

Practical Applications

Producer application technical breakout offers valuable resources.

Story & photos by **Raney Lovorn**, editorial intern

While the 2015 Beef Improvement Federation (BIF) symposium's theme was "Expanding Focus," several technical breakout sessions allowed attendees to dive deeper into specific topics. The session featuring producer applications included topics of measuring genetic susceptibility to bovine respiratory disease, a new website providing a resource on bovine genomics, and the success of a state heifer-development program built on collection of phenotypic data on reproductive traits. The symposium was hosted June 9-12 in Biloxi, Miss.

Measuring genetic susceptibility to bovine respiratory disease

Bovine respiratory disease (BRD) has a costly impact on the beef industry each year, especially in the feedlot sector. Mark Enns, Colorado State University, discussed the potential of a genetic correlation among feedlot and dairy animals treated for BRD each year.

Studies have shown that BRD is up to 37% heritable, Enns said. More than 100 known genes impact an animal's susceptibility to the disease.

"We are developing a case that there is a genetic contribution to susceptibility to bovine respiratory disease measured as a severity system or as a treated yes or no," Enns said. "Therefore, knowing that, if you will, there is potential for genetic improvement of this trait."

Due to the costly nature of the disease, Enns said, it would be an added value if producers could market more BRD-resistant cattle to feedlots.

The goal is to use what's learned to develop selection tools to enable cow-calf producers to produce progeny that will be healthier in the feedlot and have lower



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Data collection and standardization poses the biggest problem for quantifying BRD. Enns said the way most data are collected only gives information as to whether the animals were treated for BRD or not, and more detailed treatment information is necessary.

"What we really need, if our goal is to produce a tool for breeders, is some standardization, and that is where BIF comes in," Enns said, referring to the organization's role in developing uniform guidelines for data collection and reporting. "The whole goal of this is to enable production of a selection tool, add accuracy to our selection and produce animals with lower treatment rates."

In order to make a BRD selection tool a reality, BIF created a task force to create guidelines. The committee is a diverse group, with veterinarians that specialize in feedlot medicine, USDA professionals, individuals with BRD grant funding and university professionals.

Enns called the effort BIF's first known attempt at establishing guidelines for a disease trait.

"We are breaking a little bit of new ground," Enns said. "I anticipate these guidelines that we first come up with will be modified as we gain more knowledge."

The committee will recommend a tiered data-reporting approach to the feedlot industry, Enns said. The system will give more flexibility to their research and allow for a wider variety of traits to be monitored with higher accuracy.

Tier 1 data will have specifics like animal identification, sex, in and out dates, and owner of origin. Feedlots are already collecting the majority of this data, Enns said. For BRD information, the committee would like the date the calf was diagnosed, date treated and temperature at treatment, which currently has a 74% recording rate at the feedlot.

Tier 2 would depend on the feedlot's comfort in sharing the information with the owner of origin, who could submit that data to breed associations for analysis, Enns explained.

The guideline committee plans to submit a final recommendation to the BIF board of directors at its mid-year meeting, he concluded.

New genomics website available

When Darrh Bullock, University of Kentucky, Google-searched fact sheets centered on beef genomics, he was surprised to find only information about goats. Bullock presented <http://eBEEF.org>, a website developed by a team of individuals from across the country as a potential solution to the lack of easily accessible genomics-centered information on beef.

Built to provide a comprehensive platform for the general public to access information



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from the beef cattle genetics and genomics community, the eBEEF website has a variety of accessible fact sheets.

“This is where you go, and you’re not going to have to sort through a whole lot,” Bullock said. “To cover a topic like EPDs, you will have a fact sheet to go to as opposed to doing a search.”

News and supplying individuals with current, relevant information are two of the core purposes of eBEEF. The website offers a quarterly newsletter through email for anyone who wants access to information and links to a variety of beef cattle media outlets.

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Adding value to Missouri’s cow herd

Increased data collection, adoption of new technology and a fortified relationship between commercial producers and experts

has significant economic impact in Missouri. David Patterson and Jared Decker shared their strategies and success with data collection through Missouri’s Show-Me-Select Replacement Heifer Program.

Since 1997 the Show-Me-Select program has contributed more than \$90 million to Missouri’s economy through an emphasis on selection for reproductive traits in heifers to improve genetics and a value-added marketing plan. Show-Me-Select has a heavy emphasis on data collection and utilizing new reproductive technologies to increase efficiency and upgrade whole-herd genetics.

“How they perform when they calve is going to directly impact what occurs relative to that subsequent breeding season,” Patterson said. Getting first-calf cows rebred to have their second

calf has been a problem area.

Patterson began the program with a plan to help producers take advantage of new reproductive technologies to jump-start heifers and build a program that could have long-term effects on Missouri. He accomplished this by helping producers gain opportunities for improved genetics through the use of timed-artificial insemination (TAI) protocols.



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Helping producers connect the significance of accuracy with their sire-selection decisions was an obstacle to Patterson’s production plan. Showing producers the impact of accuracy helps stabilize genetic advances.

The value of accuracy is that it reduces risk for the commercial producer, Patterson said. “It gives them a lot more predictable information relative to the traits that they are focusing on.”

Accuracy in expected progeny differences (EPDs) and accuracy in reproduction through breeding practices and pregnancy verification add value to the heifers involved in the program and increase demand for animals developed in the Show-Me-Select program.

“Essentially, we try to create a platform for long-term reproductive health,” Patterson said. “I think this is critical relative to heifers that are enrolled in the program, so we do have a standardized health protocol that the heifers are expected to comply with.”

A prebreeding exam — including weight, reproductive tract score and pelvic exam — is required for all heifers sold through the Show-Me-Select program. An emphasis on calving ease and nutrition is also a part of the heifer protocol.

“From my perspective, having both an extension and a research appointment, I think these projects have really had a big impact,” Patterson said, “because we see herds across the state, and the use of improved genetics, largely through AI, has literally exploded in Missouri.”

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Editor’s Note: The 2015 BIF Annual Convention was hosted by Mississippi State University and the Mississippi Extension Service June 9-12 at the Beau Rivage Casino and Hotel in Biloxi. The Angus Journal and LiveAuctions.tv provide comprehensive online coverage of the event at www.BIFconference.com. Visit the Newsroom for summaries, proceedings, PowerPoints and audio of the sessions; the Awards page for announcements of award winners; and the Photos page for photo galleries of the tour.

Fig. 1: Five-step production plan for Show-Me Select heifer-development program

1. Create an understanding of the importance of heifer development based on reproductive outcomes;
2. Changes in heifer development spill over into the cow herd;
3. Importance of reproductive management becomes apparent;
4. Focus expands to genetic improvement; and
5. Creation of a value-added product requires a re-evaluation of marketing strategies.