TEXAS A&M AGRILIFE EXTENSION

# Texas Dairy Matters

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## TIMING CRITICAL FOR AI SUCCESS

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Getting cows pregnant continues to be a challenge for most dairy herds. One of the main obstacles to reproductive success has been heat detection. Nationwide, less than half the cows that are predicted to be in heat are identified as being in heat on dairies.

To overcome this obstacle, researchers have developed synchronization programs, such as OvSynch. These programs allow timed artificial insemination (TAI) following a specific sequence of hormonal manipulations. For example, the OvSynch protocol starts with an injection of GnRH followed seven days later with $PGF_{2\alpha}$. A second dose of GnRH is given 36- 48 hours later with TAI occurring 16 hours after the second GnRH.

There is an optimum stage of the estrous cycle to start synchronization programs to obtain the best results. Because of this one or two injections of $PGF_{2\alpha}$ are sometimes given prior to OvSynch so more cows are in the optimum stage of the cycle.

As these programs have been implemented on farms, success rates have varied. On more than one farm, not enough GnRH or $PGF_{2\alpha}$ was on hand, so some animals were skipped or given the shot a day late. Delaying the interval from the first GnRH to $PGF_{2\alpha}$ by just one day can result in the newly formed follicle dying prior to ovulation. If the interval from GnRH to $PGF_{2\alpha}$ is shortened by one day, any corpus luteum formed in response to the GnRH may not regress in response to the $PGF_{2\alpha}$. Both scenarios can markedly reduce conception rates.

In one herd where a single dose of $PGF_{2\alpha}$ was given 14 days prior to starting OvSynch, conception rates were tracked following various program modifications. In this herd all cows were being synchronized for first TAI to occur between 60 and 66 dim. Cows that received all of

the injections had a first service conception rate of 30%. As happens in many herds, the breeders inseminated a number of cows that showed heat following the $PGF_{2\alpha}$ two weeks before starting OvSynch. The conception rate on those cows was only 20.3%. Another group of cows was observed in heat after the first GnRH of the OvSynch protocol and were inseminated. Their conception rate was 20.7%. More cows would have been pregnant if the whole program had been followed.

CIDRs are another tool in our reproductive management tool box that have just been approved for use in lactating dairy cows. Again if they are going to be used, timing is critical. In one herd, the first time CIDRs were used they were left in extra days. Only one of 22 (<5%) cows became pregnant. Subsequently, when timing was correct the conception rate following CIDRs went to 28.6%.

Although these are not controlled studies, it shows what happens on dairies. So if you are going to implement an estrous synchronization program on your dairy, adhere to the recommended timing for whichever program you use. Alterations in timing may very well decrease fertility costing you money from increased days open and wasted pharmaceuticals.