

THE WINNING TICKET?



Embryo transfer can provide many benefits to Hereford breeders. But is an ET program the winning choice for you?

by **Christy Couch Lee**

The possibilities are enticing. With the advancements of modern technology, you can produce dozens of calves from your best cows each year. Yes, embryo transfer (ET) can appear to be the golden ticket for your operation.

David Faber, DVM, Max Stotz and Jason Hoffman have years of experience with ET. They say this tool can be a great asset to your ranch. However, with the investment required, you must determine if the odds are in your favor. Before you

take a gamble, ensure ET truly is right for you.

Experience with ET

Faber is the president and founder of Trans Ova Genetics, Sioux Center, Iowa. In 1980 Trans Ova began offering ET services, and today, its services

have grown to include in-vitro fertilization, sexed semen and cloning to beef and dairy producers across the U.S.

“Our goal is to be able to help producers take their elite animals and have a great impact on their herds,” Faber says. “And by utilizing ET, the top few percent of females in a herd has the ability to make faster genetic gain or progress for a producer.”

Stotz, Star Lake Cattle Ranch, Skiatook, Okla., says by utilizing ET for more than two decades, Star Lake has discovered its highest valued calves are often ET calves.

“You are able to identify the cow that you want to get more offspring from — the one you would like to produce more than one calf per year,” he says. “We’re not rocket scientists. We just try to pick the right cows.”

In a typical year, Star Lake flushes about 25 cows. In addition to selling embryo calves year-round, Star Lake also sells 40-45 embryos in monthly Internet auctions.

Hoffman works with his dad and stepmother, Dennis and Dixie; wife, Kaycee; and hired herdsman, Andy Scasta, on the family operation — Hoffman Herefords, Thedford, Neb. They annually register 200 Hereford calves, with plans to grow to more than 300 registered calves per year — 75% of which will be ET calves.

continued on page 18...



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— *David Faber*

ET allows you the opportunity to sell groups of full and half brothers, which is very appealing to commercial producers.

— Jason Hoffman



He has utilized ET for the past six years and recently has taken their ET program to a new level with the addition of an ET center on their ranch. This center allows their embryologist to work year-round on concrete in a heated facility, if needed, to flush about 30 cows at a time.

These men say for a program wishing to propel its operation quickly, ET is an excellent option. And, Stotz says, it all boils down to simple mathematics.

“Rather than a cow having one calf a year, she can now



Shane Bellow, Trans Ova Texas location leader, performs an embryo collection.



Trans Ova Genetics embryologist searching for embryos from a donor collection.

have multiple calves in that same time,” he says. “Rather than only producing one \$2,500 calf a year, she may now produce three or more times that.”

Faber says, in some cases, a producer’s top cows have the ability to improve the entire herd with ET.

“The top 5 to 10% of cows in a herd have the ability to produce high-quality calves to significantly provide return on more than one calf a year,” he says. “You really can multiply success and improve the genetic gain in your herd.”

And, for cattlemen with a commercial bull market, Hoffman says, ET can also be beneficial.

“When you can sell a commercial producer half to full brothers and know the consistency of EPDs (expected progeny differences) and phenotype, it’s very appealing to them,” he says. “And, for the consistency of the cow herd, you can have many cattle bred similarly — flushmates to go back into your replacement herd. That will pay off down the road.”

Although the benefits can lure you to begin an ET program immediately, these men say you should keep a few things in mind before you start.

Look before you leap

Faber says before you begin an ET program, you must have realistic expectations of what the technology can offer your program.

“There is a large amount of variation — some cows produce very few embryos, while others can produce hundreds a year,” he says. “It’s important to understand there can be wide variations in the end result.”

Stotz says you must also determine your market to understand your desired calving dates. Reproductive experts often recommend keeping a cow fresh for 90 days before flushing, he says. For example, if she calves in January, she can be flushed in April. Therefore, you must plan accordingly.

Perhaps the greatest initial consideration, Hoffman says, is to determine the financial feasibility of ET for the operation.

Know the costs

“No matter what you think it’s going to cost, you should plan on multiplying it by half again,” he says. “You need to determine if your customer base is going to reward you for taking that risk.”

Stotz says ET can be expensive. Therefore, you must ensure you’ll make a profit before you begin.

“The name of the game is to make a profit or a living,” Stotz says. “If the grandmother is a good cow and that cow is going to produce a top calf, it’s more probable that you’re going to have good offspring.”

