

Livestock Efficiency

Title: Reproductive Wastage in Western Whiteface Range Ewes

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Story In Brief: Increasing reproductive efficiency will have the greatest influence on ranch profitability. New Mexico ranches will typically wean between a 90 and 110 % lamb crop. However, the potential is much greater. Willingham et al. (1986) found that range ewes (west Texas) ovulated 1.52 eggs per ewe and with a lambing and weaning percent of 117% and 101%, respectively. The greatest reproductive loss is between ovulation and lambing with the most vulnerable period pre-implantation. Therefore, to increase reproductive efficiency, we need to increase implantation rates and reduce early embryonic death.

A second way to increase reproductive efficiency is to increase the pounds of lamb marketed per ewe. Therefore, we need to increase weaning weight of lambs going to market in the fall. For many years, producers in New Mexico and the west have used mutton sires as terminal crosses on western white face ewes. This system fit well into the selection system developed by Prof Neale. However, little information is published regarding the actual benefits of the crossbred lamb.

Objectives: The primary objective of this study was to determine the stage/s of greatest reproductive loss in Western Whiteface range ewes.

The secondary objective was to determine if terminal cross breeding will effectively produce more pounds of weaned lamb than straightbred Western whiteface lambs on native rangelands.

Expected Outcomes: Our hypothesis was that we would see about 40 – 50 % loss of potential lambs (potential lambs = ovulation rates) with the greatest loss in the first few weeks following breeding. Also, we expected the cross bred lambs to wean about 10% heavier than the straightbred lambs.

Duration: December 2002 to present

Approach:

- From December 2002 to present, ~150 Western whiteface ewes were randomly assigned each year to 4 pastures.
- Suffolk rams were applied to 2 pastures and Rambouillet rams to 2 pastures.
- Thirty four days later rams were removed. In 2005, 32 ewes were laparotomized to count corpus lutea. This was used as an ovulation rate estimate for the entire herd.
- One week prior to lambing, half of the ewes from each pasture were randomly chosen for to be shed lambed.
- The shed lambing ewes were housed in corrals to positively identify lambing rates.
- The lambs were ear tagged, weighed, and returned to their pasture of origin within 24 hours of their birth.
- Fifty five days after the birth of the first lamb all lambs were docked, castrated, weighed, and tagged.
- One hundred fifty days after the birth of the first lamb all lambs were weighed and weaned.

- Ten lambs from each pasture will be placed in a feedlot study on campus so growth and efficiency data can be collected. Carcass data will also be collected following slaughter.

Results:

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Application:

- Reproductive Efficiency
 - Greatest reproductive loss is from **ovulation to birth**. No dystocia nor late abortions were observed. Therefore, early embryonic loss should encumber most of this loss.
 - Three reasons would be associated with early reproductive failure; unfertilized ova, **unsuccessful implantation of embryo**, or early embryonic death.
 - Loss of lambs after a viable birth is unavoidable in a range situation. Losses included **starvation (weak lambs)** and predators.
- Crossbreeding
 - Neale (1943) reported that terminal crossbred lambs recorded larger body weights at marking and weaning during fair range conditions but straightbred ewes weaned heavier lambs on poor range conditions.
 - The **crossbred lambs grew faster from birth to marking** during our experiment and maintained that weight advantage from marking to weaning.
 - We deduced that **terminal crossbreeding will wean more pounds of lamb** than straightbreeding if producers are moderately stocked.

References:

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