

# Range Cow Logic

## PART 3

Symposium sessions focus on nutrition, animal health.

In Part 3 of our published coverage of the 19th Range Beef Cow Symposium (RBCS), we provide overviews of the presentations during the nutrition and animal health sessions. The Dec. 6-8, 2005, symposium in Rapid City, S.D., was sponsored by the Cooperative Extension Services and the animal science departments of South Dakota State University

(SDSU), Colorado State University (CSU), the University of Wyoming and the University of Nebraska (NU). For Angus Productions Inc.'s (API's) online coverage of the event, which includes summaries of all the sessions and a link to audio/video coverage, log on to the newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

## RANGE AND NUTRITION

### A Holistic Approach

A holistic management approach begins with a can-do attitude, Dale Richardson of Nebraska's Rex Ranches told attendees of the 2005 RBCS.

"The first obstacle toward change for a lot of us is attitude," Richardson said. "We need to recognize the need for change to improve. And, change is a funny thing — it's a constant evolution." Richardson shared that he keeps his attitude in check by surrounding himself with people who have the attitude he wants to possess.

Adopting an accepting attitude toward education and learning is also important in managing holistically, Richardson said. "This is the most important factor at Rex Ranch."

Part of the learning process is making mistakes, he added. "That's how we learn and improve ourselves. Training is no good if you don't go home and implement it."

In applying new ideas or a new attitude toward change, Richardson suggested producers look at a variety of management practices on their ranch. As an example, he said, "Do you need to change your winter feeding regimen? Are you doing it out of habit or because you feel sorry for your cows?"

Similarly, he suggested producers evaluate whether their grazing system matches their resources.

"Attitude governs our perceptions. We must constantly look to improve



Dale Richardson

PHOTOS BY LYNN GORDON

ourselves and our industry. Be lifelong learners," he said. "It is important for all of us to look at life from a holistic standpoint, because we always affect somebody else by what we do."

— by Kindra Gordon

### Forecasting Forage Production

Stocking rate is probably the most important range and forage management tool applied by producers grazing cattle on the Great Plains. Stocking rate decisions are critical in determining long-range productivity and sustainability of range ecosystems and the financial success of ranches.

According to Sandy Smart, SDSU range and forage specialist, using weather data to forecast annual forage yield will help producers adjust stocking rates to maintain or enhance plant

communities. Smart told producers they can monitor moisture and temperature factors to estimate forage production and develop grazing plans accordingly.

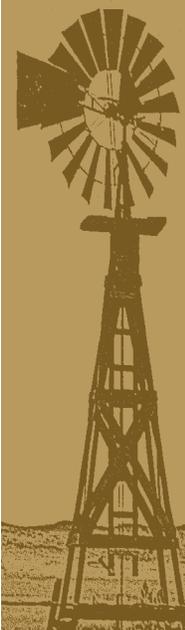


Sandy Smart

"There's no crystal ball," Smart offered, "but there are drivers of range and forage production that they can use."

Spring precipitation is a key driver of annual production, particularly on Great Plains rangelands dominated by cool-season grasses whose rapid growth occurs in the spring and early summer. However, research indicates a strong relationship between spring

CONTINUED ON PAGE 120



precipitation and warm-season forage yield. Smart said this relationship suggests that moisture is stored for use by warm-season species later in the growing season.

Another driver of forage production is temperature, Smart said. Late-spring freezes inhibit cool-season grasses that have already entered a rapid growth phase. Chill tolerance diminishes dramatically during this phase, leaving plants more susceptible to damage by cold temperatures, thus decreasing production. Warm-season grasses are not affected, since their rapid growth phase does not begin until June.

"Precipitation from previous years also influences the current year's forage yield because of its affect on plant vigor," Smart added.

Different types of plant communities respond differently to these key drivers, Smart said. In mixed-grass prairie, however, spring precipitation events, the last spring freeze and spring precipitation from the previous year are useful in forecasting current annual forage yield by July 1, allowing managers to make stocking rate adjustments for the rest of the growing season.

— by Troy Smith

### Distillers' Grains for Range Beef Cattle

The dramatic increase in corn ethanol production has led to an increased availability of corn byproducts for use as cattle feed. They have gained popularity for use in finishing rations, but NU beef specialist Ivan Rush told RBCS attendees that relatively high protein, energy and phosphorus (P) values make corn byproducts ideal range supplements.

"Because the starch has been removed (in ethanol production), it doesn't lower forage digestibility, as is the case with grain supplements," Rush explained. "So, corn byproducts make



Ivan Rush

an excellent supplement for cows on low-quality forage diets."

Rush said the two primary types of corn-milling processes yield quite different products. The byproduct of the ethanol industry's dry-milling process is distillers' grains. The less common wet-milling process produces corn syrup, oil and starch, with corn gluten feed as the byproduct.

The process differences make corn gluten feed variable among plants and by season. Therefore, Rush warned, it is important to evaluate product analysis prior to purchase and feeding.

