Some of our partners in progressive research:

Agriculture & Agri-Food Canada
University of Alberta
University of Manitoba
University of Saskatchewan
University of Guelph
University of Calgary
Olds College
Dairy Research & Technology Centre
Poultry Research Centre
Growing Forward 2
Alberta Livestock and Meat Agency
Alberta Crop Industry Development Fund
Alberta Milk
Alberta Pork
Alberta Hatching Egg Producers
Egg Farmers of Alberta
Alberta Turkey Producers
Alberta Chicken Producers
Prairie Swine Centre
Parrheim Foods
Bow Valley Research Inc.
U.S. Grains Council
Canadian Bio-Systems
Saskatchewan Pulse Growers
Biostel
Canola Council
Alberta Veterinary Laboratories Ltd
Alberta Pulse Growers
Grow Safe Systems
Merial Canada Inc
Lethbridge College
Alberta Aquaculture Association

Government of Alberta
Agriculture and Rural Development

www.agriculture.alberta.ca/livestockresearch

Livestock Research Branch

Who we are…

We are a dedicated group of researchers in the Livestock Research Branch of the Livestock Research and Extension Division at Alberta Agriculture and Rural Development

Branch Administration
Darrell Bignell, Systems Analyst
Cathy Bryant, Administrator
Judy Chow, Administrator
Linda I. Hansen, Administrator
Wesley Johnson, Branch Head

Animal Welfare Research Group
Nigel Cook, Research Scientist
Denise Froehlich, Animal Physiology and Biochemistry Technician

Beef Research Group
John Basarab, Research Scientist
Laki Goonewardene, Research Scientist
Jennyka Hallewell, Graduate Student
Yidong Han, Research Technologist
Susan Markus, Research Scientist
Dongyan Niu, Research Scientist
Jenilee Peters, Research Technologist
Brenda Ralston, Research Scientist
Tim Reuter, Research Scientist
Kim Stanford, Research Scientist
Susanne Trapp, Research Technologist
Homayoun Zahiroddini, Research Technologist

Dairy Research Group
Divakar Ambrose, Research Scientist
Marcos Colazo, Research Scientist

Feed Quality Research Group
Mary-Lou Swift, Research Scientist

Monogastric Feed Research Group
Eduardo Beltranena, Research Scientist
Matt Oryschak, Research Associate
Miranda Smit, Technical Writer

Poultry Research Group
Valerie Carney, Poultry Research and Extension
Brenda Schneider, Poultry Research and Extension
Jessica Josephson, Poultry Research Technologist

Aquaculture Research Group
Dan Watson, Aquaculture Biologist
Bill Hirsche, Aquaculture Technologist

Your partner for success!

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Animal Welfare Research Group

What we do…

Our team conducts original and applied research in the area of animal health and welfare focusing on:

1. Developing automated systems to remotely measure animal temperature by infrared thermography.
2. Develop and apply biomarkers of stress, pain and health status of livestock species, using minimally-invasive samples, *e.g.* saliva, feces, hair, feathers.

Why we do it…

1. Febrile diseases can be detected in changes to radiated body heat, often before changes to core body temperature. Measuring radiated heat by infrared thermography provides an early warning of disease. Current research is focused on swine barns and in beef cattle feedlots, but is equally applicable to poultry and dairy barns.
2. Increases in radiated temperature respond to immunological challenges such as vaccination. The response is being used to compare the febrile effects of different vaccines to the same pathogens.
3. Radiated body heat is a reflection of underlying metabolic processes. Energetically-challenged animals conserve heat by reducing radiated energy losses. Thus, measuring radiated heat may be used to identify those animals that are more metabolically efficient. Current research in this area is focused on swine and beef cattle.
4. Pain can be detected by a short, sharp decline in radiated temperature of the lachrymal region of the eye due vasoconstriction. This response is used to study effects of procedures that are potentially painful, *e.g.* tail docking and castration of pigs, or to compare methods of pain relief.
5. Stressors such as handling and transport induce metabolic changes in a host of biochemical compounds, including steroid hormones and acute phase proteins. Measurement of corticosteroids in minimally-invasive samples provides a means of assessing stress responses of animals with minimum disturbance due to sample collection.

Poultry Research Group

What we do…

Our team conducts extension activities such as:

- Workshops
- Seminars
- Technical Literature
- Musicals

Our team conducts applied research focusing on:

1. Putting research into practice—adapting the results from university led trials into practice on commercial poultry operations.
2. Identifying "bright spots" on individual farms that can be adopted throughout the industry.

Why we do it…

1. Putting research into practice gets the innovative techniques from the research barn into rural Alberta poultry farms. We extend the discovery research from academia through targeted field studies.
2. New innovations and discoveries are delivered via workshops, seminars or technical literature.
3. We collaborate with Poultry Research Centre scientists to develop practical and innovative outcomes ranging from production solutions to value added product development.
4. We believe that having FUN is the best way to learn. We've incorporated music and even some dancing to deliver poultry science information to some of our targeted audiences.

