



TWINNING

The Pros and Cons

BY JANET MAYER

Twinning, or producing two calves at once, can mean double profit for some breeders while others consider it double trouble.

Certainly the profit from the sale of weaned, twin calves can far exceed the profit from the sale of a single weaned calf, and twinning can provide cattle breeders with a means of increasing the birth rate of valuable animals with outstanding growth and carcass expected progeny differences (EPDs).

According to L.R. Sprott of the American College of Animal Physiology at Texas A&M University, twinning has merit but also has drawbacks of which breeders should be aware.

"Twinning can obviously increase a cow's lifetime production in that it increases pounds of calf produced per twinning female," he says. "What is unknown is how much does that cost and subsequently pay. What is also unknown is the consistency or repeatability of twinning that would occur in a female that is genetically predisposed to twinning. Nevertheless, either one or two sets of twins from a female has added value above a lifetime of single births."

Yet twinning has its problems, Sprott cautions. There can be delays returning to estrus after calving, requiring extra management to make sure the cow rebreeds in a timely fashion. Other problems he cites are a slightly higher incidence of retained placenta and the chance that the twins will be fraternal, which means it's possible they will be of different genders. When this happens females are usually sterile, which has an obvious negative implication on the ability to generate sufficient numbers of replacement heifers in a herd where significant selection pressure for twinning is applied.

Twinning also can cause difficult births that require assistance.

"Unless management is designed to give the cow extra care (increased nutritional level, observation for calving difficulty), she will have an extended period of recovery after calving," he explains. "In many cases, ranchers are not in a situation where they can easily and consistently provide such a level of care.

"My overall opinion of twinning is that it definitely has merit in a cow-calf production scenario," he continues, "but we need a greater understanding of the necessary management techniques that would be required to make twinning a routinely feasible production objective."

Research findings

In a 20-year, ongoing research project at the Roman L. Hruska U.S. Meat Animal Research Center (MARC) in Clay Center, Neb., scientists have gained insight about the physiology of reproduction. Under the direction of Keith Gregory, now retired, an experimental herd of mixed breeds was assembled using cattle from the center's own herd and outside cattle with a history of multiple births.

A twinning rate of about 55% has been achieved in the experimental herd, proving that a beef cattle herd selected for a high rate of natural twinning can excel in production. Combined weights of twin calves at weaning were 58% greater than the individual weights of calves from single births.

But scientists involved in the study say raising this type of herd will be practical only on farms where breeders can provide their cattle with plenty of high-quality, nutrient-rich grain and forage and the extra management and labor necessary.

In an effort to help breeders who want to increase the rate of twinning in their herds, research studies at the University of

Wisconsin-Madison have tracked down at least one gene that promotes twinning. Heading the study, professor and animal geneticist Brian Kirkpatrick says that twinning can be increased in beef herds by using the new DNA testing that identifies the first known gene to foster twinning among bovine chromosomes. He predicts twinning can be increased by 13% from the typical 1% in most beef herds.

"I feel the low reproduction rate of beef cattle keeps beef production costs high," Kirkpatrick says. "With a herd of beef cows that consistently bears twin calves, production costs can be lowered by 20% — or even more — giving producers an increase in profitability. With the new DNA test specifically identifying the form of chromosome 19 associated with [a] high ovulation rate, cows that test positive for that DNA have about a 10% chance of producing twins at each birth."

Commercial application

Kirkpatrick's efforts to gather data on twinning go far beyond the university to his 323-acre family farm in eastern Iowa. Having worked on the studies of twinning for a number of years, he wanted to put the idea into a commercial beef operation to see if it really would work. Four years ago, he and his brothers Mark and Dan started the operation with 12 mixed-breed cows from the Clay Center herd. With the help of full-time employee Brian Grebel, the cow-calf operation has grown to 135 females.

"I feel the operation is sort of a proving ground," Kirkpatrick says. "I use ovulation data from the herd for our gene-mapping studies at the university, as well as for our own herd data."

The operation uses artificial insemination (AI) to breed the cows once, then they are

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turned out with a bull for natural service, typically using bulls of mixed breeds. One of the bulls bought from Clay Center has a 62% twinning rate, but Kirkpatrick says they are contemplating the use of an Angus bull reputed to have a high twinning rate among his daughters.

“I know that most producers aren’t interested in seeing more twins because of the extra problems for cows during pregnancy and calving and the extra management skills required to raise them. In fact, dairy herd owners use data from our studies to lower the number of twin calvings in their herds.

“To head off problems in our own herd, we have found that the use of ultrasound during pregnancy is a real help in detecting twins. In Iowa the cost is only \$3 or \$4 per head, which I feel is well worthwhile.”

Kirkpatrick says the operation retains ownership through the feedlot and slaughter facility in order to get feedback on carcass data. Although the main objective is to gather information on twinning, they still like to maintain good carcass merits on their cattle, which ultimately brings more profit.

“Just how profitable twins might be is something producers need to evaluate based on their particular situation,” he adds, “but

for the smaller producer, it is something they might want to consider.”

Editor’s Note: *With the ongoing studies at Clay Center, Neb., and at the University of Wisconsin, Brian Kirkpatrick says they are on the lookout for records of twin births. For producers interested in sharing their records, he is working to develop a public registry for cattle of this type. For those with an interest in increasing twinning rates in their herds, he publishes the Twinner Cattle newsletter. Kirkpatrick can be reached at 1675 Observatory Drive, University of Wisconsin-Madison, Madison, WI 53706; phone: (608) 263-4323; fax: (608) 262-5157; e-mail: kirkpat@calshp.cals.wisc.edu.*

