

# Range Beef Cow Symp

Nearly 600 participants ventured to Mitchell, Neb., to enhance their beef production knowledge.



PHOTOS BY TROY SMITH

by  
**KASEY MILLER**

Practical beef production knowledge was the name of the game at the 22nd Range Beef Cow Symposium (RBCS) in Mitchell, Neb., Nov. 29-Dec. 1. This popular event for cattle producers, known for its reputation of being an excellent educational program, started in 1969 at Chadron, Neb., and is hosted every other year.

Nearly 600 participants traveled this year to Mitchell, dubbed landmark country for its natural and historic landmarks, including Scotts Bluff National Monument, Chimney Rock and original wagon wheel ruts from the Oregon Trail.

The event rotates between Colorado, western Nebraska, western South Dakota and Wyoming. Focusing on beef production issues in the Western states, the symposium regularly attracts a good crowd of cattlemen and agribusiness booth vendors for the three-day event. Commercial displays representing many segments of the industry are an integral part of the symposium. Exhibitors were present this year to introduce new products and discuss their product lineups.

**Mark your calendar:**

**Range Beef Cow Symposium XXIII**

**Dec. 1-3, 2013**

**Rapid City, S.D.**

The Bull Pen Sessions, which this year were at the Gering Civic Center, Gering, Neb., are one of the most popular aspects of the symposium. This is a time for attendees to have considerable discussion with the speakers and an

opportunity to ask specific questions in an informal setting. The majority of symposium speakers on Tuesday and Wednesday were present in the evening following their presentations.

Some of the highlights of the symposium are presented on the pages that follow. For additional coverage, visit [www.rangebeefcow.com](http://www.rangebeefcow.com), the event coverage website compiled by Angus Productions Inc. (API) and sponsored by LiveAuctions.tv. The site features synopses of the speakers, PowerPoint presentations, links to vendors and additional information, and archives to past years' coverages. Be sure to check the website often as presentation audio and video interviews for this year's event will be posted soon.

Karla Jenkins, animal scientist at the University of Nebraska-Lincoln (UNL) and main organizer of the event, says proceedings are available for \$22 at <https://carreregistration.unl.edu/coursestatus.awp?course=11beef1129pa>.

Remember, though, that nothing beats the interaction with other producers and attending the Bull Pen Sessions, so plan to attend the next symposium in person.

The 23rd RBCS will be Dec. 1-3, 2013, in Rapid City, S.D. API's [www.rangebeefcow.com](http://www.rangebeefcow.com) will feature hotel and registration information and the symposium schedule when they become available.

The RBCS is sponsored by the Cooperative Extension Service and animal science departments of the University of Wyoming, South Dakota State University, Colorado State University and the University of Nebraska.

## Challenges for Cow-Calf Producers

Guest speakers during the opening session of Range Beef Cow Symposium XXII discussed ways cow-calf producers can position their operations for future

## Market Outlook for 2012

CattleFax economist Mike Miller offered highlights from the organization's 2012 Annual Outlook and Strategies Meeting. Overall, he said, the markets show a pretty friendly scenario for beef producers, especially with international demand.

Miller mentioned that the national beef cow inventory has declined. He projected 30.2 million head in January 2012, which is down 165,000 from the previous year. He also projected that the number would continue to decline into 2013, and noted that replacement heifer numbers were especially low in beef cattle. On a brighter note, he predicted that 30 million should be the low point, and there should be growth in future years.

Despite the lower cattle inventory, prices have been on a record high. Almost everyone has been pleasantly surprised at increased prices in 2011 in all aspects of the beef industry.

"We do think we're going to be able to hold on to those gains," said Miller, "in fact, even extend those gains for the next couple of years."

He mentioned that the average cow-calf profit is trending up, as incomes and costs have both risen. Would \$200-\$400 per head profit be enough of an incentive to start expanding?

With some work, yes, he posited. This profitability can help expand the beef cow number and the national cow herd.

