Drafting Embryo Transfer Contracts For Cattle Producers

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Texas Bar Agriculture Law Conference
May 23, 2013
Lubbock, Texas

I. OVERVIEW

A. What is Embryo Transfer ("ET")?

1. **Generally:** ET is extracting embryos from a superovulated female animal with superior genetics and breeding a recipient animal with the embryo. The recipient animal will give birth to the ET offspring and milk the baby until weaning.

2. **History:** Increased popularity now among beef and dairy producers; however, this is not new technology. In fact, it was first performed by Walter Heape in 1890 with rabbit embryos with a gestating doe to produce a litter of bunnies. In the 1930's it was first performed with sheep and goats. It wasn't until the 1950's that ET was successfully performed with cattle and pigs at Cambringe. It wasn't until the 1970's that ET was used commercially in the United States with livestock producers. See Glenn Selk, "Embryo Transfer in Cattle", Oklahoma Cooperative Extension Service ANSI-3158 at 1 available http://www.humble.k12.tx.us/cms/lib2/TX01001414/Centricity/Domain/3026/Embryo%20Transfer-cattle.pdf (last visited April 7, 2013).

3. **Why ET Is Utilized:** A breeding female can have an estimated 150,000 potential "eggs" or ova while males have billions of sperm. Natural breeding mitigates the number of potential progeny that a particular breeding animal can propagate. To illustrate, the average cow has a gestation period similar to humans. A typical heifer is bred to have her first calf at around 2 years of age and will be able to have one natural calf for her lifespan (about 11-15 years). Therefore, a typical cow may have around 9-13 calves during their life. Meanwhile, an average herd bull will only be able to sire 15-50 calves per year. Artificial insemination allows a genetically superior bull to sire more calves. Similarly, embryo transfer techniques also increase the number of offspring that a genetically superior cow can produce. See id. Furthermore, Recipient Cows do not need to be genetically superior and may be more affordable.

In other words, it is a way to enhance the quality of the progeny without investing in more superior cows.

B. Application in the Livestock Industry

1. **Costs of ET:** The costs of ET can vary significantly. Some ET technicians perform "on farm" transfers at the location of the Donor Cow while other facilities house and board the Recipient Cow and perform the ET under hospital-like conditions. A minimum cost of $250 per cow pregnancy has been reported, excluding Pharmaceuticals used for superovulation and synchronization, registration, embryo transfer certificates, semen, and the cost of maintaining the Recipient Cow until the calf is weaned. This could add another $400-$600 in expense. In order to justify the expense in ET, each calf should have a market value of at least $1,000 to $2,000 create than naturally conceived calves. See Glenn Selk, "Embryo Transfer in Cattle", Oklahoma Cooperative Extension Service ANSI-3158 at 4 available http://www.humble.k12.tx.us/cms/lib2/TX01001414/Centricity/Domain/3026/Embryo%20Transfer-cattle.pdf (last visited April 7, 2013).

2. **International Sales:** Since embryos can be frozen, it makes international sales of embryos possible. That said, lawyers working with these transactions should research whether there are regulations from the importing country that may affect the transaction. See id.

C. General Contract Provisions in an ET Contract. There are also some general provisions that should be included in all ET contracts.

1. **General Provisions:**

   a. Legal name of parties (including D/B/A's or state where incorporated);
   b. Contact information of the parties;
   c. Choice of law (especially important if across state lines or international transaction);
   d. Alternative Dispute Resolution (e.g., mediation or arbitration) or forum selection clause;
   e. Attorneys' fees for the prevailing party in a dispute;
   f. Binding to heirs, successors, and assigns;
   g. Whether credit card information is accepted (or used as security for late payment);
   h. Payment instructions;

i. Stating the relationship between the parties (i.e., not forming a partnership or joint venture);
j. Severability (i.e., if a provision in the contract was not enforceable that the other provisions of a contract will be enforceable); and
k. Compliance with all federal, state, and local laws including but not limited to livestock animal cruelty laws.

