



South Dakota Hosts Recent Range Beef Cow Symposium

by **Troy Smith**

From genetics, nutrition and reproduction to range management, marketing and pertinent public policy, the Range Beef Cow Symposium typically has a reputation for addressing topics of particular interest to cow-calf producers of the Western Plains area. Since 1969 the biennial symposium has been a joint production of the land grant universities of South Dakota, Nebraska, Colorado and Wyoming, with each state hosting the event in rotation.

South Dakota State University (SDSU) animal science department and cooperative Extension service personnel took leadership roles in organizing Range Beef Cow Symposium XXIII, hosted Dec. 3-5, 2013, in Rapid City, S.D.

Cow folk came to glean information from successful ranch managers, as well as speakers representing academia and private industry. During the always popular evening bull pen sessions, audience members had the opportunity to pick the speakers' brains.

Nutrition

During discussion of nutrition-related topics, University of Nebraska (UNL) Cow-Calf Specialist Karla Jenkins talked about semi-confinement systems for cow-calf production. Jenkins and her colleagues have been studying limit-feeding of cows managed in confinement.



Karla Jenkins

"Producers may need to rethink their utilization of grass and think outside the box as they look at different possibilities," stated Jenkins, suggesting limited and increasingly expensive grazing resources may have to be used strategically.

As an example, Jenkins said cows could graze cornstalks and other crop residues during fall and winter but be confined during at least part of the traditional grazing season. They might be confined to a "sacrifice pasture," on pivot corners or in a more typical feedlot setting, where they are fed a ration comprised of low-quality harvested forages and byproduct feedstuffs.

The latter is not limited to distillers' grains or other grain milling byproducts. In the Nebraska Panhandle, for example, sugar beet pulp is an economical and readily available alternative.

Jenkins stressed the importance of limit-feeding cows during confinement. That means the animals are fed an energy-dense ration to maintain adequate body condition and not for weight gain. She called knowledge of animal nutrient requirements during various stages of production and knowledge of the nutrient content of feedstuffs critical to balancing

and making this kind of system economical.



Rick Funston

Fetal programming

UNL reproductive physiologist Rick Funston was the first of two speakers to address fetal programming — the cumulative effects that a pregnant female's diet has on the health and performance of

her calf. While the mechanisms by which it occurs are not clear, nutrition of the gestating dam has far-reaching effects.

Funston shared data from multiple studies showing how weaning weight, carcass weight and carcass quality of steers, as well as fertility of heifers, were affected by their dam's nutritional status during pregnancy, particularly during the last trimester. Funston cited studies illustrating fetal-programming effects in other animal species and humans. Research with mice suggests there may also be a paternal influence that affects progeny later in life.

Amanda Blair, SDSU meat scientist, said cow nutrition's influence on calf carcass characteristics appears to start during mid-gestation. Blair described a study showing that calves born to cows whose diets were energy-restricted during mid-gestation exhibited less backfat. Carcass yield grades were also lower than those for calves born to cows whose diets were not energy-

restricted. Researchers saw no significant differences in marbling scores, but calves from dams on restricted diets produced carcasses with less subcutaneous fat.

"As a meat scientist, I'm concerned with muscle and fat. Beef consumers are concerned with beef's appearance, palatability (tenderness, juiciness, etc.) and cost, but all of those things come down to muscle and fat," stated Blair, suggesting that knowledge of fetal-programming effects can be used to manipulate marbling and subcutaneous fat thickness, relative to lean muscle, during prenatal development.

Heifer nutrition

On another nutrition-related topic, University of Wyoming beef cattle specialist Scott Lake reminded cow-calf producers that heifer pregnancy rates can suffer when the diet changes abruptly following artificial insemination (AI). This means heifers developed on a relatively high energy diet may be at risk when turned out to pasture immediately after insemination.

"We sometimes forget that high-concentrate diets can put heifers at a disadvantage when they go back to an all-forage diet," said Lake, explaining that part of the problem is the "change" itself but also that the forage diet may afford too little energy.

"Heifers can't get the calories they are used to," said Lake, citing evidence suggesting heifers switched suddenly from a mixed ration to pasture can lose as much

or more than three pounds per day during the first week.

Research suggests heifers whose dietary plane of nutrition decreases immediately following AI may exhibit decreased pregnancy rates whether they conceived to AI or to a clean-up bull. In other words, overall breeding season pregnancy rates can suffer. Post-AI nutrient restriction may result in poor quality embryos that are unable to successfully signal maternal recognition of pregnancy. The result is early embryo loss.

According to Lake, these results suggest that the early embryo, oviduct and uterus are sensitive to immediate changes in nutrition. Restriction following breeding appears to alter the reproductive system so that it may not support embryo growth and pregnancy recognition. Lake advised producers to manage nutrition so that breeding females do not experience a negative energy balance following AI.

Sexed semen

The potential of AI with gender-sorted or sexed semen in commercial operations was the subject of University of Idaho Beef Specialist John Hall's presentation. Hall explained how sexed semen is being used in an Idaho research herd to produce Hereford-Angus cross females as replacements.

"The best use of sexed semen in commercial herds may be to develop maternal lines of females that can be bred to terminal sires," said Hall. "Using a maternal line strategy to produce replacement females could reduce the proportion of a herd dedicated to generating replacements. Terminal sires can then be used on the remainder of the cows."

