



# Research Briefs

► Compiled by *Kindra Gordon*

## The latest revealed at ASAS

*This month we continue our review of the latest research presented at the American Society of Animal Science (ASAS) meeting in Phoenix, Ariz.*

### Herd management

**Cows grazing low-quality forage likely do not need to be supplemented with crude protein (CP) daily.** That's according to the findings of a study conducted at the Eastern Oregon Agriculture Research Center in Burns, Ore.

"In this study, we found that supplementing beef cows with crude protein as infrequently as once every six days results in performance and grazing behavior that is similar to daily supplementation," says Oregon State University (OSU) researcher David Bohnert. "The primary advantage is a decrease in labor and fuel costs of approximately 83% for supplementation once every six days compared with daily supplementation — with no negative effects on performance."

The Oregon study compared three treatments among 120 cows during an 84-day period in each of three years: (1) an unsupplemented control, (2) daily supplementation of 2 pounds (lb.) CP and (3) supplementation once every six days of 12 lb. CP. Cottonseed meal [43% CP on a dry-matter (DM) basis] was provided as the supplement source.

The researchers found that cow performance [weight and body condition score (BCS) gain] was improved for supplemented cows compared to cows that did not receive supplement. However, there were no differences in weight or BCS between the cows that were supplemented daily and those that were supplemented every six days.

The researchers did note that grazing time was greater for the control — those animals given no supplement — compared with supplemented cows. However, cow distribution and distance traveled for grazing and water were not affected by supplementation or supplementation frequency.

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**Responding quickly to drought conditions by weaning calves early proved to be the most economic strategy for cow-calf enterprises,** according to a Montana State University (MSU) study.

The researchers utilized an economic computer model to simulate a range-based cow-calf production system in the Northern Plains. The base management system was characterized by inputs required to maintain a herd size of 511 cows during an average climatic year with a fixed forage base of 4,329 animal unit months (AUM) of range forage, plus 571 tons of grass hay and 189 tons of alfalfa hay.

The study evaluated early vs. normal management strategies and a moderate vs. severe drought intensity. The early management scenario included detecting drought by July 15 and weaning calves at 90 days of age. The normal management scenario included no "early" management changes to emerging drought, but nutritional management was modified as needed to maintain animal performance (for example, cows were fed hay or range cubes).

The moderate drought conditions represented a 20% reduction in available forages; whereas severe drought represented a 40% reduction in available forages.

A second economic computer model was used to simulate drylot performance for early-weaned calves. Outputs from the two models were combined, and treatments were evaluated based on feed costs, average

weaning weight (WW) and cumulative gross margin, which was calculated as gross income minus variable costs from both the ranch and drylot.

In all of the drought scenarios profitability was reduced, but the early management strategy had less of a reduction for both levels of drought than the normal management. Cumulative gross margin was reduced 17.6% and 48.8% with early management for moderate and severe drought, respectively; and 33.6% and 72.3% under normal management for moderate and severe drought, respectively. Early management also had lower purchased feed costs than normal management.

The researchers concluded that early weaning should effectively reduce the negative effects of drought on profitability. They found that directly feeding early-weaned calves proved more efficient than feeding cows hay or range cubes to produce milk and maintain calf performance.

*For more information contact MSU animal scientist Mike Tess at (406) 994-3721 or [mwtess@montana.edu](mailto:mwtess@montana.edu).*

### How does calving date and weaning age impact cow and calf production?

Researchers at the U.S. Department of Agriculture (USDA) Livestock and Range Research Laboratory (LARRL) in Miles City, Mont., sought to answer that question in a three-year study that evaluated late-winter (February), early-spring (April) and late-spring (June) calving systems on beef cow and calf performance in the Northern Plains.

Crossbred cows were randomly assigned to one of the three calving seasons and one of two weaning times (designated as Wean 1 and Wean 2). February and April calves were weaned at 6 and 8 months of age; and June calves were weaned at 4 and 6 months of age. Breeding by natural service occurred in a 32-day period that included estrus synchronization. After weaning, steers were housed in feedlots, while half of the heifers grazed improved pastures and half were housed in feedlots.

With WW of calves adjusted to a constant date, researchers found that



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WW was decreased as calving time became later (601 lb., 504 lb. and 398 lb. for February, April and June calves, respectively). When adjusted to a constant 190 days of age, June calves were also lighter than February and April calves (447 lb., 493 lb. and 486 lb. for June, February and April, respectively).

