



Last month we published a sampling of synopses to presentations at the 2003 Range Beef Cow Symposium XVIII, which was in Mitchell, Neb., earlier this month. Last month we focused on synopses that related to pasture and feeding management. This month we bring you summaries focused on genetics, breeding, identification and end product targets.

You can listen to an actual presentation by visiting www.rangebeefcow.com, the real-time coverage site sponsored by Boehringer Ingelheim Vetmedica, Inc. Click on the News:Papers:Audio link, then click on the speaker's name. This should pull up the synopsis of the presentation, followed by links to the audio file, the proceedings paper, and the speaker's PowerPoint® presentation if one was available.

If you are worried about download times due to rural connection speeds, call Angie Stump Denton, director of the Web Marketing Department, at (816) 383-5211. Her team can save the audios you are interested in to a CD and mail it to you.

CONTINUED ON PAGE 206

Down to Business Part 2

Four universities pooled resources to provide one of the most useful cowboy gatherings of 2003. API put the information online and provides another sampling in this special section.

Range Beef Cow Symposium XVIII

December 9 - 11, 2003
Scotts Bluff County Fairgrounds Events Center, Mitchell, NE

NEWS : PAPERS : AUDIO

[For video archives, click here](#)

New beef products and how they have helped increase demand for beef
[Sally Atkins](#), Nebraska Beef Council, Kearney, NE

Traceback, verification and identification on the ranch: Big brother or best buddy?
[Jack Whittier](#), Extension Beef Specialist, CSU

Direct marketing of beef: Pro's and con's, do's and don'ts
[C.J. Mucklow](#), Rowell County Ag Extension Educator, CSU



Economically Relevant

Indexes offer means to make simultaneous improvement in economically relevant traits.

by *Shauna Rose Hermel*

Since the late 1970s, the industry has moved from five expected progeny differences (EPDs) to many breeds having more than 15. “There’s no way to really combine all those EPDs to make a good bull selection decision or choose the right replacement heifers that are going to increase the profitability of your breeding program or increase the profitability of your calves in the feedlot,” Colorado State University (CSU) geneticist Mark Enns told attendees of the 2003 Range Beef Cow Symposium.

The assumption has been that the more EPDs we have, the better we can characterize individuals. The problem, Enns said, has been the proliferation of EPDs for indicator traits that don’t relate to economic goals. While indicator traits do help characterize animals, economically relevant traits (ERTs) directly influence either a cost of production or an income associated with the production of a commercial operation.

As an example, Enns cited birth weight as an indicator trait, while calves

born unassisted is the ERT that affects a producer’s bottom line.

To make sense of the EPDs available today, Enns said producers have three options.

- 1) Stay with the status quo. This option relies on producers weighting traits according to their own perceived values as they attend a sale, for example. While it is the easiest option, Enns told producers it is the least accurate.
- 2) Develop a selection index. Enns summarized a couple of selection indexes that have been used successfully to make simultaneous directional change in multiple — and even antagonistic — traits. This option requires a detailed knowledge of costs of production and sources of income and may require the help of a consultant, he said.
- 3) Focus selection on ERTs. This option varies in complexity from just narrowing the number of EPDs one considers to developing value-based indexes based on



PHOTOS BY KIM SCHMIDT

► Geneticist Mark Enns said producers should focus on what affects their profitability and the economic traits of the cow herd when making selection decisions. He said the future of EPDs is the development of economic trait indexes.

ERTs, which again requires a knowledge of costs, income sources and enterprise levels.

“There are ways we can combine economics and we can combine traits into values to help us improve those traits that directly influence our profitability simultaneously,” Enns said.

As part of the National Beef Cattle Evaluation Consortium (NBCEC), CSU has released a prototype of a maintenance feed requirement EPD that is available to all breed associations. Also in the works are a days-to-finish EPD and a stayability EPD.



Editor’s Note: For more on this presentation, visit www.rangebeefcow.com.

Traceability On the Way

Use it to your advantage.

by *Troy Smith*

A national initiative to develop a U.S. Animal Identification Plan (USAIP) has the objective of providing food-animal traceability. Skeptical beef producers view USAIP as an intrusion and an inconvenience. Proponents say the ability to trace individual animals

back through the production chain can be applied to disease surveillance, verification of product origin, food safety assurance, homeland security, value-added marketing and genetic selection for improved beef products.

