4TH ANNUAL SMALL RUMINANT SHORT COURSE

RAM & BUCK TEST

October 10-11, 2025

Gainesville, Florida

UF IFAS UNIVERSITY of FLORIDA

UF College of Veterinary Medicine UNIVERSITY of FLORIDA

UF IFAS Extension UNIVERSITY of FLORIDA

Welcome to the 4th annual UF Small Ruminant Short Course!

The UF Small Ruminant Short Course and Ram/Buck Test Program Committee, the Department of Animal Sciences, the College of Veterinary Medicine and UF/IFAS Extension would like to welcome you to our fourth annual joint event. We look forward to this program in anticipation of delivering a premier educational event for small ruminant producers in the southeastern United States. Whether you are a small or a large producer, we hope that you enjoy the program and learn about the small ruminant industry's future direction, best management practices, and new information about specific production and management tools that may impact your small ruminant enterprise.

We are very excited to have a two-day conference event that combines an exchange of knowledge with information shared during lectures, research updates and demonstrations . In order to expand hands-on learning opportunities, we added a series of pre-conference seminars last year which takes place on Thursday, prior to the full conference kick-off. This opportunity was well received, so we have decided to continue it this year. We are privileged to have outstanding individuals speaking at the UF Small Ruminant Short Course. It is our hope that the knowledge exchanged will contribute to the advancement of the Florida small ruminant industry and beyond. We hope that you enjoy our program!

The 4th annual UF Small Ruminant Short Course is an event that requires immense coordination and dedication of many individuals to accomplish the final program. The UF Small Ruminant Short Course Organizing Committee is very grateful to faculty, staff, students, and volunteers that are essential in the planning and execution of this event.

Thank you for choosing to attend the 4th annual UF Small Ruminant Short Course. We hope the program exceeds your expectations and provides you with valuable information to impact your small ruminant enterprise.

Best Regards,

Brittany N. Diehl, DVM, MS
Clinical Assistant Professor
Small Ruminant Extension Specialist
UF College of Veterinary Medicine

2025 Small Ruminant Short Course

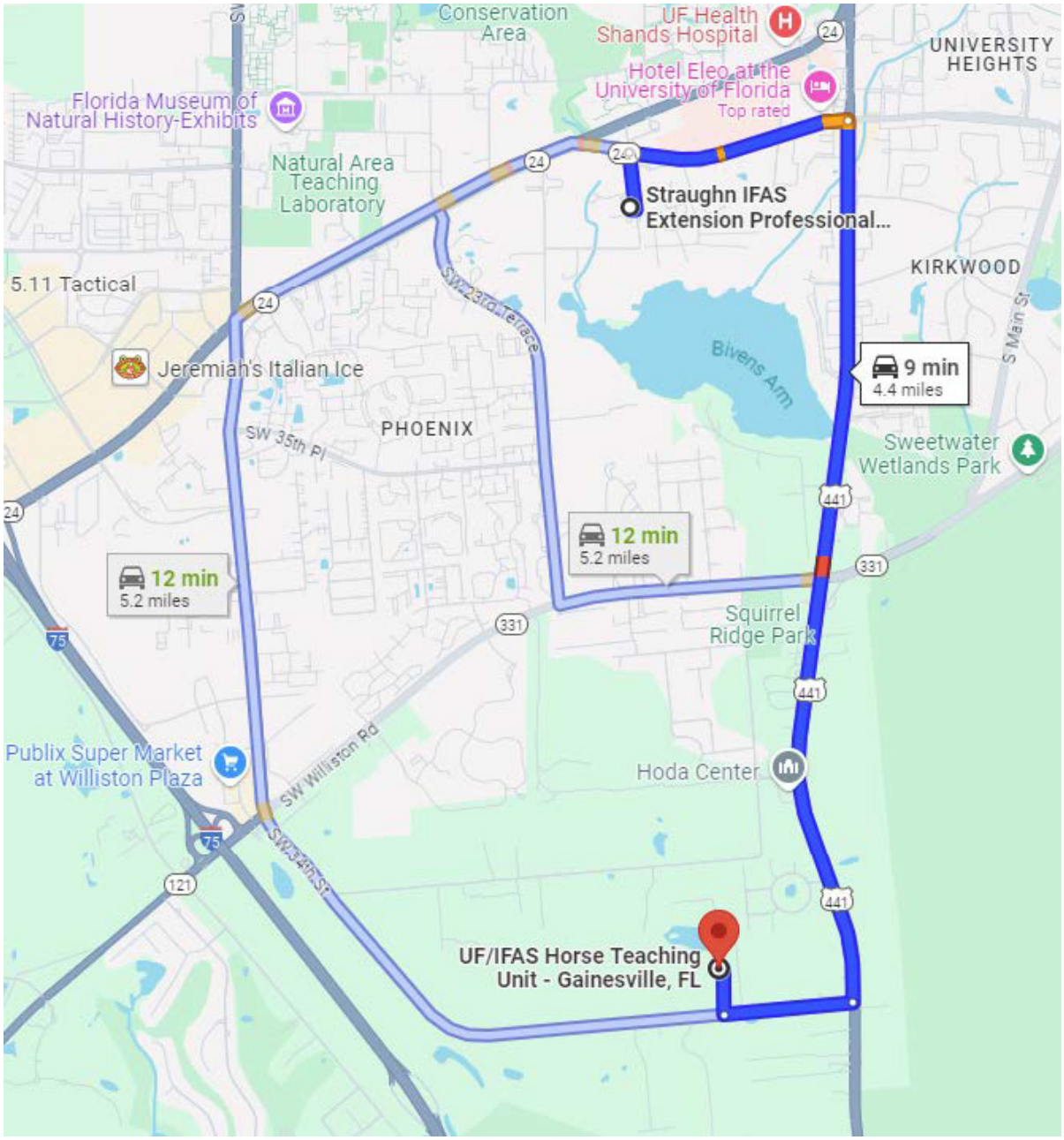
October 10-11, 2025

Presented by

UF/IFAS Department of Animal Sciences
UF College of Veterinary Medicine
UF/IFAS Department of Agronomy
UF/IFAS Extension

2025 Small Ruminant Short Course Committee

Brittany Diehl, Chair
Diwakar Vyas
Fernanda Rezende
Clay Whitehead
Matti Moyer
Adriana Barbat
Savanna Linzmaier
Small Ruminant Extension Group



Straughn Professional Development Center Address: 2142 Shealy Drive, Gainesville, FL 32608

UF Horse Teaching Unit Address: 1934 SW 63rd Ave, Gainesville, Fl 32608

From Straughn Professional Development Center to Horse Teaching Unit:
- Depart the Straughn Center, turn left on Shealy Drive (0.02 mi).
- Go to stop light and turn right on SW 16th Ave (0.7 mi).
- Turn right onto US-441 S/SW 13th St (2.9 mi).
- Turn right onto SW 63rd Ave (0.4 mi).
- Turn right and destination is on left, UF/IFAS Horse Teaching Unit (0.1 mi)

Table of Contents

Thursday, October 9

Pre-conference Seminars, Various Locations

UF IFAS UNIVERSITY of FLORIDA

Pre-conference seminars are hands-on workshops aimed at providing in-depth exposure to specific topics, delivering practical knowledge and application, while connecting producers and specialists.

Pre-conference seminars will have a maximum capacity of 15 participants each. Pre-registration is required.

Transportation to each location is the attendee's responsibility, there will not be transportation provided. Meals are on your own on Thursday, October 9th.

Cost per session: $60/person

Option 1: Advanced Small Ruminant Pasture Management

Instructor: Dr. Marcelo Wallau, University of Florida

Description: Participants will have the opportunity to engage in hands-on instructional activities related to small ruminant forage production and management. This session will be focused on advanced strategies for forage management.

Location: UF Sheep Unit, 2108 Shealy Drive, Gainesville, FL 32608

Time: 10:00 AM-12:00 PM EST

Option 2: Small Ruminant Veterinary Techniques

Instructor: Dr. Sara Beth Speziok, Springhill Equine Veterinary Clinic

Description: Participants will have the opportunity to engage in hands-on instructional activities related to small ruminant venipuncture, needle size and length determinants, injection techniques, orogastric tube placement, hoof trimming, FAMACHA scoring, and body condition scoring.

Location: UF Sheep Unit, 2108 Shealy Drive, Gainesville, FL 32608

Time: 2:00-4:00 PM EST

Friday, October 10

Location: Straughn Professional Development Center

2142 Shealy Dr, Gainesville, FL 32608

7:30	Registration
8:30	Welcome - Dr. Saqib Mukhtar, UF/IFAS Extension Associate Dean - Dr. Brittany Diehl, UF College of Veterinary Medicine
8:40	How can genetics for growth and parasite resistance increase producer profits, reduce labor and reduce reliance on chemical dewormers? - Dr. Andrew Weaver, North Carolina State University
9:40	Refreshment Break
10:00	Registered versus commercial sheep/goat production – Which might be best for your operation? - Dr. Andrew Weaver, North Carolina State University
11:00	Early Season Grazing Strategies - Dr. Marcelo Wallau, University of Florida
12:00	Lunch
1:00	Small Ruminant Pregnancy Toxemia and Hypocalcemia - Dr. Martha Mallicote, UF College of Veterinary Medicine
2:00	What I wish producers and clients knew about antibiotics - Dr. Katelyn Menacho, Oak Hammock Large Animal Veterinary Services
3:00	USDA – Current Topics for Small Ruminants - Dr. Kayla Crum, Veterinary Medical Officer USDA-APHIS (Florida)
3:45	Producer's View: A Panel Discussion
4:30	**Travel to UF/IFAS Horse Teaching Unit (HTU)** **1934 SW 63rd Avenue, Gainesville, FL 32608**
5:00	Cocktail Hour and Trade Show UF Ram Test Sale animals available for viewing
6:00	Dinner

Saturday, October 11

Location: UF/IFAS Horse Teaching Unit
1934 SW 63rd Avenue, Gainesville, FL 32608

8:45	Registration
9:15	Welcome - Dr. Jason Ferrell, Interim Chair, UF/IFAS Department of Animal Sciences
9:25	Ram & Buck Test Data Overview
	Award Certificate Presentations - Dr. Brittany Diehl, UF College of Veterinary Medicine - Clay Whitehead, University of Florida
10:00	Small Ruminant Meat Cooking Demonstration - Dr. Chad Carr, University of Florida - Kyle Mendes, University of Florida
10:30	Short Rotations & Trade Show
	UF Ram Test Sale animals available for viewing
	Best Management Practices for the Southeast - Laura Bennett, UF/IFAS Extension Pasco and Sumter Counties
	Incorporating Cool Season Forages Into Grazing - Erin Dasher, UF/IFAS Extension Suwannee County
	Common Pasture Weeds in Florida - Lizzie Whitehead, UF/IFAS Extension Bradford County
	Small Ruminant Hoof Care - Stephen Jennewein, UF/IFAS Extension Duval County
	Small Ruminant Reproduction - Cassidy Dossin, UF/IFAS Extension Clay County
	Aging Small Ruminants with Teeth - Alicia Halbritter, UF/IFAS Extension Baker County
	Small Ruminant Fecal Egg Counts - Kevin Korus, UF/IFAS Extension Alachua County
	Toxic Plants to Small Ruminants - Ashley Stonecipher, UF/IFAS Extension Volusia County
11:45	Lunch
1:00	Adjourn
Location:	**UF/IFAS Sheep Unit, 2108 Shealy Drive, Gainesville, FL 32608**
1:00	FAMACHA Training/Certification (30 participants max) - UF/IFAS North Florida Livestock Agents Group (NFLAG)

Small Ruminant Extension Group

Jay Ferrell
Professor and Interim Chair
UF/IFAS Department of Animal Sciences
jferrell@ufl.edu

Saquib Mukhtar
Professor and Associate Dean
UF/IFAS Extension
smukhtar@ufl.edu

Brittany Diehl
Clinical Assistant Professor & Small Ruminant Extension Specialist
UF College of Veterinary Medicine
bn.diehl@ufl.edu

Diwakar Vyas
Assistant Professor of Ruminant Nutrition
UF/IFAS Department of Animal Sciences
diwakarvyas@ufl.edu

Fernanda Rezende
Assistant Professor, Statistical Genetics
UF/IFAS Department of Animal Sciences
frezende@ufl.edu

Chad Carr
Professor – State Extension Meat Specialist
UF/IFAS Department of Animal Sciences
chadcarr@ufl.edu

Marcelo Wallau
Assistant Professor – Forages Extension Specialist
UF/IFAS Department of Agronomy
mwallau@ufl.edu

Clay Whitehead
Farm Supervisor – Sheep Physiological Unit
UF/IFAS Department of Animal Sciences
jacobcwhitehead@ufl.edu

Jack Eck
Agricultural Assistant – Sheep Physiological Unit
UF/IFAS Department of Animal Sciences
jeck2014@ufl.edu

Laura Bennett
Pasco, Sumter, Hernando Counties
Multi-County Livestock Extension Agent
laurahbennett@ufl.edu

Jonael Bosques
Hardee County
Agriculture Agent & CED
jonael@ufl.edu

Erin Jones Dasher
Suwannee County
Livestock Extension Agent
erinj1295@ufl.edu

Cassidy Dossin
Clay County
Agriculture & Natural Resources Extension Agent
cdossin@ufl.edu

Mark Mauldin
Washington County
Agriculture & Natural Resources Extension Agent
mdm83@ufl.edu

Nicholas Simmons
County Extension Director – Escambia County
UF/IFAS Extension
n.simmons@ufl.edu

Ashley Stonecipher
Volusia County
Agriculture & Food Systems Extension Agent
ashleykush@ufl.edu

Lizzie Whitehead
Bradford County
UF/IFAS Extension
liz.whitehead@ufl.edu

Allison Williams
Hillsborough County
Small Farms and Alternative Enterprises Extension Agent –UF/IFAS Extension
allisonwilliams@ufl.edu

NC STATE EXTENSION

How can genetics for growth and parasite resistance increase producer profits, reduce labor and reduce reliance on chemical dewormers?

Andrew Weaver

Small Ruminant Specialist

North Carolina State University

arweave3@ncsu.edu

Economically Relevant Traits

Any trait that impacts the revenue and expenses of the operation.

- Growth
- Maternal
- Fitness (parasite resistance)
- Carcass Quality

What matters to YOU?

NC STATE EXTENSION

Phenotype =

Genotype + Environment

Fundamentals of Genetic Improvement

- **Control the environment**
  - **=> contemporary groups**
- **If environment is the same**
  - **=> differences should be genetic**
- **Min. number of contemporary groups at birth**
  - **=> number of groups can only increase**
  - **=> as number of groups increase, group size and ability to identify genetic differences decreases**
- **Identify individuals that are superior to contemporary group average for traits of interest**
  - **=> should be genetically superior**

Tools for Selection

1. It's a beauty pageant
2. Use performance records
3. Use adjusted performance records
4. Buck/ram test evaluation
5. Estimated Breeding Values

1. It's a Beauty Pageant

Phenotypic Selection

- Pros:
  - Nice to look at
- Cons:
  - Phenotype vs genotype
  - Are these traits economically relevant?
  - Is there consensus among breeders regarding what is ideal?

