

Can You Afford NOT to A.I. Your Heifers?

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One of the fastest ways to make genetic improvement in your herd is to artificially inseminate your replacement heifers.

First lactation cows make up the largest age group on a typical dairy. Therefore, a heifer A.I. program can accelerate genetic improvement simply because there are more calves born from these cows.

Add this to the fact that the average A.I. sire has an advantage of \$180 Lifetime Net Merit Dollars over an average natural service bull (comparing first evaluation sires in the November 2005 USDA Sire Summary). This means resulting milking daughters of the average A.I. sire should return \$180 additional profit to the dairy, compared to daughters of the average herd bull.

Finally, your semen cost will be less per pregnancy for heifers than cows, because of higher conception rates. You get more bang for your buck!

With all these advantages, it is unfortunate more heifers are not bred A.I. The 2000 *Hoard's Dairyman* Continuing Market Study found that 46.8 percent of producers reported using a bull to breed dairy heifers. That was up 6.4 percent from 1998!

Producers have many reasons for not A.I.'ing heifers. On many dairies, heifers are housed on a different farm or away from the main farm making it difficult to heat detect. In other cases heifers are housed where there are no headlocks. With the rising cost of replacement heifers, many producers are focusing more on internal herd growth. Then the question becomes, "Can you afford not to A.I.?"

Fortunately, new developments in heat detection aids and synchronization protocols can make heifer A.I. practical in most situations.

Heat Detection

The three cardinal rules of a good heat detection program are:

1. Know the signs of heat.
2. Take the time to accurately heat detect - and only heat detect.
3. Heat detect at the right times of the day.

We all know heat detection can be time consuming, but it is a necessary chore for a successful A.I. program. The good news is research shows heifers stand to be mounted more often and are in heat longer than a lactating dairy cow. This may allow more efficient heat detection, spacing out the times you heat detect throughout the day.

There also are a number of heat detection aids available to help make heat detection even easier. I have listed a few of them below as well as some tips for using them.

Estrus AlertTM

The Estrus AlertTM is a self adhesive, friction-activated heat detection aid. You apply the patch to the tailhead before standing heat, or at the initiation of a synchronization protocol. When heifers are mounted during standing heat, the scratch-off surface of the detector is rubbed off to expose a fluorescent orange, green, fuchsia or yellow layer underneath.

Kamar® Heatmount Detector

The Kamar® Heatmount Detector is a pressure sensitive device with a built-in timing mechanism designed to be activated by standing heat activity. When the detector is glued to the tailhead, pressure from the brisket of a mounting animal requires approximately three seconds to turn the detector from white to red. The timing mechanism helps assure activation from true standing heat and not partial mounting activity.

DETAIL™ Tail Paint

DETAIL™ Tail Paint is water-based, non-toxic heat detection paint. When applied in a 2" x 6" strip to the tailhead of an animal, it serves as accurate heat detection aid. The paint is removed from the mounting action of other animals, letting you know an animal is in heat. It contains the bittering agent Bitrex to discourage other heifers from licking the paint off and lasts for 7 to 10 days with minimal touch-ups.

Heat detection aids cannot totally replace visual detection, but they can help you be more effective by being your eyes when you can't be there.

Synchronization

In the last several years many estrus synchronization protocols have been developed specifically for use in heifers. The programs usually involve a minimal amount of heat detection and minimal times the cattle have to be handled, and they maximize conception and pregnancy rates.

Synchronizing estrus of the animals allows for more effective heat detection with greater accuracy and less labor. Heifers should be inseminated as soon as practical after observing standing heat.

Oral MGA

MGA is an inexpensive oral feed additive used in conjunction with GnRH and prostaglandin (PGF_{2α}) as shown in the chart below. The key to this program is to only inseminate after the PGF_{2α} injection. Many animals will show heat a few days after MGA is removed from the feed. The program needs to be followed exactly to ensure the highest pregnancy rates, as heats are less fertile before PGF_{2α}.

- Feed Oral MGA** – Start Day 0 until Day 14
- GnRH** – Day 25 (Optional for tighter synchronized in cow group)
- PGF_{2α}** – Day 32
- Heat Detect and A.I.** – Day 33 and on. Only A.I. after PGF_{2α}.

	M	T	W	Th	F	S	S
Feed MGA	→						
Feed MGA	→						
				Inject GnRH (Optional)			
		Inject PGF _{2α}	Heat Detect				

GnRH-Prostaglandin (PGF_{2α})

This protocol calls for the animals to be handled three times. This is a fairly inexpensive program because there are just two injections, but there is a higher labor for the time needed for heat detection.

Timed AI 72 hours after second PGF_{2α}.

- GnRH** – Day 0
- Start Heat Detection** – Day 6
- PGF_{2α} all non-inseminated cattle and Heat Detect** – Day 7

	M	T	W	Th	F	S	S
Inject GnRH							Heat Detect
Inject PGF _{2α}		Heat Detect					

Heat Detection and Prostaglandin (PGF_{2α})

This is the simplest of the protocols presented. The program begins with intense heat detection for at least six days. This assures the animal is in the proper stage of the estrous cycle for a single injection of prostaglandin to be effective. The injection should be followed with another round of intense heat detection. This program has the lowest drug cost with only one injection, but requires the most time for heat detection.

- Heat Detection is key here.*
- Intense Heat Detection** – Day 0
 - PGF_{2α} all non-inseminated cattle and continue to Heat Detect** – Day 6

	M	T	W	Th	F	S	S
Heat Detect	Intensely						
Inject PGF _{2α}	Heat Detect	Intensely					

EAZI-BREED™ CIDR®

The EAZI-BREED™ CIDR® is a great reproductive management tool to tighten estrus synchronization. Within the protocol there is a shot of prostaglandin that must be given to

- CIDR® Inserted** – Day 0
- Inject PGF_{2α}** – Day 6
- CIDR® Removed** – Day 7
- Heat Detect and A.I.** – Days 8-11

	M	T	W	Th	F	S	S
Insert CIDR							Inject PGF _{2α}
Remove CIDR	Heat Detect						

ensure the high levels of pregnancy rate.

Before choosing a synchronization protocol for your heifers, consider your handling facilities and the time you are able to put into heat detection, giving shots and on insemination day.

Finally, don't forget your Genex representative will be able to provide you with the kind of service and products to help get your heifer A.I. program off the ground. Good luck and happy A.I.'ing!

Author Bio: Sarah Thorson conducts reproductive and educational programs, as well as training Genex employees and producers who breed their own cows.