

# Preparing for a Controlled Breeding Season

**UGA Extension Goat and Sheep  
Production Summit**

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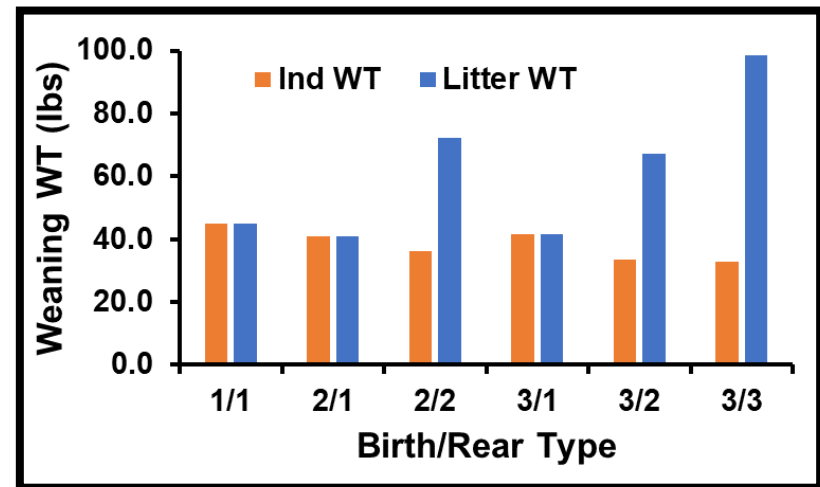


# Why is reproduction so important?

## ➤ Pounds Weaned per Female Exposed for Breeding

1. Conception rate
2. Lambing/kidding percentage
3. Weaning percentage ★
  - Lamb/kid survival
4. Lamb weaning weight
  - Milk production
  - Lamb/kid growth potential

***Keep records on each of these metrics to evaluate areas for improvement***



2019 SWVA AREC Lambing Data

# Reproduction starts with the males





# How do we control our management system???

**Take the male away from the females!!!**



*A controlled breeding  
season leads to a controlled  
lambing/kidding season*

Timing and length of the  
breeding season

=

Timing and length of the  
lambing/kidding season

# Controlling the breeding season

- Timing should be based on environment and desired marketing date for lambs or kids
- Shorter the better!
  - Limit exhaustion and fatigue during lambing or kidding
  - More uniform group of lambs or kids to market
  - Selection for more fertile ewes or does
  - More precise management around lambing or kidding
- Limit ram or buck exposure to two estrous cycles
  - Sheep: 34 days
  - Goats: 42 days

