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Adaptability is the Foundation of Cow Efficiency

Researcher discusses tips for selecting cows that fit the western U.S. range.

By Kaitlin Donovan

BOISE, Idaho — Do your discussions on beef cow efficiency center around growth and feed conversion? That's where many producers start, but Tim DelCurto, Ph.D., tells cattle producers that is the wrong place to focus.

"The cow has to calve every spring, breed during a defined breeding season, wean a calf each fall and do it all over again the next year," DelCurto said. "Reproductive success is our most important metric for efficiency."

DelCurto presented "Beef Cow Adaptability: The Western Range Cow as an Example," at the 2026 Beef Improvement Federation (BIF) Research Symposium and Convention in Boise, Idaho. The annual meeting was established to bring together science and industry professionals to improve beef cattle genetics.

DelCurto is professor and head of the Department of Animal and Range Sciences at Montana State University, where he is known for his research in range beef cattle nutrition and management. His studies have shown that efficiency isn't determined by a single measurement, but it is instead documented by how well a cow matches the environment in which she's expected to perform. DelCurto said producers should consider thinking beyond popular selection trends and focus on biological adaptability.

What is Biological Adaptability?

Rather than searching for a universal "ideal cow," DelCurto recommends identifying the type of female best suited for the forage base, climate and management system.

In the arid and semi-arid rangelands of the western United States, where growing seasons are short and forage quality declines quickly, cattle must do more with less. Those conditions reward cows that maintain body condition, breed back consistently and efficiently utilize available forage.

"It's an environment where you don't maximize production," DelCurto said. "It's an environment where we try to optimize production."

Focus on Cow Size

While larger-framed cattle often excel in feedlots or high-input production systems, DelCurto said moderate-sized cows with moderate milk production frequently outperform larger counterparts when feed resources become limited. However, that doesn't mean producers should assume that bigger cows automatically require more feed.

"Be careful when you read some of these studies looking at cow size," he said. "A lot of times they assume intake is proportional to the size of the cow. It is not."

Instead of focusing solely on mature size, DelCurto said producers should evaluate how genetics interact with available resources. Selecting for ever-increasing growth and milk production may improve individual performance traits, but this can also increase nutritional demands and reduce longevity in harsher environments.

"There's no such thing as normal weather here in the western U.S.," DelCurto said. "There's an average, but everything deviates from the average."

That annual variability makes adaptability one of the most economically valuable traits in a cow herd.

Building an Adaptable Cow Profile

DelCurto said there is value in evaluating feet and leg structure, pulmonary arterial pressure (PAP) scores and residual feed intake (RFI), but only when done in the context of the production system.

Ultimately, he said, producers should strive for cows that require fewer inputs while remaining productive throughout their lifetime.

"The cattle we try to fit in an environment are the cattle we'd like to minimize nutritional inputs," DelCurto said. "Those are the animals you're really trying to match to your resources."

As genetic technology continues to advance, DelCurto encouraged producers not to lose sight of the fundamentals, from reproduction onward.

"What do we need them to do? What are our expectations? What kind of resources do we have?" he asked.

Answering those questions, he said, is the key to building a cow herd that is both biologically efficient and economically sustainable.

Access the 2026 BIF Symposium presentation archive, which is continuously updated, at BIFSymposium.com. DelCurto's full presentation is available on the BIF YouTube page at youtu.be/lzcF5onKTkQ.

Key Takeaways

- **Reproduction is the ultimate measure of efficiency.** A cow's ability to calve, rebreed and wean a calf every year outweighs any single production metric.
- **Match genetics to the environment.** Cow size, milk production and growth potential should complement available forage and management resources.
- **Optimize—not maximize—production.** In limited-input environments, moderate cows that maintain body condition often provide greater long-term profitability.
- **Don't rely on one number.** Traits such as PAP, RFI, feet and leg scores, and growth EPDs should be evaluated together rather than individually.
- **Adaptability creates longevity.** Cows that thrive under variable weather and forage conditions are the foundation of efficient, sustainable cow-calf operations.

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The Beef Improvement Federation (BIF) is an organization dedicated to coordinating all segments of the beef industry — from researchers and producers to retailers — in an effort to improve the efficiency, profitability and sustainability of beef production. The organization was initiated more than 50 years ago to encourage the use of objective measurements to evaluate beef cattle. Continuing the tradition, BIF is now the clearinghouse for developing standardized programs and methodologies for recording of performance data for all traits, from birth weights to carcass traits. Its three-sided logo symbolizes the link between industry, extension and research.

Note to Editors: A photo of Tim DelCurto is included with this release.

Caption: Tim DelCurto, Ph.D., professor and head of the Department of Animal and Range Sciences at Montana State University, presented on beef cow adaptability at the 2026 Beef Improvement Federation Symposium and Convention in Boise, Idaho.