Good prices don't come without risks. There has been — and will continue to be — much volatility in

the beef industry. 2011 has seen more volatility than any time in history, with beef and corn prices changing almost weekly. Miller urged producers to manage their margins and to not guess on the market. Plan for volatility and risk in the upcoming year.

With strong prices that are foreseeable for many years, profits depend on producers' abilities to be disciplined and to manage increasing risk, he said. "Remember, increasing prices don't equal increased profits."

**International opportunity.** A large opportunity for the beef industry lies abroad, Miller said, explaining that exports increased by 23.2% from 2010 to 2011. He said he anticipates another 10.4% increase in 2012. The beef industry has enjoyed the growth, but still doesn't have full access to all markets, which means there is more opportunity for export expansion.

"Long-term, if you think about our industry's place in the global beef market, we're still the leader," Miller concluded. "Even though we've seen our overall supplies decline, we are going to be in a position, at some point here in the next several years, to stabilize the overall size of the beef cow herd and grow."

"There are a lot of bullish things going on outside the United States from a demand standpoint that we still believe we are going to be able to capitalize on in the next 5, 10, 15 years."

— by **Kasey Miller**

# osium Success

success. Setting the stage for following presentations, University of Nebraska Professor Emeritus Ivan Rush outlined some of the challenges to producer profitability.



Political influences and economic drivers raise questions about land use in the future, said Ivan Rush.

Rush pointed to the continuing decline in the U.S. beef cow inventory. He said cow numbers have decreased by a half million head in the last 10 years in the four states (Nebraska, Colorado, Wyoming and South Dakota) comprising the symposium's target area. That presents opportunity for producers still in the business, but there are fewer players actively engaged.

"Cattle prices are good," said Rush, "but we need every bit of it to counter increased costs."

Rush cited increased use of corn for ethanol production, creating competition for use as livestock feed. He noted the related shift of former hay and pasture acreage to corn production, which leads to higher forage costs. The value of rangeland is increasing, making it increasingly difficult to pay for by grazing cattle. Rush said political influences in addition to these economic drivers raise questions about land use in the future.

"We're shifting to placement of heavier feeder cattle in feedlots for shorter feeding periods. Most likely, growing cattle to heavier weights (prior to placement) will take some forage away from cow herds," said Rush. "That creates some conflict."

Rush said the growing price spread between Choice and Select beef also raises the question of whether the industry has become somewhat complacent about quality.

The threat of increased government regulation, stemming from concern over environmental impact, animal

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care and animal rights, will also present challenges. Rush advised producers to be involved in influencing the decisions that will affect their businesses and their lives.

“Still,” Rush stated, “I’m convinced that, by using sound science, we can continue to produce a super product for consumers.”

— by *Troy Smith*

the largest cow herd, but the U.S. does produce the most beef. So the window of opportunity is pretty good for the U.S.”

Globally, Robb shared that the cow herds in Mexico, Argentina and Russia are still shrinking, while the cattle inventories in Canada and Australia are beginning to stabilize.

Robb said projections for the U.S. cow herd inventory are 30 million head on Jan. 1, 2012, which is down 1.6% from a year ago. He called the drought in the South a “game changer” that has contributed to this declining inventory, while high crop prices have also influenced inventory.

“Heifers held as beef cow replacements on July 1 were down 4.5% from a year ago ... and cow slaughter has been huge,” Robb reported. “We need to add 300,000 head to stabilize the U.S. herd, and even more than that to grow it.”

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## Cow Inventory Presents Opportunity

“There is a heck of an opportunity to make money in this business like we haven’t seen in a long time,” Jim Robb told attendees of RBCS XXII. Director of the Denver-based Livestock Marketing Information Center (LMIC), Robb noted that there are several external factors influencing the industry, but despite the recent recession, he is optimistic for beef’s future.



Calf prices have been volatile, LMIC’s Jim Robb said, adding that he anticipates record-high prices ahead, which will put cow-calf producers in the driver’s seat.

The 2008-2009 recession was the worst economic recession since the Great Depression, Robb shared. “Things have changed in the consumer picture. People used to brag about their spending and debt. Now, they have cut up their credit cards and become astute buyers.”