**Make sure you have sufficient ram or buck power**

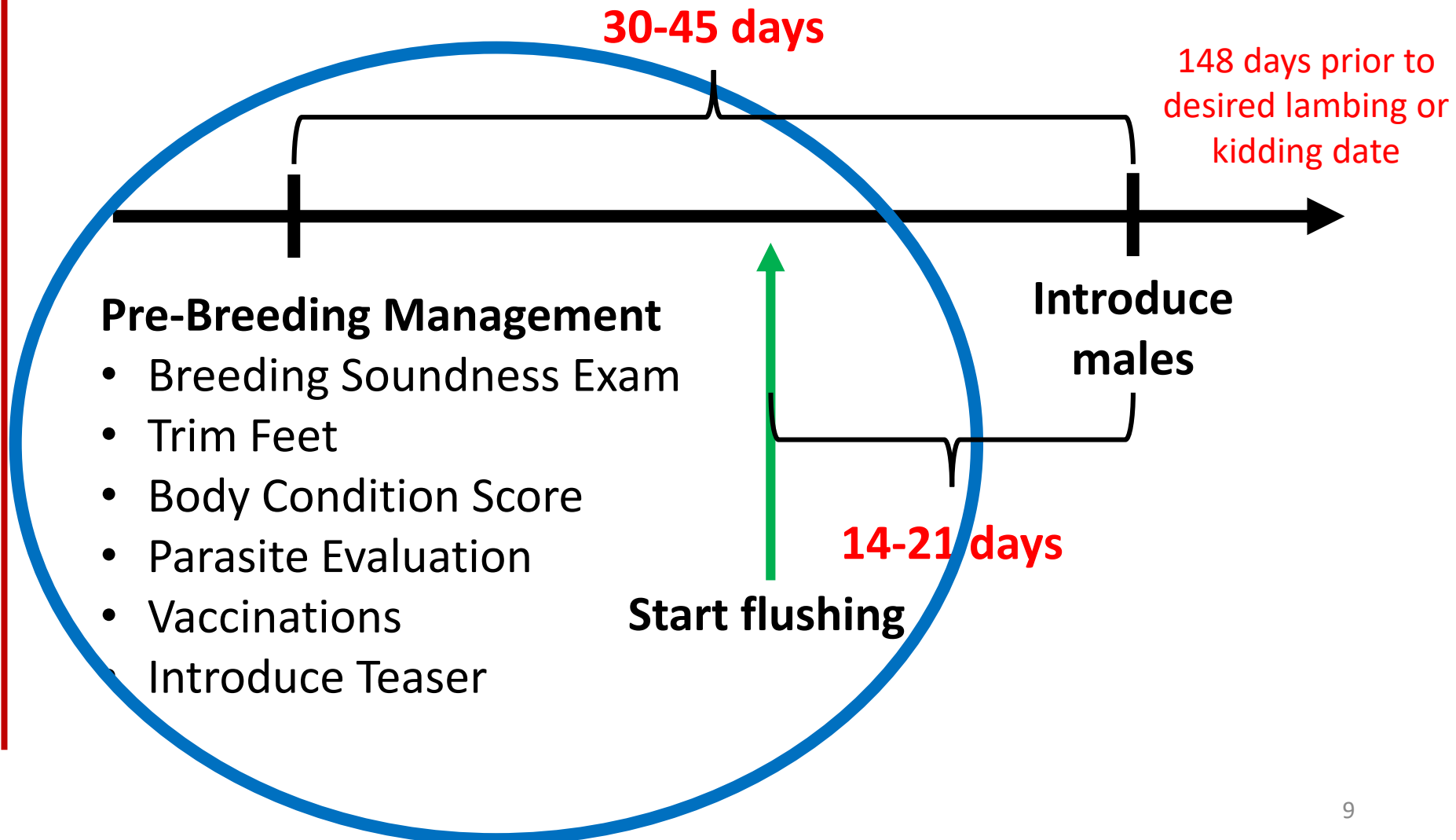
- Standard: 3 mature males per 100 females
- Max male:female ratio of 1:45
- Ram lambs or buck kids: Max 1:25 ratio

# Opportunity to optimize:

1. Labor Efficiency
2. Nutrition and feeding program
3. Vaccination schedule
4. Genetic Improvement
5. Marketing potential
6. Infrastructure resources

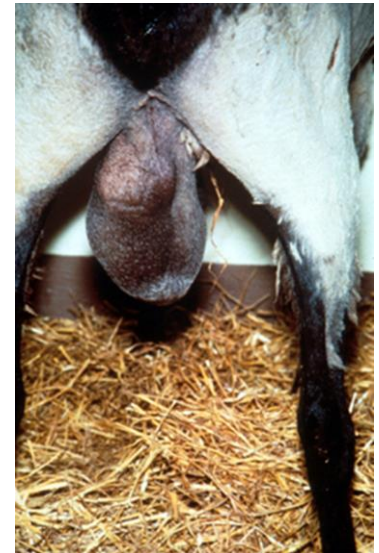


# Timeline



# Breeding Soundness Exam

- One of the most cost effective investments you can make for your operation
- Should be conducted 30-45 days before the start of breeding to allow sufficient time to find a replacement if ram or buck does not pass exam
- Anatomical and semen evaluation
  - Testicular development and scrotal abnormalities
    - Hernia, infection, etc.
  - Semen volume, concentration, motility and morphology





# Evaluate Feet

- Foot scald and foot rot limit animal mobility and soundness and can decrease reproductive success
- Cannot cure overnight so prevention and preparation prior to the breeding season is essential
- Wet environments/moist soil increase susceptibility
- Make sure hooves are trimmed 30-45 days prior to the breeding season to allow time for animals to adjust to trimming, prevent disease, and treat if necessary
  - Treat with 10% Zinc Sulfate





