ARSBC 2012: December 2012 • Sioux Falls, S.D.

Focusing on Reproduction

ARSBC symposium takes an in-depth look at reproductive strategies in beef cattle.

Reproductive strategies were the focus of the Applied Reproductive Strategies in Beef Cattle (ARSBC) symposium Dec. 3-4, 2012, in Sioux Falls, S.D. Twenty-eight presentations by 27 speakers from across the United States and Canada shed light on topics ranging from practical management considerations to the latest research findings to how to profit from what is known. The program was hosted by the Beef Reproductive Task Force, South Dakota State University (SDSU) and iGrow, in cooperation with the University of Missouri Conference Office.

Your *Angus Journal* staff was on hand to provide full event coverage — including summaries of the presentations, proceedings, PowerPoints, audio and more. We've compiled the summaries in the following section, but we encourage you to visit the Newsroom of the Sioux Falls 2012 meeting available through *www.appliedreprostrategies.com,* or go directly to *www.appliedreprostrategies.com/2012/SiouxFalls/newsroom.html.*

LiveAuctions.tv provided live streaming video from the conference and DVDs will be made available. Watch future issues for details.

For more information about the conference, contact George Perry, SDSU beef reproductive specialist, at george.perry@sdstate.edu or 605-688-5456. For more information about API's online coverage, contact Shauna Hermel, editor, at shermel@angusjournal.com or 816-383-5200.

ARSBC 2012: Profiting from Reproductive Technology

A Commercial Producer's Perspective

South Dakota cattleman John Moes shares how he has incorporated estrous synchronization into ranch operations.

by ***Kasey Miller,*** *associate editor*

According to the scientific community, by using reproductive protocols, commercial cattlemen can improve profits. John Moes of Moes Ranch and Moes Feedlot LLC, Florence, S.D., said he can attest to that. He explained his operation's use of reproductive methodologies to nearly 350 beef producers at the 2012 Applied Reproductive Strategies in Beef Cattle (ARSBC) symposium in Sioux Falls, S.D.

Since 1987, the Moes Ranch has increased from 20 cows to 250. Moes started using artificial insemination (AI) in 1992. He explained that all cows get one chance to conceive to AI, and only about 50 late cows go with the bulls.

Moes began synchronizing heifers in the mid-1990s, and started synchronizing 2-year-olds in 2010. For the past four years, the ranch has used a PG 6-day CIDR® protocol followed by heat detection and timed AI of nonresponders. Only about 5%-10% are time-bred. The protocol achieved a 76% AI conception rate in 2009 and a 63% AI conception rate in 2010-2012.

The ranch develops 50-60 replacement heifers each year and has found that, through several different management options, having heifers at a lighter weight didn't hurt conception rates, Moes said. He explained that at 970 pounds (lb.), 90% of the heifers had reached puberty.

In the mature cows, since using CIDRs and gonadotropin-releasing hormone (GnRH), despite environmental challenges, conception rates have increased.

Reproductive rate is only part of the equation. How do the calves perform? Forty-seven 2008-born steers posted an average yield grade (YG) of 3.2, backfat of 0.47 inch (in.), ribeye area of 13.8 square inches (sq. in.), with 76% grading low-Choice and 23% grading Select. One hundred sixty 2011-born calves averaged 2.93 YG, 0.56 backfat, 12.5 sq. in. ribeye area, with 3% Prime, 73% Choice [including 27% *Certified Angus Beef*® (CAB®)] and 24% Select. His latest mixed load graded 98% Choice and 47% CAB.

You can't keep enough records, Moes stressed. "You really have to push the pencil to what we're looking at anymore." Everyone's situation is different, and records will reveal your situation. He recommended working with a university to use new reproductive technology.

Since implementing estrous-synchronization protocols, his operation has improved conception rates, increased longevity, produced more uniform cattle and increased overall quality.

► **Since implementing estrous-synchronization protocols, South Dakota cattleman John Moes says his operation has improved conception rates, increased longevity, produced more-uniform cattle and increased overall quality.**

Moes spoke during Monday's ARSBC session focused on how to profit from reproduction. Visit *www.appliedreprostrategies.com/2012/SiouxFalls/newsroom.html* to listen to his presentation and to view his PowerPoint slides.