According to Colorado State

University (CSU) Extension beef specialist Jack Whittier, there is little doubt that U.S. beef producers are going to be asked to stand behind their practices and products more than ever before. A national system of individual animal identification (ID) is coming, and mandatory compliance seems likely. Whittier suggested that producers make the system work to their advantage.

“The issue of individual animal identification for the goal of traceability isn’t going to go away. The train is on the track,” stated Whittier during the 2003 Range Beef Cow Symposium.

“Why not use it for your own benefit?”

According to Whittier, a national ID



Too Much Muscle?

Extension beef specialist considers the benefits and pitfalls of selecting for marbling and muscle.

by Troy Smith

Large premiums for Choice (Ch) vs. Select (Se) carcasses and substantial discounts for Yield Grade (YG) 4 carcasses provide incentive for beef cattle producers to select for carcass traits. University of Nebraska (NU) Extension beef specialist Jim Gosey advised producers at the 2003 Range Beef Cow Symposium to practice balanced, multiple-trait selection for carcass merit and to avoid single-trait selection for either marbling or muscling.

“The difficulty lies in achieving the optimum balance of traits, especially considering the powerful impact of reproduction and production traits on ranch profitability,” Gosey said. “Ranchers should match their cattle to ranch resources first and adjust carcass traits only as much as those resources reasonably allow.”

Gosey warned producers to be aware of genetic antagonisms between traits. Some genes have multiple effects, and change does not occur in a vacuum. Inevitably, other traits are affected. A negative correlation between marbling and leanness illustrates why improvement through selection can be difficult and slow to achieve.



►In this day of age of technology, we have the tools available to make mistakes faster and with greater accuracy than at any time in history, said Extension beef specialist Jim Gosey. He advised producers to practice balanced, multiple-trait selection and to avoid single-trait selection for either marbling or muscling.

Simultaneous change in both traits can be achieved — if selection pressure is applied to both traits.

There is limited research estimating the genetic correlation between carcass traits and reproductive traits. However, studies do suggest that when applying selection pressure for muscling producers should avoid an associated higher age at puberty, lower conception

system can foster marketing opportunities for producers. He cited marketing programs, like Certified Angus Beef LLC (CAB), as examples of where participating producers receive premiums resulting from verification and assurance initiatives.

Traceability also promises to improve access to foreign markets. Japan, a leading export market for U.S. beef, has implemented traceability for its own domestic meat products and favors application of a traceability system for meat it imports from other countries. Implementation of traceability in the Japanese import market may have up to a 6¢-per-pound value to the U.S. beef industry.



The events of recent years have shown how animal diseases, such as bovine spongiform encephalopathy (BSE) or foot-and-mouth disease (FMD), can devastate markets in countries where such diseases have occurred. Whittier said a system of animal ID and traceability

rate, greater calving difficulty and larger mature weight.

“Selection to jointly improve antagonistic carcass traits, like marbling and muscling, within a single breed is difficult,” Gosey said. “However, there are ‘outlier’ or ‘curve bender’ bulls that defy some of the antagonisms between traits, but they are rare.”

Gosey suggested complementarity through crossbreeding, or the matching of strengths of one breed to weaknesses of another breed, as a way to conquer antagonisms between carcass traits. This concept is demonstrated by the improvement in net merit achieved by matching the marbling input of a British breed with the lean muscle growth of a Continental breed.

Developments in DNA marker technology to test for marbling and tenderness genes provide additional tools for including carcass traits in selection programs. Gosey warns that DNA tests explain only a portion of the variation for these traits, but they offer seedstock breeders an option for screening young bulls for further progeny testing. Primarily due to costs currently associated with DNA testing, Gosey doesn't view the technology as a realistic option for commercial operators.



Editor's Note: For more on this presentation, visit www.rangebeefcow.com.

►“The issue of individual animal identification for the goal of traceability isn't going to go away. The train is on the track,” said Jack Whittier, Extension beef specialist. “Why not use it for your own benefit?”

will improve animal disease surveillance programs for U.S. producers.



Editor's Note: For more on this presentation, visit www.rangebeefcow.com.



Target Weights

Recent research findings on target weights for replacement heifers counter current theory.

by Troy Smith

Experts agree that proper development of replacement females is critical to a cow-calf operation. Heifers should be managed to reach puberty early, conceive early in the first breeding season, calve unassisted and breed back early for their second calf. Producers strive to accomplish these goals at the lowest cost possible.

According to Rick Funston, a University of Nebraska (NU) specialist in beef cattle reproduction, producers have been advised to manage heifers to reach 65% of expected mature weight by breeding time. However, Funston told attendees of the 2003 Range Beef Cow Symposium that there is limited research to support this generally accepted guideline.

