

2003 Review

Iowa State University Beef Nutrition Research Farm

3405 North Dakota Avenue

Ames, Iowa

A.S. Leaflet R1867

Rod Berryman, Superintendent
Animal Science Beef Nutrition Unit

A 36' x 40' hay storage building
A small wood bunker used to store wet by-product feeds.
Three solid manure storage bunkers.

History

The university purchased land for this farm in 1954. Construction of the original experimental cattle feedlot unit and feed mill was completed in 1955.

Over the next 20 years a second cattle feedlot unit, a lamb-feeding unit, later converted to a cattle unit, four open cattle lots and a confinement building were added. In 1996 two of the cattle units were demolished and construction began on a 60 pen feedlot with commodities storage shed and a cattle handling facility.

Farm Area and land use

The farm consists of approximately 275 acres with the following use; 48 acres in crop rotation, 22 acres of permanent brome pasture 58 acres of timber pasture, 50 acres of brome pasture for rotational grazing experiments, 60 acres of fescue/red clover pasture for winter grazing experiments. The remainder includes the building site, small pastures and open lots and areas used for containment of runoff.

Facilities

A 36' x 756' open front shed with 60, 6 head pens.
A 28' x 196' open front shed with 16, 6 head pens, needs building repairs, fence replacement and a system to handle runoff from the cattle lots.

A 40' x 120' open front shed with 6, 6 head pens each pen with 6 Calan electronic gates for individual feeding. Four dirt lots with fence line bunks, concrete apron and windbreaks.

Two dirt lots with concrete apron, one with fence line bunks, no windbreaks.

76' x 184' concrete lot divided into various sized pens most with fence line bunks. There is a 16' x 120' open front shed. Building and concrete are in very poor condition.

A feed mill with overhead storage, bag storage, grain processing, batch scale and two horizontal mixers.

A 48' x 56' building with animal handling facilities, supply room and shop area.

A 58' x 72' building used for commodities storage and feed mixing.



Mission

Provide facilities and support for research aimed at optimizing nutrition and management of beef cattle in Iowa.

Contributions

Feedlot Nutrition and management research.
Summer and winter grazing research.
Nutrient management research.

Support metabolism and digestion trials in the Kildee Hall animal unit.

Contribute to the teaching and outreach mission of the department.

Research activities

Evaluation of distillers grains for dairy beef production.

Evaluation of distillers solubles in beef cattle diets.

Evaluation of stocking rates and energy supplementation on forage intake and performance of pregnant heifers grazing stockpiled forages.

Determination of P digestibility and retention on hay and pasture fed cows.

Evaluation of implant site characteristics.

Efficacy of three oxytetracycline regimens for treatment of *Anaplasma marginale* carrier status in beef cattle.

Digestibility of corn distillers by-products by beef cattle.

Metabolic mechanism by which orexigenic peptide ghrelin stimulates feed intake in ruminants.

Phase feeding effects on ammonia emissions from cattle.

Use of 25-hydroxyvitamin D₃ and vitamin E to improve beef tenderness.

Evaluation of a feedlot runoff treatment system.

Evaluating amino acid fermentation byproducts as potential spray-on silage covers for bunker silos.

Teaching activities

Animal Science 425 spring semester.

VCS/VDPAM 340X, Clinical Foundations 1

Outreach activities

Iowa Cattleman's Association tour.

Other activities

Custom feeding heifer calves for Iowa State Research Farms.

Developing an Environmental management system for the Beef Nutrition Farm in conjunction with Ag/Biosystems Engineering and the Iowa Beef Center.