“People are saving more and not spending as much,” he added. “Things have changed; that’s a reality.”

But, Robb added, the economy is slowly recovering. For the economy’s big picture, he pointed to global factors.

“There will be one-third more people by 2050,” Robb said, noting that India and China will be the top two countries in world population, with the United States being third. “To meet the basic needs plus the growing incomes of this increased population, animal-based product consumption will double by 2050.”

“That makes one more optimistic,” he said, adding, “We’ll need more of everything. We’ll need more grain and fertilizer to produce more animal protein, and we will need to do it more efficiently.”

Currently, the United States is the largest beef-producing country in the world, Robb said. “That’s a pretty good position to be in. We don’t have

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Based on these trends, Robb said, “This is not the cyclical industry it was 10, 20 or 30 years ago. The beef cycle is still in a downward trend.”

He added, “Historically, many producers made management plans by where we were in the cattle cycle. The cycle is still here, but it is not the economic

driver it was. It’s time to bury the cattle cycle.”

The nation’s cow herd is declining, and that trend will probably continue in 2012, Robb noted. “This means 2015 is the first opportunity to increase beef production in the U.S.”

Going forward, Robb noted that calf

prices have been volatile, but he anticipates record-high prices ahead, which will put cow-calf producers in the driver’s seat. He noted that heavy steers and cull cows are also setting new highs.

Because of the low inventory and the increasing demand — especially globally — Robb said he anticipates the cost of

replacement cows and bulls will increase — possibly by as much as \$500 per cow-calf pair in the next year.

“Looking ahead, cow-calf returns are very positive, but you need to forget the cattle cycle,” Robb concluded. “Sound business practices will be required, and mistakes could be costly. Cattle producers who are adaptable and flexible can make money.”

— by *Kindra Gordon*

**Implications of the Ethanol Industry for Cow-Calf Producers**

Kansas State University (K-State) ag economist Ted Schroeder said he came neither as a proponent nor an opponent of the ethanol industry. As an observer, however, he said he believes the long-term result of demand-driven ethanol production from corn is a smaller, restructured beef industry that receives higher prices for beef and cattle.



“A \$1-per-bushel increase in the price of corn results in about a 15% to 20% increase in hay price,” explained K-State’s Ted Schroeder. “For the cow-calf producer, that means the annual cost of maintaining a cow increases by about \$15.”

According to Schroeder, there is no doubt that expanded ethanol production has resulted in increased costs and reduced revenue for cow-calf producers — in the short run. With competition for supplies, the price of corn has increased. Forage prices increased, too, as more acres are allocated to growing corn.

“A \$1-per-bushel increase in the price of corn results in about a 15% to 20% increase in hay price,” explained Schroeder. “For the cow-calf producer, that means the annual cost of maintaining a cow increases by about \$15.”

The cost of raising replacement heifers also increases with higher grain and forage prices. In addition, prices received for feeder calves decline because there is reduced demand by feedlots faced with higher costs of gain. Schroeder said that same \$1 increase in corn price, and associated increase in hay price, means feeder buyers will likely pay \$60 per head less for a 750-pound steer.

According to Schroeder, the long-term adjustment to reduced profitability is a contraction of the nation’s cow herd. The least profitable producers are likely to exit the industry, and the remaining more-profitable producers are likely to

become larger. Their profitability may then increase when, because of fewer overall cattle numbers, demand drives prices for cattle and beef higher.

Asked what can be done to alter the course of events, Schroeder said challenging government policy supporting ethanol production (import tariffs, blenders' credits and renewable fuel mandates) probably wouldn't make much difference.

"I wouldn't expect much success. Instead, I advise investment in technology and management strategies that improve beef production efficiency that helps offset higher costs," said Schroeder. "But I'd hang most of my hope on expanding global demand for U.S. beef."

Growing consumer markets for beef can increase industry revenue by taking advantage of North America's comparative advantage for producing high-quality beef. Growing demand for the product, said Schroeder, is an effective way to offset increased production costs.

