEVELOPMENT AND KNOWLEDGE TRANSFER UNIT

GREENHOUSE RESEARCH COMPLEX AND SANDY SOILS



Total staff: **96**  
Includes: **22** researchers



A **MINOR USE PESTICIDES SITE** that conducts research trials on potential solutions to grower-identified pest problems

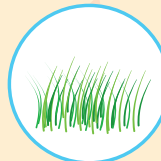
### RESEARCH FOCUSES ON:



PLANT BREEDING



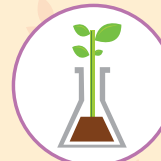
CROP PHYSIOLOGY AND MANAGEMENT



WEED SCIENCE



PLANT PATHOLOGY



SOIL SCIENCE



ENTOMOLOGY

### IN SUPPORT OF 5 SECTOR SCIENCE STRATEGIES

#### 1. HORTICULTURE - GREENHOUSE CROPS

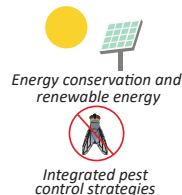
Focusing on year-round greenhouse crop production



Crop management strategies



Plant-based climate control



Energy conservation and renewable energy



Integrated pest control strategies

#### 2. AGRO-ECOSYSTEM RESILIENCE

Developing environmentally sustainable agricultural practices for the Ontario Great Lakes watershed through research on



Water management



Nutrient dynamics



Soil physical quality and carbon dynamics

#### 3. OILSEEDS; 4. CEREAL AND PULSE

The Harrow RDC develops

Food-grade soybean and dry bean germplasm

Pest management research includes



Population dynamics and plant-pest interactions



Ecology



Management of disease, insect, nematode, and weed pests

#### 5. BIODIVERSITY AND BIORESOURCES

Home to the Canadian Clonal Genebank, part of AAFC's Plant Gene Resources Program



Preserving the genetic diversity of Canadian fruit crops by acquiring and maintaining wild plant material and named cultivated varieties

### CONTACT INFORMATION



519-738-2251



aafc.harrowrdc-crdharrow.aac@canada.ca




2585 County Road 20, Harrow, Ontario N0R 1G0

# LONDON RESEARCH AND DEVELOPMENT CENTRE

## LONDON, ONTARIO

ESTABLISHED IN **1951**

 **Total staff: 77**  
**Includes: 24 researchers**


### 2 Satellite locations

RESEARCH AND GREENHOUSE FACILITIES

VINELAND RESEARCH FARM - MAIN SITE OF FRUIT TREE RESEARCH IN ONTARIO

A **MINOR USE PESTICIDES SITE** that conducts research trials on potential solutions to grower-identified pest problems

### RESEARCH FOCUSES ON:



FIELD CROPS



CLEAN TECHNOLOGIES



GENOMICS AND BIOTECHNOLOGY



PEST MANAGEMENT



AIR, WATER, AND NUTRIENTS

### IN SUPPORT OF 5 SECTOR SCIENCE STRATEGIES

#### 1. CLEAN TECHNOLOGY

Researching crop genomics and bioproducts using modern molecular analytical technologies to



Control plant pathogen and insect pests



Combat disease and insect resistance



Improve quality traits and productivity in crops

#### 2. AGRO-ECOSYSTEM RESILIENCE

Researching microbiology and chemistry with the goal of protecting environmental and human health



Analytical chemistry



Molecular microbiology



Ecology of pathogens



Toxicology

#### 3. HORTICULTURE

Protecting and improving



Fruits, vegetables, and high-value crops



Biopesticides



Pest and disease control methods

#### 4. OILSEEDS; 5. CEREAL AND PULSE

Harnessing the genetic potential of crops by



Developing crop improvements



Integrating pest and disease management

### CONTACT INFORMATION

519-457-1470

aafr.londonrdc-crdlondon.aac@canada.ca

1391 Sandford Street, London, Ontario N5V 4T3



## GUELPH RESEARCH AND DEVELOPMENT CENTRE

GUELPH, ONTARIO

ESTABLISHED IN **1997**

IN THE  OF THE LARGEST CONCENTRATION OF EXPERTISE AND INFRASTRUCTURE DEDICATED TO FOOD RESEARCH AND DEVELOPMENT IN CANADA


**Total staff: 45**  
**Includes: 14 researchers**


### RESEARCH FOCUSES ON:



FOOD SAFETY

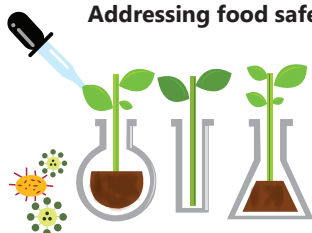


FOOD ATTRIBUTES

IN SUPPORT OF **1** SECTOR SCIENCE STRATEGY

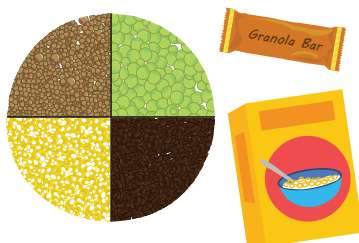
## 1. AGRI-FOOD

### Addressing food safety threats to the value chain by researching



- The control of bacterial pathogens
- Antimicrobial resistance
- Mycotoxins
- Chemical threats in food production systems