2. **Confidentiality:**

a. Bilateral vs. Unilateral: If used, should almost always be mutual

b. Issues that should be addressed in a Non-Disclosure Agreement ("NDA"):

i. Who will be exchanging confidential information?
ii. What is the purpose of the exchange of confidential information?
iii. What type of information is to be considered "confidential" for protection under the NDA?
iv. How can this confidential information be used and by whom?
v. How will the secrecy of the confidential information be maintained?
vi. How long will the confidentiality of the information be maintained?
vii. What are the consequences of a breach or misuse of the confidential information?

c. Common Provisions

i. Legal name of the parties and location

ii. Purpose of the NDA

iii. Permitted Parties that can see the confidential information

iv. Identification of Confidential Information

a) Written information should be marked as "Confidential"

b) Recommended that oral disclosures should be identified as confidential orally (sometimes it is appropriate to require following up in writing on what was confidential in an oral conversation)

v. Exceptions or "Carve Outs") to Confidentiality

a) Examples include the following: (a) if known prior to the date of disclosure, (b) is in the public domain, (c) was lawfully communicated to the recipient by a third-party, (d) was independently developed by employees, (e) written release by the disclosing party, and (f) when the law requires disclosure (e.g., court order or subpoena) allowing the disclosing party reasonable notice to obtain a protective order.

vi. Security of Confidential Information

vii. Term (e.g., 1-3 yrs from the termination of the ET Agreement)

viii. Procedures Upon Termination (e.g., return or destroy confidential information

d. <u>Applicability to ET Contracts</u>

i. If a farm has a standard NDA that it uses, it is fine to use this in this particular transaction. If a farm does not have a standard NDA, consider asking your client if he/she would be interested in getting one drafted

ii. ET Contracts are relatively simple so if confidentiality is addressed then the important aspects of a NDA should be implemented into a confidentiality provision

iii. This will not be necessary in all transactions but may be very important in some. Consider whether the parties will be exchanging information that

should remain secret (e.g., price or financial information, information about breeding/feeding/marketing strategies, identification of ET technician, discussion of potential buyers or sale price, trade secrets).

D. **General Advice for Practitioners Drafting ET Contracts**

1. Remember that you are working with a conservation culture who widely does business on a "handshake" not involving attorneys.

    a. Important to add value to the transaction.

    b. Don't make this an overly complicated contract full of "legalese"

2. Recommend drafting ET Contracts on a "flat fee", including minimal negotiations (if necessary).

3. Create an ET Contract form that can be used by an operation over and over again for similar transactions. Have that operation come back for an ET Contract(s) review on an annual or bi-annual basis.

II. ET CONTRACTS WITH CATTLE

A. Applicability: ET is primarily performed with cattle (beef and dairy), although it can be utilized with goats and sheep using surgical methods.

B. How is ET Performed on Cattle? In order to draft an ET contract, it's important to have a cursory understanding of the process to better understand the transaction itself. ET requires several steps, discussed below.

1. Selection of the Donor Cow: The characteristics sought for in a donor cow vary depending on the type of cattle operation. Many operations select a donor cow based on both phenotype (i.e., how the animal looks – such as balance, eye appeal, structure, rib/volume, fleshing ability, and muscle) and genotype (e.g., pedigree, genetic predictors). Some commercial operations may choose to take into consideration ultrasound and carcass data of the cow's offspring. See Glenn Selk, "Embryo Transfer in Cattle", Oklahoma Cooperative Extension Service ANSI-3158 at 1 available http://www.humble.k12.tx.us/cms/lib2/TX01001414/Centricity/Do

main/3026/Embryo%20Transfer-cattle.pdf (last visited April 7, 2013).

a. *Showing Presence.* Some operations sell most of their offspring for show cattle industry – some of those operations specifically target the sale of show steers vs. breeding animals—at the state or national level.