— by *Troy Smith*

congressional representatives and senators to register comment before the comment period ends Dec. 1.

On the positive side, Johanns praised the recent adoption of trade agreements with Japan, South Korea and Colombia. The agreements, he said, should create new jobs and increase access to markets for U.S. beef.

Johanns said the biggest challenge ahead is reining in government spending. He noted how, as governor of Nebraska, he had to work with legislators to balance the state budget.

"What a remarkable concept — a balanced budget," stated Johanns, saying that's what is needed at the federal level.

"We have to make tough choices and rein in spending. We can no longer afford to kick the can down the road."

— by *Troy Smith*

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### **Government Policy Affecting the Cattle Industry**

Kicking off the opening session of RBCS XXII, U.S. Senator Mike Johanns (R-Neb.) spoke to the audience by Internet transmission from Washington, D.C. The senator addressed several public policy issues and expressed concern over efforts by government agencies to impose excessive regulation on agricultural producers.

Johanns mentioned specifically USDA's attempt to impose broad regulation, through the proposed rule by the Grain Inspection Packers & Stockyards Administration (GIPSA), which could hinder marketing opportunities for cattle producers.

"It went too far," stated Johanns. "But Congress has said to USDA that the proposed rules went beyond the intent of Congress."

Johanns also lamented the "mixed signals" coming from the Environmental Protection Agency (EPA) regarding regulation of farm dust. It created much uncertainty over the agency's true intentions. Threatened with proposed legislation that would limit its regulatory power, explained Johanns, the EPA finally clarified its position, saying it will not try to regulate farm dust.

Johanns cited other examples of regulatory overreach, including attempts to broaden the definition of "waters of the United States," which might make farm ponds and stock tanks subject to regulation by the Corps of Engineers. Another proposal related to child labor regulations promised to restrict the ability of young people to work part-time on local farms and ranches.

The latter proposal, said Johanns, might prohibit farm and ranch youth from helping work cattle or engaging in activities associated with 4-H and FFA. He urged producers to contact their

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### Unit Cost of Production

Only about 15% of beef producers know exactly how much it costs to produce a pound of weight on a calf or to put up a ton of hay, said Aaron Berger, extension educator with University of Nebraska-Lincoln (UNL) Extension. While the accounting aspect of cattle production is

generally not the most appealing, he says it is necessary and an important part of the ranching business.

He also said the right mindset is important. Ranchers must go into their endeavors with the idea that they can be profitable, and calculating unit cost of production (UCOP) can help with that.

Berger quoted Dennise Bakke saying, "Profits are to business as breathing is to life. Breathing is essential to life, but not the purpose for living."

Four characteristics of profitable ranches, Berger said, are:

- 1) low levels of investment;
- 2) average levels of production;

- 3) low level of annual cost; and
- 4) above average marketing.

Knowing the UCOP, the ratio of total costs divided by total product produced, is an important tool.

Berger said there are two types of cost, direct and indirect, and it is important to consider both types. Because you can't manage what you don't measure, he recommended that ranchers keep records throughout the year. They don't have to be complicated, but they do need to be accurate and thorough.



Knowing your UCOP gives you power, especially in budgeting, evaluating inputs, evaluating enterprises and entities, and marketing and risk management, said UNL's Aaron Berger.

"Almost every decision made on the ranch affects the UCOP," says Berger.

Every direct cost dollar put into those cows should return more than a dollar.

He suggested breaking the ranch into enterprises, because a general overview of finances isn't detailed enough to know where money is being made and where it is being lost.

Berger did warn of challenges of enterprise analysis, including:

- how to break out and allocate costs;
- variations in production/expenses can skew results, especially for one year; and
- eliminating an enterprise won't always eliminate all the costs associated with it.

Despite these challenges, knowing the UCOP gives a rancher power, especially in budgeting, evaluating inputs, evaluating enterprises and entities, and marketing and risk management.