2. Use Performance Records

Phenotypic Selection

- Pros
  - Measuring traits of economic relevance
  - Provide benchmark for production level
  - Market animals based on these traits
- Cons
  - Phenotype vs genotype
  - Environmental factors influence these metrics
    - Dam age, kid age, litter size, management factors
    - Some can be adjusted for, others cannot

3. Use Adjusted Performance Records

Phenotypic Selection

- Pros
  - Control for known environmental impacts
  - More accurate than raw performance records
- Cons
  - Phenotype vs. genotype
  - We don't sell livestock on adjusted weights

Dam Age	Adj. Factor
1	1.10
2	1.09
3+	1.00

Sex	Adj. Factor
Buck	1.00
Wether	1.08
Doe	1.11

	RT		
BT	1	2	3
1	1.00	1.14	-
2	1.04	1.18	-
3	1.08	1.23	1.27

Notter, D. 2008

NC STATE EXTENSION

3. Use Adjusted Performance Records

- Calculating adjusted weights
  - BWT = 8 lb., WWT = 50 lb., Weaning age = 98 days
  - Wether, Dam Age = 2, Born as a triplet, raised twin
  - 90 d WT = ([(50-8 lb.)/98 d] X 90 d) + 8 = 46.6 lb.
  - Adj. 90 d WT = 46.6 lb. X 1.09 X 1.08 X 1.23 = **67.5 lb.**

Dam Age	Adj. Factor
1	1.10
2	1.09
3+	1.00

Sex	Adj. Fact
Buck	1.00
Wether	1.08
Doe	1.11

	RT		
BT	1	2	3
1	1.00	1.14	-
2	1.04	1.18	-
3	1.08	1.23	1.27

Notter, D. 2008

4. Buck/Ram Test Evaluation

Phenotypic Selection

- Pros
  - Controlled environment for fixed period of time
  - Opportunity to measure more difficult traits
- Cons
  - Phenotype vs. genotype
  - Divides contemporary groups
  - Pre-test management may influence test performance

NC STATE EXTENSION

5. Estimated Breeding Values

Genetic Selection

- Pros
  - Most accurate selection tool
  - Removes environmental factors
    - Prevents biased selection for environmental factors that aren't constant between farms and years
  - Simplifies buck/ram selection
  - Relevant between herds
- Cons
  - Investment of labor and time to collect and submit data

Estimated Breeding Values (EBV)

- Predictor of genetic merit
- Numerical representation of genotype
- More accurate than:
  - Raw performance data
  - Adjusted performance data
  - Buck/Ram tests
- Best tool in the toolbox
- "Estimated" not "true" breeding value
  - Associated accuracy value

NSIP
National Sheep Improvement PROGRAM

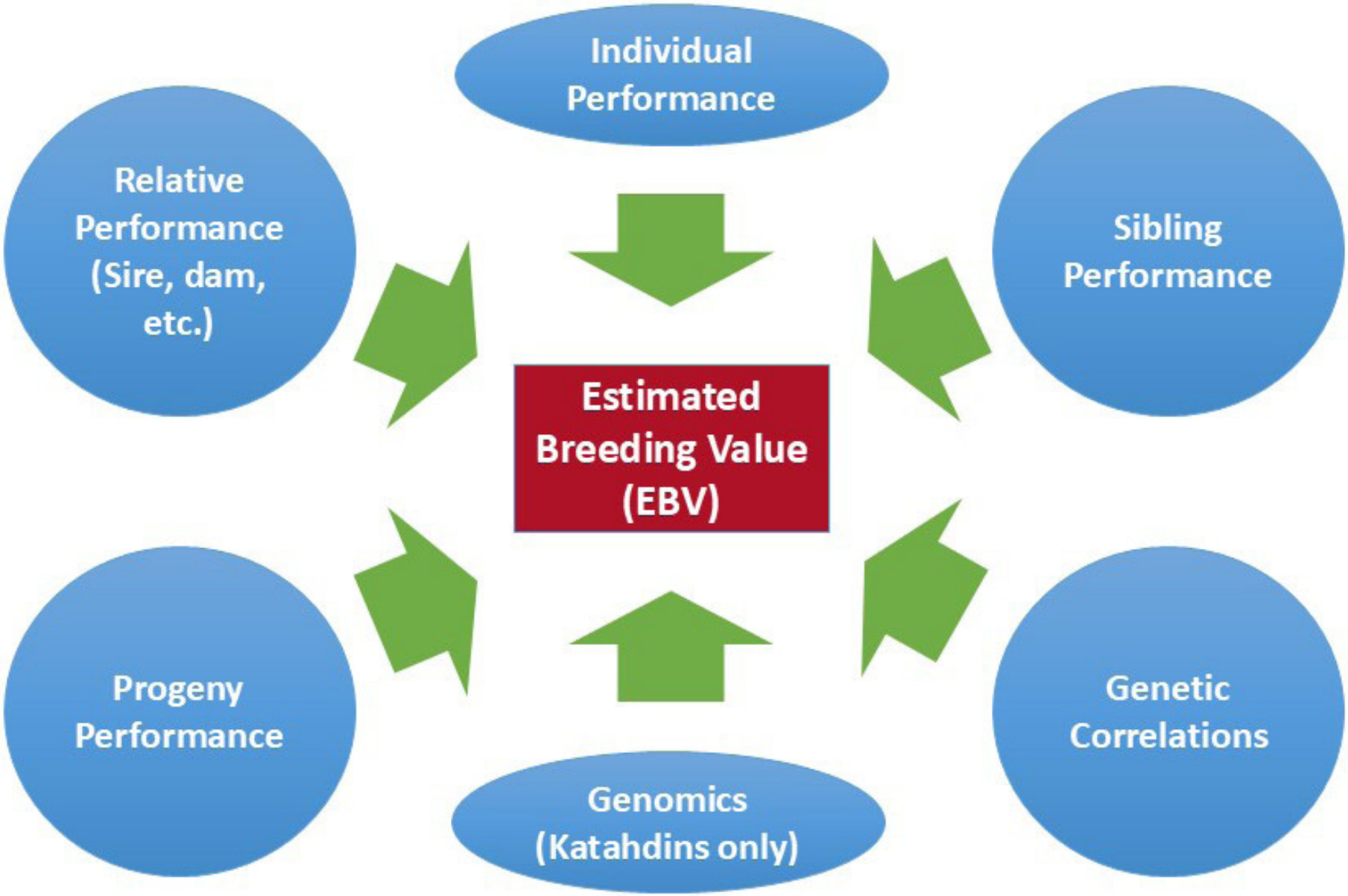
Phenotype = Genotype + Environment

Estimated Breeding Values (EBV)

- Predictor of genetic merit
- Numerical representation of genotype
- More accurate than:
  - Raw performance data
  - Adjusted performance data
  - Buck/Ram tests
- Best tool in the toolbox
- "Estimated" not "true" breeding value
  - Associated accuracy value

NSIP
National Sheep Improvement PROGRAM

Phenotype = EBV + Environment


Individual Performance
Relative Performance (Sire, dam, etc.)
Sibling Performance
Estimated Breeding Value (EBV)
Progeny Performance
Genetic Correlations
Genomics (Katahdins only)

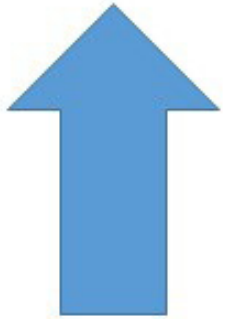
NC STATE EXTENSION

Katahdin Percentile Report

October 2025

2024-2025 born lambs with genetic linkages

Percentile	BWT	MWWT	WWT	PWWT	PFAT	PEMD	WFEC	PFEC	PSC	NLB	NLW	US Hair Index	YWT	HWT	MBWT	SRC$ Index
100	1.00	2.70	5.25	9.39	-2.42	2.68	-99.84	-100.17	0.00	0.52	0.40	107.31	9.06	0.00	0.98	141.63
99	0.66	1.93	3.67	6.87	-1.27	1.60	-93.63	-98.22	0.00	0.33	0.28	105.60	6.57	0.00	0.64	131.37
98	0.61	1.77	3.43	6.38	-1.03	1.38	-90.46	-96.38	0.00	0.29	0.26	105.24	6.03	0.00	0.57	129.37
97	0.58	1.65	3.27	6.06	-0.95	1.26	-87.81	-94.35	0.00	0.27	0.24	104.93	5.64	0.00	0.53	128.34
96	0.56	1.57	3.17	5.83	-0.89	1.16	-85.67	-92.35	0.00	0.25	0.23	104.76	5.38	0.00	0.51	127.25
95	0.54	1.49	3.08	5.64	-0.83	1.07	-83.93	-90.61	0.00	0.24	0.22	104.63	5.17	0.00	0.48	126.43
90	0.47	1.27	2.78	5.00	-0.62	0.79	-75.95	-83.97	0.00	0.20	0.20	104.16	4.47	0.00	0.40	123.79
85	0.42	1.12	2.57	4.59	-0.47	0.61	-69.10	-77.11	0.00	0.17	0.18	103.88	4.01	0.00	0.34	122.05
80	0.39	1.00	2.40	4.26	-0.34	0.49	-63.25	-70.86	0.00	0.16	0.17	103.66	3.64	0.00	0.29	120.81
75	0.35	0.90	2.26	3.99	-0.23	0.39	-57.77	-64.28	0.00	0.14	0.16	103.46	3.30	0.00	0.26	119.70
70	0.33	0.81	2.13	3.74	-0.13	0.30	-52.01	-57.45	0.00	0.13	0.15	103.29	3.00	0.00	0.22	118.72
60	0.27	0.64	1.89	3.29	0.01	0.14	-41.94	-45.07	0.00	0.11	0.13	102.96	2.44	0.00	0.17	117.00
50	**0.22**	**0.49**	**1.66**	**2.86**	**0.18**	**0.00**	**-31.57**	**-31.69**	**0.00**	**0.09**	**0.12**	**102.65**	**1.87**	**0.00**	**0.11**	**115.45**
40	0.17	0.31	1.42	2.45	0.38	0.00	-20.42	-16.71	0.00	0.07	0.10	102.34	1.26	0.00	0.06	113.85
30	0.11	0.10	1.17	2.00	0.59	-0.15	-6.64	0.00	0.00	0.05	0.09	102.00	0.27	0.00	0.00	112.08
20	0.05	0.00	0.86	1.47	0.87	-0.33	1.19	8.45	0.00	0.03	0.07	101.61	0.00	0.00	-0.01	109.82
10	-0.05	0.00	0.41	0.67	1.29	-0.60	25.75	41.40	0.00	0.00	0.04	101.04	0.00	0.00	-0.10	106.90
0	-0.71	-1.37	-2.07	-4.07	4.25	-2.03	330.30	339.97	0.00	-0.27	-0.14	97.94	-5.14	0.00	-0.94	92.75
Units	kg	kg	kg	kg	mm	mm	%	%	cm	%	%		kg	kg	kg	



More genetically superior

Breed Average

What do these EBVs mean for flock productivity and producer profitability???

Growth Traits

- **Weaning Weight (WWT) EBV**
  - Indicator of weight differences at 60 days of age
  - Reported in kg (2.2 lb. per kg)
  - Adjusted for lamb and dam age, NLB and NLW
- **Post-weaning Weight (PWWT) EBV**
  - Indicator of weight differences at 120 days of age
  - Reported in kg
  - Adjusted for lamb and dam age, NLB and NLW
- **Maternal Weaning Weight (MWWT) EBV**
  - Indicator of dam genetic contribution to weaning weight
  - Largely differences in milk production
  - Reported in kg
  - Expressed in females

NC STATE EXTENSION

Lets compare a ram at the 90th percentile to one at the 50th percentile….

Weaning Weight EBV

2.78 kg

WWT Expected Progeny Difference

1.39 kg

EPD = (½)EBV

1.66 kg

0.83 kg

Expected progeny weight difference at 60 days of age is 0.56 kg or 1.2 lb.

~$2.40 to $4.20/hd

NC STATE EXTENSION

Weaning Weight EBV Example

	WWT EBV (kg)	WWT EPD (kg)
Ram A	2.78	1.39
Ram B	1.66	0.83
Difference	**1.12**	**0.56**

Divide by 2

NC STATE EXTENSION

Weaning Weight EBV Example

	WWT EBV (kg)	WWT EPD (kg)	WWT EPD (lb.)
Ram A	2.78	1.39	3.0
Ram B	1.66	0.83	1.8
Difference	**1.12**	**0.56**	**1.2**

Divide by 2

Multiply by 2.2

NC STATE EXTENSION

Weaning Weight EBV Example

	WWT EBV (kg)	WWT EPD (kg)	WWT EPD (lb.)	Flock A WWT (lb.)
Ram A	2.78	1.39	3.0	56.0
Ram B	1.66	0.83	1.8	54.8
Difference	**1.12**	**0.56**	**1.2**	**1.2**

Divide by 2

Multiply by 2.2

NC STATE EXTENSION

Weaning Weight EBV Example

	WWT EBV (kg)	WWT EPD (kg)	WWT EPD (lb.)	Flock A WWT (lb.)	Flock B WWT (lb.)
Ram A	2.78	1.39	3.0	56.0	54.8
Ram B	1.66	0.83	1.8	54.8	53.6
Difference	**1.12**	**0.56**	**1.2**	**1.2**	**1.2**

Divide by 2

Multiply by 2.2

Prolificacy Traits

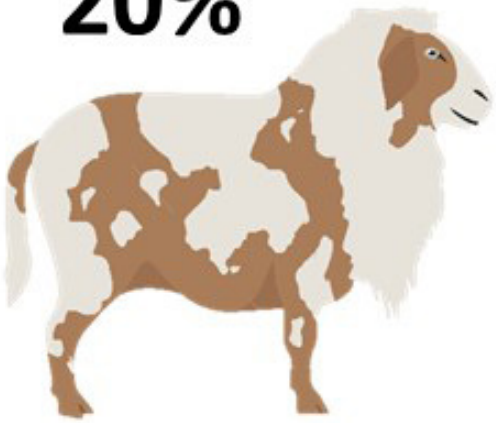
- **Number of Lambs Born (NLB) EBV**
  - Indicator of prolificacy (litter size)
  - Reported as number of lambs born per ewe lambing or can be shown as a percentage
  - Expressed in females
- **Number of Lambs Weaned (NLW) EBV**
  - Indicator of number of lambs surviving to weaning
  - Combination of prolificacy and survivability
  - Reported as number of lambs weaned per ewe lambing or can be shown as a percentage
  - Expressed in females

NC STATE EXTENSION

Lets compare a ram at the 90th percentile to one at the 50th percentile....

Number of Lamb Weaned EBV

20%



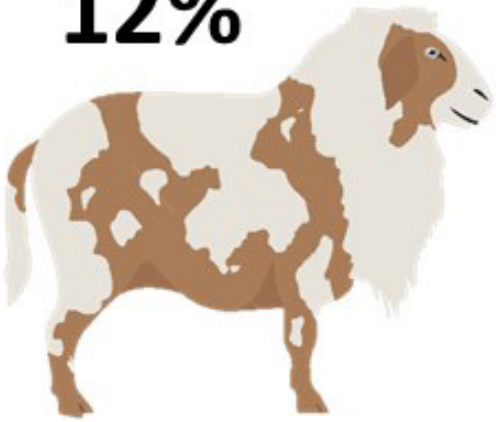
NLW Expected Progeny Difference

10% in daughters

EPD = (½)EBV

Expected additional lambs weaned of 4% or 4 more lambs per 100 lambing events

12%



6% in daughters

$150 weaned lambs => $6/litter

Index Selection

➢ Maternal Hair Index

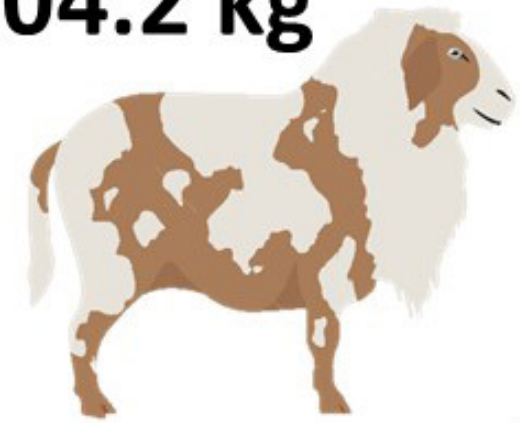
- Combines weaning weight, maternal weaning weight, number of lambs born and number of lambs weaned
- Indicator of weight of lambs weaned per ewe lambing
  - Traits weighted accordingly as they contribute to litter weight
- Reported in kg
- Expressed in females

NC STATE EXTENSION

Lets compare a ram at the 90th percentile to one at the 50th percentile….

Maternal Hair Index

104.2 kg



Mat. Hair Index Expected Progeny Difference

52.10 kg in daughters

EPD = (½)EBV

Expected weight difference of 0.75 kg or 1.65 lb. per litter

102.7 kg

51.35 kg in daughters

~$3.30 to $5.78/litter

NC STATE EXTENSION

Scenario

- Over 3 years you retain 25 daughters. These daughters stay in the flock for an average of 4 lambings = 100 lambing events
  - 50 lb. lambs worth $3.22/lb. (San Angelo, Oct. 1, 2025)

90th percentile

104.2 kg

50th percentile

102.7 kg

Difference: 1.65 lb./litter × **$3.22/lb.**

= **$5.31** × **100 lambing events**

= **$531 difference in value**

Disease Traits

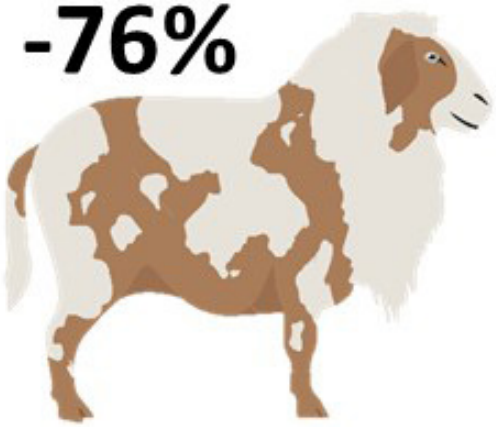
- **Fecal Egg Count (FEC) EBV**
  - Indicator of changes in fecal egg count related to parasite resistance or susceptibility
  - Reported as percent change
  - Negative (lower) values are better
  - Weaning FEC EBV
    - Indicator of innate immunity to parasitism
  - Post-weaning FEC EBV
    - Indicator of adaptive immunity to parasitism
  - May be associated with immunity to other diseases

NC STATE EXTENSION

Lets compare a ram at the 90th percentile to one at the 50th percentile....

