

# Over The Wire

A Beef Cattle E-Letter for Area Cattle Producers

## Artificial Insemination: The Forgotten Technology

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### *Where Are We With AI?*

Using artificial insemination to breed cattle has been around for a long time, in fact, it was started in dairy cattle in the 1930's. The dairy industry in this country has really adopted this technology with approximately 66 percent of dairy cows bred artificially each year.

The beef industry has not been as aggressive in using AI. There are less than 5 percent of the beef cows in this country bred AI and the majority of these cows are located on purebred operations or on ranches that produce club calves for the 4H and FFA club calf market.

When you look at the competition, the hog industry, AI is used by over 70 percent of commercial hog operators to breed their sows. Wow!

### *Why Not in The Beef Industry?*

In a paper written by Dr. John Hall, University of Idaho Extension Beef Specialist, entitled *Strategies to Optimize Use of AI in Cow/Calf Production Systems*, he indicated that when beef cattle producers were asked why they did not use AI and other reproductive technologies, the vast majority indicated that it was due to the increase in labor required. Producers also said that increased costs, the difficulty in starting an AI program and the lack of facilities were additional reasons for not adopting the available technology.



Dr. Steven Blezinger, a private beef cattle consultant from Texas, indicated in an article he authored that at one time AI was way more expensive than natural service, but today that is no longer the case. Good bulls are very expensive and most commercial cattle producers have to really think hard about spending tens of thousands of dollars on a herd bull. A straw of semen from most of the top bulls in the industry can be purchased at a cost that ranges from \$15 to \$50 depending on the bull.

Dr. Blezinger also stated that in the olden days, AI sires were not much more genetically superior than the average bull. That is no longer true today either. The top AI sires in today's industry have exceptional genetic potential and are proven. With EPD's and now DNA enhanced EPD's, producers can select bulls with confidence and make tremendous genetic improvement in their herd.

## ***How Can I Address the Labor Issue?***

There is no way around that fact that there is an increase in labor if an AI program is used. Increased labor in the form of hours spent heat detecting cows and the labor needed to run them through the chute.

We can't reduce the labor for running the cows through the chute, but technology now allows us to use synchronization programs that can eliminate the need to spend time heat detecting cows, which drastically reduces the amount of time spent on an AI program.

## ***Facilities?***

Most ranches have a decent set of working corrals, alley way and chute at the ranch headquarters. These can be used for breeding cows in an AI program. Fall calving operations can usually have access to these facilities because the cows are in the winter feeding area normally close to the ranch's working facilities.

In most spring calving operations, the cows are turned out on pasture or range during the breeding season. Having access to working facilities that will allow for AI is difficult. There might be some gathering pens at the pasture location and little else. To solve this problem, some AI companies have portable facilities that can be set up and used for implementing an AI program. Of course, it will be easier to talk the companies into bringing the portable working facilities to a pasture if there are a large number of cows to breed. So there are options in regards to working facilities if an AI program is considered.

## ***Will it Pay?***

Dr. John Hall pointed out in his paper that I referenced earlier, that AI will indeed improve product quality and will result in more money returned to the ranch. Hall referenced results given by Mr. Tim Sutphin of Hillwinds Farm in 2007. Mr. Sutphin indicated that calves sired by AI bulls and born to dams that were also produced via AI, returned 22% more to the ranch in income compared to natural sired calves born to natural sired cows.

The percentage of steers grading choice was also

greater with 61% of the calves born from non-AI dams and sires grading choice, compared to 74 to 85% grading choice when one of the parents was born via AI, versus 97% grading choice when both the dam and sire were from AI.

Of course these returns were obtained by retaining ownership in the cattle and selling them on the rail using the grid. Selling at weaning will reduce the amount of return, however, it will make the calves more valuable when the buyers realize how good the calves are.

The top AI sires are really expensive and most have high accuracies. This spring, the top bulls in each breed are selling for tens of thousands of dollars. With DNA profiling and EPD's, they can be used with confidence that they will improve various traits.

Most commercial producers have a budget that will allow them to spend three to four thousand or less for a bull. These bulls may have good genetics, but the genetic improvement in the herd will be significantly slower compared to using the top bulls in a particular breed.

## ***Synchronization Protocols***

"One of the most significant barriers to a successful AI program is effective estrus detection. Therefore, a principal strategy is to improve the efficiency of estrus detection or to eliminate the need for estrus detection altogether." Dr. John Hall, UI.

There are several estrus synchronization protocols with some allowing for fixed time breeding which eliminates the need to estrus detect as Dr. Hall indicates. This new technology has made it more practical for commercial cattle producers to adopt AI. Producers can look at their calendar and determine when it will work for them to use estrus synchronization and fixed time AI. Conception rates vary based on many factors, but several studies have shown that using a synchronization program and fixed timed AI can result in pregnancy rates of 50 to 60% .

The major problem with these synchronization programs is the number of times you have to run the cows through the chute, usually 3 to 4 trips.

I don't have space to list all the estrus synchronization protocols. If you would like more information, visit the Estrus Synchronization Planner website at [http://www.iowabeefcenter.org/estrus\\_synch.html](http://www.iowabeefcenter.org/estrus_synch.html). Also, feel free to contact me or any AI company representative for help.

### **Summary:**

Artificial Insemination is a tool that should be considered for use by commercial cattle producers. The technology available allows for AI to be more feasible than ever before. This technology is being adopted at a rapid rate in many foreign countries as they try to catch up with the US beef industry.

Research has shown that adopting AI and estrus synchronization can increase profits and improve the quality of the producer's herd.



The facilities needed to adopt an AI program and the increased labor costs associated with handling the cows a number of times is a concern. However, the advantages of AI should offset these issues.

For more information on this topic, please contact me. Good luck with your spring work.

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### **References:**

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