### Improving attributes of agricultural commodities for food and non-food uses by



- Demonstrating bioaccessibility, bioavailability, and efficacy of bioactive compounds in vitro and in animal models
- Working with breeders and producers to support marketing of crops and developing foods with health enhancing properties
- Collaborating with science partners to demonstrate the human health benefits of novel functional foods and ingredients to support industry health claims and the availability of healthy food choices

### CONTACT INFORMATION

-  226-217-8200
-  [aafc.guelphrdc-crdguelph.aac@canada.ca](mailto:aafc.guelphrdc-crdguelph.aac@canada.ca)
-  93 Stone Road West, Guelph, Ontario N1G 5C9

# OTTAWA RESEARCH AND DEVELOPMENT CENTRE

## OTTAWA, ONTARIO

ESTABLISHED IN **1886**


**Total staff: 323**  
**Includes: 74 researchers**


AGRO-CLIMATE GEOMATICS AND EARTH OBSERVATION DIVISION

BIOLOGICAL COLLECTIONS DIVISION

### RESEARCH FOCUSES ON:



CARBON AND NITROGEN  
CYCLING IN AIR,  
WATER, AND SOIL



AGRICULTURE PRODUCTS THAT  
CONTRIBUTE TO THE PROSPERITY  
OF CEREAL AND OILSEED SECTORS



VASCULAR PLANTS,  
FUNGI/BACTERIA, AND  
INSECTS/ARACHNIDS/NEMATODES

### IN SUPPORT OF **4** SECTOR SCIENCE STRATEGIES

#### 1. CEREAL AND PULSE; 2. OILSEEDS

Developing crop improvements for



*Sustainable cereal and oilseed production systems for  
Canada, especially Eastern Canada*

#### 3. AGRO-ECOSYSTEM RESILIENCE

Conducting research to



*Enhance the environmental  
performance of agricultural  
production systems*




*Maintain or access new  
international markets*

#### 4. BIODIVERSITY AND BIORESOURCES



*Biosystematics research on organisms critical to Canadian agriculture  
helps to protect crop production and contribute to crop diversification*

#### CONTACT INFORMATION

 613-759-1858

 [aafo.ottawardc-crdottawa.aac@canada.ca](mailto:aafo.ottawardc-crdottawa.aac@canada.ca)

 960 Carling Avenue, Central Experimental Farm, Ottawa, Ontario K1A 0C6



## SAINT-JEAN-SUR-RICHELIEU RESEARCH AND DEVELOPMENT CENTRE

### SAINT-JEAN-SUR-RICHELIEU, QUEBEC

ESTABLISHED IN **1912**

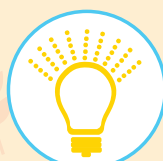
**3** Satellite locations


**Total staff: 67**  
**Includes: 13 researchers**


L'ACADIE  
 FRELIGHSBURG  
 SAINTE-CLOTILDE

Saint-Jean-sur-Richelieu RDC is also a **MINOR USE PESTICIDES SITE** that conducts research trials on potential solutions to grower-identified pest problems

**HELPS THE CANADIAN HORTICULTURAL SECTOR STAY COMPETITIVE AND SUSTAINABLE BY DEVELOPING:**



NEW  
KNOWLEDGE AND  
TECHNOLOGIES



CROP  
PROTECTION



IN SUPPORT OF **1** SECTOR SCIENCE STRATEGY

## 1. HORTICULTURE

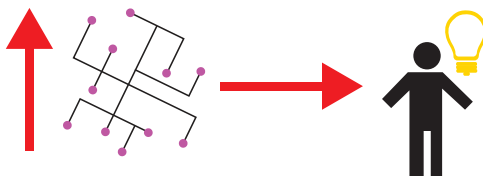
### Addressing threats to the value chain

**Horticultural crop pest biovigilance**  
*Early detection, monitoring and  
characterization of bio-aggressors*



### Increasing agricultural productivity and enhancing environmental performance

**Precision agriculture**  
*Using information derived from  
technology to make decisions*



### CONTACT INFORMATION

 579-224-3100  
 [aafc.saint-jean-sur-richelieurdcrdsaint-jean-sur-richelieu.aac@canada.ca](mailto:aafc.saint-jean-sur-richelieurdcrdsaint-jean-sur-richelieu.aac@canada.ca)  
 430 Gouin Boulevard, Saint-Jean-sur-Richelieu, Quebec J3B 3E6

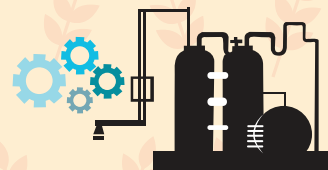
## SAINT-HYACINTHE RESEARCH AND DEVELOPMENT CENTRE

SAINT-HYACINTHE, QUEBEC

ESTABLISHED IN **1987**

THE CENTRE IS A PILLAR OF THE SAINT-HYACINTHE TECHNOPOLE, WHICH WAS RECOGNIZED AS THE WORLD'S BEST EMERGING SCIENCE PARK IN 2012