Weaning Fecal Egg Count EBV

-76%



WFEC Expected Progeny Difference

-38%

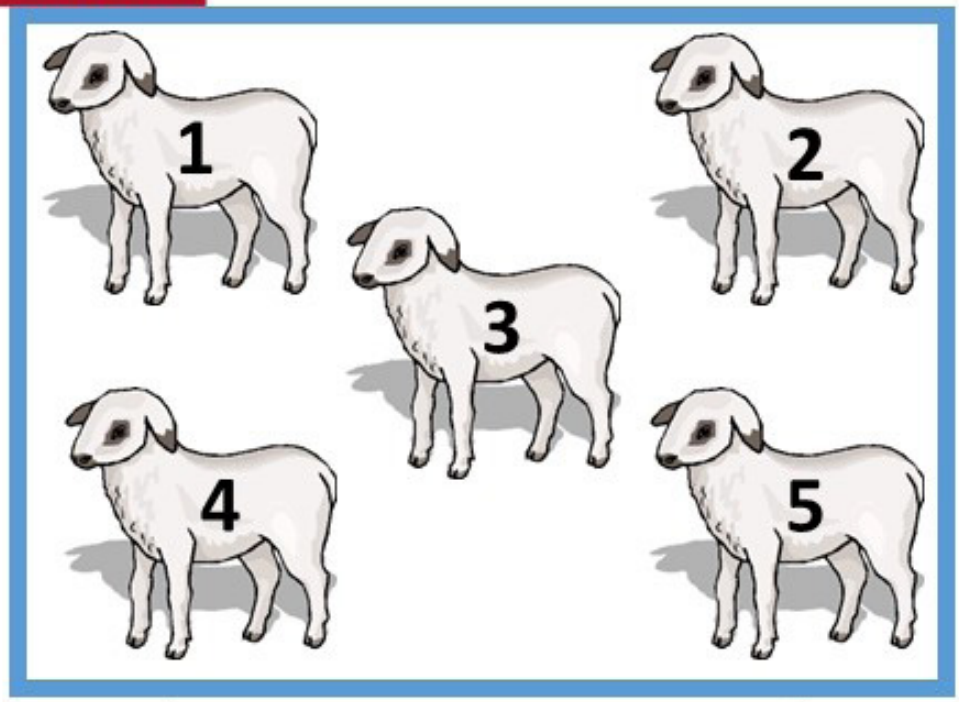
EPD = (½)EBV

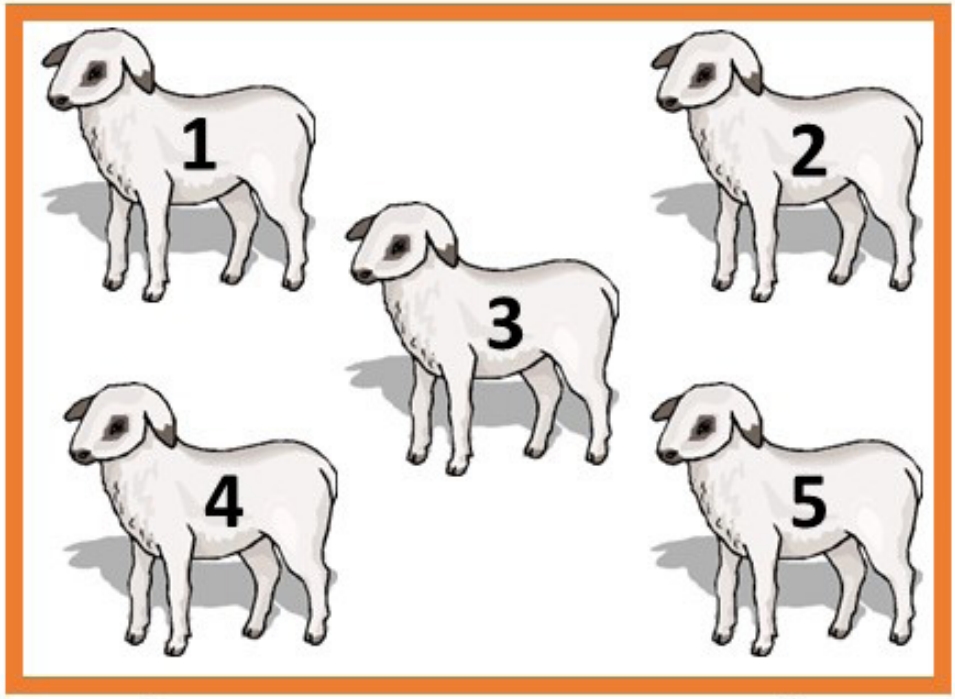
Expected FEC difference between lambs sired by these rams is 22%

-32%

-16%

NC STATE EXTENSION





Sire	PFEC EBV	Acc.
Low Sire 1	-68	94
Low Sire 2	-82	94
Low Sire 3	-100	85
Low Sire 4	-99	94
Low Sire 5	-79	88
Average	**-85**	

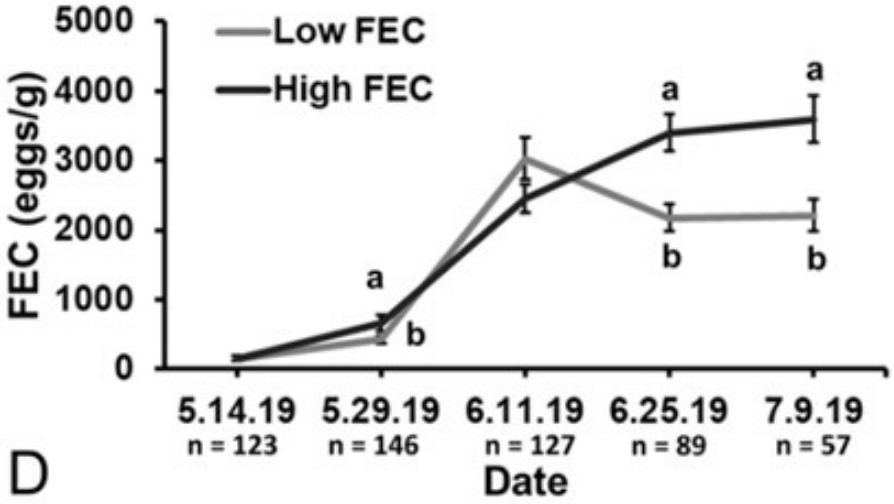
Sire	PFEC EBV	Acc.
High Sire 1	348	84
High Sire 2	104	92
High Sire 3	510	93
High Sire 4	120	82
High Sire 5	360	82
Average	**288**	

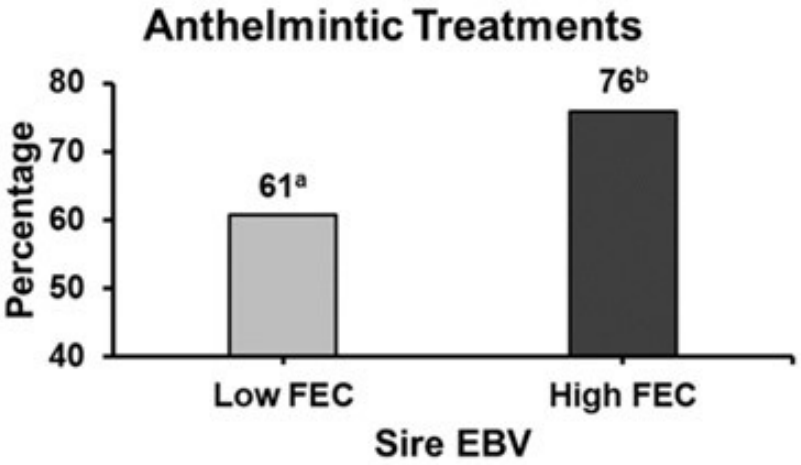
Weaver et al., 2023

NC STATE EXTENSION

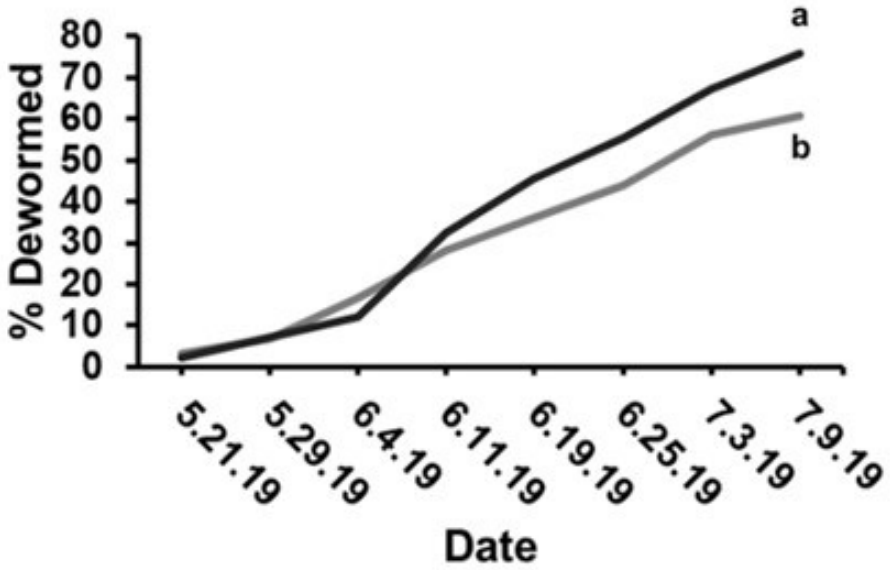
Selection Works!

