



Canada's Beef Science Cluster

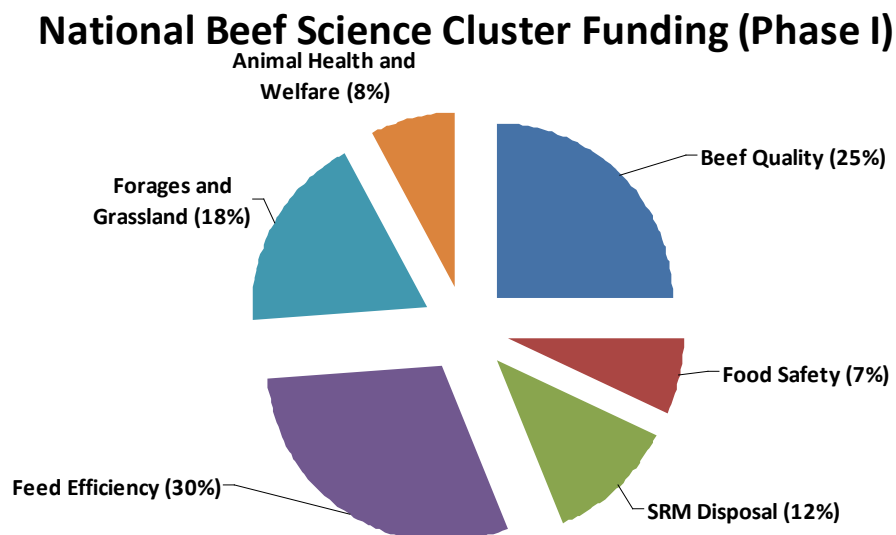
A portion of each National Check-off dollar is directed toward beef cattle research administered by the Beef Cattle Research Council. Since 1997, the BCRC has contributed over \$4 million in funding to more than 60 different initiatives. For every \$1 the BCRC contributes to research, \$5 in other federal and provincial funds has been leveraged. This brings the total funding of these projects to over \$20 million (including BCRC's contribution).

A 2008 review initiated by the CCA and National Beef Value Chain Roundtable found that research funding, infrastructure, expertise, and technology transfer to support cattle and beef research have fragmented and declined significantly in Canada. This grew into the concept of the Beef Science Cluster. The Beef Science Cluster is a partnership between Canada's beef industry and Agriculture and Agri-Food Canada to strategically leverage industry research funds and allocate them to industry priorities.

The Beef Science Cluster will contribute to the beef industry's competitiveness by focusing on research projects and programs that meet two core research objectives:



1. **Reduce production costs** through enhanced feed and forage production, increased feed efficiency, decreased impact of animal health issues and production-limiting diseases, improved utilization of specified risk materials, and improved animal care.
2. **Improve beef demand and quality** through a beef quality audit, improved food safety, setting quality and yield benchmarks supporting the Canadian Beef Advantage, and improvements in genetics, animal and carcass management.

The funding breakdown for the Beef Science Cluster is described below:





1. Reduce production costs (66% of Phase I funds):

Animal Health and Welfare: Efforts to control and prevent Johne's disease would benefit from a vaccine or diagnostic test that effectively detects the disease sooner, less expensively, or more reliably:

- ✓  An improved diagnostic test for Johne's disease.
- ✓  A calftlood vaccine and early detection test for Johne's disease.


Diagnosis and control of anaplasmosis is an ongoing issue for Canada's beef industry:

- ✓  Factors affecting tick and biting fly risks.
- ✓  A better test for anaplasmosis.

The cause(s) of reproductive failure go undiagnosed in 25% of herds:

- ✓  Causes of reproductive failure.








The health and performance of newly weaned calves may benefit from cost-effective improvements in transportation practices:

- ✓  Effect of transport practices on feedlot performance and health of weaned calves.




Compared to traditional feeds, nutrient levels of distillers' grains may impact animal health.

- ✓  Do DDGS affect feedlot cattle health?




Forage and Grassland: A sustainable beef industry requires forage varieties that fit regional soil, water and climate characteristics, are productive, disease resistant and have superior nutritional value.

- ✓  Breeding drought tolerant forages.
- ✓  Grazing alfalfa more safely.
- ✓  Forage seed mixtures for different regions of Canada.
- ✓  New technologies to breed better barley.
- ✓  Reducing swath grazing costs, Part 1
- ✓  Reducing swath grazing costs, Part 2.
- ✓  Using late summer swath to rest perennial pastures.

Feed efficiency: Feed costs are the largest single cost in beef production. Reducing feed costs would benefit both cow-calf and feedlot sectors.

- ✓  Finding DNA markers for feed efficiency.
- ✓  Predicting feed efficiency more economically.
- ✓  Effect of nutrition and genetics on fetal growth and winter feed costs.

Biofuel by-products have high levels of protein, phosphorus and sulfur. Diet formulations may need to change to accommodate DDGS from different crops and refining methods.






- ✓  Optimizing protein levels in feedlot diets containing DDGS.
- ✓  Strategies to use oats, barley, and corn DDGS more efficiently.
- ✓  Effect of feeding DDGS on nutrient value of beef manure.

SRM Disposal: The enhanced feed ban has increased deadstock disposal and SRM costs for producers and packers. If composting can destroy BSE prions, SRM could be dealt with more cost-effectively.







- ✓  Can composting destroy BSE prions?

2. Improve beef demand and quality (34% of Phase I funds):

Improve beef safety: How can we cost-effectively improve and ensure the safety of our beef so that Canadian and international consumers come back for more of our beef, more often?

-  Improving the shelf life of ground beef, Part 1.
-  Improving the shelf life of ground beef, Part 2.
-  E-beam treatment to improve beef safety.
-  Do wheat DDGS affect E.coli 0157:H7 shedding?
-  Training new food safety researchers.

Improve beef quality: How has beef quality changed since the last audit? How can we improve eating quality so that Canadian and international consumers come back for more of our beef, more often?

-  Canada's beef quality audit
-  New technologies to evaluate beef carcasses.
-  How does forage finishing affect product quality?
-  Will feeding DDGS affect beef composition and quality?
-  Developing a better DNA test for tenderness.
-  Providing consumers with more tender roasts.

The Beef Research Cluster is funded by the Canadian Cattlemen's Association and Agriculture and Agri-Food Canada to advance research and technology transfer supporting the Canadian beef industry's vision to be recognized as a preferred supplier of healthy, high quality beef, cattle and genetics.

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