Recent studies have compared development of spring-born heifers at lower prebreeding target weights (55% and 60% of mature weight) and the effects on reproduction and cow and calf productivity. According to Funston, pregnancy rates for low-gain and high-

gain heifers were not statistically different. However, costs were higher for the high-gain group.

"Average calf birth date, calf birth weight, calving difficulty and calf losses were similar for both groups through three calf crops," Funston said. "Calf gain and adjusted 205-day weights were also similar, indicating milk production was probably similar for both groups."

According to Funston, making sure heifers are of a biological type that matches the environment and ranch resources may be more important than application of high-cost heifer-development programs targeting a critical body weight. This does not discount the importance of adequate nutrition to achieve successful reproductive function.

Noting the considerable interest in using fat supplements in replacement heifer diets, Funston said studies suggest a limited benefit to fat supplementation in well-developed females. Nutritionally challenged heifers have the greatest potential for positive response. The



► Rick Funston, beef cattle reproductive specialist, said pregnancy rates for low-gain and high-gain heifers were not statistically different. However, costs were higher for the high-gain group.

feeding of fat may only be warranted when the cost is comparable to other protein and energy sources.

"More research is needed to elucidate possible mechanisms by which fat supplementation may positively or negatively impact reproduction in developing heifers," Funston added.



Editor's Note: For more on this presentation, visit www.rangebeefcow.com.

Control BVD

BVD has roots on the ranch.

by Troy Smith

Increased incidence of abortion, unexplained calf deaths or congenital defects may be signs of bovine viral diarrhea (BVD). Often thought of as a disease more prevalent in feedlot operations, BVD has roots on the ranch.

According to clinical veterinarian Bob Mortimer, of Colorado State University (CSU), animals infected with BVD may display diarrhea and slobbering fever, but not all infected animals exhibit obvious symptoms. BVD is immune suppressive, making the animal more

susceptible to infection from other diseases. Animals may also be persistently infected (PI) and appear normal while spreading the virus to many other animals.

Mortimer told attendees of the 2003 Range Beef Cow Symposium that less than 4% of U.S. herds are thought to have any PI calves, but 20% of herds with a history of BVD are likely to include PI animals. Along with shedding the virus and exposing herdmates to infection, a PI female that survives to

maturity and enters a breeding herd may produce PI calves. PI bulls may also shed the virus through semen, infecting females and calves they sire.

Herd effects due to BVD are varied and depend on the level of exposure. Mortimer cited evidence that BVD can lower pregnancy rates by 6%. Incidence of abortion may increase by 4%-8%, and live calf losses may increase by 3%-6%.

"When you add up the losses, it's quite substantial. The overall calf crop can be reduced by 10% to 20%," Mortimer said, noting a potential economic effect of a \$15 to \$24 decrease in return per cow annually.

Mortimer advised producers to consider BVD control strategies. All cow-calf producers should have a monitoring plan to prevent



Synch 'Em

A look at the costs and benefits of estrus synchronization tools.

by Corinne Patterson

Estrus synchronization has become a powerful management tool for beef producers, said Doug Zalesky, a manager and research scientist at the San Juan Basin Research Center, Colorado State University (CSU). Along with the use of artificial insemination (AI), estrus synchronization has contributed to the introduction of new sire genetics and has allowed breeders to control breeding and calving seasons.

While research on synchronization has been done for many years, Zalesky reported that only 3%-5% of beef producers use the technology on an annual basis.

Why isn't it widely used in the beef industry? "The two top reasons why beef producers don't utilize synchronization are No. 1 — time and labor restraints, and No. 2 — poor results," he told attendees on Day 2 of the 2003 Range Beef Cow Symposium.

"Because there are so many synchronization protocols available today, understanding what system can be implemented correctly and efficiently

within a given production environment when considering AI, and which system would fit your low-cost management strategy, can be very important," Zalesky said.

Zalesky described some of the synchronization technologies that have been developed. He provided an overview of the synchronization products, including prostaglandin ($\text{PGF}_{2\alpha}$); progestins, such as melengestrol acetate (MGA); and gonadotropin-releasing hormone (GnRH).

Zalesky estimated the cost per dose of these products as follows: $\text{PGF}_{2\alpha}$, \$1.57; GnRH, \$2.50; MGA, \$0.02 per head per day; and CIDR® (controlled internal drug release) insert, \$8.