For help calculating your UCOP, Berger suggested looking into Ranch Management Practicum schools in the region that offer in-depth education and practice calculating UCOP and enterprise analysis. Information can be found at <http://RanchPracticum.com>. There are also spreadsheets available at <http://hpranchpracticum.com>. Berger also suggested using North Dakota State University's Cow Herd Appraisal Performance Software (CHAPS), found at [www.chaps2000.org](http://www.chaps2000.org).

"Ranch managers who know the UCOP numbers for ranch enterprises and understand the interaction between input costs and production are able to implement strategies to help them

effectively manage resources to meet both business and personal goals,” says Berger.

To view the PowerPoint accompanying Berger’s presentation, visit the newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

— by Kasey Miller

### The Future Structure of Beef Production

Tom Brink thinks owning beef cows might be a good idea, for the present and into the future. Formerly with CattleFax and now associated with JBS Five Rivers Cattle Feeding, Brink shared his observations regarding structural changes occurring in the U.S. beef supply chain. He called the current situation unique in the history of the beef industry.

Beef demand is growing, while supply is shrinking. Prices are rising and showing no sign of stopping, despite reaching record highs this year. Brink said he thinks cow-calf producers may, during the next five years, see some of the best profits they have experienced in decades.



Stocker operators have been having a lot of fun, thanks to a 10-year run of profitability, said Tom Brink.

Stocker operators, said Brink, have been having a lot of fun, thanks to a 10-year run of profitability. High corn prices have increased costs of gain in feedyards, resulting in increased placement of yearlings and decreased demand for calves. Smaller price spreads between calves and yearlings have resulted in more favorable purchase-to-sale relationships for the stocker segment. In regions where byproduct feeds are abundant, their use has helped stocker operations hold down production costs.

“It’s an advantageous situation for the stocker segment,” said Brink, calling it the only cattle segment that is growing, as some feedyards and cow-calf operations have shifted to stockers. “If you can put 200 pounds (lb.) on a calf for less than \$1.10 per pound, it can be profitable,” he added.

Brink said it is likely that yearling placement will continue to increase. He looks for calf placement to decline by 20% during the next couple of years, with yearlings weighing 750 lb. or more comprising nearly half of all feedyard placements.

That could make it more challenging to maintain beef marketing programs

tied to ranch of origin, since more calves may be purchased and grown by stocker operators, rather than going directly to feedyards. Brink said breaks in the linkage between packers, feeders and cow-calf producers, along with relaxation of animal age restrictions associated with beef export markets, could diminish opportunities

to garner premiums for age and source verification.

But Brink thinks cow-calf producers can expect good times, provided their cost structures are favorable and they can sell calves at prices equal to the market average or higher.

“To me,” stated Brink, “it seems like a

pretty good time to own the factory.”

To view Brink’s PowerPoint, visit the newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

— by Troy Smith

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### Growing Options for Weaned Calves

As the days of “cheap corn” become a thing of the past, the cattle industry must find new options to economically background feeder calves prior to feedlot entry. UNL animal science professor Terry Klopfenstein highlighted many of those

alternatives during his presentation at RBCS XXII.

“There are great opportunities for retaining calves to make money out of them,” Klopfenstein said. “The goal is to be better than average.” He shared seven important areas for producers to consider as they design a backgrounding

plan for their individual operation. The list includes:

1. Match cattle to the system you have available. Klopfenstein posed the question, “What fits your resources?” He emphasized that it is a myth to always assume forage gains are cheaper than feedlot gains. He shared data that showed



Terry Klopfenstein shared opportunities for retaining calves profitably.

cheap background gains — on forage — lead to expensive feedlot gains. But there are differences in efficiency and the cost of gain. Thus, Klopfenstein says, “It is essential to look at the entire system before drawing conclusions about cheap backgrounding gains.”

2. Make effective use of grazed forage. As an example, Klopfenstein urged producers to consider the cost of harvesting and feeding forage vs. grazing forage.

3. Maximize use of grazed cornstalks. “If available this can be a tremendous resource that can be complemented by feeding byproducts,” Klopfenstein said.

4. Use implants and ionophores.

5. Make strategic use of byproducts for protein and energy supplementation. Ethanol co-products can be especially cost-effective to minimize supplement costs, he pointed out.

