

Plant Structure



Plant Growth/Development

Ruminant Anatomy & Physiology

- Surface Area and Papillae
- Buffering Mechanisms



- Symbiotic Relationships—cow and micro-organisms
- Plant and Micro-organisms Interaction

Nebraska Agriculture



Ecosystems and Influence on Food Production and Economy

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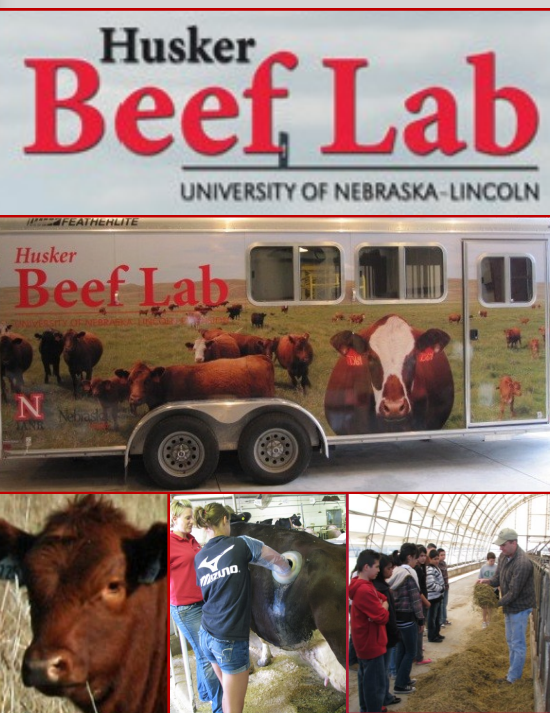


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Opening the doors for Nebraska's youth to experience the value of and supporting the production of high quality protein beef animals.

UNL Husker Mobile Beef Lab — *teaching Nebraska youth livestock science principles*



Teaching Nebraska Youth the value of high quality protein beef animals.

The **Husker Beef Lab** will provide hands-on experiences for students in middle school and high school.

The Beef Lab experience will teach students science principles through a ruminant animal — it's complexities and what makes the ruminant truly

unique in the environment and ecosystem.

The overarching goal for the Beef Lab experience is to teach Nebraskans the value of, and support the production of, high quality, protein beef animals.

What Youth Will Learn:

Animal Well-Being



Animal Research and Care of Teaching Animals

Educational Objectives:

Youth who participate in the mobile lab experience will recognize and describe:

- how research animals are protected by research protocol and cared for as teaching animals.
- the human nutritional benefits of beef as a source of complete protein.
- the steps ranchers and livestock producers take from pasture to plate to assure beef is a safe and nutritious food.
- how agricultural lands in Nebraska are suited for livestock production and the benefit of livestock production to the state economy.

Youth who participate in the mobile lab experience will investigate and recognize:

- the science of the rumen animal digestive system and the four compartments of the cow's stomach.
- the science of plant structure, microfibrils and carbohydrates in cell walls and the role of photosynthesis in carbon sequestration.
- the rumen as a fermentation vat and the amount of bacteria, protozoa and fungi in the cow rumen.



Nutritional Aspects of Beef



As a Source of Protein in Human Health

Pasture to Plate



A Safe Food Product