Dairy Research Group

What we do…

Our team conducts original, applied dairy research focusing on:

1. Increasing Dairy estrus detection efficiency, improving herd pregnancy rates through strategic application of fixed timed artificial insemination (AI), and reducing embryonic losses through nutritional management.
2. Poor reproductive efficiency of dairy cows is a major contributing factor to the decline in longevity, with reproductive failure being the No. 1 reason for culling cows from dairy herds.

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Beef Research Group

What we do…

Our team conducts original, applied beef and sheep research focusing on:

1. Using molecular techniques to identify genetic markers for use in marker assisted selection by relating phenotype to genotype. As an example, feed intake data will enable the selection of cattle that reach market faster, with less feed and which produce less waste and greenhouse gases.
2. Alternate slaughter strategies for beef production systems and the impact they have on measurable eating quality attributes, costs of production and sustainability as the industry moves to marketing healthier beef for human consumption.
3. New food-borne pathogen mitigation strategies as well as rapid, sensitive and inexpensive detection strategies and tools.
4. Developing strategies for controlling resilient animal or environmental pathogens such as prions or sport-forming bacteria.
5. Assist in the development of livestock pharmaceuticals.
6. Collaborate with industry groups and organizations to deliver research results to the ranch. Our partnerships are focused on adapting new and innovative tools and technologies for use on livestock ranches in a holistic approach which considers the animal and environment relationship for production, sustainability and profitability.

Why we do it…

1. Alberta is recognized as a world leader in feed efficiency, an area that will reduce cost of production, improve competiveness and reduce the environmental impact of Canada's beef cattle industry.
2. Alberta beef must be marketed based on our superior beef quality and safety through alternative, branded product lines to safeguard our domestic and export market consumer confidence.
3. The beef industry needs to be strengthened on a foundation of animal health, food safety and public health to make us more globally competitive with our lower cost competition.

Monogastric Feed Research Group

What we do…

Our team conducts original, applied animal feed research focusing on:

1. Novel or currently underutilized grains, legumes, oilseeds, their fractions and co-products.
2. Processing methods that improve the feeding value and reduce antinutritional factors in feeds.
3. Mitigating adverse effects of feeding bio-energy co-products on performance, carcass characteristics and meat quality.

Why we do it…

1. Feed represents as much as 70% of the cost of production for Alberta producers. Reducing feed costs for producers is central to all of our research projects.
2. Research into the feed value of locally grown and processed pulses may permit us to reduce our reliance on imported and animal-based protein ingredients. This will also create increased market demand for local pulse crops.
3. Our carcass and meat quality research is critical to safeguarding domestic and export market consumer confidence in the quality of products from animals fed bio-energy co-products.
4. Expanded production of bio-fuels in Western Canada will produce large quantities of co-products. Learning more about how to integrate co-products into livestock and poultry feeding will create local market to help clear anticipated surplus inventories.
5. Our research into the feeding value of fractions may permit a single crop to be used simultaneously for human food products, bio-industrial applications and animal feedings, thereby creating opportunities to add value to raw commodities.

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Aquaculture Research Group

What we do…

Our team conducts original, applied aquaculture research and education and outreach activities focusing on:

1. Investigating aquaponics, the ecologically friendly combination of fish and plant production
2. Investigate the replacement of fish meal with alternative proteins for a sustainable fish feed.
3. Establishing Alberta Coho salmon for a table food production industry.
4. Growing Alberta's industry with new species and strains of market fish.

Why we do it…

The continued growth of Alberta's private commercial aquaculture industry.

1. World markets for healthy seafood products are growing while wild fish supplies are declining.
2. Canadian market movement away from coastal net-pens to sustainable multi-trophic and contained inland systems is evident.

Feed Quality Research

What we do…

1. Technical support for a network of Near Infrared Spectroscopy (NIRS) machines installed on feedlots, colonies, in feed mills, nutrition consultant offices throughout Alberta
2. Collaboration in a number of research projects where NIRS is being used to a) develop new procedures (e.g. starch content of manure in feedlots) or b) as a tool to predict nutritional composition of feedstuffs, finished feeds and forages.

Why we do it…

1. NIRS is a rapid and low cost tool that can accurately characterize feed value of ingredients and forages. Participants in the NIRS network (as well as collaborative researchers) can use NIRS to pay fair market value for ingredients, improve accuracy and precision of formulation as well as quality control of finished feeds.
2. NIRS is a secondary technology that relies on development of calibration models which requires expertise in both the technology and statistics. We provide this expertise to the network as well as research projects investigating unique uses of the technology in the Alberta livestock and crop sectors.