During the two months between weanings, weight gains for early-weaned calves averaged 1.6 lb., 1.2 lb. and 0.9 lb. per day for February, April and June, respectively. Weight gain of calves still with the cows averaged 1.7 lb., 1.0 lb. and 1.2 lb. per day during this same period.

Regarding cow performance, researchers found that between weanings, suckled cows gained less or lost more than non-suckled cows in all herds. Cow weight changes between October (Wean 1) and December (Wean 2) did not differ for April and June non-suckled cows, but loss was greater for suckled June cows than April cows.

Researchers concluded that time of weaning did not affect the subsequent year's cow or calf performance at weaning. And pregnancy rates (87.9%) were not affected by calving season.

However, the researchers encouraged producers to carefully consider the optimal calving time for their specific enterprises.

"Weaning weights are affected by both time of calving and age at weaning," says USDA's Elaine Grings, who helped conduct the study. "While calf weights are greater in February and April calving systems compared to June, feed inputs may also be increased. Feed costs need to be weighed against calf prices to determine optimum calving time."

For more information contact Grings at (406) 232-4970 or [elaine@larrl.ars.usda.gov](mailto:elaine@larrl.ars.usda.gov).

### How do birth weight (BW), gestation length and need for calving assistance compare between calving-ease Simmental and low-BW Angus sires?

That was the objective of a two-year MSU study that collected data on 1,039 births among Angus yearling heifers that were bred in two consecutive years (1999 and 2000) at four locations by artificial insemination (AI), using semen from Simmental and Angus sires. BW, gestation lengths and calving-ease scores were analyzed to determine sire breed effect.



The researchers found that Simmental-sired calves were 4.7 lb. heavier at birth, 2.9 days longer in gestation length and assisted 1.4 more times than Angus-sired calves.

Calf sex also affected BW and gestation length. Bull calves were 6.1 lb. heavier at birth and 1.3 days longer in gestation than heifer calves. Furthermore, bull calves were assisted 2.51 and 1.36 times more than heifer calves in Year 1 and Year 2 of the study, respectively. In this study, researchers concluded that calf sex was the leading cause of dystocia, followed by sire breed.

For more information contact MSU's Raymond Ansoategui at (406) 994-5569 or e-mail [raymonda@montana.edu](mailto:raymonda@montana.edu).

### Bred cows grazing windrows during harsh winter conditions may need to be fed supplemental hay to maintain body weight, say University of Wyoming (UW) researchers.

During a recent five-year study, cows offered windrowed forage had similar performance to cows fed baled hay in four of the five years. However, during winter 2000, poor weather reduced the accessibility of windrowed forage to cows, and the Wyoming researchers observed that cattle grazing windrows lost body weight while cattle fed baled hay gained body weight,



resulting in lower average daily gain (ADG) for cattle grazing windrows compared to cattle fed baled forage.

Beginning in November, 54 pregnant cows were assigned to either a pasture with windrowed forage or were fed baled forage for 42 days. Forage samples were collected once monthly until January. CP, acid detergent fiber (ADF) and neutral detergent fiber (NDF) of forage left in windrows was greater compared to forage harvested as bales. However, on average, cows fed baled hay gained 0.33 lb. per day, while cows grazing windrows lost 0.88 lb. per day and were 50 lb. lighter than control cows at the end of the study.

Based on the overall similar performance results of the cows during the five-year study, the researchers conclude windrow grazing is a viable practice. However, these researchers recommend that producers have a source of baled forage available for times when weather conditions prevent cattle from full access to the windrowed forage.

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### Whole corn may be better suited for growing-finishing diets of bulls than cracked corn,

according to a 112-day growth study conducted at Angelo State University in San Angelo, Texas. Findings of the study indicate that cracked corn processing will not improve performance of growing bulls fed nutritionally similar diets based on whole corn.

In the study, 40 spring-born Angus bull calves with an average weight of 697 lb. were divided into eight pens and fed identical diets containing either cracked or whole corn *ad libitum* throughout the trial. Rations were formulated to meet or exceed nutritional requirements of growing finishing bulls, and ration DM digestibility of both the cracked and whole corn diets was similar.

The researchers report that ADG and intake over the entire trial were similar for bulls fed whole or cracked corn. However, feed efficiency (feed:gain, or FE) throughout the trial was improved with the whole corn diet, 8.41 vs. 9.02, respectively.

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