Faber says ET is a profitable choice when a producer has a superior female that he or she believes can cover the cost of the services and provide a return on the investment made.

“You need to have the ability to sell calves or replacement heifers that will have a high value to offset the costs,” he says.

Of course, the greatest cost to your ET program could be the donor female, Faber says.

Then, you must determine if you prefer to do much of the work at your farm or to take your donor to

a facility where much of the labor and inputs are included in the fees.

In an on-farm setting, the producer provides most of the inputs, including feed, labor and recipient cows (recips). Often, in this situation, Hoffman says, a producer must also be able to adjust his schedule and plan on additional time inputs.

"It's like anything else — you're going to get out of it what you put into it," Hoffman says. "The management doesn't kill you when you follow a routine, but it does get tiresome. We breed off the cow's heats — 12 hours later. So, if she comes into heat at noon, we breed at midnight. No matter what you're doing, you have to drop it to keep the proper schedule for embryo work."

At the other end of the spectrum, a producer may take a cow to a center that provides all services, including the pregnant recips, Faber says.

"The time involved in the latter is as little as delivering the donor to a center where the services are provided," Faber says. "The center will manage the donors and provide heat detection, super-ovulation, synchronization and breeding for the donor cows, as well as synchronizing the heat detection on the recips." The center will also transfer embryos to recips or freeze the embryos.

Selection of the embryologist for your operation can play a major factor in costs. However, these gentlemen recommend not allowing cost to determine your technician. Rather, Faber says, experience and service should drive your choice.

"Can the ET practitioner provide the necessary services that you need?" Faber asks. "It's like any other service: locating experienced professionals who have trust, respect and integrity should be your top priority. Really, you should be looking at cost per pregnancy, not cost per service."

Hoffman says using a local veterinarian for your ET services may not be best.

"The technician you use should have a great reputation and experience," Hoffman says. "The way I look at it, you cannot teach experience. You want to use someone who's reputable that has a good track record."

And, if you're a smaller producer, Hoffman recommends ensuring the technician you choose has experience working with operations of all sizes.

"You want to make sure your embryologist isn't too busy to take care of a smaller guy," he says.

When determining the costs of ET for your operation, remember to include the cost of recips — feed, drugs and related expenses. Stotz says synchronizing recips is critical, as open recips can be one of your greatest costs in an ET program. If they are open, they are simply eating away profits — literally.

"We've found over the years, an open recip is one of the biggest costs you'll have as a purebred producer," he says.

Hoffman says they have located breeders who will implant Hoffman embryos into their cows. Then the Hoffmans buy the calves back, based on the producers following mandatory conditions, such as creep feeding.

Not only must you determine if ET could be financially feasible for your operation; you must also ensure you have a donor-worthy cow.

Is she worthy?

Most often, the best donor cows are young to middle-aged; have been

A look at the numbers

The costs of an embryo transfer (ET) can vary, based on the embryologist and services used. Below is an estimate of what you can expect to spend per cow when on-farm ET work is performed, according to David Faber, DVM, president and founder of Trans Ova Genetics, Sioux Center, Iowa; Max Stotz, Star Lake Cattle Ranch, Skiatook, Okla.; and Jason Hoffman, Hoffman Herefords, Thedford, Neb.

Donor flush – \$265-300

Donor drug cost – \$125

Semen if purchased – \$50-100, depending on how many units of semen are used.

Transfer of embryo – \$45-75

Freezing of embryo – \$45-50 per embryo, if billed per embryo. Price varies greatly if billed by batch.

Registration of resulting calf:

0 to 4 mos. – \$27 per calf

4 to 8 mos. – \$33 per calf

8 to 12 mos. – \$40 per calf

more than one year – \$65 per calf

ET certificate if semen was purchased – \$100

ET certificate if you own the bull – \$0

Donor DNA profile – \$32

Synchronization of recip – \$13

Total out-of-pocket costs can vary greatly when utilizing a provider to house, super-ovulate, breed and collect donors. Faber says, for these services, you can expect an estimated \$300 per pregnancy, depending on how many embryos a cow produces. The more embryos produced, the lower the cost per pregnancy.

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properly managed; have a well-conditioned body score; have been fed quality feedstuffs, vitamins and minerals; and have been well housed and maintained in a quality, stress-free environment, Faber says.

A potential donor cow must also be of high genetic quality, Faber says.

"We need to have donor cows that have the ability to produce progeny with exceptional values," he says.

continued on page 20 ...



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— Max Stotz

In addition, a high-quality donor must also be able to produce the number of embryos that an owner needs, Faber says.