6. Optimize pasture management for good cattle gains. Of this, Klopfenstein emphasizes considering the quality of the forage and the time on the forage.

7. Sell high. “Be aware of the month you are selling and how you are doing that,” Klopfenstein concluded. He said it is a myth that we can all calve in the spring and produce 1,000-lb. yearlings the next fall. Thus, he said there is a need for backgrounding, particularly on forage, to help supply continuous demand for feedlot replacements.

To view Klopfenstein’s PowerPoint, visit the newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

— by Kindra Gordon

### Cow Size & Expenses

It is commonly understood that cows are getting bigger. In a presentation at RBCS XXII, South Dakota State University (SDSU) animal scientist Ken Olson said indicators, including the shift in expected progeny difference (EPD) genetic trends for animal weights and direct comparison of cow weights at the USDA Meat Animal Research Center (MARC) at Clay Center, Neb., support the assumption.

Olson said the old rule of thumb suggesting similarity between mature cow weight and live harvest weight of

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progeny also indicates cow size is trending higher. Again citing MARC data, Olson said the average cow weight for three popular British breeds and four Continental breeds is nearly 1,400 lb. However, contrary to commonly held perceptions, cow size for British breeds is a bit bigger than that of Continental breeds (see Fig. 1).

It is a fact, said Olson, that nutrient requirements increase as the size of an animal increases. However, nutrient requirements increase more directly as a function of body surface area, rather than body weight. So, nutrient requirements, in terms of net energy for maintenance ( $NE_m$ ), rise as a function of body weight

to the  $\frac{3}{4}$  power. Accordingly, explained Olson, a 1,400-lb. cow's requirement is about 11% higher than a 1,200-lb. cow's, even though she is about 16% heavier.

"To pay her feed bill, a bigger cow has to produce a bigger calf. For every 200-pound increase in cow mature weight, she has to produce 50 pounds more



Extension specialist Ken Olson considered the cow side of producing 1,000-lb. feeders.

weaning weight," said Olson, noting that higher milk production also increases nutrient requirements and demands a little additional weaning weight in return.

Olson said cow-calf producers must consider whether cow biological type (size, growth potential and milk production) match available forage resources for grazing. If cows are too big, they will struggle to maintain acceptable reproductive rates unless additional harvested feed is provided. The cost of that feed could mean even more pounds of weaned calf would be needed to pay the bill.

**Fig. 1: Mature cow weights**

<b>Breed</b>	<b>5-year-old wt., lb.</b>
Hereford	1,419
Angus	1,410
Red Angus	1,409
Simmental	1,404
Gelbvieh	1,323
Limousin	1,391
Charolais	1,371

"Bigger cows may not fit limited range resources and certainly must wean a bigger calf," concluded Olson. "They will probably require more management, such as improved grazing management, strategic supplementation and adjustment of calving and weaning dates."

To view Olson's PowerPoint, visit the newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

— by Troy Smith

**Seeking Efficiency in the Cow Herd**

How should feed efficiency data be used for the cow herd? That was the question researcher Andy Roberts addressed during RBCS. Roberts is a research animal physiologist with the USDA-Agricultural Research Service (ARS) at the Fort Keogh Livestock and Range Research Laboratory in Miles City, Mont.

Roberts got the audience's attention when his opening remarks questioned if feed efficiency data should be used for the cow herd. Roberts pointed out that current measures of feed efficiency — such as feed conversion, gain-to-feed

ratios, residual feed intake and residual gain — may not be the best factors to determine cow efficiency.

“Weight gain is not the critical output in cows,” he pointed out.

Beef can’t compete with other species on a 1:1 basis, he added. “We need to realize that and put it in proper perspective.”

Rather than look at feed efficiency, he suggested cow longevity — reproductive rate — may be a better measure for cow efficiency, saying, “Lifetime production becomes important.”



Andy Roberts questioned whether feed efficiency should be used for analyzing the cow herd.