FOCUS EXCLUSIVELY ON **FOOD PROCESSING RESEARCH** AND WAYS TO **IMPROVE MANUFACTURING**

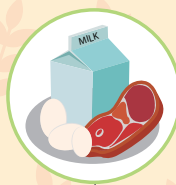



**Total staff: 63**  
 Includes: **18 researchers**


### RESEARCH FOCUSES ON:



HIGH VALUE INGREDIENTS AND PRODUCTS



MEAT AND DAIRY PRODUCTS



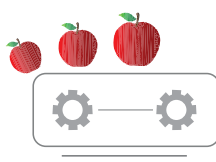
GRAINS, OLSEEDS, PULSES, FRUITS AND VEGETABLES

### IN SUPPORT OF **1** SECTOR SCIENCE STRATEGY

## 1. AGRI-FOOD

### Improving attributes for food and non-food uses




*Innovation in processes, production of food ingredients and food processing procedures*



### Increasing agricultural productivity

*Characterizing the technological and nutritional properties of ingredients and foods developed through new technologies and new value-added food production processes*

### CONTACT INFORMATION

 450-768-7999  
 [aa.fc.saint-hyacintherdc-crdsaint-hyacinthe.aac@canada.ca](mailto:aa.fc.saint-hyacintherdc-crdsaint-hyacinthe.aac@canada.ca)  
 3600 Casavant Boulevard West, Saint-Hyacinthe, Quebec J2S 8E3



## SHERBROOKE RESEARCH AND DEVELOPMENT CENTRE

SHERBROOKE, QUEBEC

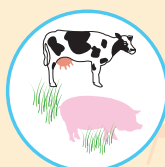
ESTABLISHED IN **1914**

 Total staff: **105**  
 Includes: **19** researchers

IS THE **ONLY** AAFC RESEARCH CENTRE THAT IS DEDICATED EXCLUSIVELY TO DAIRY AND SWINE PRODUCTION



### RESEARCH FOCUSES ON:



ANIMAL  
HUSBANDRY



NUTRITION AND  
FUNCTIONAL GENOMICS

IN SUPPORT OF **1** SECTOR SCIENCE STRATEGY

## 1. DAIRY, PORK, POULTRY AND OTHER LIVESTOCK

### Enhancing the sector's productivity and environmental performance



Reduce greenhouse gas emissions  
and nutrient excretion from cows



Dairy and swine research focuses on disease resistance, animal welfare, sow productivity, cow lactation persistency and effectiveness of cow and pork inputs.



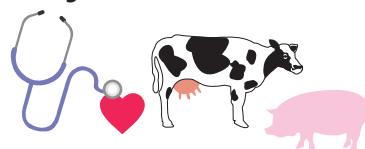
Reduce swine excretion and odours

### Improving food and non-food attributes



Identifying and developing value-added attributes in pork carcasses and meat quality. Also improving quality for food and non-food uses throughout the food chain.

### Dealing with the risks of value chains



Improving cow and swine health and milk safety by reducing antibiotics; reducing the risk of disease from pathogens; and by the conservation of genetic resources and safety.

### CONTACT INFORMATION

 819-565-9171

 aafc.sherbrookerdc-crdsherbrooke.aac@canada.ca

 2000 College Street, Sherbrooke, Quebec J1M 0C8

# QUÉBEC RESEARCH AND DEVELOPMENT CENTRE

## QUÉBEC CITY, QUEBEC

ESTABLISHED IN **1967**


**Total staff: 71**  
 Includes: **16 researchers**


### 2 Satellite locations

SAINT-AUGUSTIN RESEARCH FARM

NORMANDIN RESEARCH FARM

### RESEARCH FOCUSES ON:



AGRICULTURAL  
PRODUCTIVITY  
AND SUSTAINABILITY



ENVIRONMENTAL  
PERFORMANCE



ADDRESSING THREATS TO  
THE VALUE CHAIN

IN SUPPORT OF **2** SECTOR SCIENCE STRATEGIES

### 1. FORAGES AND BEEF

Reducing environmental impacts, boosting productivity and enhancing the Forages and Beef sector



The centre has a diverse forage expertise, which includes genetics, molecular biology, biochemistry, pathology, ecophysiology, management, microbiology and quality, as well as soil science.



Soil expertise is a major component involving soil chemistry-biochemistry-fertility and includes specialists in soil management, soil-plant-air interaction, precision farming, agri-meteorology, water management and modelling.

### 2. AGRO-ECOSYSTEM RESILIENCE

Conducting research to



Reduce environmental  
impacts



Boost productivity



Improve crop  
sustainability



Enhance the Agro-Ecosystem  
Resilience sector

### CONTACT INFORMATION

418-657-7980

aafc.quebecrcd-crdquebec.aac@canada.ca

2560 Hochelaga Boulevard, Québec City, Quebec G1V 2J3











