

# Temperament Matters

***Cow temperament does affect reproductive efficiency and profitability.***

by **Sara Gugelmeyer**

**W**e've all been there. It's time to gather to wean or vaccinate or whatever, and there are those few cows that run over everybody and head to the backside. Dad's yelling at you, and Mom's yelling at him, so all the cows scatter, and the whole thing dissolves into something about which Baxter Black would write. Well, now there's some proof. Beyond the obvious headaches they cause, a high-strung, wild cow is less likely to get bred, stay bred and raise a calf that gains. Send a thank-you card to Reinaldo F. Cooke, Ph.D., because he proved it.

Cooke, who is currently a beef cattle specialist and assistant professor at Oregon State University (OSU), says he was prompted to study this topic after working in Brazil with naturally aggressive *Bos indicus* cattle.

Many producers already select for docility, mainly for safety reasons. It's known that temperament is a heritable trait, but actual production implications were not well established before this study.

Starting while at the University of Florida (UF), Cooke studied Brahman-cross cows and discovered that those with more "excitable" or wilder temperaments had lower pregnancy rates than their more docile herdmates. When Cooke began working at OSU, he and beef cattle Extension specialist David Bohnert, Ph.D., decided to expand the study to see if cow temperament had the same effect in the generally more docile *Bos taurus* cattle.

Using more than 400 Hereford-Angus cows on range conditions at two different locations in eastern Oregon, they set up an experiment.

Cows at both locations were tested for temperament using an

average of chute score and exit velocity (how fast the cow leaves the chute) score. Using this system, Cooke and Bohnert identified the group of cattle to be about 75% of adequate temperament and about 25% aggressive.

At one location, cows were bred by artificial insemination (AI) and then turned out with clean-up bulls. The other location used natural service breeding only.

"This gave us two different production environments to look at this," Bohnert says.

## **Advantage in reproduction**

The hypothesis held true at both locations with the aggressive cows as a group having a lower pregnancy rate of 89%. The more docile cows were 95% bred.

Bohnert says, "With AI, the cows are all being handled, and stress could be a large factor. But what we saw was that it didn't really matter whether it was a bull breeding situation or AI; we still saw an advantage (in higher pregnancy rates) with the cows that had moderate to calm temperament. Those that were more aggressive or flighty didn't get pregnant as readily, even under natural conditions."

But why would excitability affect fertility? It has all to do with stress, says Bohnert. "We think that hormones are partially involved in this difference. This includes cortisol, a stress hormone. Some of the data has shown elevated cortisol in the animals that have poor temperament (more aggressive or flighty and excitable). These are the high-headed, tail-in-the-air



Cooke's first experiment measured the differences in temperament in *Bos indicus*-influenced cattle in Florida.

cattle that tend to run and jump over fences. They have higher cortisol levels and we are confident that this is partially what's involved when we are looking at the different reproductive hormone cascades and everything else."

The difference shows. Cooke says, "Cows with excitable temperament wean (on average, due to reduced pregnancy and weaning rates) 35 lb. less than their calmer cohorts."

### Advantage in profitability

Those cows with adequate temperament weaned 490 lb. of calf per cow exposed, but the aggressive cows weaned only 455 lb. of calf. From a profitability standpoint, that 35 lb. means about \$56 if a calf is worth \$160/hundredweight (cwt.).

Additionally Cooke and Bohnert measured the calves' temperament at weaning and found that those calves of adequate temperament, on average, weighed about 17 lb. more than those with aggressive temperaments. Also figuring \$160/cwt., that increased gain makes those calves \$27.20 more valuable than the aggressive temperament calves.

Furthermore, if the comparison is continued in a retained ownership operation, the difference is \$29 per head at slaughter, with the adequate temperament group being worth \$1,309 and the aggressive group bringing \$1,280 per head.

"These aren't huge differences," Bohnert says, "but if you are looking at 500 or 1,000 head, a bunch of calm to moderate temperament calves would make a noticeable difference in profit margin. They not only have increased weight at weaning, but they retained that difference and were able to keep going through retained ownership."

Cooke summarizes, "The initial conclusion was that even in *Bos taurus* cattle, excitable temperament is detrimental to reproductive performance of females and production efficiency of the calf crop," Cooke explains.

"Our conclusion was that by improving temperament of the cow herd it would benefit production," he adds.

But how?

### Acclimation to handling

The next topic of study, then, was could a producer improve the temperament of his cattle?

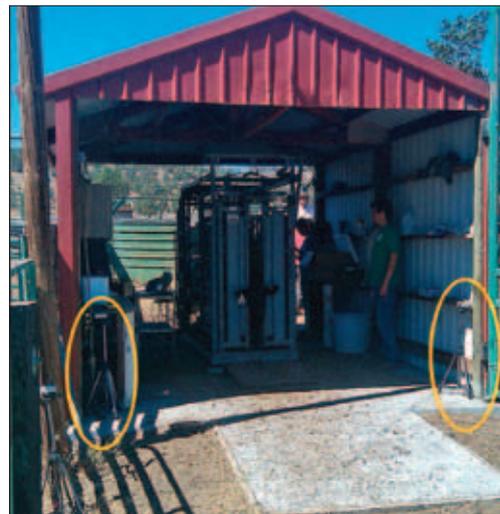
At UF, Cooke had already studied the subject using Brangus and Braford heifers which were acclimated to handling. The same study was re-created in Oregon using the Hereford-Angus cross heifer calves.

The result, in both cases, Cooke says, was that acclimating heifers to human handling (gathering them and put them through the chute three times a week for four weeks) improved their natural temperament, decreased cortisol concentrations in the blood and hastened their reproductive development.

"We found that heifers we acclimated to human handling reached puberty earlier than the ones that were not handled," Bohnert says.

However, when doing the same acclimation procedures with mature cows, Cooke says, "No positive effects were detected. The best way to improve the mature cow herd temperament is through selection and culling criteria."

The studies at UF and OSU demonstrate this: temperament



Timers were used to measure how fast cows left the chute, termed exit velocity.

matters. It means not only the difference between torn up equipment and injured helpers but also a difference in terms of reproductive efficiency, which directly affects producers' profitability.

While Cooke and Bohnert proved that temperament and the resulting reproductive efficiency could be helped through acclimation when cattle are young, achieving the improvement is time-consuming and labor intensive. And, once cows are mature, attempts to improve temperament don't help a bit. The underlying lesson here is that for many reasons, it makes sense to buy calmer, more docile cattle from the get-go. And isn't that what Herefords are known for? **HW**



The study continued with these Hereford-Angus cross cows in Oregon.