# Body Condition Score

- At the start of the breeding season, males should be in greater body condition than females
  - Males: BCS 3.5-4.0
  - Females: BCS 2.5-3.0
- Males will generally lose body condition during the breeding season
  - Need to ensure they start with enough condition to remain healthy during the entire breeding season
  - May need to supplement prior to breeding
- Young or thin males can be hand mated or only turned out with females at night

# Check for Parasites

- Check for signs of parasite infection in males and females prior to the start of the breeding season
  - FAMACHA Score
  - Fecal Egg Counts
  - Dag Score/fecal soiling
- Allow time to address parasite challenges before the breeding season begins



Image by Cristina Sotomaior

# Vaccinate for Abortion Diseases

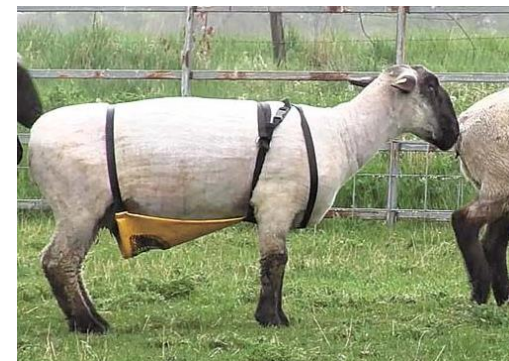
- Campylobacteriosis (vibriosis) and Chlamydiosis
- Clinical signs: Abortions
- Transmission
  - Feed/water contamination or fetal membranes/fluid
- Incubation
  - Campylobacter: 14 days from infection to abortion
  - Chlamydia: 60-90 days
  - Ewes/does infected later in gestation will have weak lambs/kids
- Vaccinate prior to the breeding season
  - Initial series and then annual booster





# Introduce Teaser Rams/Bucks

- The “Ram Effect” or “Buck Effect” can be used to induce cycling and increase reproductive success
  - Females usually exhibit “silent heat” with 3-4 days of male introduction
  - Normal heat **18-26 days later**
- Introduce vasectomized ram/buck “teaser” about 30 days before the breeding season starts
  - Maintain libido but lack breeding capacity
- OR use intact ram with teaser harness



# Flushing

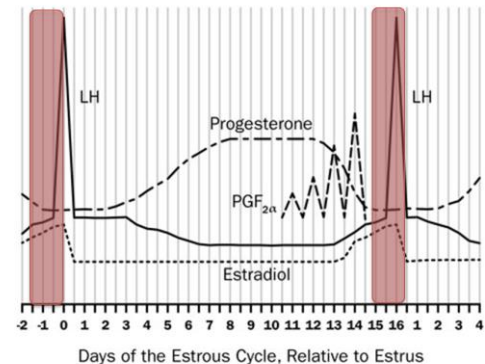
- Increase plane of nutrition prior to and during the beginning of the breeding season to improve ovulation rate and number of lambs/kids born
  - 2-3 weeks prior to ram/buck turnout
  - Continue for 3 weeks after ram/buck turnout
- Driven by ENERGY (TDN)
- Supplement diet with high energy feedstuffs (whole corn works well or high quality pasture) during this time period
  - 0.5 lb.-1 lb./hd/day
  - Ewes/Does respond best when BCS 2.5-3

Let's get more precise!