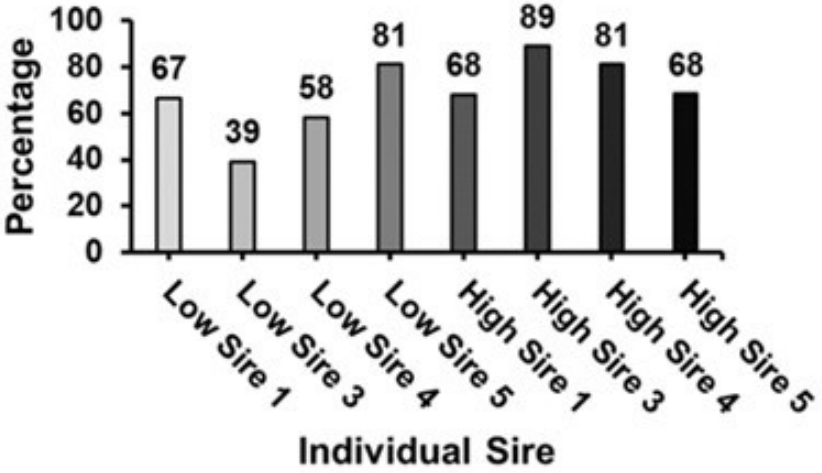
A





D

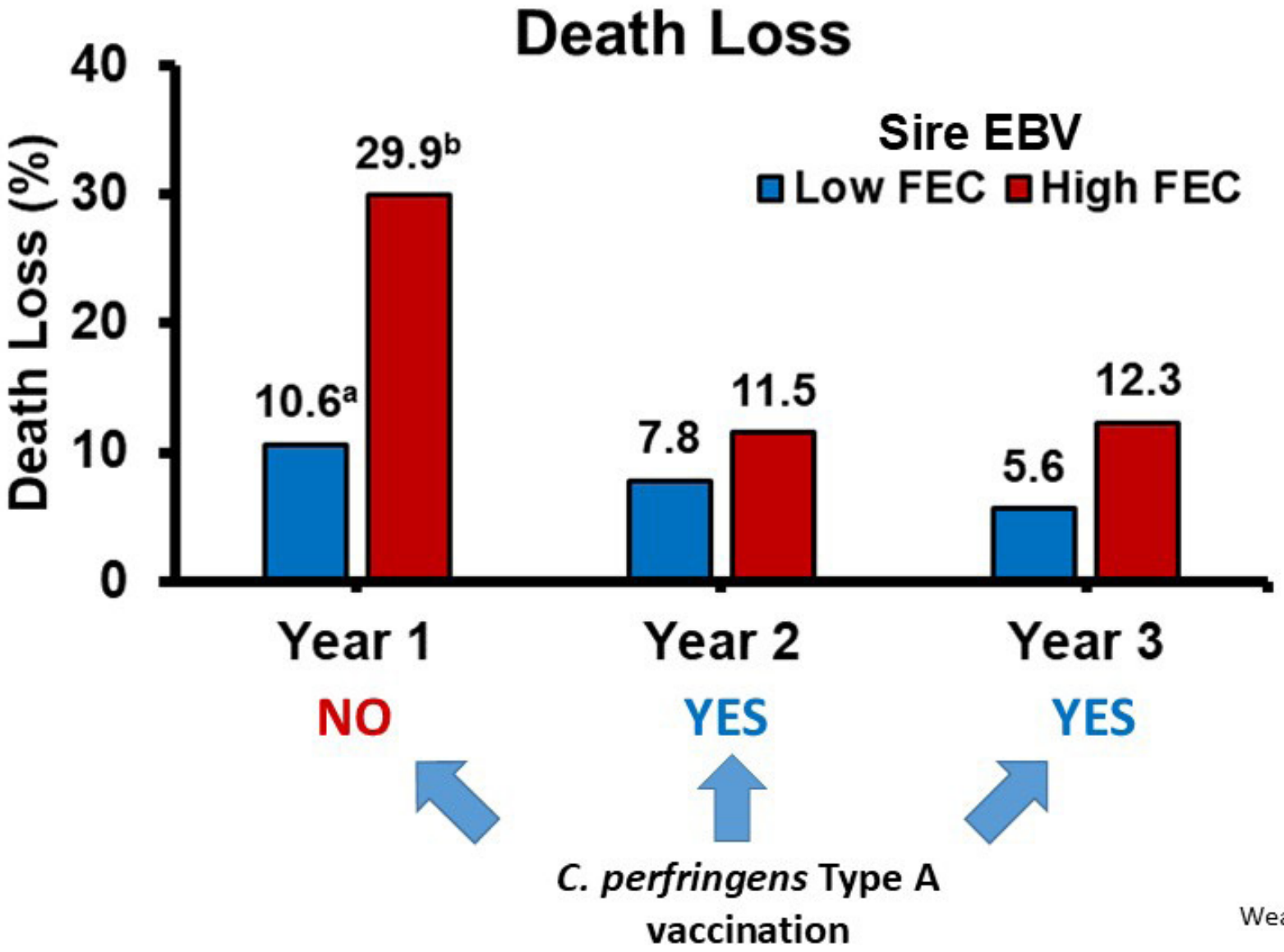




Weaver et al., 2023

NC STATE EXTENSION

FEC EBV: A risk management tool



Weaver et al., 2023

NC STATE EXTENSION

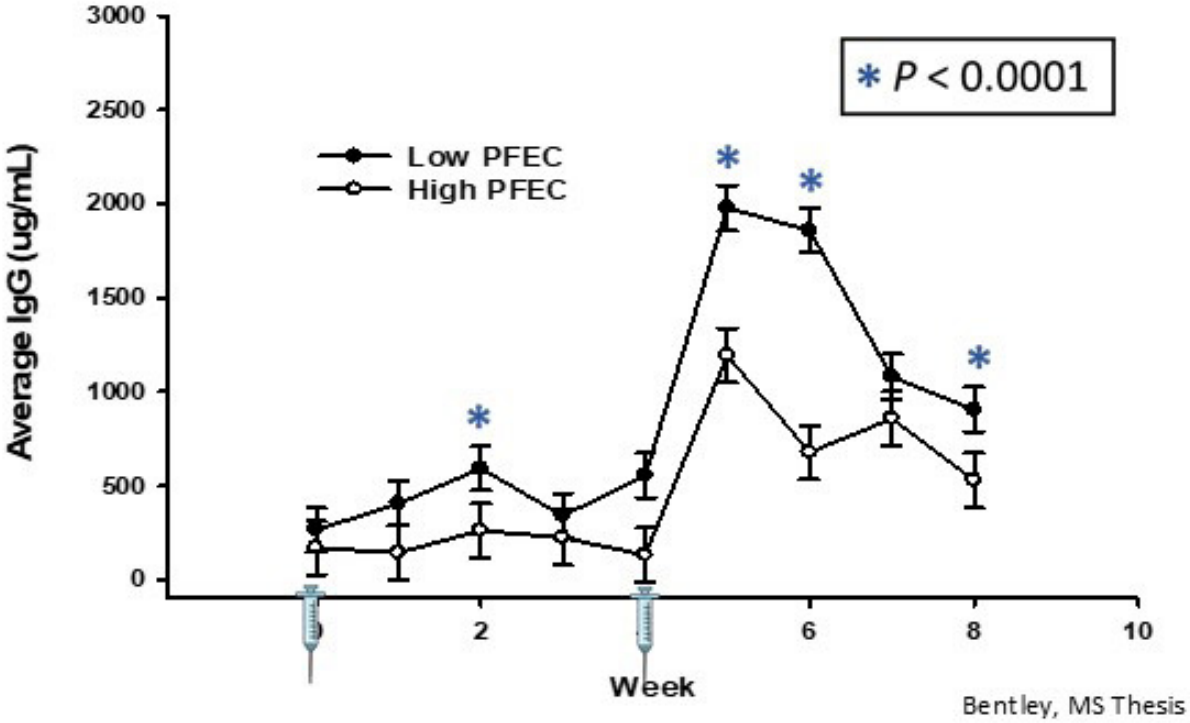
Selection for Low FEC

=

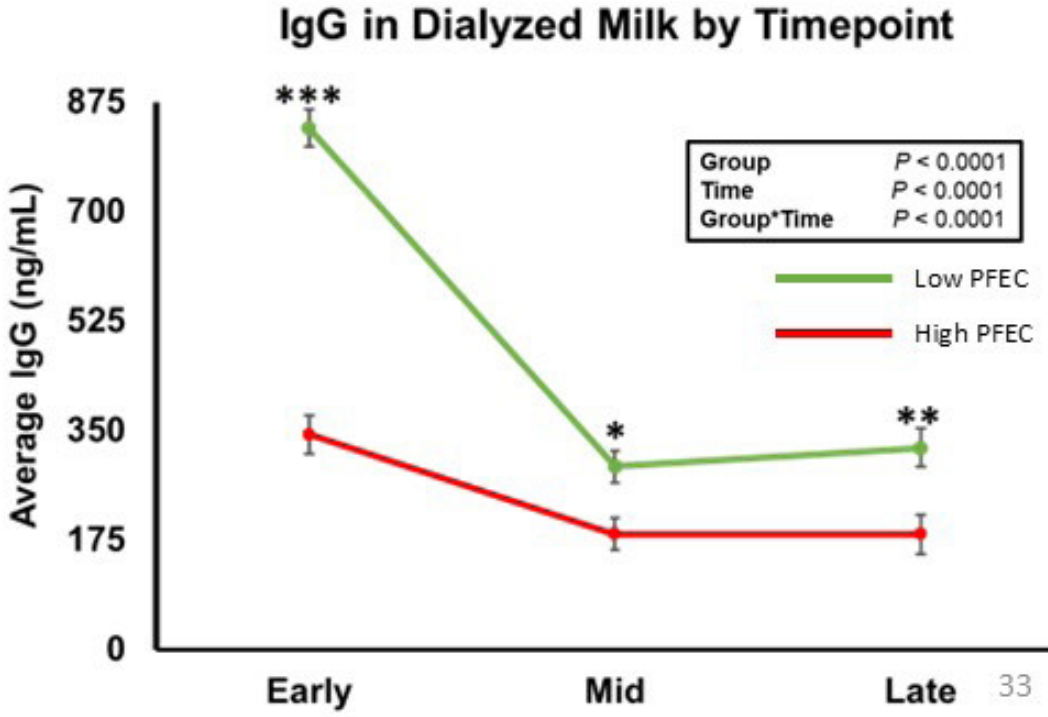
Improved Parasite Resistance

+

Improved Immunological Fitness



Bentley, MS Thesis



Selection for improved parasite resistance through FEC EBV may also improve immunological fitness and resistance to other pathogens in the grazing environment

Strategic Culling

- Set goals and standards and make sheep/goats live up to expectations
- Your sheep/goats work for you.
  - You do not work for them.
- When they don't meet standards (lower than expected performance, increase labor requirements, chronic disease carriers, etc.), get rid of them through culling
  - When they leave, your problems leave with them
- Identify sheep/goats that work in your environment and production system. Do not go out of your way to make a special environment for your sheep/goats.
  - If they don't work in your system, they need to go

Summary

1. Identify economically relevant traits (set goals)
2. Determine current production metrics
3. Prioritize traits for selection
4. Utilize scientifically proven, accurate selection tools to identify breeding stock
   - Estimated Breeding Values!
     - Improve performance and decrease parasitism
5. Continue to collect data to quantify improvements
6. Using strategic culling to get rid of problems!

Andrew Weaver
Department of Animal Science
North Carolina State University
Raleigh, NC
arweave3@ncsu.edu

NC STATE EXTENSION

Registered versus commercial sheep/goat production

Which might be best for your operation?

Andrew Weaver

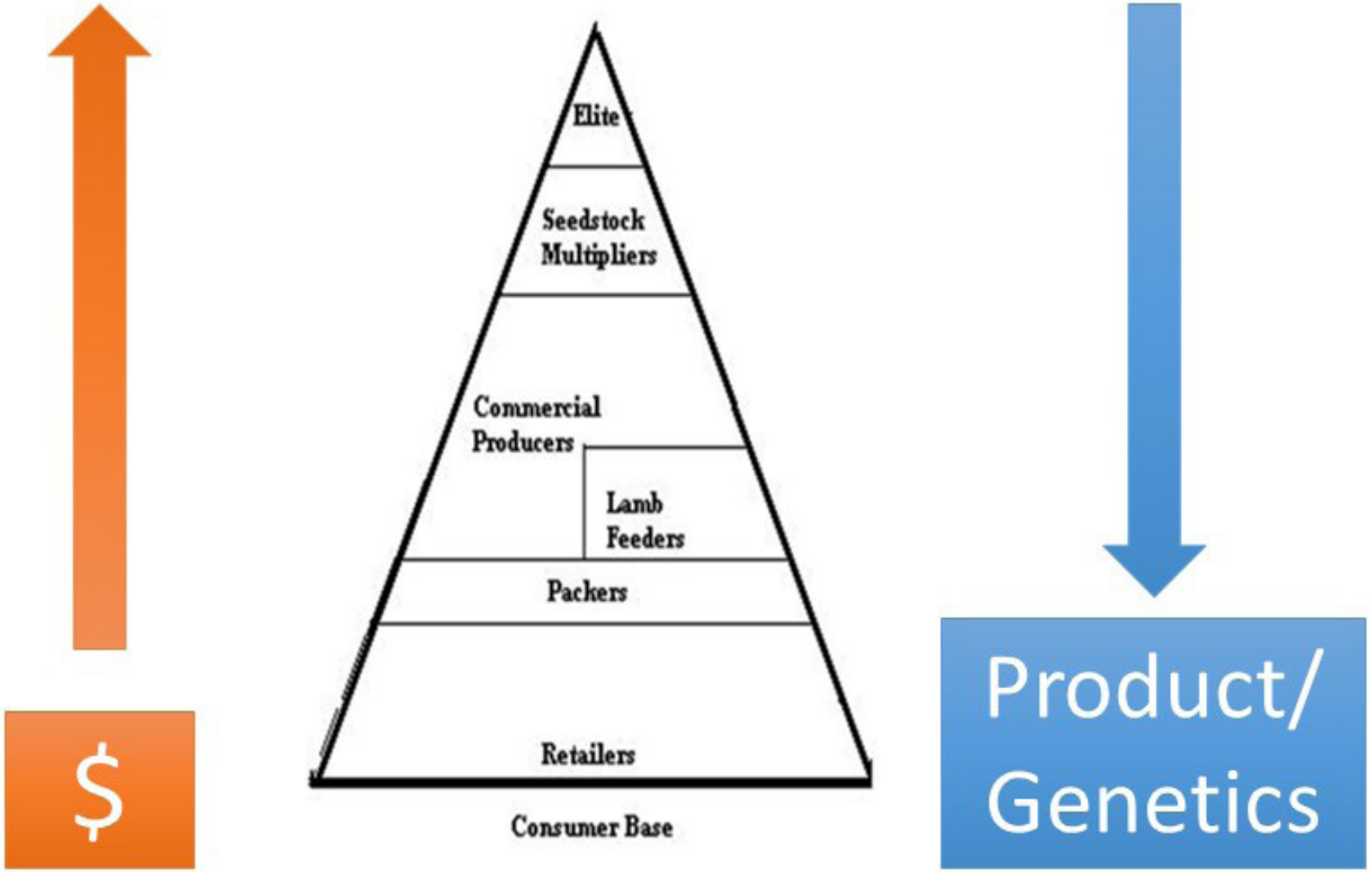
Small Ruminant Specialist

North Carolina State University

arweave3@ncsu.edu

NC STATE EXTENSION

Industry Structure



Industry Structure Overview

- **Elite breeders:** Strive for genetic progress. Visionaries. Identify direction and breed for it. Generate genetics that will be passed to the rest of the industry. Usually smaller flock sizes. Utilize technology (EBVs, AI, ET, etc.). Purebreds!
- **Seedstock multiplier:** Purchase purebred rams/bucks from elite breeders. Larger flock sizes. Produce large number of purebred rams/bucks for commercial producers. Also, typically purebreds!

Industry Structure Overview

- **Commercial producer:** Produce lambs/kids to market as feeder or slaughter lambs/kids. Typically generate own replacements. Utilize crossbreeding.
- **Feeders:** Purchase lambs/kids from commercial producers and feed to desirable market weight and finish. Some commercial producers also feed their own lambs/kids.
- **Packers:** Harvest lambs/kids and break carcasses down to primal cuts. Market primals to retailers, wholesalers, restaurants, and food service.

Industry Structure Overview

- **Retailer:** Offers retail products for sale. Obtains product directly from packer or through wholesale distributers.
- **Consumer:** Final purchaser and consumer of products. They tell the rest of the supply chain what they demand.

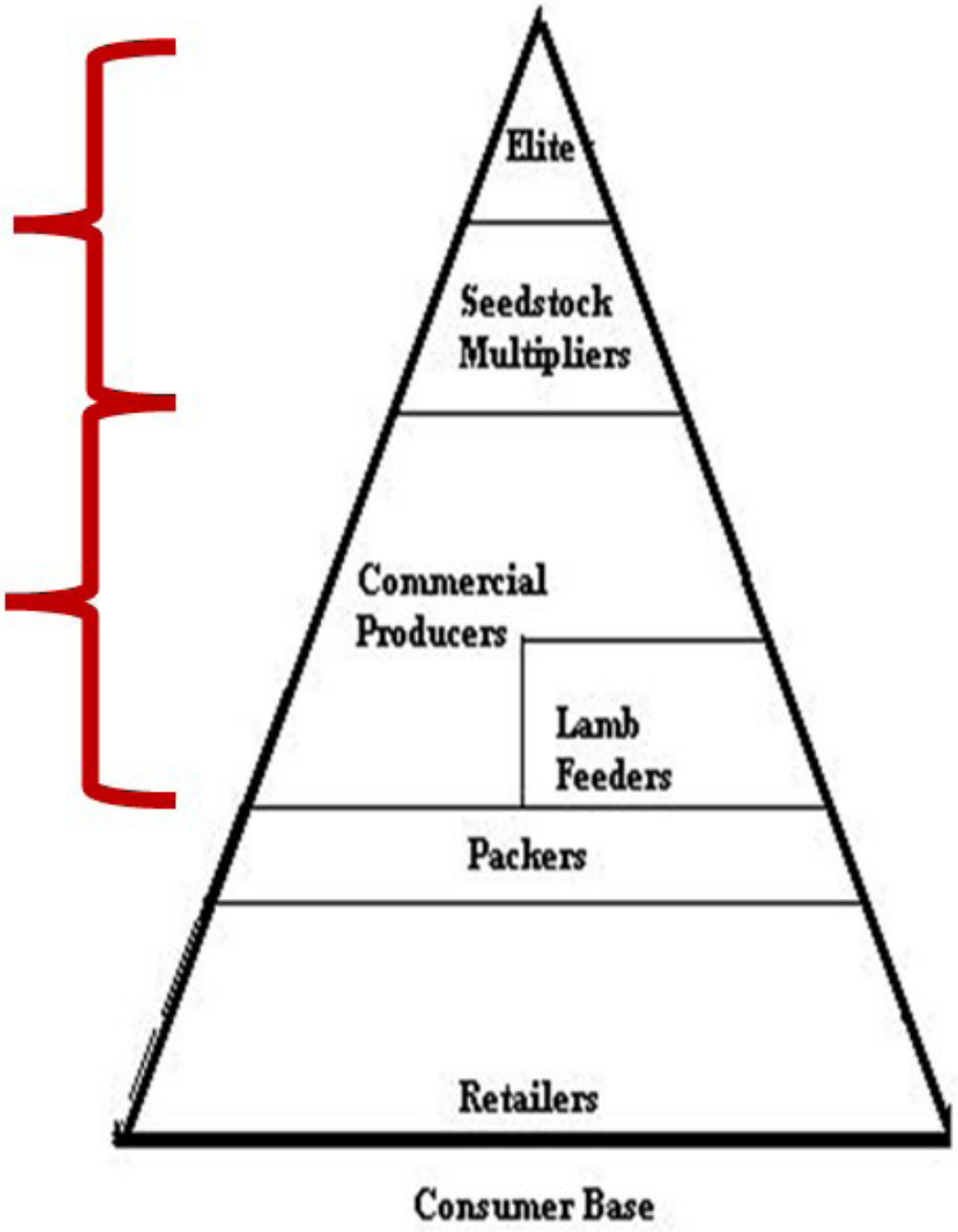
Source: ALB

Purebred Seedstock Producers

- Generate breeding stock desired by commercial industry
- Purebreds
- Intensive data collection
- Generally sold by the head based on genetic merit

Commercial Producers

- Generate market animals for consumers
- Weight sold relative to females exposed for breeding is major profit determining metric
  - Number marketed is key!
- Take advantage of hybrid vigor
- Data collection may vary
- Buy high genetic merit rams/bucks from seedstock sector
- No value in registration papers



Registration Papers or Not?

- Breed associations provide registration papers to document purebred status determined by historical pedigree records
- Registration paper contains multi-generation pedigree, date of birth, ownership information, and may contain Codon 171 (scrapie) genotype
- In cattle industry, breed associations also coordinate genetic evaluation providing breeding values and genetic conditions
- In small ruminant industry, genetic information beyond pedigree is provided by separate entity (National Sheep Improvement Program, NSIP)

What is the National Sheep Improvement Program (NSIP)?

