

BOER GOAT EMBRYO TRANSFER

Embryo Transfer

- Good management
- No shortcuts
- **PLAN AHEAD**

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AVOID STRESS

- Some examples of how stress is induced are:
- Mixing groups or individual animals together that have not previously been together.
- Altering the goats regular routine.
- Handling the goats unnecessarily.
- Confining goats in close or unfamiliar surroundings.
- Causing goats to become frightened, such as exposure to predators

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AVOID STRESS

- The ease with which your goats can be handled and the avoidance of stress from a period of time before you began an ET period until at least the second month of pregnancy will reflect drastically on your conception rates and ultimately the number of kids born.

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Recipients

- Breed
- Body Type
- Age

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TEASER BUCKS

- Very important to overall success
- Recipients and Donors must be exposed to teasers
- Initiate heat activity
- Minimum of 30 days, and preferably 60 days, prior
- Vassectomized over deviated over fence line contact
 - *vassectomized can still penetrate the females which allows for better stimulation.*

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TEASER BUCKS

- One teaser buck per small Donor groups (5)
- One teaser per 25 Recipients
- Use Teasers both before you begin a program and during heat detection at mating time.
- Harnesses with different colored chalk can be strapped to teaser bucks and is helpful in heat detection.

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NUTRITION:

- Positive weight gains throughout an ET program
- Beneficial to result on conception and kidding rates
- Depending upon the initial condition of your donors and recipients,
 - start stock in a condition that would allow for approximately 0.5 lb. of gain per day beginning 30 days prior to start of the program through 45 days after breeding
 - Note: it is difficult to put weight on a fat goat, (Boer goats are easy keepers) use scales to monitor the gain of donors and recipients.

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EXAMPLE OF AN ET PROGRAM SCHEDULE:

- **DAY 0** - Put CIDRs In Recipients
- **DAY 1** - Put CIDRs In Donors - Official Start of ET Countdown
- **DAY 16** - Donor FSH Injections in AM & PM
- **DAY 17** - Donor FSH Injections in AM & PM
- **DAY 18** - Donor FSH Injections AM & PM and Recipient CIDRs Out in PM
- **DAY 19** - FSH Inject. in AM & PM, Donor CIDRs Out in PM & Record Recip Heats
- **DAY 20** - Mate Donors in the AM & PM and Record Recipient Heats
- **DAY 21** - Mate Donors in the AM And Record Recipient Heats
- **DAY 23** - Put New CIDRs Back In Donors
- **DAY 25** - Take Both Donors and Recipients Off Feed & Water
- **DAY 26** - **ET Day:** Flush & Lutalyse Donors, and Transfer Embryos To Recips
- **DAY 36** - Remove Donor Stitches

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CIDR (Controlled Internal Drug Release)

- CIDRS are a synchronization device used in sheep and goats (and in cattle)
- Plastic and impregnated with a hormone called progesterone
- While the CIDR is in place, progesterone is released into the system of the goat.
- When the CIDR is removed, rapid fall in the progesterone level, *much in the same way as the progesterone falls during the normal cycle.*

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- FSH (Follicle Stimulating Hormone)
 - Follitropin, Ovagen
- LH (Luteinizing Hormone)
 - effect growth, maturation, and ovulation of the follicles.
- FSH - donors - superovulation
- on days 16 to 19.
- eight injections given twice daily for four days., and the **dose is dependent upon the age** of donor that is being superovulated.

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- Timing of estrus or heat in both the donors and recipients is controlled by CIDR removal.
- You will notice that the recipient CIDRS are removed 24 hrs. earlier than the donors. The reason for this is that it takes the recipients longer to respond to CIDR removal because of lower estrogen levels when compared to the superovulated donors.
- Donors are mated using natural service over an extended period of time because of ovulation occurring over 24-36 hours.

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- Does are mated at 12 hr. intervals beginning at onset of heat and continuing until she will no longer accept the buck.
- One ejaculation per breeding is sufficient. Don't overwork your bucks.
- Do not put a buck with a group of donor does and leave him. He will very likely service only one donor.

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- If you have not been using your bucks regularly prior to beginning a program, you may want to artificially create heat in some extra does to test mate your bucks to be assured that they will work, and/or you may wish to have your veterinarian perform a fertility exam.
- Re-implantation of the donors with another CIDR. Is done to help prevent premature luteal regression.
 - This is a condition where progesterone levels fall and the donor begins to return to estrus even before she can be collected. By increasing progesterone levels with the CIDR this problem can sometimes be prevented.

EMBRYO COLLECTION

- Method of collection is surgical using general anesthesia.
- To help prevent complications that can occur when animals regurgitate, we take them off feed and water the day before surgery to facilitate an empty rumen.
- The goats uterus consists of two horns which is referred to as a BIPARTITE. On the day of collection, the embryos are located in the section of the horn of the uterus the most **distal** from the cervix.

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- The collection is done by literally washing the inside of the uterus with a fluid media in which the embryos become suspended and then searching this fluid aided with the use of a low powered microscope.
- After evaluating the superovulatory response of the donor by observing the ovaries through a laparoscope, the horns of the uterus are exposed, one at a time, through a small incision just in front of the udder.
- Each horn is collected separately, using approximately 40 ml of media for each side.

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IMPLANTING EMBRYOS:

- Results from superovulation are varied.
Averages are approximately:
 - 8 useable embryos from doe kids
 - 10-12 useable embryos from adults
 - Older does work the best
- Program 6-8 recipients on kid flushes
- 8-10 recipients on adult flushes

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- Two embryos are routinely transferred to each recipient with the exception being when there is an odd number of embryos from a given donor.
- The recipients undergo the same type of general anesthesia as the donors.
 - The ovaries and uterus are examined through the use of a laparoscope.
 - After a recipient has been determined acceptable, a small portion of the uterus is exposed through a small incision in the abdominal wall, and two embryos are injected via a needle puncture into the uterine horn on the same side that ovulation occurred.

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- The freezing of embryos is a tool that can be used when recipient numbers are short and embryo splitting can be utilized when abundant recipients are available.
- Post transfer recipient care is also critically important. The avoidance of stress during this period can influence conception and kidding rates positively
- wait 30-40 days post transfer before scanning for pregnancy or moving goats.

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- Dr. Sam Castleberry