# What is Estrous Synchronization?

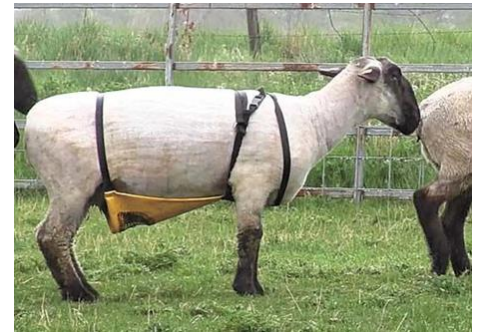
- Bringing females into heat in groups
- Advantages
  - Reduced length of breeding season
  - Focused periods for breeding & lambing
  - More uniform groups of offspring
  - Improved herd genetics (coupled with AI or ET)
- Requirements
  - Good record keeping and management
  - Appropriate facilities
  - Short periods of intense labor needed
  - Some added technical skills needed (for AI)



# Methods of Synchronizing Estrus

- Utilize the Male Effect
- Light therapy (Artificial Day Length)
- Hormone therapy
  - Progesterone treatments (Controlled Intravaginal Drug Release; CIDR)
  - Prostaglandin (Lutalyse<sup>®</sup> or Estrumate<sup>®</sup>) injections
  - Chorionic Gonadotropin (PG-600) injections

Male Effect and CIDRs are the most practical, effective tools for out-of-season synchronization



# Approved Drugs for Sheep/Goats

- Very few are approved for small ruminants
  - Extra label drug use
  - Costly
  - Strongly recommend having a valid Veterinary-Client-Patient-Relationship to help with planning and purchase of products
- **Disclaimer:** Mention or Display of a trademarks, proprietary product or firm in text or figures does not constitute an endorsement by NC State University and does not imply approval to the exclusion of other suitable products or firms.



# Hormonal Manipulation

- Progesterone Treatment
  - Progesterone controls the estrous cycle
    - Progesterone implants (CIDRs) are the most commonly used device to block estrus activity

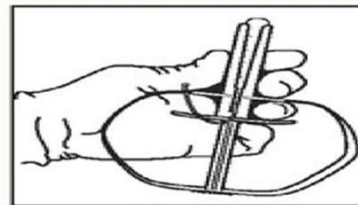


Figure 1



Figure 2

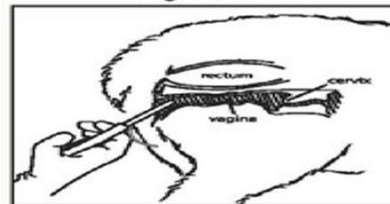


Figure 3

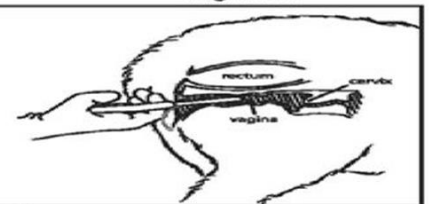


Figure 4

# Hormonal Manipulation

- Prostaglandin F2a Treatment
  - Prostaglandin F2a controls ovarian function
  - ONLY works in cyclic ewes (during the breeding season)
    - LUTALYSE® Injection (15 mg or 3 cc)
    - Estrumate (Cloprostenol Sodium; 150 mg or 0.6 cc)



# Hormonal Manipulation

- Chorionic Gonadotropin Treatment
  - Chorionic Gonadotropin stimulates ovulation
    - PMSG (pregnant mare serum gonadotropin - eCG- 400 IU)
    - PG 600 (400 IU eCG & 200 IU hCG)



# Inducing Estrus

- Need Progesterone supplementation for 10-14 days
  - CIDR- preferred method of progesterone supplementation
    - Can use Prostaglandin F2a (lutalyse) when removing CIDR but not required
    - Do not need extra hormones (eCG or PG600) to stimulate ovulation IF in the breeding season (required for out-of-season)
  - Note: this method is optimum for getting ewes to cycle together for uniform lamb crop – but not for Timed AI
- Ewes will display estrus in 1 to 3 days following CIDR removal





