



# Genetic Improvement Using AI – Why Not?

**With the upcoming spring breeding season just around the corner, artificial insemination is a good topic to discuss. You may have already read the articles and reviewed the university studies – AI works and the economic results are undeniable. Still only about 8 percent of U.S. beef operations are using AI. Why is that?**

If we were to ask the other 92 percent of producers, I believe they would answer:

- Don't have the time or man power.
- Tried once and it was a failure.
- Don't have the proper facilities.

First, let's briefly discuss the proven benefits of AI to help get our minds on the same page. We know that by implementing a sound AI program we can achieve:

1. Tighter calving window. We can get 55 to 65 percent of our calves born in a 10-day period.
2. Improved genetic potential. You can breed to the industry's top genetic bulls without having to pay big money to own that sire.
3. More uniform calves due to tighter calving period and more similar genetics.

4. Fewer walking bulls needed to breed and maintain year around.
5. Ability to focus and change a particular area of your cowherd quickly due to the use of superior genetic outliers.
6. Ability to move late calvers up as much as one complete heat cycle with synchronization.
7. More pounds weaned due to the ability to move your cows ahead in the breeding season.

We just identified seven advantages that are significant to the cow-calf business, yet only 8 percent of our producers take advantage of this well-proven technology. This is concerning, and we need to go over some of the potential issues that negatively influence some producers so much that they completely avoid AI. Hopefully this discussion will help overcome their concerns.

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Why don't we start with the ever so famous?

### It Requires Too Much Time!

Artificial insemination does require much more time and management than turning a couple of bulls out of the trailer, but the words "too much" are really not accurate. Let's stop and really think about where your operation's genetics are today and where they could be a year from now?

Also, what economic benefits is your operation missing out on, due to the lack of an AI program? You will likely agree that "too much time" spent on your herd's genetic improvement and on your bottom line is a misnomer. You really cannot spend "too much time" on the factors that so greatly affect your success or lack thereof. There is no way around the time issue, but once a successful AI program is in place, you will very likely say "I can't afford not to spend the time it takes."

### Tried AI Once and It Was a Disaster

Producers that have tried AI and had a bad experience should not give up. You can ask the most experienced operation that has been using AI for 30, 40 or even 50 years – results do vary and aren't always as good as hoped. Without question, this is to be expected, but it still outweighs the alternative.

Also keep in mind that most negative AI experiences can be avoided with careful planning and management decisions. Let's go over some of these variables to help avoid disappointment in the future.

### Cow or Heifer Body Condition

This is a very important factor that sometimes gets little attention. Good body condition doesn't mean fat. Too much fat or flesh can be just as detrimental as being too thin. The ideal body condition score is between 5.5 and 6.

But even more important is nutrition. Is your female on a higher-trending plane of nutrition for 30 days prior to breeding? If not, reproduction will not be the first thing your cow's physiological system prioritizes. The ability to breed actually ranks fifth after supplying nutrients to vital organs, lactation (in cows), growth (in heifers), general body maintenance, adding a reasonable level of body condition, and then finally reproduction. Make sure her "multiple" nutrition levels are satisfied so she can accommodate your desire for her to reproduce.

### Semen or Gun Handler and AI Technician

Don't underestimate the importance of your AI technician. Once you have put all the time and money into preparation,



it's crucial to have the semen deposited in the proper location. This person has the last step of the breeding process and can make a huge difference in overall conception rates. Sometimes it is their fault when things go poorly, but other times technicians are unfairly blamed.

Perhaps more important than your AI technician, is how your semen and guns are handled. Make sure the person loading your gun(s) is well trained and knows the importance of their job. You can have the absolute best AI tech in the world, but if the semen is damaged or dead when he or she deposits it, you would have the same results if you deposited it on the ground. Those cows or heifers won't conceive!

### Environmental Conditions

Be creative. You don't need a fancy indoor processing facility or breeding box to have success, but you must control the environmental changes that arise. If you are outside, improvise.

A little homemade tarp shelter beside the chute will allow you to control the climate by either heating or cooling the area as desired. It will also help control UV light (that damages sperm cells), and helps with cleanliness of the equipment being used to handle the semen. After you have enclosed your semen-handling area, you must now put something over your chute to keep moisture out. Rain and snow will add to contamination issues and any small amount of water kills sperm. None of this will cost much, but the cost of not protecting the insemination area could be huge.