“Some cattlemen assume more is better, but that’s not always the case,” he says. “In some operations, they may only wish to have a finite number of embryos out of that particular cow. Then, it’s not about how many, but about having an adequate number of embryos to meet their expectations.”

And, should a cow have difficulties in producing an adequate number of embryos, Faber says, technology such as in-vitro fertilization can be of assistance.

“Today, we have so many tools available to work with donor cows; we have the ability to produce embryos out of almost all donor cows,” he says.

Hoffman says you can learn a lot about a potential donor cow by evaluating her pedigree.

“That cow family backs up a lot,” Hoffman says. “I’ll take a much higher risk on one that is plainer but has several good cows behind her, than one who is better phenotypically that doesn’t have the cow herd behind her. That cow family and the genetics are way more important than one special individual.”

He says to also evaluate pedigrees for any red flags — anything two or three generations back that could surface again.

“Through ET it’s probably going to surface again,” he says. “You want to stay far away from any red flags in a cow family’s history. Otherwise, you take a huge chance of mass multiplying it.”

Once you have determined a cow is donor quality, you must ensure she is managed properly if you want to reach her full potential.

Maximize results

In order for a donor cow to perform at her peak, you must ensure she has the proper nutrition and management, these men say.

Faber recommends you sit down with your herd veterinarian or ET provider to ensure you have the proper rations for your cow herd, including the proper levels of all-natural protein.

“We like to see producers utilizing a quality vitamin and mineral program with chelated minerals added,” Faber says. “I believe there’s no ‘magic bullet’ program to magically boost performance. Good nutrition is based on basic, solid nutrition and quality feed ingredients that have been properly stored and prepared.”

Nutrition is critical in a cow responding to synchronization, Stotz says.

“Poor nutrition can lead to a poor response from the donor,” he says.

“It could be one of 10 things that could be causing her not to produce embryos, but it could be No. 1.”

Hoffman believes, in their program, cows flush best when they are a bit thinner and in the process of gaining weight rather than a cow with more condition on the decline.

“After we flush three or four consistent times, we must be disciplined enough to kick her out, tone her back down and harden her back up,” he says. “Our embryologist always tells us that when breeding cows back after so many flushes, you need to know when to say when.”

And, Faber says, let’s not forget the management of the recipient cows.

“All of those same management principles apply to the recip,” Faber says. “That’s the part, in farm settings, that may be overlooked. Producers sometimes pay so much attention to the donor cow because she is their pride and joy. Recips are sometimes the afterthoughts, but they are critical to having a successful ET program.”

In addition to proper management and nutrition, a producer must consider when he plans to begin an ET program with a female. Some producers flush before a heifer has calved once; some wait until at least one natural calf is born; and some may wait until the cow is a few years old. It’s really a matter of choice.

Devise a plan

Faber believes each operation can benefit from different ET programs and there’s no “right” or “wrong” time to ET.

“However, I advise producers to wait until a cow has followed through

a pregnancy and lactation to most effectively evaluate her potential as a donor cow,” he says. “This allows her to gain a bit more maturity, as well.”

Hoffman says they’ve only flushed a virgin heifer a couple of times.

“Your embryologist must be disciplined enough to run them on a low drug level,” he says. “You need to have it in mind that you’re going to shoot for a low number of eggs, just so you don’t damage the female. And after they have a calf, then it’s game on.”

Star Lake prefers to let a heifer calve once naturally before bringing her into the ET program, Stotz says.

“If she’s that good and she has that first calf, then she makes our ET program,” he says. “Our criteria are the same as for many producers. Phenotype is important, as we sell many cattle to junior exhibitors. EPDs are also important.”

Once a cow enters the Star Lake ET program, Stotz says, she is flushed three to four times during a one-year period between her first and second natural calf.

Hoffman says persistence can pay off when utilizing ET on your cow herd.

“We often see that cows are more rewarding on their second and third flushes than on their first,” he says. “We can go from five to seven embryos on the first flush to an average of 10 on the third time.”

Although ET can provide many benefits, all three men agree it’s not the right choice for everyone.

Hoffman says if you breed functional, good, middle-of-the-road cattle with a consistent cow herd, ET may not be needed.

“For someone who wants superior cattle and can take a higher risk, the embryo project can really pan out,” Hoffman says.

Take the time to put the pencil to the paper and determine if ET really could be a profitable choice for your operation. If so, it truly could be the golden ticket you’ve been seeking. **HW**