# Progesterone Synchronization Protocols

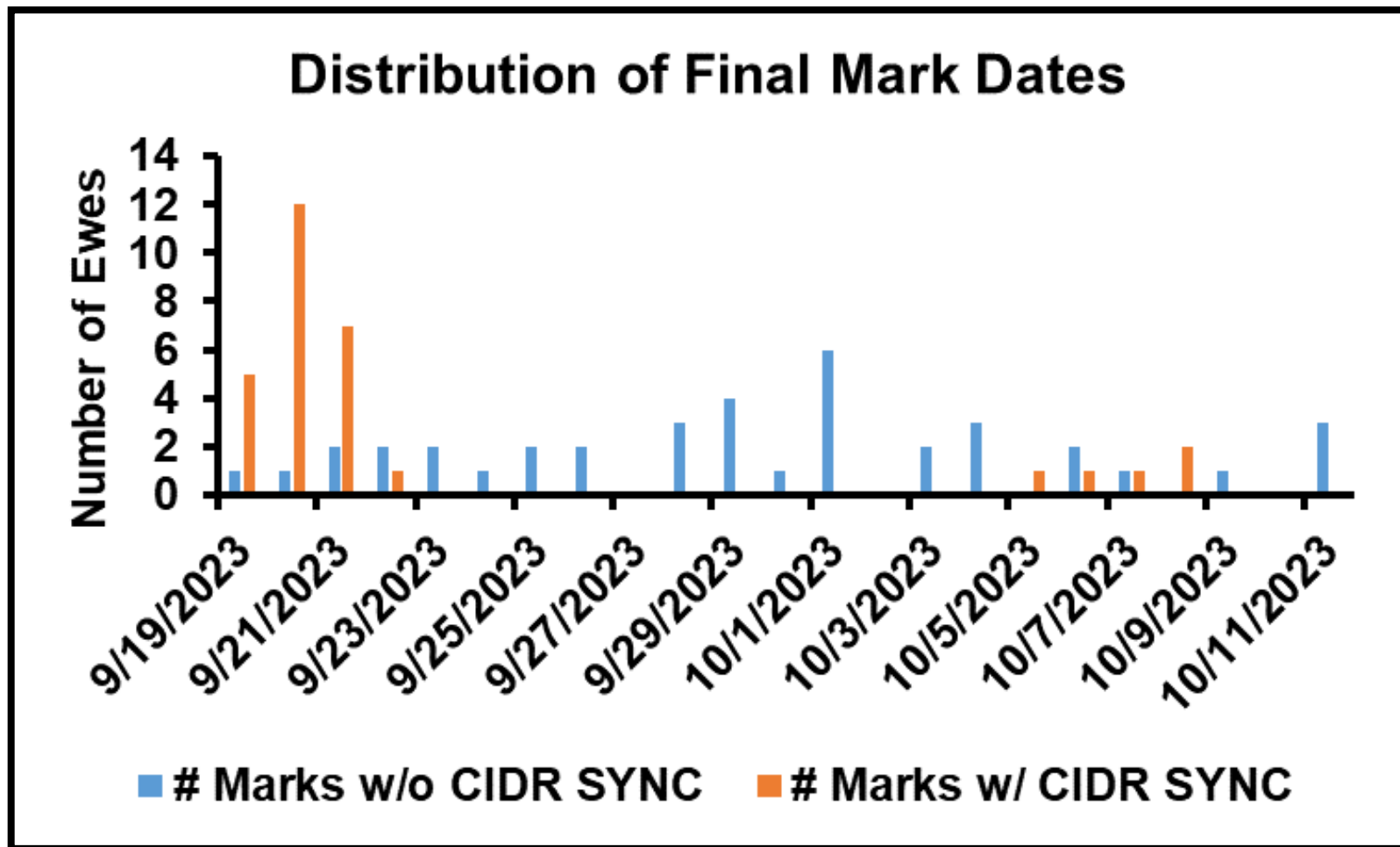
Sun.	Mon	Tues	Wed	Thur	Fri	Sat
Insert CIDR am (Day 0)						
			Remove CIDR am (Day 10)		Heat	Heat
				Heat		

