

Using Science in the Superstitions

Backus Quarter Circle U Ranch honored as 2016 CAB Progressive Partner.

Story & photos by **Steve Suther**, Certified Angus Beef LLC

You could call Chuck Backus progressive. Politics aside, just about every sense of the word describes his approach to a 36-year professional career in education and research. It certainly applies to his 39 years in ranching.

The commercial Angus producer and former provost of Arizona State University embodies the various definitions:

applied innovation, development and growth by accumulation of knowledge, learning by doing, and even the genre of music that experiments with alternative routes and expands boundaries.

“With the data available now and all that we can measure, it’s a complex problem,” the retired nuclear engineering doctorate and solar energy specialist says. “It’s



► “It’s 22 square miles of rocks, cactus and mountains that we call pastures, but we have animals that do well in these conditions,” Backus says. He rides through the terrain several days each week to monitor that.

► When a nuclear engineer turned college provost takes up ranching in the high desert, great things can happen. Innovation took a herd from 0 brand qualifiers 10 years ago to 95% today — and most of those Prime. Faith and focus did that while making a home for quality out of cactus and rocks, and teaching others how to follow suit. Digital readers, click the photo below for a short video featuring CAB's 2016 Progressive Partner.



► Above: Backus reviews cattle with feeder Dale Moore.

also a rewarding challenge to weigh all these factors — from genetics to cattle health and range conditions. It demands a lot of time and focus to make measurable progress, but I enjoy it.”

That's Backus, who contacted the *Certified Angus Beef*® (CAB®) brand a decade ago to explore the idea of transforming his locally adapted desert cow herd into one that could produce premium-quality beef. He fed his first load of steers 10 years ago in Texas, and the 2006-born calves made 48% Choice with one CAB that made it by 1% of a marbling score.

It was the first year of artificial insemination (AI) for what soon became a key strategy and bred 358 head this spring. Among the 2015-born steers, 65 fed at Cattleman's Choice Feedyard, Gage, Okla., hit a new high of 95.4% Prime and premium Choice, most of them Prime.

The stunning success gets a smile and a nod from Backus that says, “Yes, we're on the right track.”

A calculating look out across the Superstition Mountains at the black dots moving up a canyon trail and he adds, “We still have a long way to go.”

the reasons CAB recognized Chuck and Judy Backus and their Quarter Circle U Ranch, Apache Junction, Ariz., with the 2016 Progressive Partner Award. They would be the most local producers at the CAB Annual Conference in Tucson, Ariz., Sept. 22-24.

“What Chuck has done and is still accomplishing is truly unique given all constraints,” says Paul Dykstra, beef cattle specialist for the brand. “Identifying genetics as such an important part of beef production is a lesson for others in any environment, but he takes it much farther by not allowing ‘accepted’ limitations to dictate what his cows can produce.”

Increasing efficiency

The engineer has already amended the plan to put equal pressure on efficiency. The academic is footnoting all the resources that led to this point as the teacher plans new ways to share results with everyone who can benefit.

These are just a few of

Angus Journal readers may recall the July 2013 article, “Adapting Angus to Arizona,” detailing the first phase of range improvements on 40,000 acres. That much-awarded stage spanned 30 years, from buying the headquarters east of Phoenix in 1979 to the summer ranch near Show Low, Ariz., in 2000. Range management stays near the top of the list, if partly eclipsed by the commitment to ramp up beef quality with Angus-based genetics starting in 2007.

A non-local wouldn't believe the herd of nearly 400 makes a living on the winter range of cactus and mostly sleeping rattlesnakes

from November through April.

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Selection for calving ease started with the first Angus bulls, since assistance is not

possible there, and no heifers have been lost at calving in 10 years. These days, when Backus makes note of “CE,” it is short for conversion efficiency. That's the key to making life easier for his cows, and more money in the bank from feeding their calves.

As president of the Arizona Cattle Industry Research and Education Foundation, Backus has written and presented to explain what he's doing and how others can follow the example. Efforts include daylong “applied workshops” on quality for profit with guest speakers from across the West and more than 100 cattlemen attending.

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Progressive Partner Award



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Conveying the big picture, he notes cattle must pit their 7-to-1 average feed efficiency against competing pork and chicken enterprises twice or four times as efficient, respectively. Individual cattle vary widely, and the trait is moderately heritable.

The American Angus Association publishes an expected progeny difference (EPD) for residual average daily gain (RADG), which Backus looks at along with mature height, but still worries about increasing cow size in the rugged environment.

Where available, he relies on residual feed intake (RFI) comparisons, measuring how much an animal eats each day for the same gain, compared to expected, which can be plus or minus 8 pounds (lb.) — meaning one individual may eat 16 lb. less than the next.

That's why Backus aims to use bulls with an RFI of -5 or less. Through replacement heifers, he figures the next generation would need 1,000 lb. less feed per year.

"Think what that would mean for my pastures, my calves and my breed-back the next year," he wrote in an *Arizona Cattlelog* article. "If they are all just 10% more efficient, I can run 10% more cows on the same forage."