Roberts went on to explain that he questions using current measures of feed efficiency for cow efficiency because range settings are much more varied than finishing settings where harvested feedstuffs are fed. He pointed out that seasonal and annual variations in quantity and quality of forage can result in greater differences between biological and economic efficiency in the cow-calf phase compared to other sectors.

As an example, Roberts shared that cows that consume more calories during the growing season and gain sufficient weight to exist on less harvested feed inputs during winter may require less total economic input than cows with greater biological efficiency that consume less during the growing season but require more calories from harvested feed later.

While researchers continue to address the efficiency question, Roberts suggested cow-calf producers focus on available management strategies to improve efficiency in their herds.

“Match genotype and calving to the environment you are in,” he stressed. “That influences cow efficiency more than anything.”

To see Roberts’ PowerPoint presentation, visit the Newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

— by Kindra Gordon

Whittier discussed the terminology of genomics and explained how samples of an animal’s DNA are tested or evaluated for SNPs (single nucleotide polymorphisms) known to be associated with genes influencing the expression of particular production traits.

According to Whittier, two primary

companies have technology to test for genetic defects, parentage, coat color, horned/polled and genetic merit for performance traits such as carcass tenderness, marbling, yield grade, ribeye area and others.

Whittier reminded the audience that EPD values, used for at least 25 years

to evaluate an individual’s genetic merit, are based on the actual performance of individual sires and their progeny. The progeny testing important to collecting data for calculation of EPDs is both time-consuming and expensive, costing up to \$25,000 per bull. Whittier said genomic

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## Genomics for the Rancher

CSU Extension beef specialist Jack Whittier offered a rancher’s “primer” on genomics — the study of genes and their function — and explained how application of the science is providing modern tools for genetic improvement through seedstock selection.

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data, derived from sampling DNA and evaluating it for gene markers, is now being integrated with traditional EPDs, resulting in marker-assisted EPDs (MA-EPDs) or molecular breeding values (MBVs).



Genomics may provide a more cost-effective means of predicting genetic value, said Jack Whittier.

Whittier likened the application of these predictors of genetic merit to the application of more rigorous analysis of nontraditional player statistics in Major League Baseball, as depicted in the film, *Moneyball*.

“With the development of genomics, predictors like molecular breeding values for economically relevant traits may allow cattle producers a better way to identify valuable animals, using ‘player statistics’ coupled with DNA markers,” said Whittier. “New tools, such as genomics provide a new method to gain enhanced genetic information without the time and expense required to test a large number of progeny.”

To view Whittier’s PowerPoint, visit the newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

— by Troy Smith

As examples, Spangler pointed to the American Angus Association, which has been including genomic predictions into EPD calculations to produce MA-EPDs for a growing number of traits since 2009. The American Hereford Association is also on the verge of releasing a MA-EPD, and Spangler said he anticipates

other breeds will soon follow.

Going forward, Spangler emphasized, the adoption of a genomic prediction must be centered on the gain it offers in EPD accuracy. That is the benefit — getting more information on animals at a younger age, which, in turn, leads to faster rates of genetic change, he explained.

Spangler noted that it is often questioned whether genomics data work. He said the real question to ask is, “How well do they work?” He said the answer to that question is related to how much of the genetic variation the marker test explains.

MA-EPDs by themselves are not the

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## Implementing Marker-Assisted EPDs is the Next Step

“Genomics information is here, and it works,” UNL beef geneticist Matt Spangler said as he discussed the implementation of MA-EPDs in the United States.

Utilizing genomics for identifying genetic defects and parentage testing has allowed producers to test and find carriers and remove them from the breeding population, Spangler noted. The next phase of utilizing genomic information is for more complex trait selection. Collecting DNA information early in a calf’s life allows the opportunity to get a better picture of its genetic potential.

“For the seedstock breeder especially, genomic data provides an opportunity to make faster genetic change,” Spangler stated.

He acknowledged that when genomics first came to the marketplace, the information presented some confusion and a “jumble of information” for producers. But, marker information is now being incorporated into EPDs, which is helping bring the genomics data to the industry.

