



To AI or Not to AI?

The question requires some consideration.

by Sara Gugelmeyer

Ranching, put simply, is managing one's own business with the added benefits of pretty scenery and a rural lifestyle. So when it comes to decisions like choosing between buying a bull or buying semen for artificial insemination (AI), the business manager ought to determine which one is most cost effective and best fits the operation. And it's one of the most important decisions a manager must make because the right choice will greatly affect the profitability of the saleable product: calves.

The traditional method for many a cattleman is to choose a bull or bulls based on the operation's production goals. The bulls are turned out with the cows or heifers, and, hopefully, about 283 days later, good quality, consistent calves are born without incident. But others may prefer using AI. Still, the cattleman must choose a bull or bulls that fit his production goals, but then the cows or heifers are likely synchronized, then inseminated. And again, hopefully, he gets the same result: good quality, consistent calves are born without trouble.

Although the end result may be the same, the costs and

decisions involved with each method must be considered.

Management

The major difference between the two methods is management. This will be the deciding factor for many operations, and Tim Shaw Herefords, Cascade, Idaho, is one. Tim runs about 300 registered cows and only uses bulls via natural service to breed his cows. The decision for him is simply about management, he says. "We summer the cows near Cascade, where I live; then in the winter, we bring them down about 70 miles to the Boise Valley, below the snow level," Tim says.

Tim and his son, Thomas, plus their wives are the only employees of the operation, and at breeding time, the cows are at least 20 miles from their homeplace. Plus, it is rented land, and there is no working facility, making it impossible to AI their cattle.

Grazing the lower elevation rented land helps the Shaws to feed their cows only 30-45 days a year, and they are still able to keep a tight calving season of 60 days. They have been using this program for about 10 years, and before that they did use AI. "We did it all ourselves; it's just that the cows were right here where we could see them all the time, and we were set up with the right facilities to handle them."

For Tim the advantages of wintering his cows in the valley outweigh any advantage he may have had with AI.

There are other operations like Tim's that just aren't set up to handle the AI process. Chad Ellingson, beef sire procurement manager for Genex/Cooperative Resources International, admits AI does take a high level of

management. He says, "If producers are too spread out and can't highly manage the cows or if they are running on large allotments of land and cannot gather them, AI isn't going to work for everybody."

Ellingson says there are situations where Genex field staff will visit with a producer and explain that AI won't be successful for him because of the management situation.

Cost analysis

If a producer has examined his operation and believes that he can provide the right management to make an AI program work, he next needs to determine if the benefit will outweigh the cost.

For Vern Rausch of Rausch Herefords at Hoven, S.D., the benefits are not always worth the added time and expense of AI. Rausch's operation consists of about 1,000 registered Hereford females. The massive time requirement necessary to synchronize and inseminate that many head makes it too costly to AI the whole herd.

Rausch explains that for his operation, the cost of AI when considering conception rates, labor, yardage and other management expenses is the equivalent of spending \$7,000 per bull.

When considering which method will work best, producers need to consider all expenses involved with each. For natural service, it's important to consider the initial price paid for the bull or if the bull is home-raised, the opportunity cost of what the bull is worth if he were sold should be used. Added to that should be the cost of maintaining the bull year-round and the added

revenue that would be earned if an extra cow could take his place. The yearly depreciation expense should be considered plus any vet expenses throughout the year like vaccinations, deworming and semen testing, among others.

Ellingson says, "If you do a cost analysis of keeping a bull, I think a lot of times people don't realize first they have the investment costs: they'll have a \$500 feed bill on top of that per year and then the depreciation of the bull; there are a lot of costs involved. If you divide that out by natural service bulls breeding 25 cows per year, it's very comparable and sometimes at a savings with using AI."

He adds that with AI, depending on the bull chosen, in a commercial situation, a pretty good bull will be about \$15 per unit of semen. "On a percentage basis on calves conceived or pregnancies, you are going to be in about that \$25 range," Ellingson says. "If you put the arm service, or time if they're doing it themselves, and labor costs and synchronization costs, they're still going to be in that \$35-40 range per pregnancy."

Most likely producers are still going to need some bulls to use for cleanup, and those costs should be included in the cost analysis.

Ellingson says it's important to remember that breeding with AI after synchronizing will be much more successful, resulting in a shorter calving interval. "If you synchronize a herd of cows, there's going to be a lot more cows conceiving a calf on day one of your breeding season versus strung out over 21 days," he says. "So from a calving interval standpoint, you are going to shorten up the

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interval, have earlier calves with a combination of synchronization and AI versus natural service.”

With that considered, a shorter calving interval will result in a more even set of calves at weaning, which is important for earning top dollar at marketing time. However, using AI isn't the only way to get an even set of calves.

When examining conception rates of AI versus natural service, Ellingson admits that natural service has a slightly higher percentage of conception on a per service basis.

Pros and cons

Rausch and Ellingson agree that the major advantage of AI is that the sires are proven for certain genetic traits, resulting in a higher chance the producer will get calves with the traits he wants.

“If they're looking for calving ease, they can choose a high accuracy calving-ease bull that when they come to calving, they are not having to pull a calf,” Ellingson says. “Or from a maternal or a carcass standpoint, if they are trying to improve their carcass, they can use a sire that is proven maternally or for growth. There are many different options where you can know what you're getting before you put the semen in the cow.”

Rausch agrees, saying, especially for a smaller producer, “Using AI can be very beneficial to breeders who have limited cow numbers because it gives the breeder access to more than one sire to mate the females to.”

He adds, “The American Hereford Association's Whole Herd Total Performance Records (TPR™) program is the best thing to come along for the Hereford breed since performance records started in 1960. The fruits of the program are starting to come of age. The volume of complete data is making genetic predictability much more accurate.”

This program is making it easier for producers to find bulls to use by natural service with a more accurate predictability of the sire's heritable traits.

Plus, Rausch adds, using AI bulls to sire herd bull prospects doesn't allow for seedstock producers to predict how the progeny will stack up in terms of economically important traits such as fertility, ability to service the cow, ability to cover a big pasture, mothering ability of the daughters, temperament and longevity.

Also, while AI allows for genetic improvement by giving more producers the chance to breed their cows to industry-leading bulls, it also makes genetic defects more likely to adversely affect the breed because it limits the breed's genetic base by

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spreading it over several more animals. Rausch says, “AI has the ability to scatter more rapidly both the good and bad undiscovered genetics in the population of the breed.”

For many these pros and cons result in using a combination of both methods of breeding for cows and heifers. In 2008 Rausch selected some of his cows and young heifers to breed AI because of the genetic predictability of AI sires for traits like calving ease but prefers to use natural service to breed the large majority of his cows. Even Tim Shaw has tried using AI in recent years on his heifers, despite the management issues associated with a more labor-intensive method.

Each producer needs to weigh the advantages and disadvantages of both natural service and AI to determine which method will work for the type of female being bred and the type of calf he wants to produce.

The good news for the Hereford breed is that more cattlemen are

turning to Hereford genetics, whether it be for AI or natural service bulls. On the AI side, Ellingson says he is seeing growth in the demand for Hereford semen.

“I think there's a growing demand for AI amongst Hereford bulls, and we have been actively seeking bulls that not only will fit the elite registered producers but that will fit the commercial producers that are probably using crossbreeding to produce quite likely baldies for replacement females,” Ellingson says. “We think there's a growing demand for using Herefords among commercial cattlemen, and for that reason we are bringing in bulls that have a balance effect of calving ease, maternal and structural correctness, and longevity with top-percentile-ranking growth traits.” **HW**