

Texas Dairy Matters

Higher Education Supporting the Industry

SUMMER TIME SYNCHRONIZATION PROGRAMS

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Getting cows pregnant in the Texas summer is difficult. Cows are hard to find in heat and their conception rate is reduced. In the past some producers have elected to depend on herd bulls during the summer, but have found reproductive performance is just as bad or worse. One way to enhance summer time pregnancy rates is to use a heat synchronization program.

Heat synchronization programs manipulate the estrous cycle of a cow so she can be inseminated at a prescribed time, avoiding the pitfalls of heat detection. One of the more common synchronization programs is called OvSynch. In this program cows receive an injection of GnRH, followed seven days later with an injection of PGF_{2α}. Forty-eight hours after the PGF_{2α} the cow receives a second injection of GnRH and she is inseminated 12-16 hours later.

More recently additional injections of PGF_{2α} have been given 14 and 28 days prior to the start of the OvSynch program to PreSynch the cows for their first insemination. This presynchronization is done to increase the number of cows in the optimum stage of the cycle for initiating the OvSynch program and serves to enhance uterine involution after calving.

The question is “Do these programs pay during the summer when we typically are seeing only about a 10% conception rate and heat detection rates of <50%, or a 5% pregnancy rate?” In synchronization trials conducted in Central Texas during two summers, we have had first cycle pregnancy rates of 25 and 20%. This herd did cool cows with fans and soakers as well.

The University of Pennsylvania has developed a computer model to predict the income generated per cow per day based on changes in heat detection rate for first and subsequent cycles. This model can be used to estimate what the economic impact of implementing a synchronization program for first insemination would be.

For the example, a herd with a mature equivalent 20,000 lbs. of milk, a milk price of \$12, a cull cow value of \$400, a replacement heifer cost of \$1200 (home rearing cost), a calf value of \$85, and a milk difference of 1000 lbs. less for a first lactation heifer compared to the mature cow she replaces was used. Because the model allows the use of only one conception rate, the average first cycle conception rate of 22.5% from the Texas trials was used.

Item	Scenario 1	Scenario 2	Scenario 3
First Cycle HDR	50%	50%	100%
Subsequent Cycle HDR	50%	50%	100%
Conception Rate	22.5%	22.5%	22.5%
Voluntary Waiting Period	45	60	60
First Cycle Pregnancy Rate	11.25%	11.25%	22.5%
Subsequent Cycle Pregnancy Rate	11.25%	11.25%	11.25%
Income/Cow/Day	\$6.50	\$6.43	\$6.84

Frequently, when conception rates are reduced, producers decrease the voluntary waiting period in an attempt to increase the number of cows becoming pregnant, so both a 45- and 60- day voluntary waiting period are shown in Scenarios 1 and 2 when synchronization is not used. Since with synchronization programs we predefine a narrow window of when we want to breed cows, Scenario 3 has a 60-day voluntary waiting period because more cows will have returned to normal cyclicity by then.

Cows in Scenario 3, which were synchronized for a timed artificial insemination, earned \$0.41 more per cow per day than those not synchronized with the same voluntary waiting period and \$0.34 more per cow per day than those not synchronized with a 45-day voluntary waiting period. Over the course of the 365-day year this means the heat synchronized cows will generate \$124.10 to \$149.65 more income than the cows not synchronized. If the hormones used for the synchronization cost \$20 per cow this is still more than \$100 per cow of additional income. Of course additional feed costs to produce the extra milk will offset some of the extra income as well.

If herd fertility suffers on your dairy in the summer due to heat stress, consider using a synchronization program, at least for first services. Providing adequate cooling is a necessity as well if you expect to continue getting cows pregnant this summer.