Turn in male at time of  
CIDR removal  
or  
AI Breed by AM/PM rule

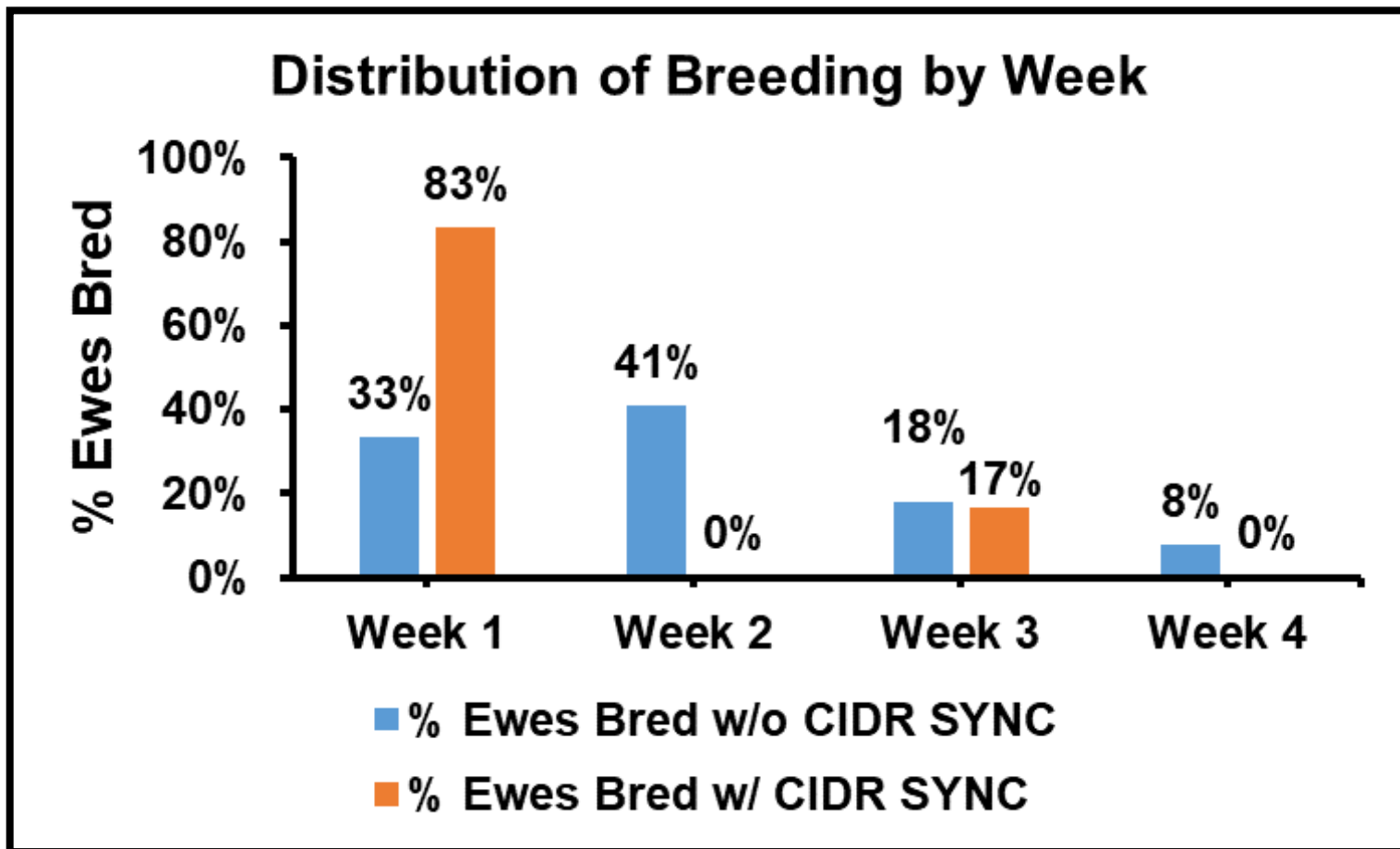
# North Carolina Sheep System Data

- 10-14 day CIDR SYNC with natural cover
- ALL CIDRs inserted on same day
- Beginning on Day 10, **FIVE** CIDRs per ram per day removed until all CIDRs removed
- Rams introduced on Day 10 post-CIDR insertion
- Rams are removed after 2 heat cycles
  - 25 days with CIDR SYNC
  - 34 days without CIDR SYNC

# North Carolina Sheep System Data



# North Carolina Sheep System Data





*Did she actually get pregnant???*



# The # 1 reason a female doesn't mark is because she's pregnant

- Utilize marking harness or rattle paint
- Change with each cycle
- Light colors to dark colors

