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YOUR PARTNER IN PREVENTION, HEALTH AND PERFORMANCE

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Vol. 39 No. 375 **JULY 2025**

What is Embryo Transfer?

Embryo Transfer (ET) is a reproductive technique used to produce more offspring from an elite donor to improve the genetics in your herd or for sale to third parties. Conventional ET (in-vivo) is done on farm and involves a hormone protocol to stimulate the ovaries of a donor cow prior to being bred to increase the number of oocytes she ovulates. Seven days after breeding, the donor cow is flushed to retrieve embryos. An average flush would result in 6 embryos per collection, resulting in 3-4 pregnancies. However, there is a huge variance, with some animals producing very few embryos and others producing 20 or more. A donor cow could be flushed or collected as many times per lactation as the owner chooses. The idea is to genetically move your herd ahead faster by using the top 10% of your cows as donors and the bottom 50% as recipients for the embryos. Animals in the bottom 50% that do not receive an embryo will be bred to beef semen, so they do not continue to hinder the farm's genetic improvement.

What is In Vitro Fertilization?

In Vitro Fertilization (IVF) is the process of creating embryos from oocytes (unfertilized egg cells) by fertilizing them with semen in a Petri dish. Oocytes are first collected from the ovaries of donors by ultrasound-guided follicular aspiration currently done in clinic. They are then matured in a Petri dish and fertilized 20-24 hours later. Conventional, sexed-frozen or reverse-sorted semen may be used for fertilization. Oocytes then develop in an incubator for seven days, at which point the resulting viable embryos are transferred into recipients or frozen for use at a later time. These donors can be open or pregnant for up to 120 days as often as every two weeks.

Who are the best donors?

The best donors for conventional ET, besides being the elite animals on farm, also need to be of good reproductive "status". Good reproductive status of the cow is the key to maximizing the number of transferable embryos recovered in your ET program. Virgin animals need to be well grown, have shown multiple heats, and free from disease. For cows, it is preferred to select donors that have had a calf every year, calved with little or no negative health issues, returned to expression of estrus in a timely manner after their last calf and are at least 50 days since their last calving. Nutritionally, she should be on a rising plane nutrition with a well-balanced ration and adequate minerals and vitamins.

Who are the best recipients?

One of the most important factors affecting the outcome of your ET program is recipient quality. Recipients (recips) are the animals that will be receiving fresh or frozen embryos from donor animals. Each recipient should have a healthy reproductive status and history. Recips should be properly vaccinated a minimum 3 weeks prior to being implanted. They should also be housed somewhere with easy handling; an area the

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producer can easily heat detect and an area with minimal stress to increase pregnancy rates. Once implanted, recipients should remain in their current housing for a week to minimize stress, disease outbreaks, and turmoil from new social interactions. Recipients are evaluated prior to implantation by the ET vet to assess BCS, disease and reproductive status. An ultrasound unit is used to evaluate the uterus and ovarian structures to ensure they correlate with the animal's heat date. On average, 1 in 4 recips are turned down due to poor ovarian structures, poor heat observation, body condition score or history. Only the best recipients are used to maximize conception rate.
If you think embryo transfer or IVF is something you might be interested in, do not hesitate to give the clinic a call and speak with the ET team to discuss the possibilities!

Bull Testing & Semen Freezing
Bull Testing – what is it?
Bulls are evaluated for their capacity to breed. All bulls used in a farm's breeding program (beef or dairy) that are expected to make pregnancies should be evaluated at least once a year.
It begins with a full evaluation of the body systems of the bull. Can he see properly? Can he walk and jump easily? Does he have adequate body condition? Does he have any apparent disease?
Next the reproductive system of the animals is evaluated. Scrotal size is an important factor in fertility and daughter reproductive maturity.
Does he meet breed standards for minimum circumference? It has been shown, the bigger the circumference, the better the fertility. Using an accurate and repeatable scrotal tape ensures accurate and repeatable measurements. Next internal and external organs are examined to ensure no abnormalities.
Semen is collected via manual stimulation or by using an electro-ejaculator. Semen is evaluated using a microscope for motility, quantity, and quality. Each bull is given an evaluation form to be kept by the owner or passed onto sales as needed. If a bull fails his "test", he can be re-evaluated in a few weeks' time.
Young animals may need additional time to mature their reproductive tracts to ensure they have what it takes to produce offspring. Stress and inclement weather can also affect semen quality.

How long does it take?
In a well-organized system (a chute is needed), bull testing will take approximately 5-10 minutes per bull.

Semen Freezing
From the producer perspective, on-farm semen freezing procedures are similar to that of bull testing. The bull and semen are evaluated on farm or hauled into the clinic. Once it has been determined that the semen is good, antibiotics and an extender are added to the semen immediately. The semen is then taken to our lab for further processing. Concentration is determined to decide on the number of straws to be prepared. Then the semen is further extended and cooled for a minimum of 4 hours. Once that time has elapsed, semen is frozen in liquid nitrogen vapor, plunged into a liquid nitrogen bath, and placed into canes. Then it is ready to be picked up!

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This semen is deemed “Owners-Use Only” semen and therefore can only used by owners and cannot be sold. Typical uses of this type of semen are for on-farm AI, flush programs, AI beef breeding on problem dairy cattle, or as an insurance policy in case a bull gets injured or sick.
If you have any interest in this service, please call the clinic and ask the team to discuss all opportunities related to semen!

Dr. Christie Morrow, DVM

Fly Control

Large animal technicians continue to offer fly prevention in combination with dehorning services. Ask your large animal tech for more information!

Upcoming Holiday Hours

Our offices in Listowel, Drayton and Mount Forest will be closed Monday August 4, 2025 for the Civic Holiday. We will re-open on Tuesday Aug 5th at 8am. As always, our veterinarians will continue to provide 24-hour emergency services for our clients.