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silver bullet, Spangler emphasized. They need to be augmented with traditional EPD information. He reemphasized that genomics data primarily add accuracy to existing EPDs, particularly on young animals.

“When you genotype animals,” he explained, “the accuracy will always go up,

but the EPD can go up or down because more information is being added to the EPD.”

“If the EPD accuracy is already 0.5 or 0.6, then it doesn’t impact accuracy as much,” he added.

In the future, Spangler said he anticipates new traits in the genomics

area, such as healthfulness of beef, disease and tenderness. To this effort, he said continuing to collect phenotypes is critical, and predictions will continue to improve as more animal information is collected.

“We have more technology available to use in beef cattle than other species, and we probably use it the worst,”



The adoption of a genomic prediction must be centered on the gain it offers in EPD accuracy, Matt Spangler said.

Spangler said in closing. He encouraged producers to utilize new technology so as not to leave money on the table. Spangler suggested that includes all the tools — from crossbreeding to EPDs to genomics.

“The fundamentals are still in place,” Spangler told commercial bull buyers. “Use EPDs because genomics information is included in them, but pay attention to accuracy.”

To view Spangler’s PowerPoint, visit the newsroom at [www.rangebeefcow.com](http://www.rangebeefcow.com).

— by Kindra Gordon

**Capturing Added Value for Calves**

Creating value in a calf crop seems simple enough. You breed good cattle and manage them well. Then, you market the increase. Well, it might not be quite as simple as it seems. According to Burlington, Colo., cow-calf producer and beef industry writer Troy Marshall, that third step can be downright difficult. Speaking to fellow cow-calf producers gathered for RBCS XXII, Marshall shared his thoughts on creating and capturing added value.

Marshall noted how excess capacity in U.S. feedyards and a short supply of feeder cattle means there is plenty of competition among willing buyers. It pushes prices higher. Marshall reminded his audience that it also creates a marketing challenge for cow-calf producers striving to market added-value calves. Because buyers really need cattle and bid accordingly, there is less price differentiation — less premium for cattle that truly represent more value.

“I believe we are going to see price spreads widen out again,” stated Marshall, predicting that grid-pricing of fed cattle and demand for program cattle — those that fit specific retail beef programs — will reward producers who create and market calves with added value. He cited instances where “program cattle” could fetch premiums of up to \$100 per head.

“If you do a good job, there will be potential to capture those premiums,” he added.

Marshall emphasized the importance of incorporating genetics representing

feed efficiency, high carcass weight and quality grade. In addition to good nutrition, he called management of health important to creating value, due to their effect on performance and carcass merit.

Marshall said increased use of artificial insemination and a short breeding season create greater uniformity in a calf crop. Timing of calving is important, too, when targeting a marketing window.

While the value of age verification may be going away, Marshall said he believes source, process and genetic verification will continue to matter. Buyers understand that differences in cattle exist, but added value can be hard to identify. Documentation lends credibility.



While the value of age verification may be going away, Troy Marshall said he believes source, process and genetic verification will continue to matter.

Marshall urged producers to also put some effort into aggressively marketing calves, saying it deserves at least as much time and effort as the routine duties such as opening up frozen water tanks in winter.

“Do you spend 20 to 30 hours a year just chopping ice?” asked Marshall. “Could you put that much time toward better marketing?”

According to Marshall, better marketing requires a systems approach. It means working with people up the chain of production. It probably means giving up a little independence and coordinating efforts with those people. But he advised care when choosing partners.

“I believe this is becoming more of a people business and building relationships is critical,” added Marshall.

— by Troy Smith

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**Editor's note:** The biennial Range Beef Cow Symposium was hosted Nov. 29-Dec. 1 at the Mitchell Events Center, Mitchell, Neb., by the cooperative extension and animal science departments of the University of Nebraska-Lincoln, South Dakota State University, Colorado State University and the University of Wyoming. Comprehensive coverage of the event is provided at [www.rangebeefcow.com](http://www.rangebeefcow.com), an event coverage site provided by Angus Productions Inc. (API), publisher of the Angus Journal and the Angus Beef Bulletin.

