

Economic Benefit of AI

Research shows average of \$49 benefit per cow exposed to fixed-time AI.

by Kasey Brown, associate editor

Many ranchers think of birth weight, weaning weight or yearling weight as important production traits; however, pregnancy itself has four times the economic impact of any other production trait. Putting herd pressure on pregnancy is a feasible and viable management system, said Cliff Lamb, professor and assistant director of the University of Florida's North Florida Research and Education Center at Marianna.

The timing within the calving period influences a cow's reproductive longevity, he said. Seventy percent of cows that calve in the first 21 days are still in the herd nine years later. Fixed-time artificial insemination (FTAI) is a way to get more cows to calve earlier in the calving season.

"My goal is to get as many cows bred in the first 30 days of the breeding season, and the positive impacts of synchronization systems in stimulating non-cycling cows to get them pregnant have been discussed today," Lamb said. "My goal is not necessarily to get the greatest pregnancy rates to timed-AI. My goal is to include as many cows in that synchronization so we get as many cows pregnant in the first 30 days of the breeding season."

Pregnancy rates can improve with consistent use of AI. Lamb shared pregnancy

rates of eight different herds. The three herds with the highest pregnancy rates — with 56.9%, 62.1% and 65.8%, respectively — were the ones that had used AI consistently over time.

With consistent use of AI, the number of days cows were postpartum at FTAI also became more uniform. Herd 1, which was one of the top three pregnancy-rate herds, averaged 87 days postpartum with a standard deviation

of 5.6 days. Herd 5, which had a pregnancy rate of 44.4% (the lowest of the eight herds), had an average of 74 days postpartum, but the standard deviation was 16.9 days.

In addition to shortening the calving season and days postpartum, FTAI can have beneficial economic effects. Lamb shared data from a herd in which half of the females were bred by natural

service. The other half was bred by FTAI followed by exposure to natural-service sires. The AI sires had similar expected progeny differences (EPDs), so the study was just looking at timing of calving value, not genetic differences in value. Due to the increased weaning weights of earlier-born calves, FTAI showed an advantage of 38 pounds (lb.).

On average, among the eight herds FTAI showed an economic benefit of \$49 per cow exposed to FTAI, and this includes additional costs of AI, labor, etc.

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Lamb accounted for the change in value based on herd sire costs. Gains of using FTAI on a 34-head operation compared to using a \$3,000 bull, a \$6,000 bull and a \$10,000 bull were \$2,881, \$3,875, and \$5,201 respectively.

He explained a selection tool to decide if your specific operation could benefit economically from using AI. The University of Florida and Zoetis have developed an app called AI Cowculator, which is a free app available through Google Play and Apple's App Store.

The app allows breeders to input their cost of natural-service sires, including bull maintenance costs and average purchase cost of bulls; cow herd-related costs like numbers of cows, number of natural-service bulls expected for clean-up to AI; and AI costs like additional labor, facilities and equipment, estrus-synchronization products, semen and AI technician cost. Using all of these inputs, the app will determine whether it would be more beneficial to use AI or natural service.

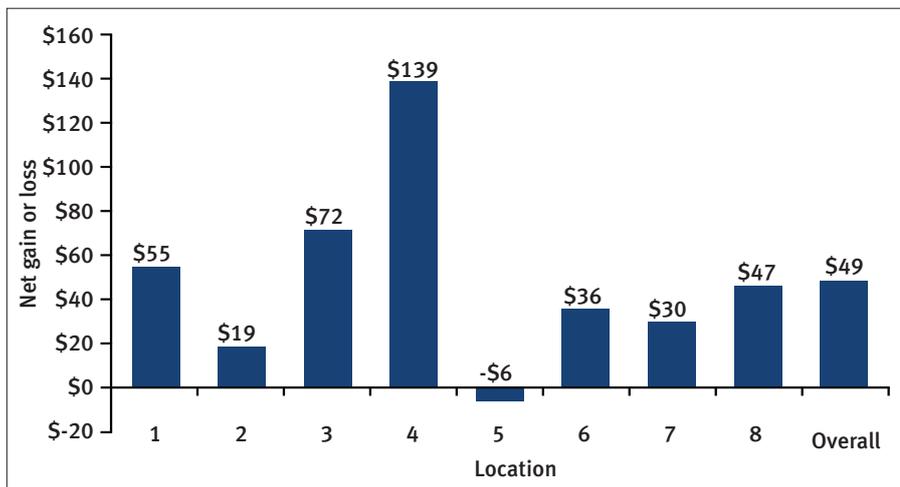
The app also has troubleshooting available through the AI Cowculator Facebook page.

Lamb spoke during Monday's ARSBC session focused on the bulls. Visit the Newsroom at www.appliedreprostrategies.com to view his PowerPoint, read the proceedings or listen to his presentation.



Editor's Note: Comprehensive coverage of the symposium is available online at www.appliedreprostrategies.com. Compiled by the Angus Journal editorial team, the site is made possible through sponsorship by the Beef Reproduction Task Force.

Fig. 1: Gain or loss per cow exposed to fixed-time artificial insemination



Source: Rodgers et al., 2011.