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A Seedstock Producer's Perspective

Minnesota cattleman Danny Schiefelbein shares how advanced reproductive technologies have improved profitability for his family's and his customers' operations.

*by **Kasey Miller,** associate editor*

Use of advanced reproductive technologies helps keep a large family operation and its customers in business to achieve three goals, said Danny Schiefelbein of Schiefelbein Farms, Kimball, Minn. Breeding about 1,000 females each year, the family seeks to:

- provide for the family, giving an option for family members to be involved;
- be profitable; and
- create a quality product.

He likened the operation's genetic strategy to that of a National Football League (NFL) franchise. There are core players (in his case, the 700 spring-synchronized cows), and there are the high-dollar draft choices, which are the popular, but unproven bulls. The beauty of artificial insemination (AI), he explained, is that it lets them avoid drafting a new unproven bull, and allows them to use the high-accuracy, proven "Peyton Mannings" to improve the genetics within their herd. This bull selection has helped them maintain birth weights, increase weaning weights and improve carcass quality, all of which help their commercial customers, too.

Another advantage of using AI sires is that it helps increase the marketability of their cattle. Schiefelbein likened it to how a department store uses well-known brands to market their own products. Schiefelbein said their bull book is enhanced in much the same way.

Embryo transfer (ET) helps on different fronts. He said that they look for the "Heidi Klum" of their cows and match those cows with the "Tom Brady" of bulls and produce a genetic super-animal. The operation's bottom-tier cows that perform well reproductively serve as recipient (recip) cows. This pushes up the overall quality of the operation, he explained, by having more calves out of the better individuals. Cooperator herds also provide a source of recip cows. Both herds benefit by marketing calves for more than commodity prices.

The family manages a 2,000-head feedlot, Schiefelbein shared. By feeding customers' calves, they can collect the data to back up the value of their genetic program. He gave as an example data from three different loads of calves to show how Schiefelbein genetics work for their commercial customers. The first load reached 97% Choice, 50% *Certified Angus Beef*® (CAB®) and 50% yield grade (YG) 4. The second load reached 100% Choice, 67% CAB and 0% YG 4. The third load reached 100% Choice, 73% CAB and 0% YG 4. The loads were from three different customers. Reproductive technology has helped increase consistency.

"These kind of forums are a great place to learn new things," Schiefelbein said. "You can say all you want about genetics and how they can be profitable, but there are so many other factors that affect the bottom line — of course, the market price swings, nutrition, herd health. All these things you have to take into consideration to help navigate through the tough times, and you will actually excel during the positive times."

Schiefelbein spoke during Monday's ARSBC session focused on how to profit from reproduction. Visit *www.appliedreprostrategies.com/2012/SiouxFalls/newsroom.html* to listen to Schiefelbein's presentation and to view his PowerPoint slides.

►By feeding customers' calves, Schiefelbein Farms can collect the data to back up the value of their genetic program, Danny Schiefelbein explained.

Hitting the Quality Target

Reproductive technologies help hit the high-quality target and can put dollars in producers' pockets.

*by **Kasey Miller,** associate editor*

2012 was another record year for Certified Angus Beef LLC (CAB), selling 811 million pounds (lb.) of *Certified Angus Beef*® (CAB®) brand product, said Larry Corah, vice president of CAB. However, shrinking cow numbers pose a challenge. More product must be produced from fewer cattle. That's another reason why reproductive efficiency is so crucial. How does reproductive efficiency affect consumers?

"One of the coolest parts of this discussion is that utilizing artificial insemination (AI) technology really targets our industry's ultimate goal — a quality eating experience for the consumer," he answered. To sell protein in a competitive market, it must be of high quality.