b. *Genetic Strength.* Some operations focus on genetic predictors such as Expected Progeny Differences ("EPD's") (e.g., growth, maternal characteristics, calving ease, carcass information) or genetic DNA markers (e.g., marbling, tenderness, feed efficiency, disease resistance).

c. *Carcass characteristics.* A commercial operation may place importance on ultrasound data and carcass figures for the cow's offspring selecting for breeding animals (both bulls and cows) with the ability to propagate superior terminal offspring. Some operations may be targeting animals for a specific program like Certified Angus Beef® that requires 51% black-hided cattle to have certain quality (Average Choice or higher) and yield grade (3.9 YG or lower) calculations. While other operations may be selecting for lean muscle.

d. *Qualitative Characteristics.* Some cattle operations select for a certain color (e.g., solid red, solid black) or horns/pollness. Docility can be of particular importance to operations selling show cattle while operations selling "rodeo bulls" are looking for aggressive traits.

e. *Reproductive Soundness.* All cattle operations should use donor cows that are reproductively sound. To explain, the female should have regular heat cycle, should not have had a problem breeding in the past, had a calves in 365 day intervals, should not have had difficulty calving, and should not have any known genetic defects. The donor cow should maintain an appropriate body condition score to help ensure that there are not fertility issues.

f. *Breed Registration.* In order to be registered with a particular livestock breed association, the animal and its offspring have to be a certain percentage of that breed in order to be registered. The ability to register offspring in a

certain breed association can be of paramount importance for some seedstock operations.

2. Superovulation of the Donor Cow: Once the Donor Cow is selected, she must be "superovulated" so that she will release multiple eggs at an estrus by using a Follicle Stimulating Hormone ("FSH"). FSH is injected twice daily subcutaneously for four days at the middle or end of the cows normal estrous cycle (which should be monitored). A prostaglandin injection is gen on the third day of the treatment schedule to cause a Corpus Luteum ("CL") regression. "Heat" or estrus will occur approximately 2-3 days (48-60 hours) afterwards. At this time, the cow will usually produce 7-20 or more viable eggs with an average of 5-15 or more that are transferable. See id. at 2.

3. Insemination of the Donor Cow: The cow is typically bred by Artificial Insemination ("AI"). An operation will select a bull to use for AI using the above characteristics in addition to cost ($25-$300 a straw) and potential hybrid vigor (if the bull is of a different breed, such as a Simmental X Angus). The cow is usually bred at 12, 24 and 36 hour (or 8, 16, and 24) intervals after the onset of standing heat. AI semen is released in the body of the uterus. See id.

4. Flushing of Embryos: Once the Donor Cow is bred, the embryos are collected nonsurgically by inserting a rubber catheter through the cervix of the Donor Cow approximately 7-8 days after breeding date. The embryos are flushed and harvested from the Donor Cow. This process usually takes approximately 30 minutes. Procedures at this point are fairly technical but essentially the embryos are put into a cylinder or petri dish with flushing fluid. See id.

5. Evaluation of the Embryos: The embryos are then evaluated under a microscope to be evaluated for quality.

    a. The embryos are classified numerically as to the potential likelihood of success if transferred to a Recipient Cow. The grades are as follows: Grade 1 (Excellent or Good), Grade 2 (Fair), Grade 3 (Poor), Grade 4 (Dead or Degenerating). Typically, only Grade 1 embryos are used for freezing.

    b. Embryos are also evaluated for their state of development: Stage 1 (Unfertilized), Stage 2 (2 to 12 cell), Stage 3 (Early morula), Stage 4 (Morula), Stage 5 (Early Blastocyst), Stage 6 (Blastocyst), Stage 7 (Expanded Blastocyst), Stage

8 (Hatched Blastocyst), Stage 9 (Expanded Hatched Blastocyst). Stage 4, 5, and 6 embryos are best with the freezing and thawing procedures. On average 31% of embryos extracted are unfertilized. See id. at 2-3.

