Heifer Synchronization and History

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I belong to an internet service called ResearchGate. ResearchGate keeps track of the research articles one has published and who is reading them. As an old school Extension person my list of peer reviewed scientific publications is not massive, but I have been involved in several interesting research projects. Results of one of the first popped up recently. It was from the 1974 Kansas State University Cattlemen's Day Report and was about a synchronization project I did with beef heifers using a progesterone releasing device and prostaglandin F2 alpha. The progesterone releasing device was an ear implant (borrowed from the Synchro-Mate B protocol) and the prostaglandin was experimental and was marketed as Lutalyse six years or so after this research was done. We put the progesterone releasing device in the ear of 50 heifers and left it for seven days, then removed the implant and injected prostaglandin, and then watched for heat and inseminated the heifers exhibiting estrus. The results … IT WORKS! This was the first published research showing this is an effective heifer synchronization protocol and has proven to be one of the most consistently successful heifer synchronization methods … dairy or beef … year after year … herd to herd.

This is also on my mind because I have been working with a dairy herd that can't make a more complicated heifer timed insemination protocol work for some reason. My recommendation is to go back to basics and try this method.

The modern version of this method utilizes a CIDR and Prostaglandin F2 alpha. The term CIDR is short for Controlled Internal Drug Release. The CIDR releases progesterone into the vagina at a controlled rate. Progesterone is "the pregnancy hormone" and keeps the heifer from coming into heat. The commercial name for the CIDR is Eazi-Breed CIDR Cattle Insert and it is sold by Zoetis. Prostaglandin F2 alpha is the hormone that causes the corpus luteum to stop producing progesterone and regress. The Eazi-Breed CIDR is inserted into the vagina for seven days and an injection of prostaglandin F2 alpha is given on the day the CIDR is removed or the day before the CIDR is removed.

The protocol looks like this:

Day 0: Insert Eazi-Breed CIDR

Day 6 or 7: Inject prostaglandin F2 alpha

Day 7: Remove CIDR

Days 8-12: Watch for heat and inseminate the heifers detected in heat

If the heifer is in the stage of her estrous cycle where she would have been in heat during the seven day protocol, the progesterone absorbed by the vaginal epithelial cells will keep her out of heat until the CIDR is removed and she metabolizes the progesterone. These heifers show standing heat 24-36 hours after the CIDR is removed. If the heifer is in the stage of her cycle where she has a functioning corpus luteum during the protocol, the corpus luteum dies after the prostaglandin injection and the heifer comes into heat after she metabolizes the progesterone from her corpus luteum and the CIDR. These heifers will come into heat 36 to 48 hours or later after the CIDR is removed. The expression of estrus and conception rates are normal. This protocol synchronizes estrus but does not synchronize ovulation tight enough for timed insemination, so heat detection is required.