### Knowing How to Properly Detect Heats

The ability to detect heat and knowing the proper time to inseminate is a learned art and takes time and effort to be successful. Fortunately, most semen companies offer assistance in both heat detection and AI services. Don't hesitate to ask for help.

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A lot of operations using timed AI protocols have moved away from engaging in any type of heat detection. That may be fine, but in some cases it has negatively affected conception rates.

In a perfect situation, using an AI synchronization protocol, you give all shots at the proper time, all females cycle at the proper time, and you breed them all at once. Rarely do all the females show estrus at the expected time. This is due to variation in estrus cycles within your herd.

You can easily improve your conception rates by 8 to 10 percent by pulling three different heats on a timed AI protocol. You will have 10 to 12 percent come in 24 hours early. Breed these 12 hours earlier than directed, or you will be too late by waiting until the scheduled time.

Then, if everything is going as scheduled, you should have a large majority show estrus 12 hours prior to the planned breeding time. It is crucial that you wait to breed 10 to 12 hours post-standing heat – it is better to be a little late than too early.

Finally, you will have 10 to 12 percent when you are finishing up breeding your main group that will be just starting to come in or not showing estrus at all. It's up to you at this point on what to do with the stragglers. You have several options – either wait 12 hours to see more show estrus and breed 12 hours later, don't do anything with those who show no sign of heat, or AI all of them on schedule and hope for the best. You will normally get 25 percent of this late group to conceive, because some will be in estrus but don't show outward signs.

### Post-Partum Interval

An AI-synchronization program is a great way to tighten up a herd's calving interval and to move a late group forward, but always keep the length of your current calving season in mind. If you take a group of cows that calved over a 60-day period and you try to AI the entire group to start calving at the beginning of next year's calving season, you will likely be disappointed.

That said, it is proven that a cow can move up one entire cycle (21 days) if she is in great condition. To move her up more than that in one year is possible, but not commonly done with success. The reason is that it normally takes 45 to 60 days post-partum for uterine involution and return to cyclic activity. Rather than trying to breed them all at once, breed in two groups.

The first group should consist of females that calved in the first 30 days with the second group comprised of those that calved in the last 30 days.

This might feel like you haven't accomplished much, but you have! You just moved a group that calved over 30 days to hopefully getting 60 to 70 percent of them to calve in the first week. The same with the second group. Once you do this for a couple of years, you will have the herd in a very tight 30-day period or less (if desired) and you helped to pull them together without having poor results by asking them to do the impossible.

### Semen Quality

Don't assume anything – this is your livelihood and your success is on the line. Your operation's upcoming year starts with your breeding decision; success or failure lurks on the horizon.

Don't necessarily assume semen quality is good upon arrival. The quality has rested in other hands before it arrived at your tank. Semen must be safely handled during collection, evaluation, freezing, storage and then transportation. Once in transportation, it is handled by multiple people that may have no education on proper handling, and there could also be uncertainty regarding how long your tank sat in transit before it arrived at your farm or ranch.

Don't wait until fall to find out that your entire tank of semen was no good. Consider taking one straw out of every 100 units and test it. If you don't have a microscope, your vet will. This will cost you the value of one straw, but it will cost you a whole lot more if the entire shipment was bad!

Hopefully, these suggestions help build confidence and eliminate man-made variables that affect the success of your AI program. If you have never tried AI or have had a bad experience in the past, I challenge you to try it for the first time or to try again. Once you have success, you'll never look at your breeding program the same again. Be forewarned, it will become addicting once you witness the transformation in your herd!

If you have a breeding management program in place that focuses on growth and carcass in your herd, let's visit. I'd like to discuss your herd's ability to qualify for Top Dollar Angus® and for you to learn how we can improve demand and price premiums for your high-end genetics. We are looking for those herds that have invested in high-quality genetics and want their calves to stand out from the pack. Let's talk about your 2017 marketing needs and qualifying your operation for Top Dollar Angus. ■



For more information, contact  
**Top Dollar Angus®**  
**Kenny Stauffer,**  
**General Manager**

308-641-0429 • [kenny@topdollarangus.com](mailto:kenny@topdollarangus.com)