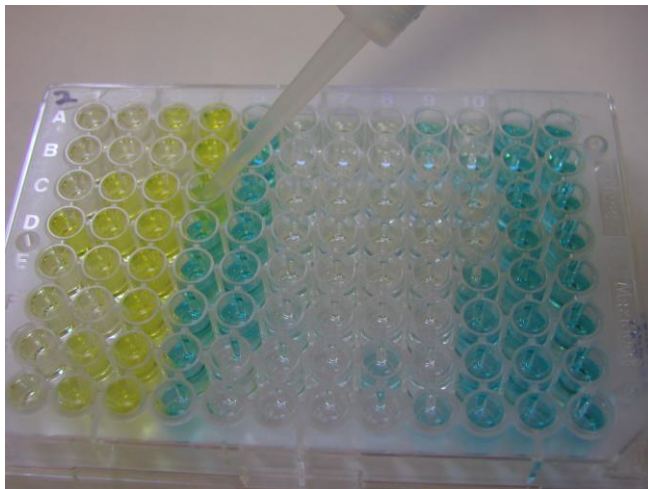
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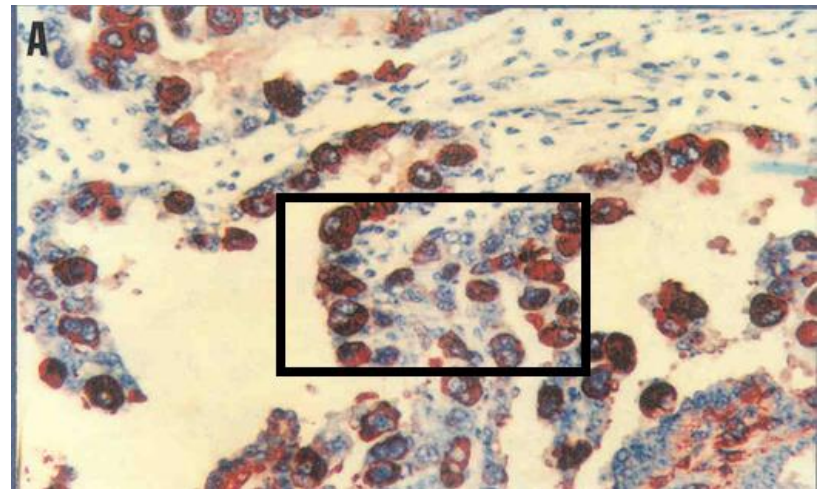
# Blood Test

bioPRYN®

- **Pregnancy** -specific protein B (**PSPB**)
  - Produced by the placenta and is present in the blood of a **pregnant** ewe/doe early after breeding until after lambing/kidding.
  - Detection 30 days after breeding

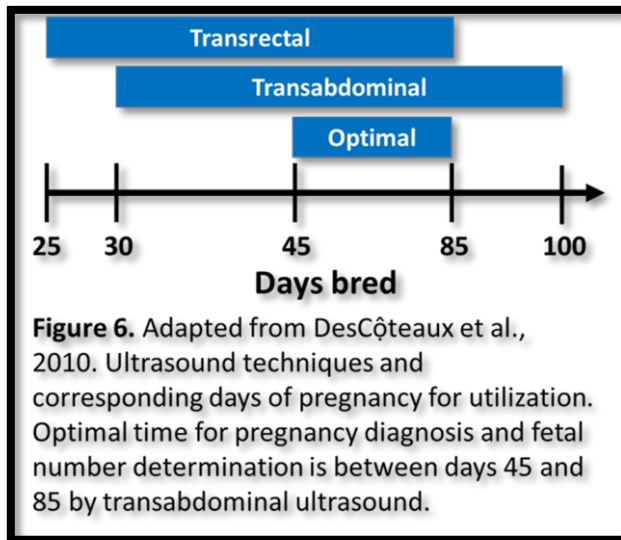


Placental Histology



# Ultrasound

- Timing similar to blood test
- Determine fetal counts
- Minimize unproductive days
  - Move open ewes/does to next breeding group or cull





# Questions

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