WASHINGTON STATE UNIVERSITY
VETERINARY MEDICINE EXTENSION

ag animal health *spotlight*

VETERINARY MEDICINE EXTENSION

October 2011

WASHINGTON STATE UNIVERSITY EXTENSION & WSU COLLEGE OF VETERINARY MEDICINE

Fine-Tuning Your Beef Cattle AI Program

By: Dr. Ram Kasimanickam and Dr. Dale Moore

Want to get more heifers bred in a shorter period of time? Read on…

Heifers are the most fertile creatures. But they still need to be treated with care to maximize their opportunity to conceive. Through some on-farm research, we have some new recommendations that will fine-tune your artificial insemination (AI) program to improve pregnancy rates.

In 2010 we completed research that showed how we could use a 5-day CO-Synch CIDR program to get good AI pregnancy rates. *(For details on AI and synchronization protocols go to:* http://animalag.wsu.edu/beef/FactSheet1002-2010beefheiferAI.pdf . In the 2011 study, we looked at fine-tuning the timing of insemination after CIDR removal.

During the 2010 heifer study we observed that quite a few heifers were detected in estrus 24 hours before AI (our set time for AI was 72 hours after CIDR withdrawal). We developed our working hypothesis based on this observation; that heifers inseminated earlier, at 56 hours might have higher AI pregnancy rates compared to insemination at 72 hours after CIDR removal.

The Research Trial: Over 1000 Angus-cross heifers were enrolled in the study at nine different locations in four states (Washington, Idaho, Virginia, and Wyoming). At each location, heifers were given GnRH at enrolment when the CIDR was inserted and two prostaglandin injections six hours apart when the CIDR was removed 5 days later, and then randomly allocated to be inseminated 56 hours or 72 hours after CIDR removal. The heifers were turned out with Angus bulls (1:30 to 1:40

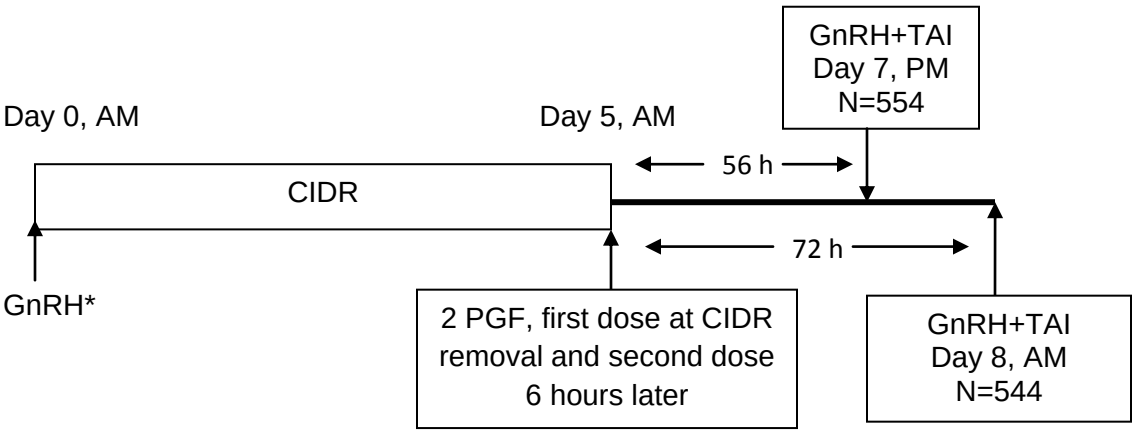
bull to heifer ratio) two weeks later and examined for pregnancy using ultrasound at 55 to 70 days after artificial insemination. All heifers were examined and scored for body condition at enrolment and about 625 of them also got a heat mount detector placed on their tail head. These heifers were also watched for heat three times a day until insemination.

The Results: For the heifers with the heat mount detectors, more of them that were observed in estrus at or prior to AI became pregnant to the first insemination compared to heifers not observed in estrus (65 vs. 52 percent). The AI pregnancy rates did vary by location of the ranch (from 56 to 69 percent). Controlling for location, AI sire, and insemination technician, **insemination at 56 hours after CIDR removal significantly improved AI pregnancy rate compared to insemination at 72 hours by 10 percent -- 66 vs. 56 percent pregnant to the single AI.**

The Conclusions: Paying attention to the timing of the artificial insemination, particularly reducing the time from insemination after CIDR removal in a CIDR Co-synch timed insemination program from 72 hours to 56 hours can greatly improve beef heifers' conception rates to a single insemination and reduce the whole process time for getting them bred to about 6 ½ days.

Protocol for the research trial:

Figure 1. Experimental protocol for WSU study investigating efficacy of artificial insemination 56 versus 72 hours after CIDR removal in beef heifers.



*GnRH-gonadotrophin releasing hormone; CIDR-controlled intravaginal drug release; PGF-prostaglandin F2a; TAI-fixed timed artificial insemination

For more information on beef cattle reproduction, see:

Beef Reproduction Task Force: http://beefrepro.unl.edu/index.html
Beef Pages for VetMedExtension at WSU: http://extension.wsu.edu/vetextension/Beef/Pages/default.aspx