

Scientists in the Nutrition Research Unit are conducting research to develop knowledge and technology to improve the efficiency of feed resource utilization for the production of edible animal products with minimal environmental impact such as:

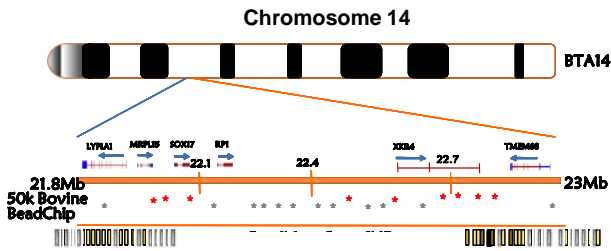
- **Feed Efficiency**
- **Regulation of Feed Intake and Growth**
- **Developmental Programming**

Feed Efficiency

The single largest annual cost of beef production is feed. Increasing the efficiency with which animals convert nutrients in feed to edible product is a potential tool for increasing the profitability of animal production while decreasing the environmental impact of animal production. There is variation amongst animals in their efficiency of feed utilization. Scientists in the Nutrition Research Unit are using new technologies to identify efficient animals and develop genomic markers to allow for marker-assisted selection and management.



Feed Efficiency Facility



Locating Genes Controlling Feed Intake

Regulation of Feed Intake and Growth

Feed intake and growth rate are major contributors to feed efficiency. Understanding the biological mechanisms that regulate feed intake and growth offers the potential to develop technologies to improve feed efficiency. Scientists in the Nutrition Research Unit are identifying genes responsible for the natural variation in rates of growth and feed intake amongst animals, and they are identifying biological mechanisms responsible for the regulation of protein accretion.

Developmental Programming

Developing replacement females for the cow herd is costly. A heifer has her first calf at two years of age. Three calves are often required in order to recover the costs associated with developing a replacement female. Increasing the length of time that a cow remains in the cow herd reduces the number of heifers that need to be developed each year. Scientists in the Nutrition Research Unit are identifying critical periods during development where malnutrition reduces the time a cow remains in the herd. Scientists are studying the effect of malnutrition during fetal and adolescent development on lifetime fertility, production efficiency, and nutrient utilization.