In general, about one-third of the dry matter (DM) of corn remains as feed products after the starch has been removed for alcohol production, Rush explained. In other words, corn is about two-thirds starch, and nearly all of that is removed. The nutrient values for protein, fat and minerals are tripled in the remaining distillers' grains. More nutrients are extracted during wet milling, so corn gluten feed is usually lower in energy and protein than distillers' grains.

Rush called distillers' grains an excellent source of supplemental energy or supplemental protein. An added advantage is that the product is often very competitively priced.

A disadvantage is that the dried product comes from the plant in meal form or as a small, soft pellet, Rush said. Feeding these on the ground to cows results in some waste. It is difficult to formulate a quality range cube without adding other ingredients such as sunflower meal or wheat midds, which increases the cost.

"When buying as a commodity, the price generally runs from \$110 to \$130 per ton — higher if bagged as a cube.

There is considerable variation in price," Rush said. "It's an excellent feed for some, but it won't fit everybody. Just make sure you check the nutrient composition and make good decisions regarding the use of any corn byproducts."

— by Troy Smith

### Supplement Winter Cow Needs

Supplements are generally known for their ability to maintain herd body condition during fall-winter grazing, but supplement applications are far-reaching, said Don Adams, NU-North Platte Extension beef specialist.

Protein supplements also have an effect on the cow's subsequent reproduction and her calf's eventual growth and performance, Adams said. Key to maximizing both is the producer's ability to understand the cow's nutrient requirements and the forage's ability to provide for such needs.

Some forages are limited in protein and energy, both important factors in late gestation or when a cow is lactating, Adams said. That's where supplementation and timing play a primary role in maintaining and improving nutritional status.

"There's just a tremendous opportunity if we can formulate our systems to fit our resources," he told attendees.

Adams reviewed the results of a study measuring the economic effect of an August vs. November weaning date in combination with protein supplement vs. no supplement. According to study analysis, calves from cows fed protein were heavier than calves from cows not fed protein. Supplemented cows had higher costs than nonsupplemented cows, and an August weaning system showed lower cow costs than a November weaning system.

The greatest net returns were for cows with calves weaned in August in combination with no protein supplement. However, as calves made their way through the feedlot, the study showed November-weaned calves from supplemented cows returned \$31.11 per cow more through the feedlot than calves weaned in August from supplemented cows.

"This is highly significant," Adams said. "The only thing different in those

steer calves is the fact that their mother received 90 pounds (lb.) of protein during [December through February]. ... Something that we did before the calf was even born is affecting the steer.”

Another study looked at wintering the calf with the cow on range and weaning it in April. According to Adams, the study showed the technique as a very promising way to cut costs for just 3 lb. of cubes per day to support a cow-calf pair.

Other outlined potential cost-saving supplementation strategies included seeking access to distillers' grains and tailoring the calving season to crop residue availability.

Whatever the technique, the opportunities to incorporate supplements into systems is limited only by a producer's imagination, Adams noted.

“We have a tremendous amount of opportunity with the products that are available,” he said. “We can look at our forage supplies; we can look at the kind of cows we got; we can look at our marketing objectives ... and if we can bring these supplements into play in a way that will meet the cows' needs, we can actually have a lot of flexibility.”

— by Crystal Albers



Don Adams

## ANIMAL HEALTH

### Trichomoniasis

Russ Daly from SDSU began his presentation on trichomoniasis (trich) with a horror story: One producer's heifer jumped fences and eventually infected an entire bull battery with trich. Unfortunately, he said, such a story is an all-too-common possibility.

The organism causing trich, Daly said, is only about the size of the head of a bovine sperm cell. While it's sensitive to extreme heat or cold, bull and cow reproductive tracts are extremely inviting. The organism localizes itself in the penis and sheath, and older bulls are more susceptible. Once a bull is infected, he explained, he's infected for life.

Bulls infect cows with trich during breeding. While animals may not look ill, Daly says the cow's body responds with intense inflammation. If the inflammation spreads rapidly, it can kill the embryo. Most often, the inflammation spreads moderately, resulting in fetus death at 50-60 days; however, if the inflammation spreads more slowly, the fetus can die at 7-8 months of age, resulting in complications for the cow.

While cows, after aborting, usually clear themselves of trich in a few months, this immunity is short-lived, and the cow can become infected again. Trich also results in an extended calving season and can interfere with pregnancy rates and bull fertility.

Since there is no treatment for trich,



Russ Daly

Daly said the best advice is to prevent infection entirely by managing for containment. Any time a new bull enters the herd, there is an opportunity for trich to spread, he explained. The organism is harder to detect in cows since they may only be infected for a short window, so Daly suggested testing every bull at least three times. The first test, he said, will only be 70%-90% sensitive to the virus. After a second test, the percentage grows to 99%, and after a third it becomes 99.98%.