- NSIP coordinates the genetic evaluation for the US sheep industry and provides tools for genetic selection
- These tools are called Estimated Breeding Values (EBVs)
- EBVs are the most powerful selection tools available
- EBVs are available for a wide variety of economically relevant traits

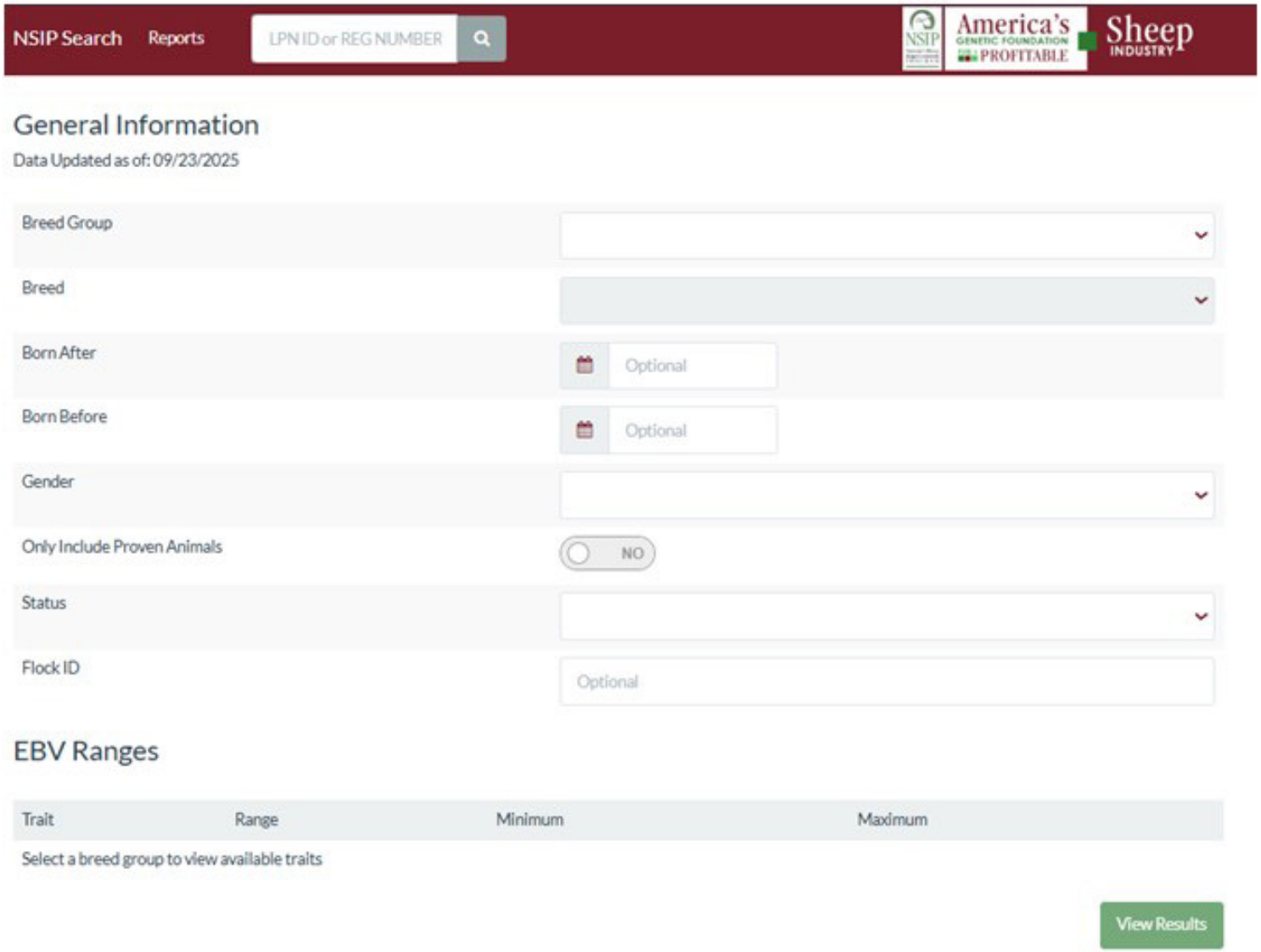
NSIP
National Sheep Improvement PROGRAM

Registration Papers or Not?

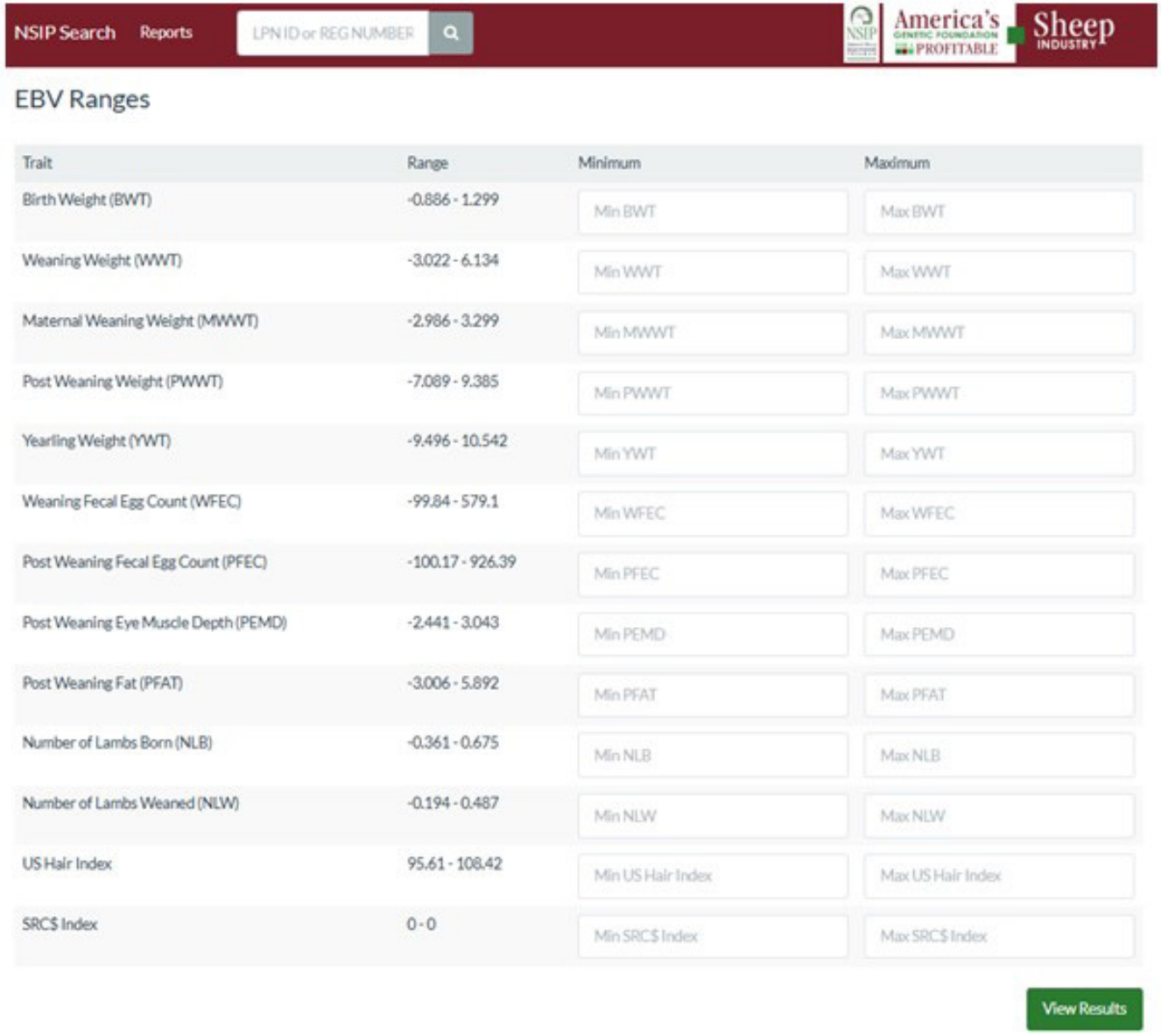
- Seedstock producers
  - How do you show genetic merit to your buyers?
  - Registration papers may be valuable to show pedigree relationships and purebred status
    - $6-14 per animal plus annual association membership fees
  - NSIP provides far greater genetic information on economically relevant traits plus pedigree relationships
    - $4.50 per animal plus annual enrollment fees
  - Do you participate in both or just one or the other?
- Commercial producers
  - Registration papers are a waste of time and money
  - Buy high genetic merit breeding stock from seedstock producers (typically just rams/bucks)

NC STATE EXTENSION

NSIP Searchable Database

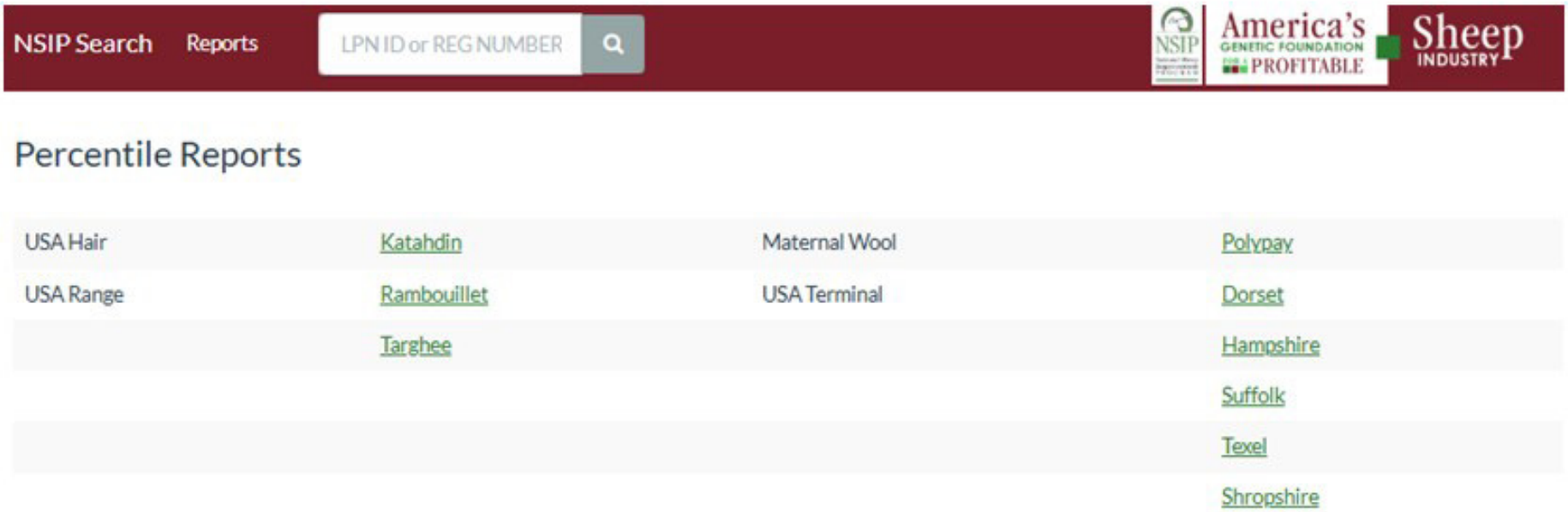


NSIP Searchable Database



NC STATE EXTENSION

NSIP Searchable Database



Key to Genetic Progress

$$\Delta G = \frac{Accuracy\ X\ Selection\ Intensity\ X\ Genetic\ Variation}{Generation\ Interval}$$

- **Accuracy**
  - Correlation between estimated and true breeding values
- **Selection Intensity**
  - Superiority of selected animals compared to flock average (Selection Differential)
- **Genetic Variation**
  - Variation in breeding values within population (hard to change)
- **Generation Interval**
  - Average age of parents when offspring are born

Key to Genetic Progress

$$\Delta G = \frac{Accuracy\ X\ Selection\ Intensity\ X\ Genetic\ Variation}{Generation\ Interval}$$

1. Make the stuff on the top bigger
   - Improved accuracy
   - Greater selection intensity
   - More genetic variation
2. Make the stuff on the bottom smaller
   - Generation Interval

Improving Accuracy

1. Collect more records
2. Use proven genetics
   - Use rams/bucks that have already sired offspring
     - Problem: Takes a while to prove a ram/buck and increases generation interval
   - Understand the pedigree (registration papers or NSIP)
3. Use appropriate tools
   - **Estimated Breeding Values (EBVs)** vs. performance data

"After this, I want to know the answer to the all-important question, what about her folks? Did she get all of this honestly or is she a freak?"

-Hank Wiescamp on selecting broodmares

More data = More accuracy

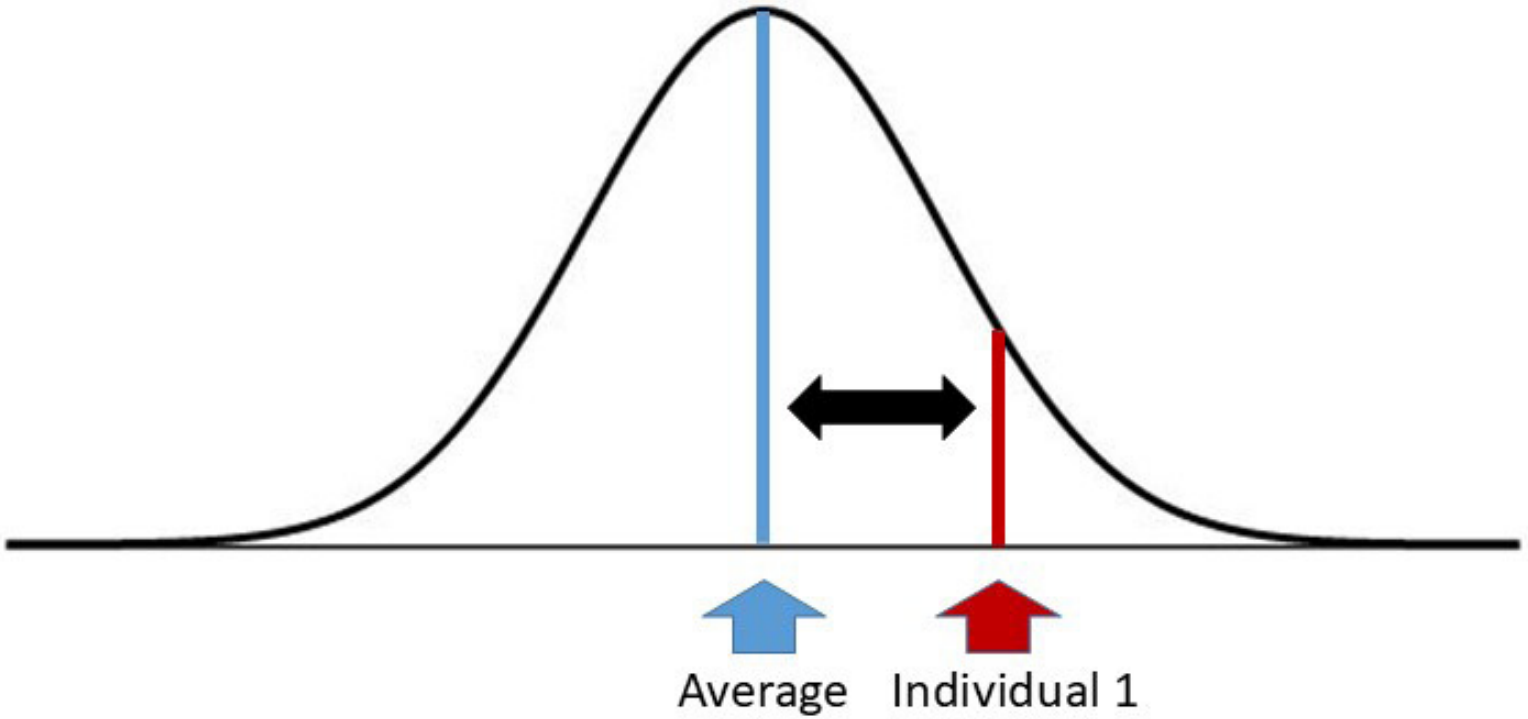
- Collect data on economically relevant traits
  - Number born/weaned
  - Weaning/post-weaning weights
  - Fecal egg counts = parasite resistance
  - Scrotal circumference
  - Birth and weaning dates
- Submit data to NSIP
- NSIP returns Estimated Breeding Values (EBVs)
  - EBVs for growth, maternal, and parasite resistance traits
  - EBVs also exist for carcass traits but minimal emphasis in maternal breeds

NSIP
National Sheep Improvement PROGRAM

Improving Selection Intensity

Increase the selection differential or genetic reach

- Increase the difference between the selected individual and the population average