Recognizing that the costs of these products could vary, Zalesky provided product cost estimates for eight estrus synchronization protocols, along with the conception rates or pregnancy rates obtained using the protocols in research settings (see Table 7 of the proceedings on the symposium Web site).



► Doug Zalesky, research scientist, shared with producers heat synchronization research using CIDR inserts. The CIDR inserts improved estrus synchrony, creating a tighter window of standing heats and higher pregnancy rates.

"In my personal opinion, we don't have enough data to make a cost comparison between the different protocols," Zalesky stated, noting there are more costs to synchronization than product costs.

Researchers need to know how much time, how many man-hours, is needed to apply each synchronization protocol in order to have meaningful cost-comparison data, he added.



Editor's Note: For more on this presentation, visit www.rangebeefcow.com.

introduction to the herd. Herds with a history of BVD should test for the disease and remove all PI animals. Mortimer advised a biosecurity plan involving testing of purchased animals that will be added to the herd.

He warned that vaccination is not effective on animals already persistently infected. Vaccination programs should target fetal protection. Mortimer says modified-live-virus (MLV) vaccines have shown greater efficacy than inactivated or "killed" vaccines.



Editor's Note: For more on this presentation, visit www.rangebeefcow.com.



► Bovine viral diarrhea, or BVD, which has been around since the 1940s, is still a problem today, veterinarian Bob Mortimer told attendees of the Range Beef Cow Symposium. He encouraged producers to have a monitoring/surveillance plan, to test all new herd additions and, in high-risk herds, to have an eradication plan for persistently infected animals.

Other real-time sites

Angus Productions Inc. (API), publisher of the *Angus Journal* and the *Angus Beef Bulletin*, provides real-time coverage of several informative industry events.

- Visit www.4cattlemen.com for coverage of the 2004 Cattle Industry Convention and Trade Show.
- Visit www.BIFconference.com for coverage of the 2003 Beef Improvement Federation (BIF) annual meeting.
- Visit www.angusjournal.com/nationalconference for coverage of the 2003 National Angus Conference.

All three sites are brought to you courtesy of site sponsor Boehringer Ingelheim Vetmedica, Inc.



Selling Beef Direct

Evaluate the pros and cons of direct marketing.

by *Corinne Patterson*

Family members who are removed from the family farm or ranch may have benefited from access to a side or a quarter of beef for many years; however, providing beef cuts directly from the ranch to a select few has grown to a source of extra income for many ranchers who have turned to direct marketing.

Attendees at the 2003 Range Beef Cow Symposium learned about such programs and the pros and cons of starting a direct-marketing business from C.J. Mucklow, Routt County Extension ag educator, Colorado State University (CSU).

The income incentive is a major pro of a direct-marketing program. "Cattle ranching is a commodity-based business in which there are only three ways to

make more money. The first is to raise more beef, which means increasing cow numbers and/or pounds weaned," Mucklow said. "The second is to capture more value per unit by retaining ownership. Lastly, add an enterprise on the ranch that captures money from an existing resource base not presently generating income."

Similar to income from a game-hunting enterprise, marketing beef cuts can fill a niche in select areas. Consumer demand for beef is on the rise, and targeting those desiring consistent beef from a specific program or area of the country may provide opportunity to tap into a valuable marketplace.

Mucklow helped develop Yampa Valley Beef, a \$24-million, direct-marketing program that capitalizes on tourists who come to Steamboat



►To have a direct-marketing plan you must be able to "sell the sizzle," said C.J. Mucklow, Routt County Extension ag educator. This means making your product more than just commodity meat by selling a locale or management practices for raising the product.

Springs, Colo. The Yampa Valley Beef group has offered ski resorts a beef product that is identified with the rural landscape used to attract tourists.

Area restaurants have been able to benefit financially from providing the product, and its beef producers can take pride in their product and their efforts to preserve the land for future generations, Mucklow said.

Range Beef Cow Symposium XVIII

But success has not come without a few lessons. Many mistakes can be learned from, but there are also cons associated with marketing beef direct, Mucklow said. It's a tough market that requires a large initial investment of time, capital and labor.

"You might be way ahead financially by seeking off-farm employment rather than taking time and effort to direct-market beef," he said.

Another perceived risk is verifiable traceback. Consumers will know exactly where the product originated. If they have an undesirable experience with the product or an experience with a product that's proven to be a health concern, Mucklow pointed out, "it may be the processors fault, but it's your label."