Consumer signals indicate Prime has only a 4% chance of providing an undesirable eating experience. Premium Choice (the category in which CAB falls) has a 5%

►It's a myth that you have to sacrifice growth and maternal function to hit a high-quality end-product target, CAB's Larry Corah shared.

chance. Choice has a 14% chance, and Select has a 20% chance of providing an undesirable eating experience. Corah asserted that 14% and above is too high, sharing that most issues are related to tenderness.

There are economic reasons why producers should aim for producing higher-quality beef, and there are four myths that concern them, Corah explained.

1. **Myth:** *No extra money is made by producing a higher-quality animal.* **Reality:** While marketing skills are needed to make more profits happen, the opportunities exist. The top 25% of cattle in a well-known national program added $115.21 per head as fed cattle. The top 50% earned $94.36. With major retailers carrying higher-quality beef, that commitment has opened many opportunities for high-quality beef production.
2. **Myth:** *You sacrifice growth and pounds to hit quality targets.* **Reality:** With the strides in genetic selection in growth traits, that is not the case. "High-gaining cattle are healthy, well-managed, genetically superior animals," said Corah.
3. **Myth:** *High-quality cattle do not feed as well.* **Reality:** Corah referenced a recent analysis by Tom Brink, JBS Five Rivers Cattle Feeding LLC, which shows that high-growth and higher-grade cattle profit by $27.30 in the feedyard, while lower-growth and lower-grade cattle lost $58.29 (see Table 1).
4. **Myth:** *You can't have functional cows and still focus on quality.* **Reality:** Corah shared an extensive research literature review by Twig Marston that concluded that the functionality of cows doesn't mean giving up quality in her progeny. Visit *www.cabpartners.com/news/research/marston_marblingandothertraits.pdf* to read the white paper.

Table 1: Feedyard closeout and carcass performance comparison

Yearling steer closeouts July-October, 2008-2011	Higher growth, higher grade*	Lower growth, lower grade **
Pens	151	113
Total head	36,266	26,729
Death loss	1%	1%
Placement wt., lb.	806	797
Purchase cost per head	$864	$857
Finish wt., lb.	1,387	1,276
Days on feed	166	150
Dry feed intake, daily lb.	20.66	12.92
Avg. daily gain, lb.	3.49	3.26
Dry feed/gain, lb.	5.92	6.12
Feedlot cost of gain, $/cwt.	88.39	93.64
Dressing percent, %	64.6	64.1
Prime and Choice, %	73	40
Certified Angus Beef, %	19	5
Yield Grades 1-3, %	89	95
Premium vs. live market, per head	$64	$12
Value per head sold	$1,415	$1,256
Profit/loss per head	$27.30	($58.29)

*1,350 lb. or heavier finish weight, 65% or better Prime and Choice grades.

**1,300 lb. or lighter finish weight, 45% or lower Prime and Choice grades.

Source: Tom Brink, JBS Five Rivers Cattle Feeding LLC.

Note: This is Table 5 in Corah's proceedings paper.

Using data and technological tools, such as expected progeny differences (EPDs) or genomic tools, can help producers hit the quality target, as well.

"We may be entering the most exciting 20 years of cattle breeding this industry has ever seen, and we can really satisfy our consumers while we are achieving this," Corah concluded.

Corah spoke during Monday's ARSBC session focused on how to profit from reproduction. Visit *www.appliedreprostrategies.com/2012/SiouxFalls/newsroom.html* to listen to his presentation and to view the accompanying PowerPoint slides and proceedings paper. AJ

Indicators of Longevity

Consider the effect of heifer calving date on longevity and lifetime productivity.

by ***Troy Smith,*** *field editor*

Are longer postpartum intervals and higher rebreeding rates of early-calving cows associated with longevity? Many veteran cow-calf producers would affirm that, and research has demonstrated a relationship between a cow's ability to consistently calve early and the length of her productive life.

"Identifying heifers that calve early in the calving season may be the simplest method to improve longevity and profitability in any herd, but especially in commercial herds," says Eric Mousel, chair of the Department of Agricultural Sciences at Northwest Missouri State University.