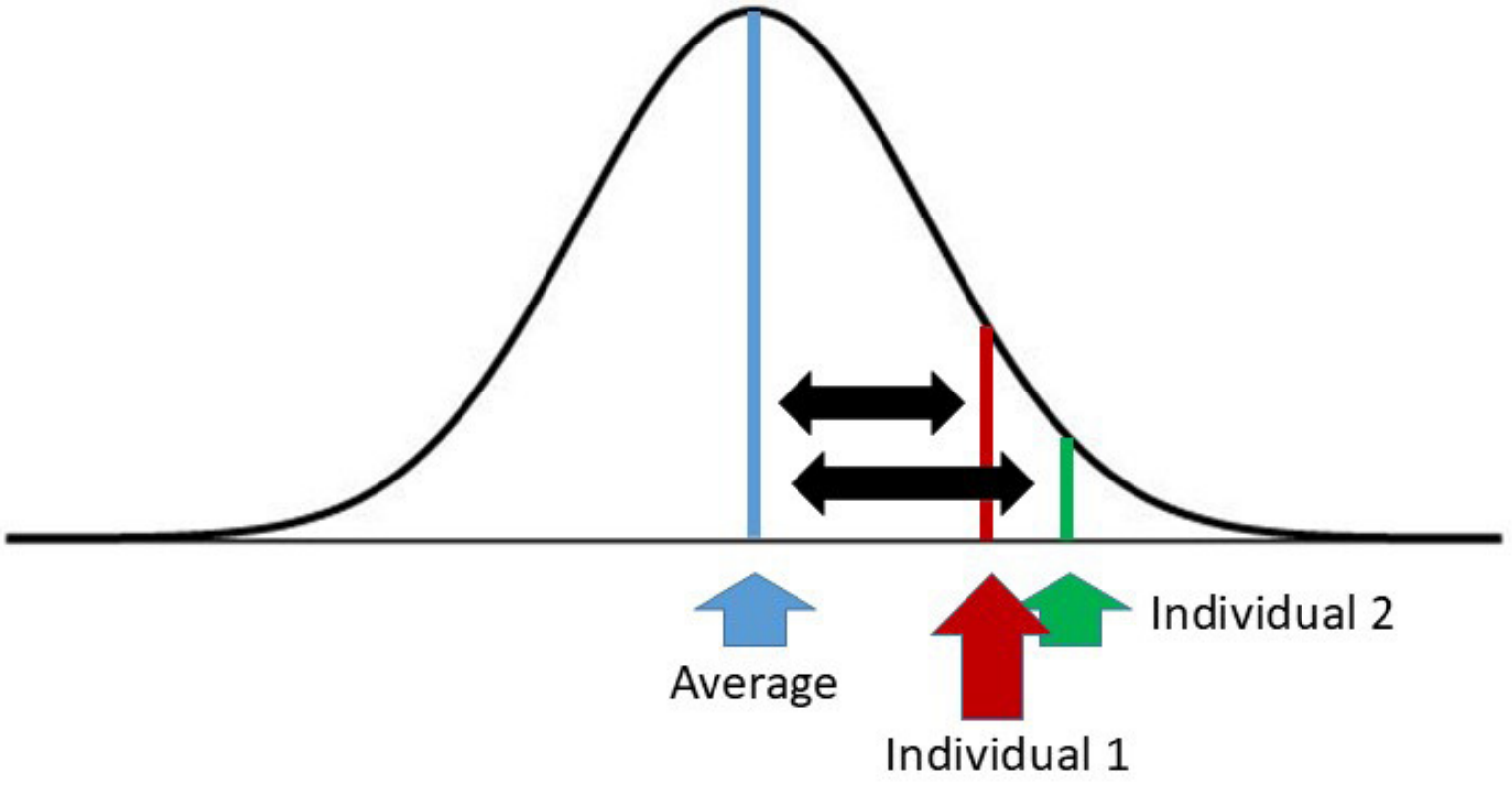


NC STATE EXTENSION

Improving Selection Intensity

Increase the selection differential or genetic reach

- Increase the difference between the selected individual and the population average



Do you need to enroll in NSIP and/or have registration papers to realize genetic improvement?

NO!

Step 1: Buy NSIP sire

- Use EBVs to identify sire with favorable genetics for your production system and market

Step 2: Use on commercial ewes

Step 3: Retain females

"F1" Replacement females are 50% NSIP genetics

Repeat steps 1-3

Step 1: Buy new NSIP sire

Step 2: Use on 50% commercial ewes

Step 3: Retain females

"F2" Replacement females are 75% NSIP genetics

Repeat steps 1-3 again

Step 1: Buy another NSIP sire

Step 2: Use on 75% commercial ewes

Step 3: Retain females

"F3" Replacement females are 87.5% NSIP genetics

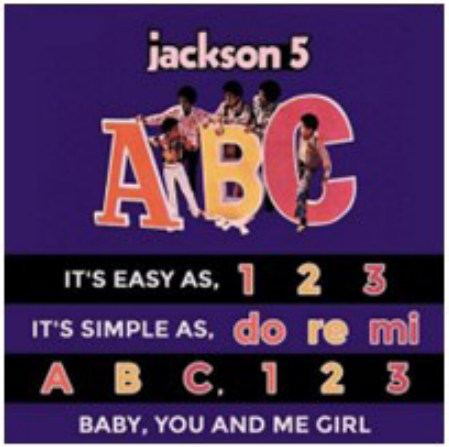
Repeat steps 1-3 a third time

Step 1: Buy another NSIP sire

Step 2: Use on 87.5% commercial ewes

Step 3: Retain females

"F4" Replacement females are 94% NSIP genetics



Easy as 1, 2, 3…

Step 1: Buy NSIP sires

Step 2: Use on commercial ewes

Step 3: Retain females

Buy 4 NSIP Rams

90%+ NSIP Genetics

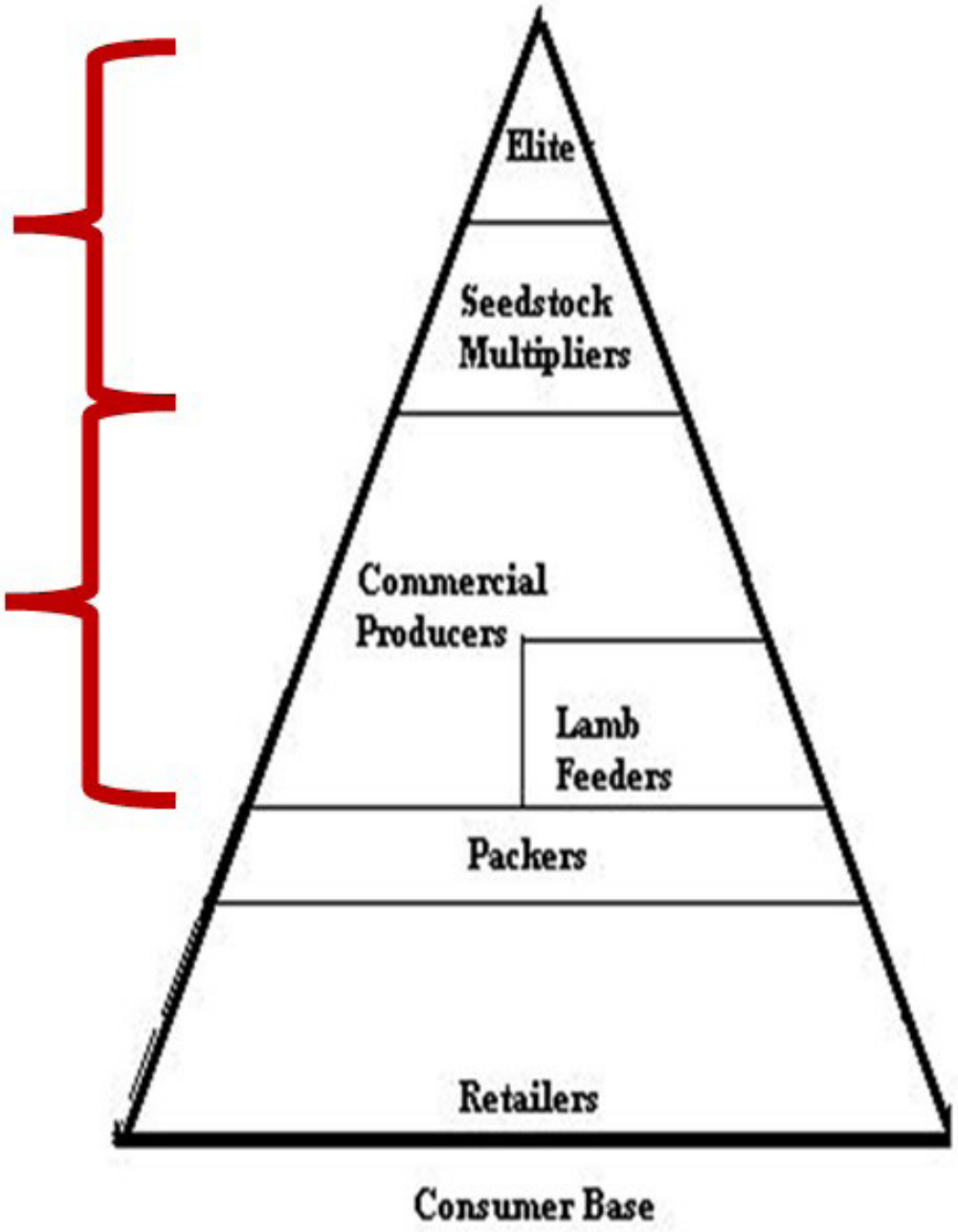
Never enrolled, never submitted data

Purebred Seedstock Producers

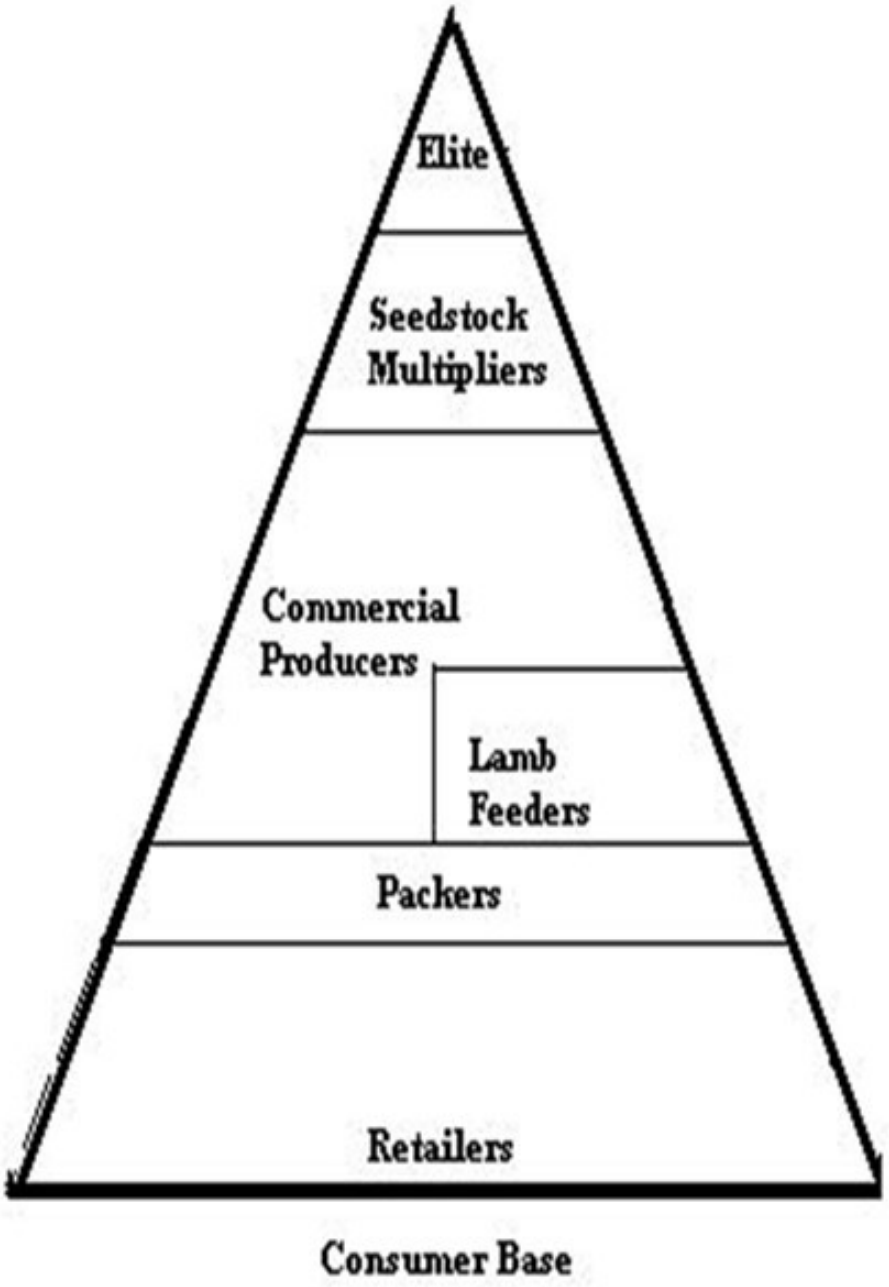
- Registration papers and/or NSIP data provide valuable information on genetic merit and ability to improve future generations
- Labor intensive => premium should be paid for seedstock

Commercial Producers

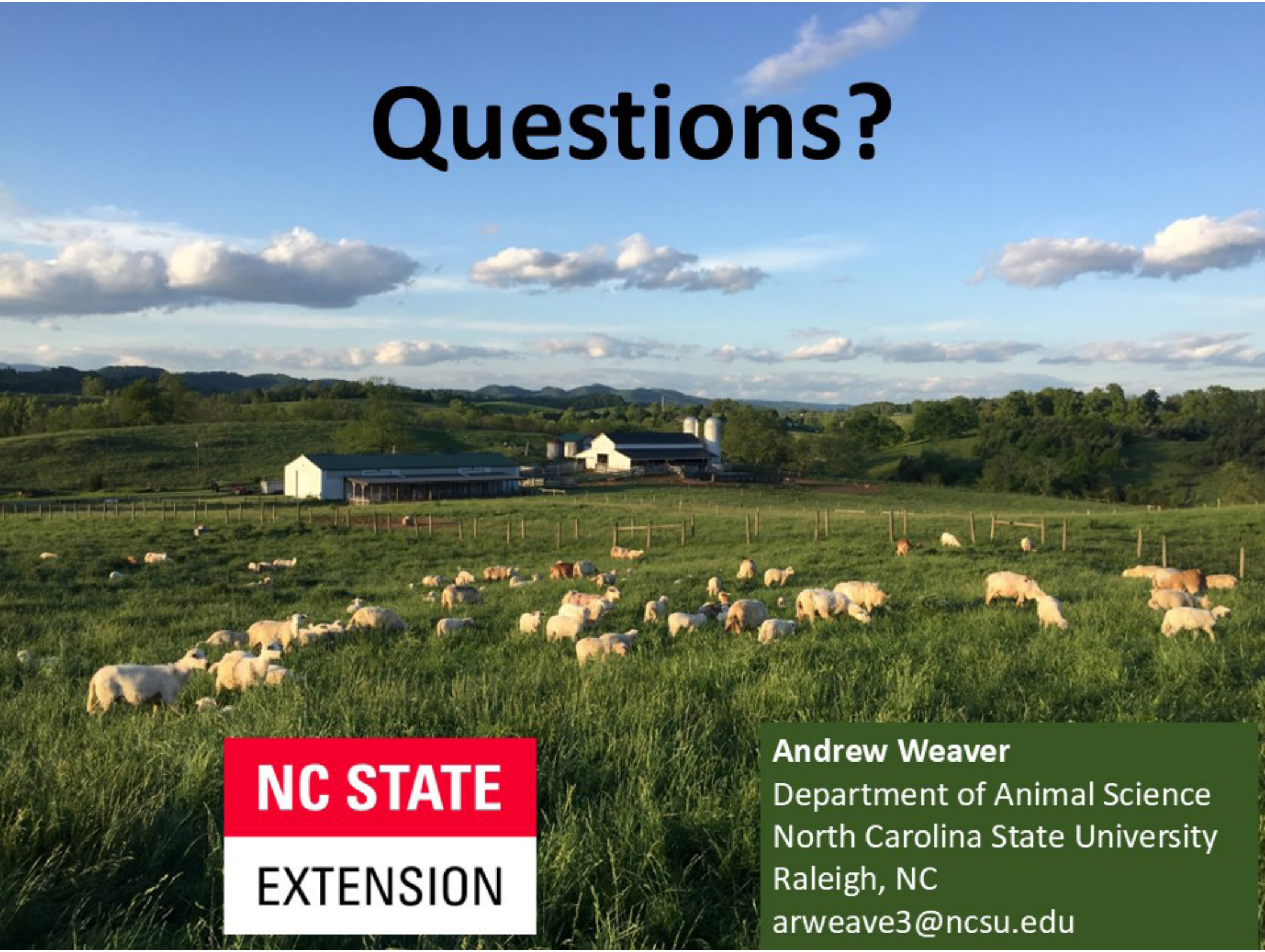
- No value in registration papers
- No value in NSIP membership
- Take advantage of extra work done by seedstock breeders
- Buy high genetic merit rams/bucks and retain daughters as replacements
- Same principles of genetic progress apply but intensive data collection not needed



Where do you want to be???



Questions?