According to Hall, another potential application is the Heifer-Heifer system, where all replacement heifers are bred to produce the next generation of replacement females. This system allows all cows to be mated with terminal sires. A potential strategy to enhance marketing would involve using sexed semen to alter the steer-to-heifer ratio in favor of more steers. Hall says this application might be most useful to smaller operations that currently must market mixed loads of calves. By shifting the gender ratio, producers could then sell load lots of steers and likely increase return per cow.

Despite early results suggesting poor results when using sexed semen for lactating mature cows, Hall's experience suggests cows and heifers can be expected to respond similarly. Sexed semen

will work with fixed-time AI systems, but inseminating females following heat detection is best. Typically, mass insemination of females is less successful.

Hall said the limitations of sexed semen include its higher cost — typically \$10-\$15 more per AI dose. Additionally, pregnancy rates are decreased by 10%-20%, compared to conventional semen.

Production costs, profitability

Sharing their respective philosophies and strategies for managing production costs and increasing profitability were ranch managers from across the four-state region.

Leading off, Chip Ramsay, Rex Ranch manager, emphasized that operation's goal of achieving optimum forage production and utilization through a "disciplined, written grazing plan." Ramsay said beef production efficiency and added value are achieved through crossbreeding.

Manager James Sewell said

TA Ranch has shifted toward an extended grazing season and reduced harvested-forage requirements. Much of the Wyoming ranch's haying equipment has been sold, reducing costs associated with fuel, repairs and depreciation.

South Dakota

rancher Ed Blair said

his family's operation is focused on production of high-quality cattle whose carcasses earn premiums. Blair also cited a more aggressive application of short-duration rotational grazing of both range and rented crop residues. Irrigated farm ground that was previously devoted to feed production has been sold, and the ranch purchases its hay supply.

"The old saying is true. You can't manage what you don't measure," said Julie Walker. The SDSU beef cattle specialist advised ranchers to use an enterprise budget, including expenses associated with feed, reproduction, animal health, labor, other direct costs and overhead. Walker also recommended they calculate a breakeven cost in terms of dollars per pound of weaned calf.

"Managing production costs is not just about spending less money. Being a low-cost producer doesn't necessarily make you more profitable," added Walker. "Lowering costs may also decrease production, decrease product quality or both, resulting in lower revenue."

Instead of managing cow costs, Walker advised producers to manage profit by focusing on both expense and revenue. Lamenting how many producers devote little time to enhancing revenue, she urged her audience

to think about whether they are selling their product or marketing it. To market effectively, Walker said producers need to know more about their cattle than the buyer does. She urged calf-sellers to consider available programs that enable them to gather performance and carcass data on part of their calves without retaining ownership of each year's entire crop.

Economist Jim Robb, director of the Livestock Marketing Information Center, talked about factors affecting producer costs and revenue. While he doesn't expect grassland prices and rental rates to go down, Robb said the industry-wide cow average annual cow cost (about \$800) could decline to a range of \$700 - \$750, due to lower cash costs for feed and energy.

According to Robb, a declining total supply should be supportive to beef prices. Often overlooked is the way cow slaughter has masked the decline in steer and heifer beef. A dwindling supply of slaughter cows should bring total beef production down significantly. Robb expects the supply to remain low for several years.

"I don't foresee any significant increase in beef production before 2017 and it could take longer," stated Robb, adding that cow herds rebuilding will be particularly slow in some parts of the country — primarily areas hit the hardest and longest by drought.

Prices paid for beef and cattle will depend heavily on consumer demand for beef. He noted that while U.S. per capita consumption has gone down, consumer demand for beef has actually increased. Robb said consumers have thus far been willing to pay higher prices reflective of smaller supply.

"Cow-calf returns look pretty darn good," added Robb, projecting increased opportunity for profitability during the next few years.

CattleFax analyst Chad Spearman agreed. He said the next three to four years should be very profitable for high-return

cow-calf producers that manage their costs. He allowed that projections assume continued improvement to drought conditions across cow country.

"For the past few years, challenges at all levels of the beef industry have been weather related. Overall, 2013 has been a better year for precipitation, forage growth and rebuilding of hay stocks," reported Spearman. "Going forward, we expect lower feed costs, but continued market volatility."

Spearman said cow inventory should remain low for several years, resulting in smaller calf crops. Heifer retention should increase, but Spearman advised ranchers entering expansion-mode to consider buying bred females and to capitalize on very favorable steer and heifer calf prices.

Projections call for corn to trade within a range of \$3.50 to \$5.50 per bushel during the next two years. Hay prices should be substantially lower. The cost of distillers' grains has elevated to 120% of corn price, so Spearman predicts continued decline in their use for finishing rations.

Overcapacity in the packing and cattle feeding sectors may result in beef plant shutdowns and closing of feedyards. However, Spearman said more feedyards are transitioning to backgrounding operations.

CattleFax projects higher fed cattle prices with seasonal market volatility. Fed cattle will likely average \$130 per hundredweight (cwt.) in 2014. Assuming seasonal highs and lows, 750-lb. steers should trade at \$150 to \$178, averaging \$165/cwt. Prices received for 550-lb. steer calves should average from \$185 to \$190/cwt. Average utility cows are expected to average near \$83/cwt. in 2014. **HW**

Editor's Note: For more highlights of the 2013 Range Beef Cow Symposium, visit RangeBeefCow.com.



Chad Spearman



John Hall

