Range and Animal Science Research in Texas

John Walker
Major Emphasis of Locations

- San Angelo – 1,762 ac
  - Animal Breeding
  - NSIP Rambouillet flock
  - Ruminant Nutrition

- Sonora – 3,460 ac
  - Prescribed Burning
  - Super Juniper Eating Goat
  - Academy for Ranch Management & many other educational programs
Major Emphasis of Locations

• Read Ranch – 5,120 ac
  • Selection of Angora goats for increased juniper consumption
  • Selection on ewes to increase wool quality

• Carl & Bina Sue Martin Ranch – 4,709 ha
  • Evaluation of Booroola gene under range condition
  • NSIP Dorper flock
  • Genetic markers for cancer eye resistance in white face cattle.
Validation of FibreLux
<table>
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<tr>
<th><strong>OFDA2000</strong></th>
<th><strong>FibreLux</strong></th>
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<tbody>
<tr>
<td>• Cost - $70k USD</td>
<td>• Cost - $2k USD</td>
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<td>• Speed &amp; ease of use =</td>
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<td>• Mobility ↓</td>
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- Explained 80% of variation in OFDA and was ±0.25µm
Near Infrared Spectrometry for Measuring Wool
NIR Calibrations

- Lab scoured yield
- Average Fiber Diameter
- Country of origin
Identification of Contaminants in Wool Fabric Polypropylene
Identification of Contaminants in Wool Fabric

Human Hair

10X

Wool

Hair

50X
Wool and Mohair Producer Testing

- Over 4,000 samples from 27 states tested annually
- Individual animal side sample (OFDA2000, FibreLux, NIRS)
- Wool data for NSIP records
- Mohair testing (OFDA100)
Annual Sheep Shearing School
Other Wool Related Activities

• Wool judging teams train and analyze samples
  • Texas A&M
  • Texas Tech
  • Angelo State
  • Kansas State

• Analyze wool samples for Ram & Angora Tests
  • Texas
  • South Dakota
Central Performance Tests

- Finewool Ram Test - 69 years
- Angora Goat Test - 51 years
- Sheep improvements
  - Increased
    - Staple length 60%
    - Clean Fleece wt. 41%
    - Final ram wt. 32%
  - AFD decreased 1%
  - 2,357 Rams Tested
NSIP Flocks

AgriLife Dorper

TAES Rambouillet
Evaluation of Prolificacy Gene on Rangelands

- The FecB allele resulted in:
  - 22% increase in number of lambs weaned
  - 15% decrease in individual lamb weaning weight
  - 3% increase in weight of lamb weaned / ewe mated
  - Small disadvantage in postweaning ADG
  - Reduced ewe longevity
Analysis of San Angelo Sheep and Goat Markets

- $/cwt goats are 38% higher than sheep but only 10% higher by the head
- $/cwt varied seasonally for hair vs wool sheep but wool sheep were higher by the head
- Because of volume there was no price advantage for ethnic holidays

2015 - 2017
Brush encroachment is a major problem limiting productivity
Woody Plants Major Problem on Rangelands
Harvesting Juniper Trees for Livestock Feed

FROM FIELD → PROCESSED → INTO FEED

$80/ton FOB
JUNIPER IS A UNIQUE livestock feed ingredient

When harvested, **NO** other feed ingredient can:

1. Be available 365 days a year
2. Synergistically enhance natural resources
3. Increase forage production
4. Enhance land value
Juniper Nutrient Composition
Selectively Breeding Goats for Biological Control of Juniper
Prescribed Fire
Prescribed Burning

How burn cooperatives have helped citizens... improve management of encroaching woody plants
Targeted Grazing
Only ewes can stop wildfires.
Livestock Guardian Dog Program

Livestock Guardian Dogs

Home IS a Livestock Predator

Maintenance needs vary based on the breed of livestock guardian dog, and the size and age of the dog. Typically, these dogs require daily exercise, appropriate food, and routine grooming. It's important to provide them with a consistent routine and avoid overfeeding or underfeeding, as this can negatively impact their health. Regular check-ups with a veterinarian are also recommended to ensure their well-being. Proper care and handling of these dogs are crucial for their success in guarding livestock.
Keeping Track of Your LGD
Ovine Ecthyma Vaccine
Over 1,000,000 doses sold
4H - Wool & Mohair Judging Program

Local, District, State, & National Contests
23,443 Sheep and Goats are shown annually by youth in Texas.
Texas Sheep and Goat Expo
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@TAMULivestockguarddog

THANKS!