Mousel talked about the effects of heifer calving date. He cited results from a study based on data collected from producers involved in South Dakota Integrated Resource Management (IRM) groups (see Fig. 1, page 82), as well as 21 years of heifer data collected at the Roman L. Hruska U.S. Meat Animal Research Center (USMARC) at Clay Center, Neb. (see Fig. 2).

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► "From the standpoint of profitability, heifers that calve in the first 21 days of the calving season may represent as much as 75% of future income," Eric Mousel told the ARSBC audience.

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According to Mousel, the longevity of South Dakota heifers calving in the first 21 days of the calving season was 24% greater than for heifers calving during the second 21 days of the season. The longevity of USMARC heifers calving during the first 21 days was 7% greater than for heifers calving during the second 21-day period and 12% greater than heifers delivering calves during the third 21 days of the season.

"Not only does this suggest that there are significant differences in longevity and, likely, profitability of replacement heifers, based on their ability to get pregnant early in the breeding season and thus calve early," said Mousel, "but the differences may be more pronounced in some heifer groups than others."

Mousel said data from calves born to USMARC heifers suggest replacement heifer calving date does affect productivity and profitability.

Mousel said data from calves born to USMARC heifers suggest replacement heifer calving date does affect productivity and profitability. Calving date influenced the weaning weight of their first six calves. The total pounds of weaning weight produced and the average weaning weight were greater for calves born to heifers delivering in the first 21 days of the calving season. Analysis of the data also suggests the average return per female is higher for those that calve early.

"From the standpoint of profitability," added Mousel, "heifers that calve in the first 21 days of the calving season may represent as much as 75% of future income."

While producers may try to capitalize on the effects of early calving by choosing their oldest and heaviest heifers as replacements, Mousel warned that those heifers do not always reach puberty earliest, nor do they always initiate reproductive cycles before younger and smaller heifers.

The relatively low heritability of reproduction traits has made selection through use of genetic technology slow, but Mousel suspects future advancements may occur through the use of genetic markers for fertility. It is likely, he said, that a heifer's age at first calving may be the best phenotypic indicator of fertility, and early-calving heifers may be the most promising population to use for discovering genetic markers for fertility.

Mousel spoke during Monday's ARSBC session focused on how to profit from reproduction. Visit *www.appliedreprostrategies.com/2012/SiouxFalls/newsroom.html* to listen to Mousel's presentation and to view the PowerPoint slides and proceedings paper submitted to accompany his presentation.

Fig. 1: Percent of heifers remaining in the herd for future calving seasons, by date of calving in the first calving season, within South Dakota heifers (P<0.01)

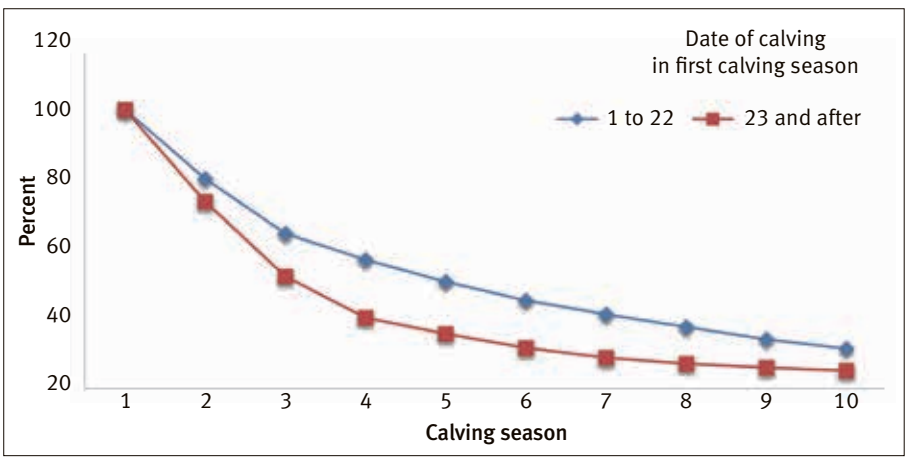

Fig. 2: Percent of heifers remaining in the herd for future calving seasons, by date of calving in the first calving season, within USMARC heifers (P<0.01)