Maximize Cow Profits

AI keeps Virginia commercial operation growing.

Story & photo by ***Boyd Kidwell***

Tim Sutphin gives artificial insemination (AI) and estrus synchronization credit for the success of Hillwinds Farm. He and his wife, Cathy, run the diversified livestock operation in the beautiful Blue Ridge Mountains of southwestern Virginia.

The Sutphins have worked hard to build Hillwinds Farm in Dublin. They manage 640 Angus-Simmental cows, of which 215 calve in the fall and 425 calve in the spring. They also have a flock of 160 Suffolk ewes and background 500 stocker calves on 1,055 acres they own and 825 acres of leased land. Cathy also has a full-time job off the farm.

"AI has had a huge impact on our farm. We couldn't have stayed in business without AI, and without estrus synchronization, we couldn't be successful with AI," Sutphin points out.

From 1990 to 1999, the Sutphins practiced estrus synchronization on their virgin heifers. Starting in 1999, they began synchronizing and AIing all of the cows and heifers. As the benefits of large-scale AI became evident, Sutphin grew increasingly excited about the practice. He says the real values of AI come from the calves he sends through the feedyard in retained ownership and the valuable genetics he brings into his herd with the heifers.

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"To succeed in the cattle business, we had to make ourselves better than the average of the good cattle in this country. AI has allowed us to achieve that goal," the soft-spoken farmer says.

Added value

According to Sutphin's records, AI calves from AI-sired cows are worth $145 per head more at harvest than calves sired by natural-service bulls on cows born from natural-service matings.

Here's how he calculates the added value from AI on his 2004 calf crop:

- ► The breeding cost was $13.91 greater for an AI calf ($41 per AI pregnancy vs. $27.09 for a natural-service pregnancy).
- ► The pregnancy rate at Hillwinds Farm has increased 2% due to an extra breeding, plus a jump-start in the estrous cycle for some cows caused by the synchronization treatment.
- ► AI calves required less delivery assistance (1.3% of deliveries vs. 2.9%). This advantage for AI calves was due to higher accuracy on birth weight (BW) and calving ease direct expected progeny differences (CED EPDs) for AI sires. First-calf heifers accounted for 90% of assists.
- ► Death loss from birth to harvest was better (3.5% AI vs. 5.5% non-AI). Lower death loss was attributed to closer observation in the short calving period and to lower birth weights of AI calves.
- ► At weaning, the AI calves from AI-sired cows averaged 747 pounds (lb.) vs. 625 lb. for non-AI calves (122-lb. difference). These weaning weights included the 45-day preconditioning period and were taken when the calves were sent to a feedyard. Most of the AI calves were older, since they were often born earlier in the calving season.
- ► In the feedyard, AI calves had average daily gains (ADGs) of 3.79 lb. vs. 3.52 lb. ADG for non-AI calves.
- ► Carcass value was a key factor in making AI calves more profitable. Of AI calves from AI-sired cows, 95.7% graded Choice or better, with all making Yield Grade (YG) 2 or YG 3. Only 4.3% of the AI calves graded Select. Of non-AI calves, 71% graded Choice or better, with 29% grading Select and 4.4% falling into YG 4.

Using the Hillwinds Farm figures, an AI calf from an AI-sired cow is worth $78.18 more at weaning and $145.27 more than a

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non-AI calf if both are retained to harvest.

Since AI-sired calves can also be born to cows that resulted from natural service (non-AI cows), Sutphin has looked at the value of that combination. An AI calf from a non-AI cow is worth $38.54 more at weaning and $64.31 more at harvest than a non-AI calf from a non-AI cow. Calves from natural-service bulls on AI-sired cows are $53.59 more valuable at weaning and $69.24 more valuable at harvest than non-AI calves from non-AI cows.

Cost to synchronize and AI, $

Semen	12.00
Prostaglandin (PG)	2.15
Gonadotropin-releasing hormone (GnRH), two doses	4.00
Chute charge	6.00
Insemination	2.50
Total cost per cow	26.65

640 head x $26.65 = $ 17,056
640 x 65% estimated pregnancy rate = 416 pregnancies
$17,056 ÷ 416 = $41 per AI pregnancy.

Fitting the plan

AI and estrus synchronization require more management than turning bulls out with cows. As the result of recent research, there are now estrus synchronization protocols that fit most herd management plans. Sutphin uses one synchronization protocol for his mature cows and a different protocol for his heifers. He averages a 63% AI-pregnancy rate with the cows and a 97.5% pregnancy rate overall.

The biggest drawback to AI and estrus synchronization is handling the cows multiple times. Depending on the protocol, Sutphin's cows make three to four trips through the chute for AI. He calculates $6 per cow for chute charge and heat detection in his budget.

Sutphin administers the estrus synchronization products and does some of the early season insemination work. During the peak breeding times, a technician from

Select Sires visits Hillwinds Farm to do the AI work.

Suffice it to say, Sutphin doesn't take many vacations during the breeding seasons. But, the work is worthwhile when he weans uniform AI calves and sends them through the feedyard. And, he's very satisfied with the performance of the AI-sired cows in his cow herd.

"We have the mind-set to maximize the net return from our cow herd. AI is a key to that effort, and I view AI as being part of a professional attitude in the cattle business," Sutphin says. AJ

Benefits are real

Artificial insemination (AI) and estrus synchronization have been around for many years. The benefits are so overwhelming that the dairy industry has moved predominantly to the practice of AI. But, only about 5% of beef producers currently use AI.

That rate may increase, as research has provided estrus synchronization options that fit most management situations. Fixed-time AI is one of the protocols that show a great deal of promise for commercial cattlemen.

In fixed-time AI, all of the cows in a herd are synchronized to cycle so they can be bred on the same day. In fixed-time research, 65% of the cows have conceived when bred on the same day. While the prospect of having so many calves arrive at once can be daunting, the researchers found that even though they were bred on the same day, the cows delivered their calves during the course of several days.

The advantages of fixed-time breeding include less labor needed to check cows during a concentrated calving season and a uniform group of calves at weaning. Fortunately, the beef industry is now rewarding producers for marketing uniform groups of animals that have the genetics to yield high-value carcasses.

For information on AI and estrus synchronization, see:

- *www.selectsires.com*
- *www.iowabeefcenter.org/content/estrussynchplannermain.htm*
- *www.accelgen.com*
- *www.absglobal.com*
- *www.ext.vt.edu/pubs/beef/400-013/400-013.pdf*