Changing stereotypes

Last year's calf crop converted dry matter at a 6.69-to-1 ratio in 200 days on feed, gaining 3.27 lb. per day. Those are already among the best at his yard, says Cattleman's Choice manager Dale Moore, who specializes in feeding for natural and non-hormone-treated targets.

"If you can't depend on technology like implants and feed additives, you darn well better have the genetics," he says. "Chuck has played a huge role in my understanding that."

Backus counts Moore among his teachers as well, but they are still going over the chapter on feeding beyond 20% Yield Grade 4s to achieve growth and quality-grade targets.

"It works because Prime premiums outweigh the discounts, but only when you know the cattle can do it," Moore says. He admits the first time he saw the Backus cattle, he thought they were typical Arizona stock. "It's a known fact that they don't grade and very few perform."

Not anymore. Although appearance has



changed only a little over time, "when they take the hide off, it's unbelievable." Moore makes sure everyone who tours his yard sees that pen and "big-time Angus producers just shake their heads."

Feeding 10,000 head per year that beat 30% Prime, Moore sees a lot of good cattle these days, but none from a more unlikely place than that cactus canyon.

"Chuck has definitely figured out how to

make every cow the best she can be in the environment she has been given," he says. "He's taught me not to judge a book by its cover until you have read it at least three times. I enjoy folks like Chuck and Judy that work hard to prove me wrong."

With 95% Prime and premium Choice results, you might think

Backus has moved on to RFI, but you'd be wrong.

Writing on feed efficiency, he reminds readers such a focus is wasted without continuing pressure on marbling.

"Ranchers that don't produce higher-quality (marbling) calves are going to be left to compete with the cull cow market as hamburger," he says.

Half of the calves are AI-sired each year, as are most females in the herd, including a couple of half-bloods born in 2007. The last two sets of replacement heifers have been limited to 79 in 2014 and 89 last year by DNA-test scores, a tool that will remain in use, always working on the improving bottom end and including feed-efficiency measures.

AI sires must include that in some form, and Backus won't buy a bull without an RFI number. That limits him to the huge pool of bulls sold at the Midland Bull Test, Columbus, Mont., and to local friend and business associate Bob Prosser's Bar T Bar Ranch at Winslow, Ariz.

"I put the highest selection pressure [descending] on: marbling [+ intramuscular fat (IMF) measurement + DNA test]; RFI measurement [+ DNA Test + dry-matter intake (DMI)]; average daily gain (ADG) measurement (>3.0); EPD indexes; calving ease (+BW); low milk; and above average yearling weight (YW)," he details.

At a recent Prosser sale of 200 bulls, 10 made Backus's list, and he bought his top three.

At a Midland sale, he bought interest in an extremely low-RFI bull with Prosser, and bought semen interest in another with Lee Leachman of Fort Collins, Colo.

"Chuck is figuring it all out and implementing the program," Leachman says. Getting half of a calf crop to grade Prime is an increasingly logical target today, he

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says. No reason to choose between grade, efficiency or other traits.

“That’s the beauty of the Angus breed,” Leachman says. “It’s a huge gene pool, so you can identify bloodlines that excel in the different traits without single-trait selection. Now, the cattle have to be managed well and fed well, or those Primes wouldn’t happen, but the bulls are out there for anybody to use.”

He says one advantage Backus may have with a herd that must maintain some limits on size is the finished steers are a bit older, and more time on feed to hit conventional carcass weights lets them realize full marbling potential.

“Going after more efficient feed conversion is the profit driver there, not gain but the cost of gain,” Leachman adds. “That makes a good cow for Chuck’s range and an efficient steer for the feedlot.”

For all the precision and planning with land and cattle, Backus cares most about people.

Judy, his wife of 59 years, leads all in traits there. She once ran a real estate business in the Phoenix suburb of Gilbert, which daughter Beth now operates. Another daughter, Amy, and her husband, Mike Doyle, work in nearby Scottsdale and have a percentage interest in the cow herd. Son Tony and wife Blanca live in Phoenix and are very much involved in the ranch operations. Quarter Circle U manager Dean Harris and wife Kris, computer records keeper for the ranch, might as well be family, too, like Casey

Murph, head cowboy at the north ranch.

There are many others in the social circle, but extending far beyond the everyday are still more friends, written into the business plan. Of course: “The overall goal is to operate the ranch in a way that encourages family and friends to participate and enjoy the ranching experience, as well as contribute

to the broader community through research, education and service.”

Details include hosting K-12 school groups through the Arizona Beef Council, adopting one school class each year to teach about ranching, allowing the ranch to be used by the community for special events and participating at every level in producer organizations.

Working with students for so long, Backus can’t help caring, but it goes deeper than experience, all the way to core identity.

“Ranching relates the person in all of our complexity to the real world, animal and earth kingdom that we live in,” he says. “We have come from a million years of gathering tribes to farmers and sustaining communities and civilization.”

Though evolution has distanced humans from their food suppliers, Backus aims to close the gap.

“I have a personal drive to leave the world a little better than I found it,” he says. “Ranching combines improving Mother Earth with the quality of the products that come from it. That quality is much better, either because of my direct contribution or setting an example that others could use to pursue goals.”

You could call that a progressive attitude.



Editor’s Note: Steve Suther is director of industry information for Certified Angus Beef LLC.



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