After weighing the pros and cons,

Mucklow shared the dos and don'ts. Every new product needs to fill a niche or possess a marketing gimmick that sets it apart from others already in the market. However, he said, making false claims, or claims that cannot be backed up, is a major don't in marketing beef.

It's important to develop a plan for your marketing venture long before the first business transaction takes place, Mucklow cautioned. The business plan will involve many angles of the business, including marketing product, business structure and long-term financial goals. Mucklow warned that a business plan isn't static, but necessary. Yampa Valley Beef didn't develop a business plan when they first started and had to shut down business to do so after almost two years of business.

Developing a good relationship with the processor is also a must, Mucklow said. It's important to consult with a meat specialist when working with the processor and to take that step early in the game, he added.

Mucklow's last advice was to "start small and be able to afford your mistakes."



Editor's Note: For more on this presentation, visit www.rangebeefcow.com.

For more information on Yampa Valley Beef, see "Act Locally" on pages 172-174 of the June/July 2000 Angus Journal and "Good Neighbors" on pages 35-39 of the October 2000 Angus Journal. Both articles are available via a back-issue search by month or the key word "Yampa" at www.angusjournal.com.



For real-time coverage of the 2003 Range Beef Cow Symposium, visit

www.rangebeefcow.com

► proceedings

► audios

► PowerPoint® presentations



Early Weaning Works

Producers share experiences with early and fenceline weaning.

by *Barb Baylor Anderson*

Earlier weaning works, said Harlow Hill, Maddux Cattle Co., and Kirk Laux, Laux Feedlot, both in Nebraska. For the last two years Hill has moved up weaning dates from September to the last week of May and June for calves born between Feb. 1 and the end of April. Laux moved his weaning dates from October/November to July/August.

“The last several years we have had four different groups. Weaning weights range from 250 to 350 pounds.

Finished weights the following April are about 1,250 pounds,” Hill told

attendees of the 2003 Range Beef Cow Symposium.

Hill said he moved to earlier weaning because the operation is geared toward April marketings. Earlier weaning stretches grass to accommodate more cows, makes it easier to move dry cows rather than pairs to pasture and allows cows to put on more weight before winter.

“We have also had to limit-feed all or part of our herd for the last four years because of drought. By having the calves off of the cows, it cheapens the ration considerably,” he explained. “If you wean



► Because of drought, Kirk Laux and his family decided to wean in July/August rather than October/November and to use fenceline weaning to reduce the stress on calves.

early enough, you can take advantage of the calves’ passive immunity acquired from the cow’s colostrum, too, rather than vaccinate. We only vaccinate calves with respiratory distress to clear up problems quickly and cost-effectively.”

Laux said he has a similar strategy. He

Range Beef Cow Symposium XVIII

has been able to reduce the stress on his grass by about two-fifths of an animal unit with early weaning. He also found passive immunity was an advantage, and he deworms his calves. "We try and beat the heat, handle the calves quickly and quietly at weaning. By October or November, we may need to vaccinate."

When it comes to feed, Hill said he likes to provide a weaning ration to cows and calves a day or two before the calves are pulled to get them on feed more quickly. In 2003, calves were weaned on irrigated grass, with the cows in an accompanying drylot fed a short ration of silage. Calves were on the irrigated grass with access to bunks filled with a sweet ration of two-thirds corn gluten and one-third distillers' corn plus trace minerals.

"We kept the cows across the fence for five or six days. Then we herd the cows to native grass or another drylot, depending on drought," he says. "Once the cows are gone, we get another group of pairs and start weaning all over again."

Laux said fresh, clean water and a



► Harlow Hill of Maddux Cattle Co. has moved up the operation's weaning date to May and June. Weaning at this young age has helped the operation harvest in April and stretch grass resources.

supplemental protein source are important. "We feed small amounts numerous times a day to get the calves to the bunk," he explained. "We modify the feedbunks and water tanks to accommodate the smaller calves."

He said the calves finish earlier than

later-weaned calves, and the system provides an overall system gain. Smaller calves are easier to wean and easier to doctor, and it helps get cows ready for winter. "We see less pressure on grass and the potential for a better grade and higher prices," he added.

"Exercising cattle will make them more content and healthy. We keep calves on green grass 30 to 45 days before we move them to the feedlot," Hill added. "This seems to work well. The calves settle in on the feedlot ration and adjust fairly quickly. Early weaning is very successful for our operation. It may not work for everyone, but it helps us meet our goals for April marketing and drought management."



Editor's Note: For more on these presentations, visit www.rangebeefcow.com.

