

## Multiply Success.™

### More information about Embryo Transfer

Embryo transfer (ET) has become one of the most exciting and progressive procedures for cattle breeders. While the average cow produces six to seven calves in her lifetime, embryo transfer can increase her reproduction efficiency to numerous calves per year - increasing selection and profit opportunities by advancing the best breeding lines. By enrolling selected females in an ET program, a cattle breeder can create more in-demand offspring and multiply marketing opportunities.

Embryo transfer involves specific hormonal treatment of cows and heifers to cause multiple follicles to ovulate. Approximately seven days after estrus and insemination, embryos are non-surgically flushed from the donor's uterus. The embryos can be transferred fresh into recipients serving as surrogates, or frozen, thawed and transferred at a later point in time.

#### Beginning hormonal treatment

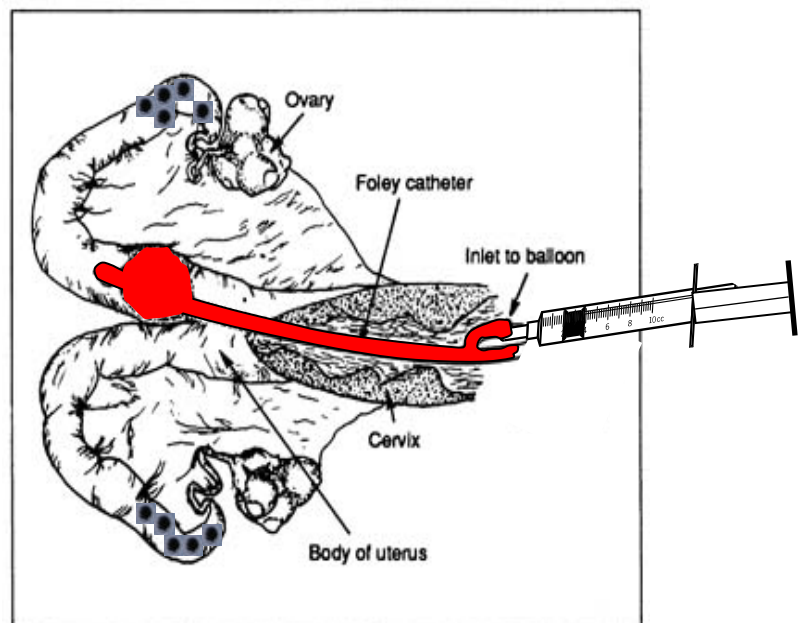
Superovulation, the first step for ET work, is a specific process that involves the injection of a fertility hormone called FSH (Follicle Stimulating Hormone). FSH is administered to the donor starting approximately 10 days post-estrus, or four days following the insertion of a progesterone device called a CIDR (Controlled Intravaginal Drug Release). The superovulation injection series consists of twice daily injections for four days. On the fourth day, an injection of prostaglandin also is administered to cause the regression of the corpus luteum. This triggers estrus one and a half to two days later.

#### Insemination

Experts recommend that donors be artificially inseminated with one unit of semen at first standing estrus. Then, follow with two units at 12 hours post-estrus and again with one unit at 24 hours post-estrus. Depending on the history of the donor, quality of the semen used, and cost of the semen, an ET practitioner may adjust this breeding schedule based on individual situations.

Because fertilization is a joint effort between the bull's sperm and the donor female's oocyte (egg), it is imperative to use the highest quality semen available.

### The Embryo Transfer Process



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### **Embryo collection**

Seven days following the breeding of a superovulated donor, she will be collected or “flushed.” Using specialized, sterile equipment, a trained ET technician will use an embryo supporting media to gently wash the embryos out of the uterus and into an embryo sorting filter.

The filter and the embryos are then moved into the laboratory. An embryologist removes the embryos and places them into media designed to support and protect the embryos while they are out of the donor’s uterus. Then, a trained embryologist will view the embryos under a microscope to grade and classify them. Viable embryos will be transferred into synchronized recipients, or the embryos can be safely frozen for transfer at a later date.



*In the laboratory, an embryologist uses precision and patience to delicately remove the fertilized embryos. At this point, the viable embryos are ready to be transferred to recipients, or frozen for transferring at a later date.*

### **Typical results**

Based on Trans Ova Genetics’ 25 plus years of experience with embryo transfer, cattle breeders can strive for an average of five viable embryos per flush, followed by conception rates averaging 65 percent for fresh transferred embryos. Embryos that are frozen and later thawed for transfer average 60 percent conception.

When considering an ET procedure for an individual or group of females, the donor animals should be selected with care. Genetic superiority is commonly of major importance and should be evaluated based on the traits important to specific breeding program goals. Ultimately, the value of the donor’s progeny must justify the investment in an ET program. Cows’ reproductive health and abilities are also important factors to consider when choosing donors.

While ET is not a new technology, its application has become a more valuable, and practical, management and marketing tool for cattle breeders. Preserving, extending and improving the reproductive performance of the best genetics available are options for all serious breeders who want to multiply success of their breeding program.