6. Selection of Recipient Cow**:** Although the Recipient's Cow's phenotype and genetype are not as important as the Donor's Cow, the Recipient Cow should still be reproductively sound, have good milking and maternal characteristics, have a history with calving ease (should not be heifer), have an adequate body condition score, is fairly docile, and is in good health. See id. at 3.

7. Preparation of Recipient Cow: The Recipient Cow's estrus cycle should be synched with the Donor Cow with use of prostaglandin with Controlled Intrauterine Device Release ("CIDR") insert. The timing of the Recipient Cow's estrus should match the time of insemination of the Donor Cow so that the uterine environment is similar approximately seven (7) days later when the transfer takes place into the Recipient Cow. See id. at 3.

8. Transfer of Embryos: An embryo is transferred into the Recipient Cow by "loading" the embryo into an insemination straw with an aid of a syringe. The ovaries are palpated rectally to determine with ovary has ovulated. The embryo is placed in the uterine horn on the same side of the ovary with an active corpus luteum ("CL"). This should only be performed by a trained ET technician – great care should be taken to make sure the lining of the uterus it not damaged. See id. at 3.

C. Recipient Agreement.

1. **Applicability**: where the cattle producer is selling a bred embryo transfer recipient cow to another cattle producer

    a. Example: Farmer Rincker enters into a contract with Farmer Smith. Farmer Smith is either:

        i. Non-certified embryologist and therefore takes the recipient to an embryologist (e.g., Transova)

        ii. Certified embryologist and then conducts the ET themself.

            a) Colorado State University is one example of an institution that certifies embryologist.

Some veterinary schools offer certification. One does not have to be a veterinarian to be an embryologist.

b) It is not typical for a recipient owner to be an embryolist.

iii. The embryogist needs embryos to transfer into the Recipient Cow.

a) Frozen embryos can be shipped from a cattle operation of choice (e.g., Hudson Pines Simmental cattle operation) or a donor female is at the embryolist site where she was recently flushed (7 day embryos) (could be from Rincker's Donor Cow).

b) Fresh embryos or frozen embryos are transferred into the recipient cow.

iv. Recipient Owner needs to now confirm the pregnancy.

a) He/she takes the recipient cow home and waits 2-3 weeks to see if she is bred (waits to see if she has an estrus cycle and is in standing heat).

b) Performs a pregnancy check at 45 days. If pregnant, then Farmer Smith notifies Farmer Rincker.

c) Farmer Smith performs another pregnancy check (either by palpation or ultrasound) at 60 days. Ultrasound necessary to determine the sex. At this point, the pregnancy is confirmed.

d) Farmer Smith typically pays for labor and costs associated with prognosticating; however, Farmer Smith could charge Farmer Rincker $5-10 per cow.

e) During this holding pattern Farmer Rincker does not typically owe money during this

time. Payment not due until pregnancy is confirmed at 60 days.

f) Farmer Rincker will pay Farmer Smith $X per cow that is confirmed pregnant.

g) In this hypothetical, Farmer Smith informs Farmer Rincker that he has 5 confirmed pregnant cows.

v. Pick-up Recipient Cow and Calf or ET Calf Only- What kind of agreement is it?

a) *Option One*: Farmer Rincker will pickup the 5 pregnant Recipient Cows within 70 days and pay $X for the cow who is confirmed pregnant ($1800-$2200).

1. If Farmer Rincker does not pickup the cow-calf on time then late fees pay apply.

2. Could be assessed a late fee plus daily boarding and maintenance fees (feed and/or pasture).

b) *Option Two*: Alternatively, Farmer Smith will care for the pregnant Recipient Cow through weaning (paying for feed and labor). Weaning is typically done between 4-6 months of age (could be specified in the ET Contract).

