

# MAKING THE CASE FOR COW FAMILIES

*Females may have more influence than you think.*

*by Barb Baylor Anderson*

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While bulls may get a lot of credit for genetic progress made within Angus herds, it's the resilient ladies that provide the staying power for success, generation after generation. In fact, producers say choosing the right cow families can help herds adapt and flourish for decades.



## MORE THAN MEETS THE EYE

The American Angus Association has long acknowledged the significance of cow families. Using family names is one of the shared characteristics of registered Angus cows worldwide. Registering Angus cattle based on the dam's name may allow producers to more easily identify cows that should work in their production systems.

“Cow families provide a nice way to discuss the female influence in a herd,” says Bob Weaber, head of the Eastern Kansas Research and Extension Centers in Manhattan, Kan., and executive director for the Beef Improvement Federation (BIF). “Cows contribute half of the genetics to every calf crop. With Angus pedigrees, producers can track the influence of elite cow families.”

Dan Buskirk, Michigan State University (MSU) Extension beef specialist says he was skeptical about how much value cow families can add, since sires make the most genetic contribution.

“I did a pedigree analysis of the MSU Angus herd, and I'm now a believer,” he says. “We have a mostly closed herd with 60 cows. I can trace nearly 25% of them to a cow born here in the 1970s.”

Buskirk says MSU began bringing new cow families into the herd the last few years.

“We have 12 established cow families. Four are very prominent,” he says. “That makes sense because fertility and longevity are what you want, so stronger families are not being culled. Instead, it highlights the strengths of specific cow families. I attribute that to genetic-by-environment interactions.”

Today's most popular cow families likely share one characteristic — they have strong survival skills. Cows kept in herds are those that not only have a high degree of fertility, but also have good milking and fleshing ability — both traits that can bring profitability to an operation.

“I have seen where a flush on the right cow can turn a herd around,” says Ben Eggers, manager for Sydenstricker Genetics based in Mexico, Mo. “There is strong value in several cow families that've been around a long time. They are more than carriers for bulls on the sire side.”

For example, Eggers references one family known to stand out for hair shedding, an indicator of heat and fescue toxicosis tolerance. He sees descendants continue to exhibit that trait.

“Such traits can be lost if you don't make them a priority among your cow families,” he says.

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While some industry experts speculate mitochondrial DNA from the maternal side may foster resilience in some cows, it has not been confirmed. Mitochondrial DNA can be linked to disease susceptibility and phenotypic traits like heat tolerance, longevity and fertility.

“Researchers have looked at the influence of mitochondrial lines on animal performance, and it seems to be very, very small,” Weaber says. “So far, it does not appear big enough to affect genetic evaluations for selection.”

## LIVE LONG AND PRODUCE PROFITABLY

Proper selection and culling of individual females can lead to genetic improvement and open the door to greater profitability. Producers can evaluate herd productivity and rank cows for economically relevant traits, including producing ability, efficiency, frame size, structural soundness, pregnancy status, health and disposition. Visual appraisal of structural soundness and conformation also is key in selecting replacement females and determining which cows to cull.

“Replacement heifers are the genetic building blocks for the cow herd,” Buskirk says. “Focus on the fertile cows that will produce a calf every year for a long time to come.”

MSU uses estrous synchronization and a single fixed-time artificial insemination (AI), followed by cleanup bulls on their cows during a 50-day breeding season. Open females are culled. Retained females are all AI-sired, so replacement heifers are conceived Day 1 of the breeding season.

“We expect a lot from cows, and they have to do all things well to remain in the herd,” Buskirk says. “We cull [for] temperament, and we cull open cows. There are no second chances.”

Even cows that may not stand out on paper can be winners if they are from a successful line within a herd. One such MSU cow with average EPDs gave birth to twin bulls.

“Sometimes you don’t know,” he says. “One bull had an average gain, and the other set the world on fire.”

Kramer Farms near Farina, Ill., is a firm

proponent of generations focused on particular cow families. The Kramer herd was created in the late 1950s, and today, it includes 60-70 cows mostly linked to the herd’s original genetics. Kramer pedigrees show 10-13 generations of two particular Angus cow families as prominent. A third line was added about 25 years ago.

## ADAPT TO THE ENVIRONMENT

“These cows work well in southern Illinois, where we have primarily fescue pastures. The cow families we have are acclimated to the fescue and they do very well on it,” Kramer says.

Eggers in northeast Missouri agrees environment plays a role in cow family success. Sydenstrickers hosted a dispersion minus 50 sale in 1990, retaining 50 females of the herd.

In 1991, Eggers headed to Montana to buy additional cows from several different herds. Once back in Missouri, some of the cow families performed well on fescue, while others did not.


“It is a good idea to buy cattle from a similar environment,” he says. “The cows I thought would perform the best here were not the cows that were most successful. While I can’t say for sure, the difference in bulls used on cow families on those ranches may have also played a role.”

Buskirk agrees environmental adaptation is essential for cow performance.

“We haven’t moved many females from our cow families into other environments. If we bring in new cows, we look for similar geographies and don’t move them from too far south,” he says. “The cow families we rely on need to adapt to this northern environment and be productive. If not, they are done.”

Weaber cautions producers to understand drawing a connection between genetics and a specific management system is not mutually exclusive. Other factors are likely at play.

“Be careful about generalizing that daughters of a specific cow family are automatically going to be adapted to your management system,” he says. “Who the sire is of those daughters matters, too, and some traits have low heritability. It can be as much



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art of the master breeder as science when it comes to finding combinations of parents with desirable maternal traits that work.”

## FUTURE EFFECTS OF BREEDING TECHNOLOGY

For strong Angus cow families that have stood the test of time, being able to evolve with modern production practices and continuing to flourish in the same fashion is an open question.

Popular thinking would suggest good maternal bulls come from good cows that come from good cow families bred to good maternal bulls. Does the advent and increase in use of advanced reproductive techniques like embryo transfer (ET) and in vitro fertilization (IVF) change that?

“Technology is a little like a trip to Vegas,” Eggers jokes. “Certainly, it works to expand the number of females from certain cow families; but our experience with ET is that natural calves may be a better alternative for us. Out of 100 flushes per year, we have had six, \$1-million semen bulls. Only one of those bulls was a product of ET. The other five were natural calves.”

Eggers adds as certain cows earn recognition, they

get flushed repeatedly and generate many progeny. The females breeders want to propagate quickly rise to the top.

IVF programs can be game-changers since the technology allows for the greatest genetic progress in the shortest amount of time. As the intervals between generations shrink, the genetic base of the herd changes rapidly. Genetic selection will intensify to reflect the herd’s priorities.

“In the 1980s when ET was more limited, some event had to create notoriety for a cow to surface and become a popular donor,” Eggers says. “Certain lines have made bigger strides than others on the breed over time because of that, often depending on the breeder’s program and goals.”

Weaber advises producers to still capture genetic variation on both sides of the pedigree through appropriate sire selection for the herd’s cows.

“Don’t spend a lot of money on these tools and elite donor dams without putting selection pressure in the right places for maximum progress. Be deliberate in your decisions based on pedigrees, EPDs and phenotypes,” he says.

Buskirk advises to select the best cow families for the environment as a base and to pick good sires to use on them. “We can assume the breed will continue to develop new maternal lines and sires through various genetic combinations. Ultimately, only the strong will survive.” **A**

*Editor’s note: Barb Baylor Anderson is a freelance writer from Edwardsville, Ill.*