NC STATE EXTENSION

Andrew Weaver
Department of Animal Science
North Carolina State University
Raleigh, NC
arweave3@ncsu.edu

UF IFAS
UNIVERSITY of FLORIDA

FORAGE TEAM

Transition
~~Early season~~ Grazing Strategies

Marcelo Wallau
Forage Extension Specialist
UF/IFAS Agronomy Department

IV Small Ruminant Short-Course – Oct 10., 2025

Outline

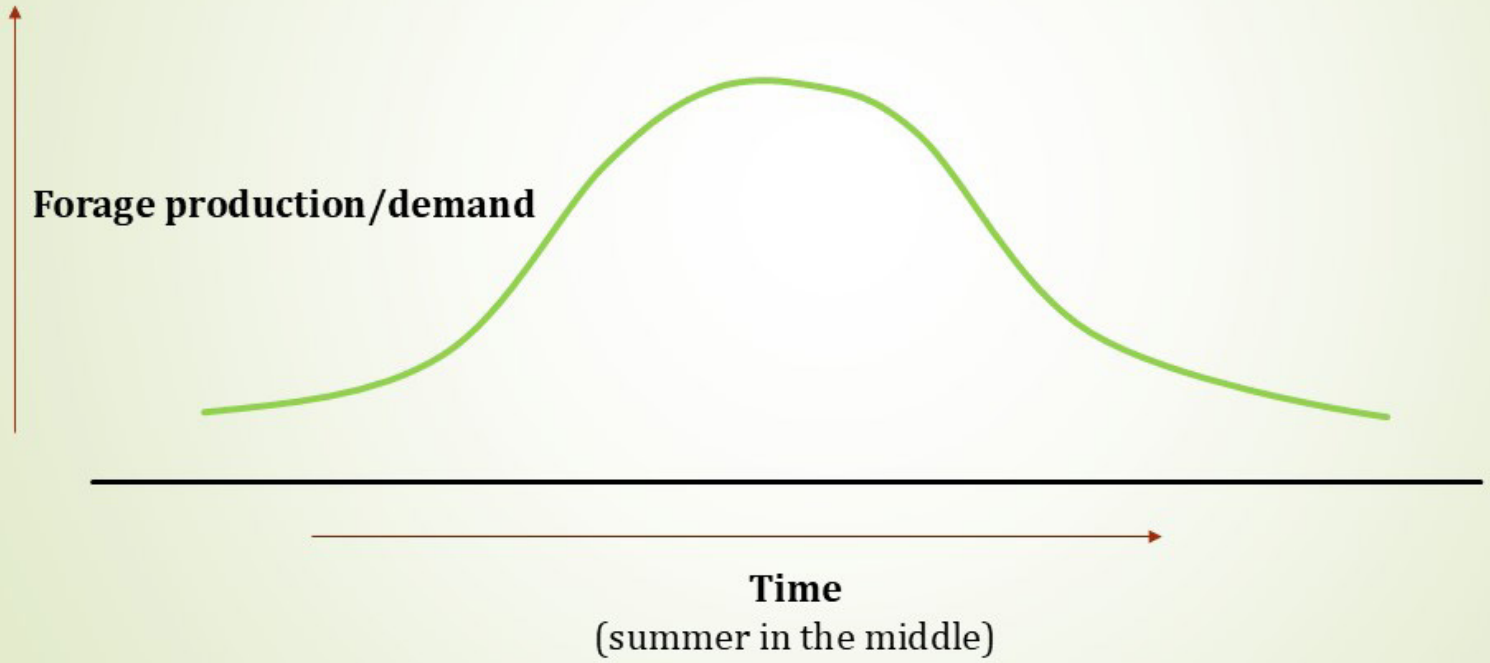
THE PROBLEM

- What are the transition periods

STRATEGIES

1. Forage choices
2. Planting dates
3. Fertilization strategies
4. Grazing management

Understanding my figures:




QUIZ TIME
PICK UP YOUR PHONES

What are the main forages in your operation?

Bahiagrass

Bermudagrass

Annual grasses

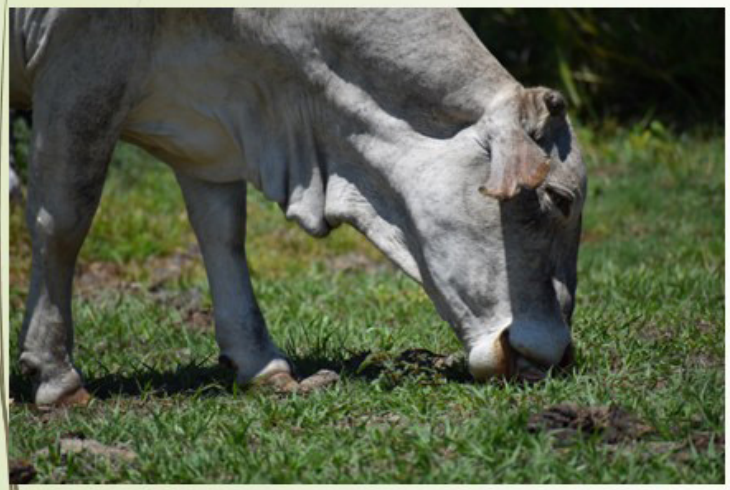
Weeds

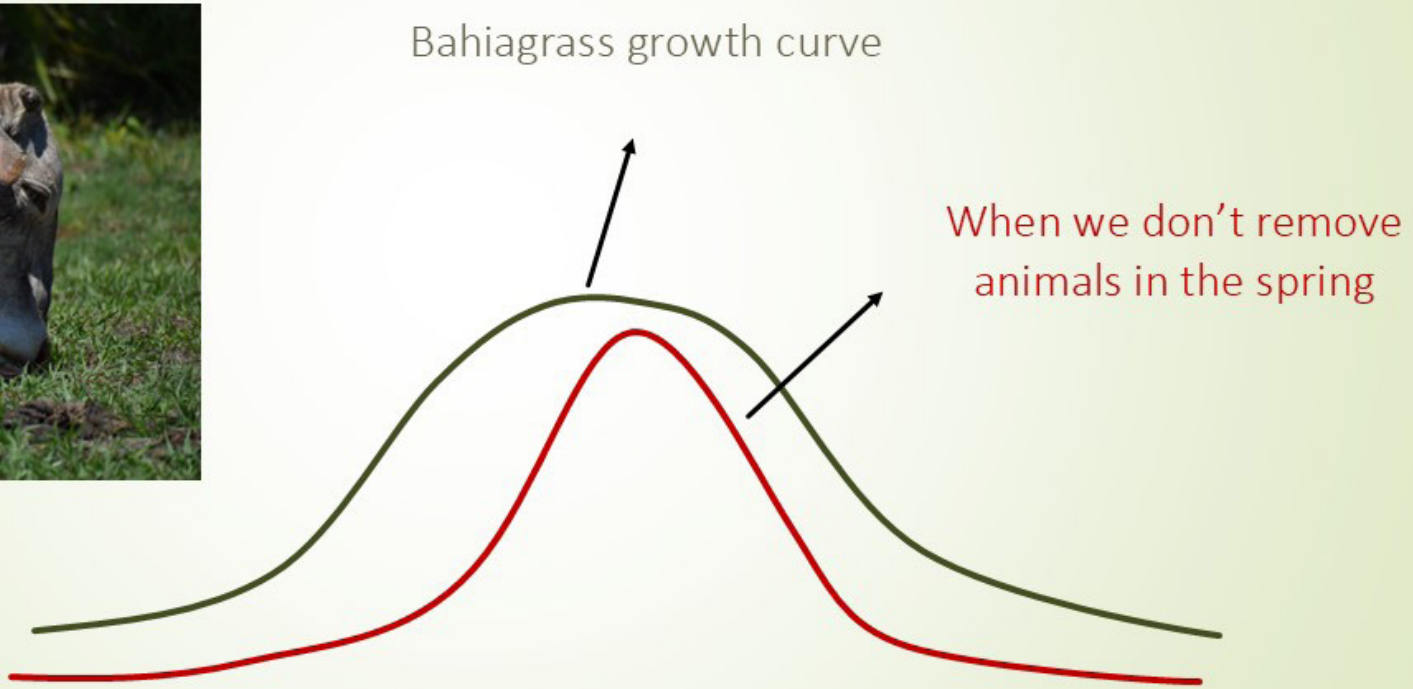
I have no idea

Multiple forages

What are the main forage-related issues you have?

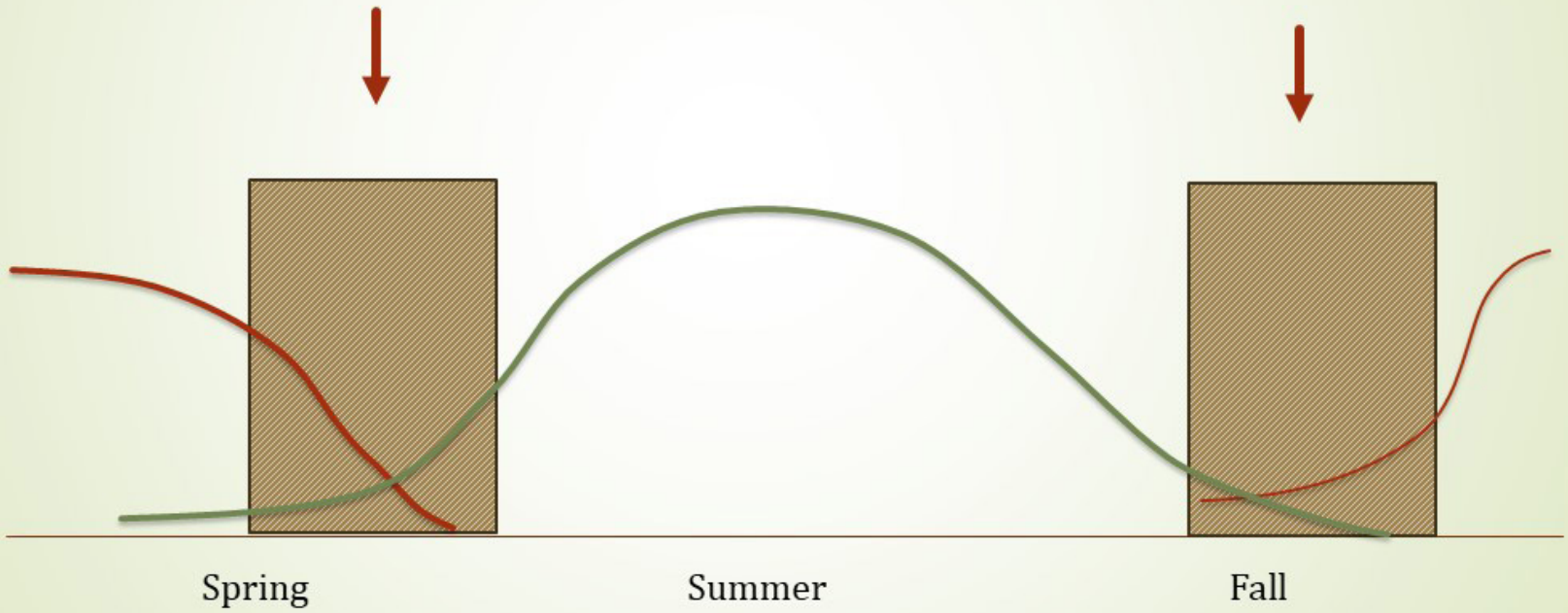
When we only have bahiagrass…





What are the forage "transition" phases

And why do we need early-season forages?



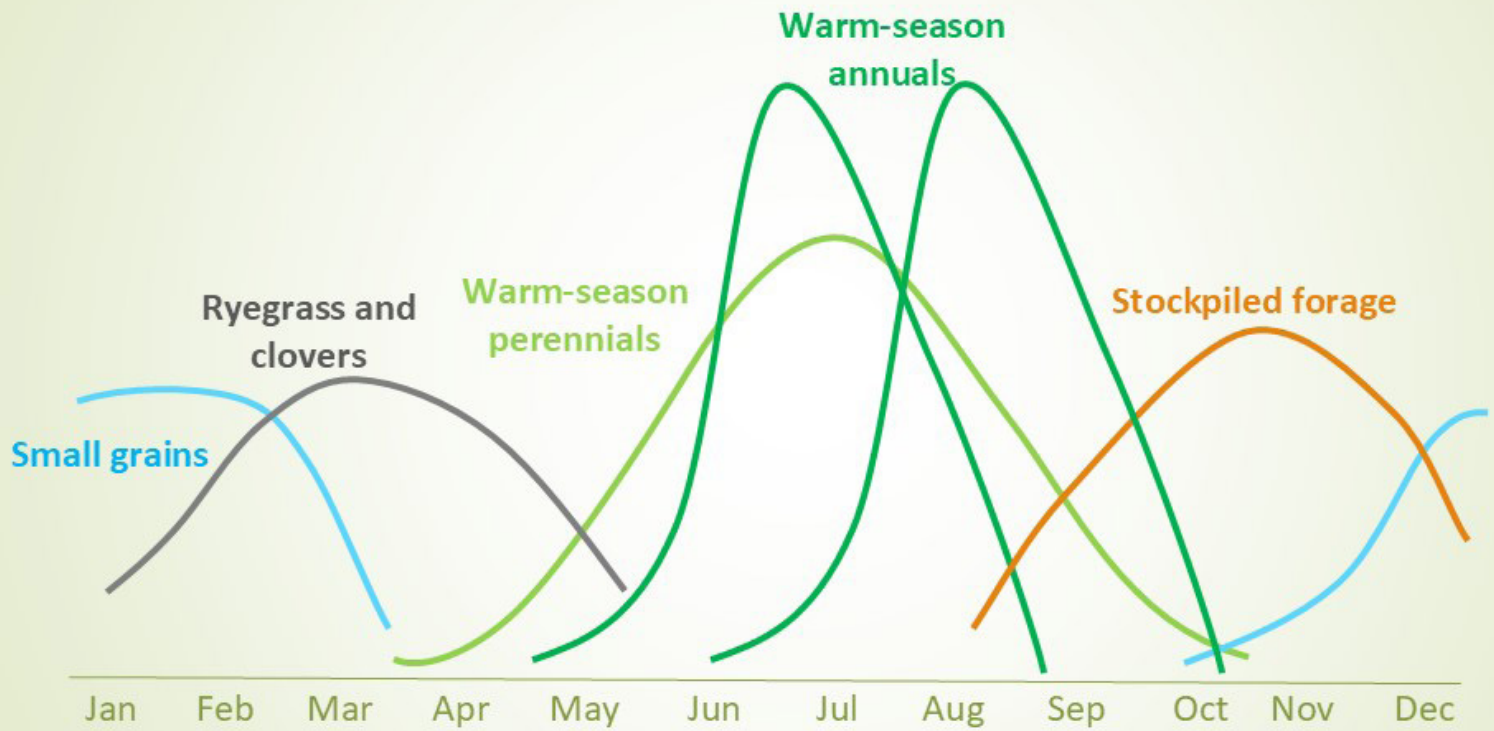
How can we extend the forage growing season?

Choice and diversity of species / varieties

1

- Examples:
  - Bahiagrass + limpograss + winter forages overseeded into bahiagrass
  - Having an area dedicated to annual forages
  - Forages varieties with different maturity

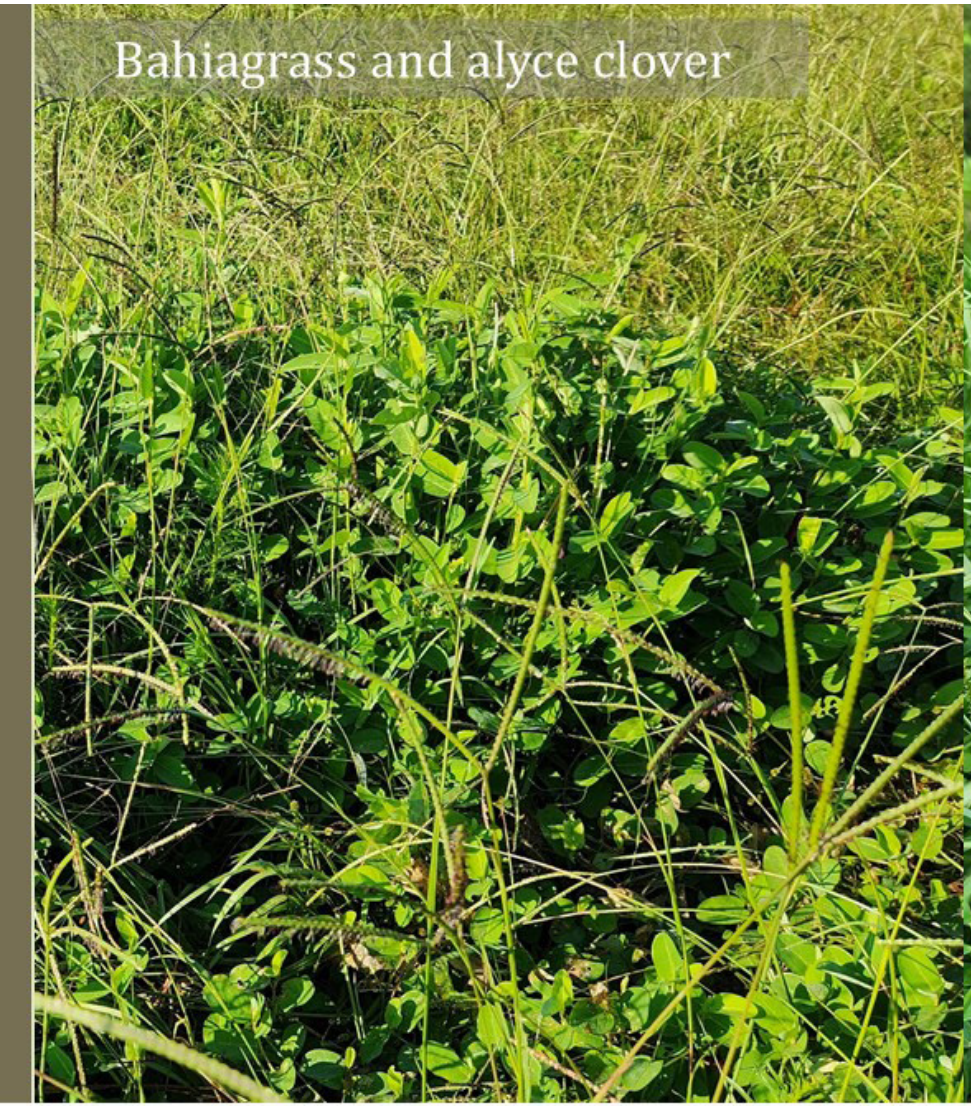
Need for diversity of forages!!!