After testing all bulls, Daly suggested producers cull open cows and late calvers, as they may have previously been infected. A third important measure is maintaining strict biosecurity by purchasing only virgin bulls, maintaining fences and preventing commingling of cattle. He also noted that putting an artificial insemination (AI) program in place might be a great option, if feasible.

“Trich is certainly a disease that has been an economic blow,” Daly said. To combat it, he discussed states that have put prevention programs in place. South Dakota has trich regulations that require nonvirgin bulls imported from another state to be tested, and the state has prohibitions against open cows being sold across state lines for breeding. Colorado, he said, has a voluntary certification program for trich-free herds.

— by Brooke Byrd

### Controlling BVD

CSU veterinarian Jim Kennedy is encouraged about the spread of knowledge regarding bovine viral diarrhea (BVD). He's particularly encouraged that it has been producer-driven. Kennedy attributed this to the growing realization that BVD is not just a feedlot-related disease. It also depresses reproductive performance in cow herds, causing abortion, stillbirths or congenital abnormalities.

CONTINUED ON PAGE 122





**Jim Kennedy**

“BVD is a very real issue for cow-calf producers,” Kennedy said.

Current initiatives by the National Cattlemen’s Beef Association (NCBA), American Association of Bovine Practitioners (AABP), the Academy of Veterinary Consultants and state livestock associations are seeking development of effective BVD control programs. Kennedy said objectives include effective vaccination programs and elimination of persistently infected (PI) animals, the most important source of exposure.

Kennedy told attendees there are two distinct types of BVD infections: Transient, or acute, infections occur when the virus is transmitted from one animal to another. Transiently infected animals may show symptoms and then recover, or they may succumb to other secondary infections, such as bacterial respiratory disease. Open cows frequently recover from transient infection. However, cows infected during pregnancy may undergo a loss of reproductive efficiency or may produce the other type of infection — persistent infection — in their unborn calves.

PI animals are the result of fetal exposure to the virus prior to immune system development — between approximately Day 18 and Day 125 of gestation. PI calves may not show outward signs of infection, but they shed the BVD virus profusely.

“Persistent infection never goes away, and these animals shed the virus at thousands of times greater levels

than animals with transient infection,” Kennedy explained.

“If that doesn’t scare you, let’s say you put a PI calf in a pen with 20 uninfected animals and then pull it out after one hour. After just one hour of exposure, all 20 of the other animals will have started to mount an immune response to BVD. That should scare you,” Kennedy added. “We need to eliminate PI animals.”

Kennedy said BVD is economically important to the cattle industry. The cost of infection is estimated to range from \$10 to near \$60 per head for the cow-calf producer, and more than \$7 per hundredweight (cwt.) of gain for the cattle feeder.

Recognizing its importance, six states (Iowa, Nebraska, Wyoming, Colorado, Kansas and Missouri) are initiating BVD control programs, Kennedy shared. New technology for testing blood and skin samples are being used. The high sensitivity and low incidence of error indicates the new testing procedure may be the key to effective BVD control.

— by Troy Smith

### Vaccine Advice

Before North Dakota State University Extension veterinarian Charlie Stoltenow would talk about vaccination programs, he told producers they first need to recognize the importance of nutrition.

“All of my health programs start with nutrition,” Stoltenow told RBCS attendees. “We can’t look at vaccines as a panacea that’s going to protect us. If an animal doesn’t have an immune system, the vaccine can’t work miracles.”

That said, Stoltenow recognized that vaccines are a critical part of health programs and said he likes to refer to them as “risk management.”

So why do vaccines sometimes fail? He shared several reasons, including:

- ▶ the animal is already incubating the disease;
- ▶ passive transfer interference;
- ▶ the wrong vaccine for the condition;
- ▶ the vaccine administered incorrectly;
- ▶ the vaccine experienced temperature abuse or was outdated; or
- ▶ the animal can’t mount an appropriate response.

The animal’s inability to mount an appropriate response is the biggest issue, Stoltenow said. “This may be due to pre-



**Charlie Stoltenow**

existing conditions, the number of doses, inappropriate age of the animal and stressful conditions.”

He emphasized that animals need to receive two doses of a vaccine — especially if it is a killed vaccine. He also stressed that feedlot animals should be vaccinated against infectious bovine rhinotracheitis (IBR), BVD, bovine respiratory syncytial virus (BRSV) and parainfluenza-3 virus (PI<sub>3</sub>). “These are the big four, and they set it up so calves can better kill off other disease threats,” Stoltenow said.

As a tip in treating calves, Stoltenow suggested learning from experience and catching sick animals and treating them early. “The first sign of disease is appetite depression. If we are to the runny nose stage, we are too late,” he says.

In designing vaccination programs for the cow herd, Stoltenow encouraged producers to visit with their state diagnostic lab and identify which diseases are problems in their local area. Depending on your location, he said,

vaccinating for things like leptospirosis may not be necessary, but the anthrax vaccine may be worth considering.

— by Kindra Gordon