1. Typically, Farmer Rincker will only get the ET calf (no cow) and will pay upon receipt of the calf ($1100-$1500).

vi. Farmer Rincker takes the ET (Cow and) Calf home to the Rincker Ranch

a) If Farmer Rincker uses an embryo that he does not own (i.e, purchased from another producer with the use Flush Agreement), then most cattle breed associations (e.g.,

American Simmental Association, American Angus Association) require verification of the parentage of both the dam and sire before registration will be allowed (e.g., genetic test on hair sample). Please note that Farmer Rincker is the person applying for the registration- not Farmer Smith.

1. Some breed associations are requiring 50K testing for a gene marker for birth weight, weaning weight, yearling weight, etc. to increase the accuracy of the genetic information. Farmer Rincker is (typically) paying for the expense of genetic testing.

b) However, if Farmer Rincker does not pay his fee to Farmer Smith then the ET Contract may ask for Farmer Rincker to assign the ET calf's registration paper to Farmer Smith as security.

2. **Provisions to Consider:** Attorneys drafting a recipient agreement for cattle producers should make sure that the following terms are included in the written contract:

   a. Purchase/lease price of Recipient Cow and management;

   b. Payment terms including penalties for late payments;

   c. Instructions for the receipt or shipment of frozen embryos;

   d. Embryo transfer fees for "open cows" (e.g., $50/cow);

   e. Dates/procedures/costs associated with pregnancy checks (*e.g.*, palpation, ultrasound);

   f. Duration that recipient will stay under the care of owner and any daily boarding/maintenance fees (*e.g.*, feed, pasture);

   g. If necessary, reimbursement for routine veterinary care and transportation;

h. Limitation of liability for congenital birth defects or reasonable birthing difficulties; and,

i. If appropriate, security on the embryo transfer progeny and the assignment of necessary registration papers.

3. **Genetic Testing.** The recipient owner may request additional fees for genetic testing or marketing services.

D. Breeder Agreement.

1. **Applicability:** A cattle breeder can have his/her agreement to be signed or these provisions can be implemented into the Recipient Agreement.

   a. These are rarely used in the industry (although they should be)

2. **Provisions to Consider:**

   a. Shift the Burden to Recipient Owner. Breeders should make sure that the recipient owner agrees to bear the burden that the Recipient Cow is:

      i. in good health and obtains necessary vaccinations;

      ii. within the appropriate age range;

      iii. has an acceptable body condition score;

      iv. if appropriate, a certain breed or color pattern (*e.g.*, solid black/red hided); and,

      v. is structurally sound.

   b. Tort Liability. The breeder may want to hold the recipient owner liable for gross negligence or intentional misconduct relating to the care of the recipient and the progeny including but not limited to birthing complications. Additionally, the cattle breeder should require that the recipient owner use best management practices.

   c. Management. If the recipient owner will be raising the progeny until weaning and retaining ownership of the recipient, the breeder may want to list special management

terms (*e.g.*, early weaning, vaccinations, creep feeding, DNA testing).

E. <u>Flush Agreement</u>.

1. **Applicability.** This should be used if a cattle producer is purchasing an embryo transfer flush from another cattle owner**.**

    a. Example: Farmer Rincker buys an ET flush from Hudson Pines in Sleepy Hollow, New York.

2. **Provisions to Consider.**

    a. *Side of the Purchaser*

        i. Minimum number of transferable embryos from the flush (*e.g.*, five embryos)

            a) Growing Trend: Minimum guarantee and split after that amount.

                1. *Example*: 6 guaranteed. If cow has 20 embryos then Farmer Rincker will get 13 embryos and Hudson Pines will keep 6 embryos.

        ii. Grade of the embryos

            a) *Example*: Six (6) Number 1 Grade Embryos

        iii. Date/procedures for the receipt of frozen embryos

        iv. Guarantee that the flush is what was ordered (*e.g.*, free of certain genetic defects, use of sexed semen, use of a particular bull's semen)

            a) Note liquidated damages in case of an error

    b. Side of the Seller

        i. Enumerate the payment terms, including shipping expenses

ii. Ensure that he/she is not responsible for the transfer of the embryos to the Recipient Cow or birthing problems that may occur

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