WHAT FORAGES CAN WE GROW?

Forage species	J	F	M	A	M	J	J	A	S	O	N	D	Productivity* (lb DM/acre)
Limpograss													9000-12000
Pensacola Bahiagrass													3000-10000
Argentine Bahiagrass													5000-14000
Hybrid Bermudagrass													7000-14000
Pearl Millet													5000-10000
Rye													2000-5000
Oat													2000-5000
Annual Ryegrass													2000-5000
Alfalfa													5000-8000
Arrowleaf clover													2000-4000
Crimson Clover													2000-4000
White clover													2000-4000

*estimate range or total productivity, in lb of Dry Matter/acre; actual values depend on cultivar, environment and management; consider using 50% for perennials and 60% for annuals



Options that don't need replanting every year

Summer Annual mix

- Sunn hemp (crescent sun)
- Cowpea (Iron and Clay)
- Pearl millet (Epic)

Oat

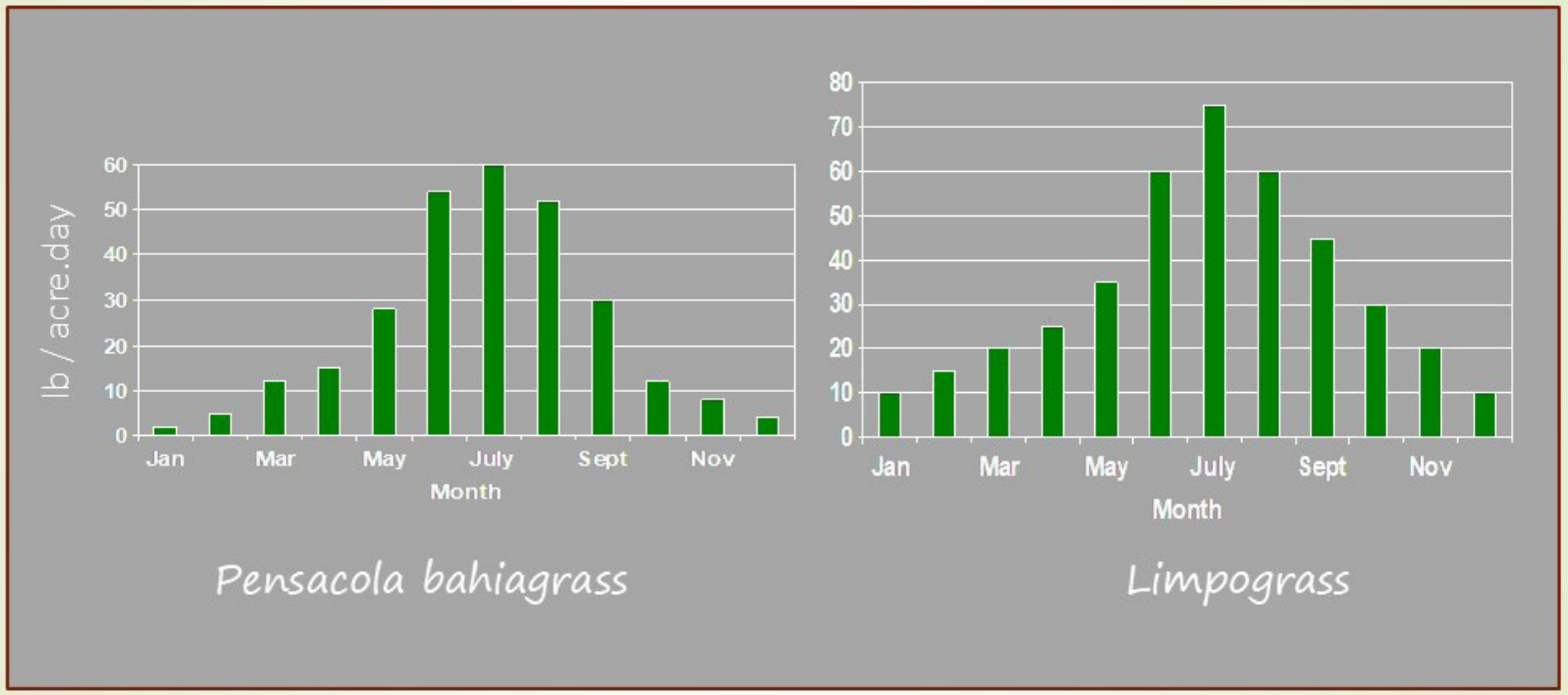
Ryegrass and crimson clover

Ryegrass

Annual winter forages

Cool-season forage mixes with ryegrass, clovers and brassicas

How much forage accumulates per day



Different forages have different growing seasons and production capacity

For reference – forage intake

As a rule of thumb, assume 2-3% of body weight in **dry matter intake** per day

- Will change based on: animal age/physiological stage
- On the type of forages and feed
- And on the amount of feed (concentrate) we are giving

150 lb ewe – 3 – 4.5 lbs DM/day

Forage accumulation in relation to intake

Production Bahiagrass – 40 lbs DM/Day * 50% utilization = 20 lbs available

Demand = 4.5 lbs/sheep/day → **4.4 sheep carry capacity**

Millet – 80 lbs DM/Day * 50% utilization = 40 lbs available

Demand = 4.5 lbs/sheep/day → **8.9 sheep carry capacity**

* Note that those values are for during the **growing season only!**

What about forage varieties?

Pearl Millet - Cumulative biomass and average between harvests

Company	Hybrid	Cumulative Biomass (2 harvests)		Average DM between harvests	
		---------- *lb DM/A* ----------			
Coffey Forage Seed	Epic BMR	5,519		2,760	
Coffey Forage Seed	ExCeed BMR	6,300		3,150	
Coffey Forage Seed	Leafy 22	7,983		3,982	
Coffey Forage Seed	TR-7	**7,995**	*	3,997	
Coffey Forage Seed	Tif-3	**8,087**	*	4,044	
Greenpoint Ag	3111 HPM	**8,374**	*	**4,187**	*
Greenpoint Ag	3221 HPM	5,139		2,570	
SouthEast Agriseeds	Prime 360	6,639		3,319	
Supra Ag	Millet	**8,613**	*	**4,306**	*
Mean		**7,183**		**3,591**	
SE_5		*516*		*302*	

Choice of varieties on yield

Maturity and seasonality of forage varieties

- Within the same forage species, some mature earlier than others

- Small grains (oat, rye, triticale) > ryegrass
- But
  - FL 405 Rye >>> Kelly Grazer III
  - Legend 567 oat > Horizon 306
  - Earlyploid Ryegrass > Nelson

- Sorghums
  - photoperiod sensitivity (PPS) → bloom mid-September
  - Non-PPS → will bloom based on degree days

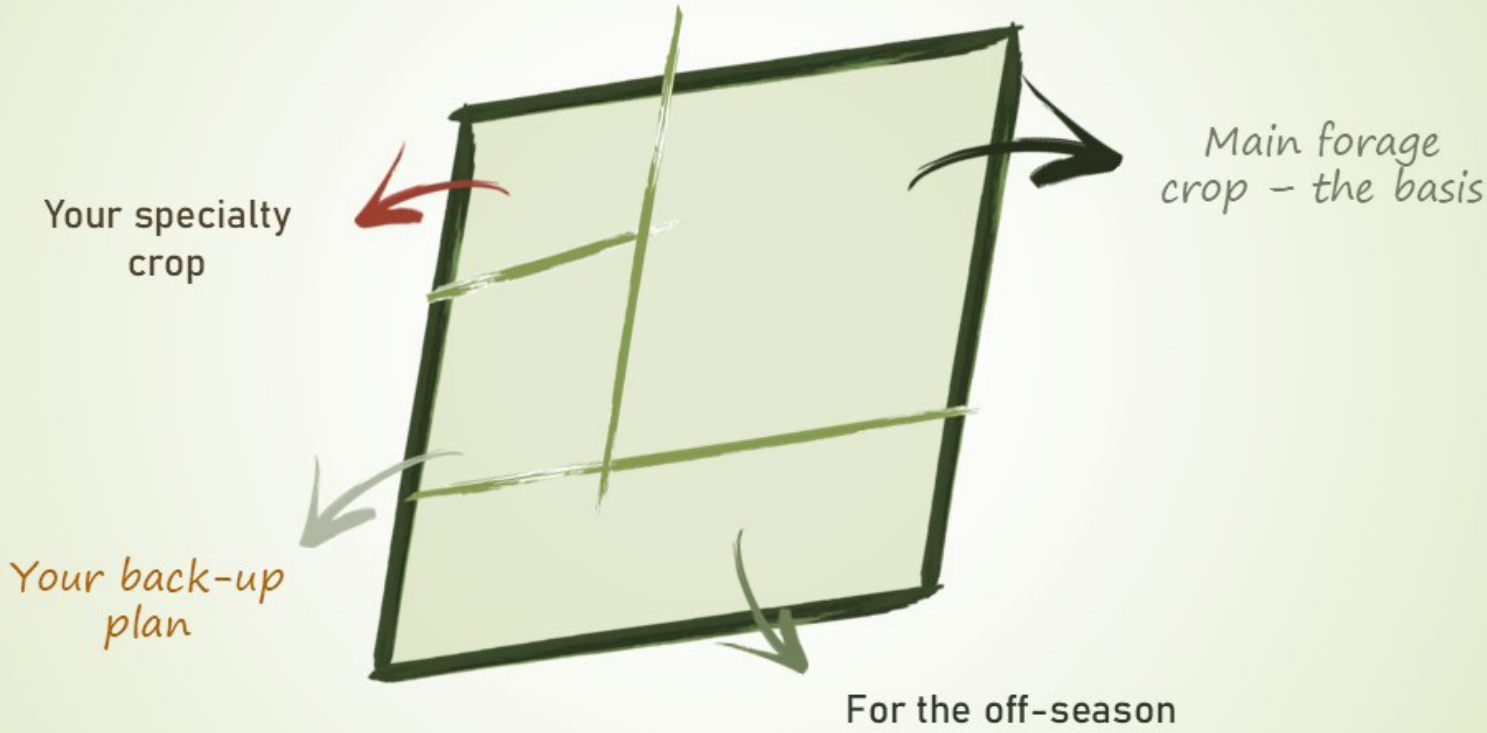
Side by side, spring green up of Pensacola bahiagrass pastures, with rhizoma perennial peanut (left) and without (right), in Gainesville, FL, on March 8th, 2023. Neither pasture has received nitrogen over the past 3 years.

https://nwdistrict.ifas.ufl.edu/phag/2023/03/10/spring-pasture-green-up-hold-your-cows-take-care-of-your-pasture/


Tifton 85 (left) and Newell (right) bermudagrasses in Citra, FL, March 8th, 2023.
Tifton 85 Bermudagrass
Newell Bermudagrass

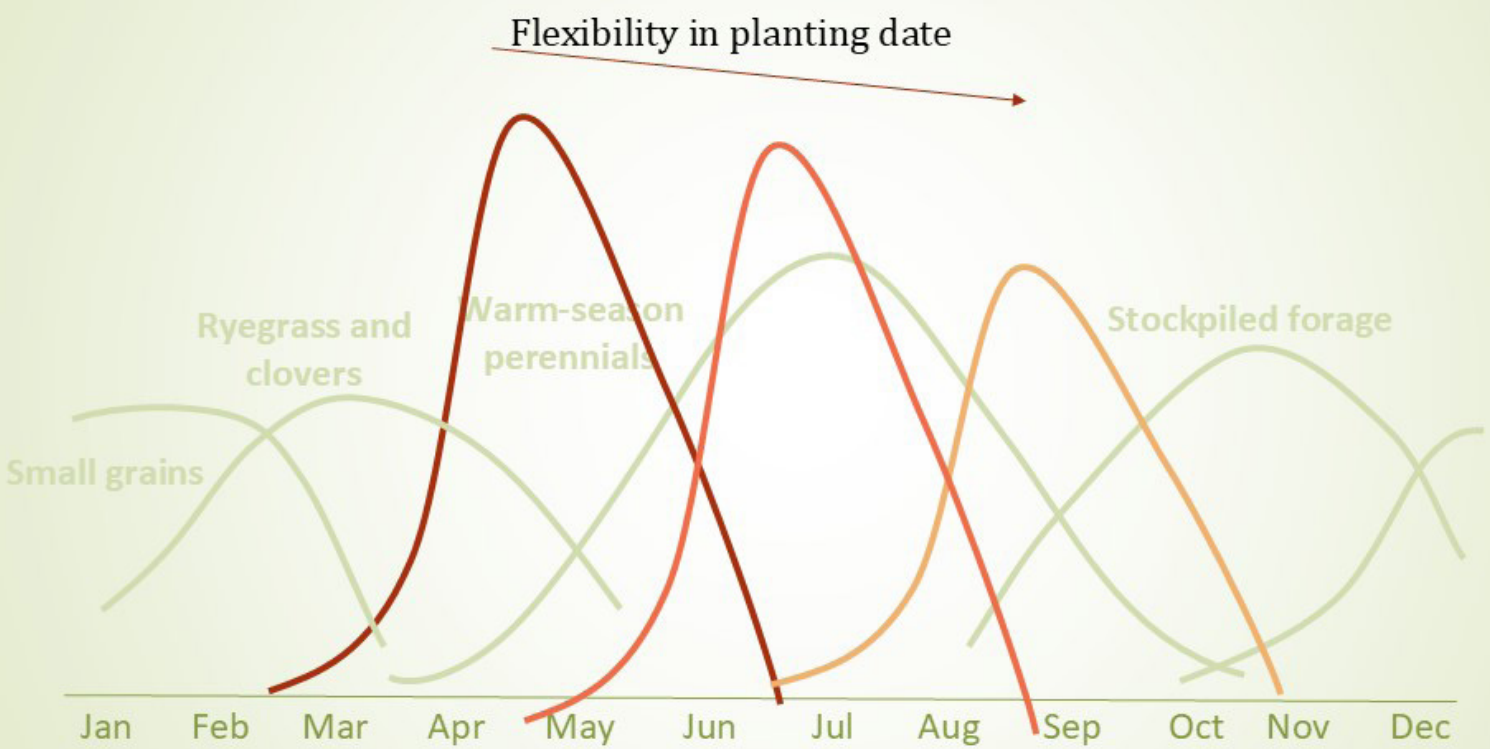

Importance of **variety selection**
Riata bahiagrass March 20th, 2025

Think how to distribute different forages in space



2 Playing with planting dates

Warm-season annuals



Sunn hemp and millet planted in mid-August

Sorghum and Sorghum x Sudan planted in spring or summer

	Corn		Forage sorghum		S x Sudan		
	Spring	Summer	Spring	Summer	Spring	Summer	SE
Yield (ton A^{-1} DM)	8.6^{a}	5.9^{d}	**6.7^{c}**	**5.7^{d}**	7.8^{b}	5.1^{e}	0.2
TDN (%)	72.2^{a}	70.4^{b}	60.2^{d}	61.1^{c}	55.2^{e}	56.6^{e}	0.5
Milk (Mg ha^{-1})	**28.6^{a}**	**18.9^{b}**	**18.4^{bc}**	**15.6^{d}**	17.4^{c}	11.6^{e}	1.0

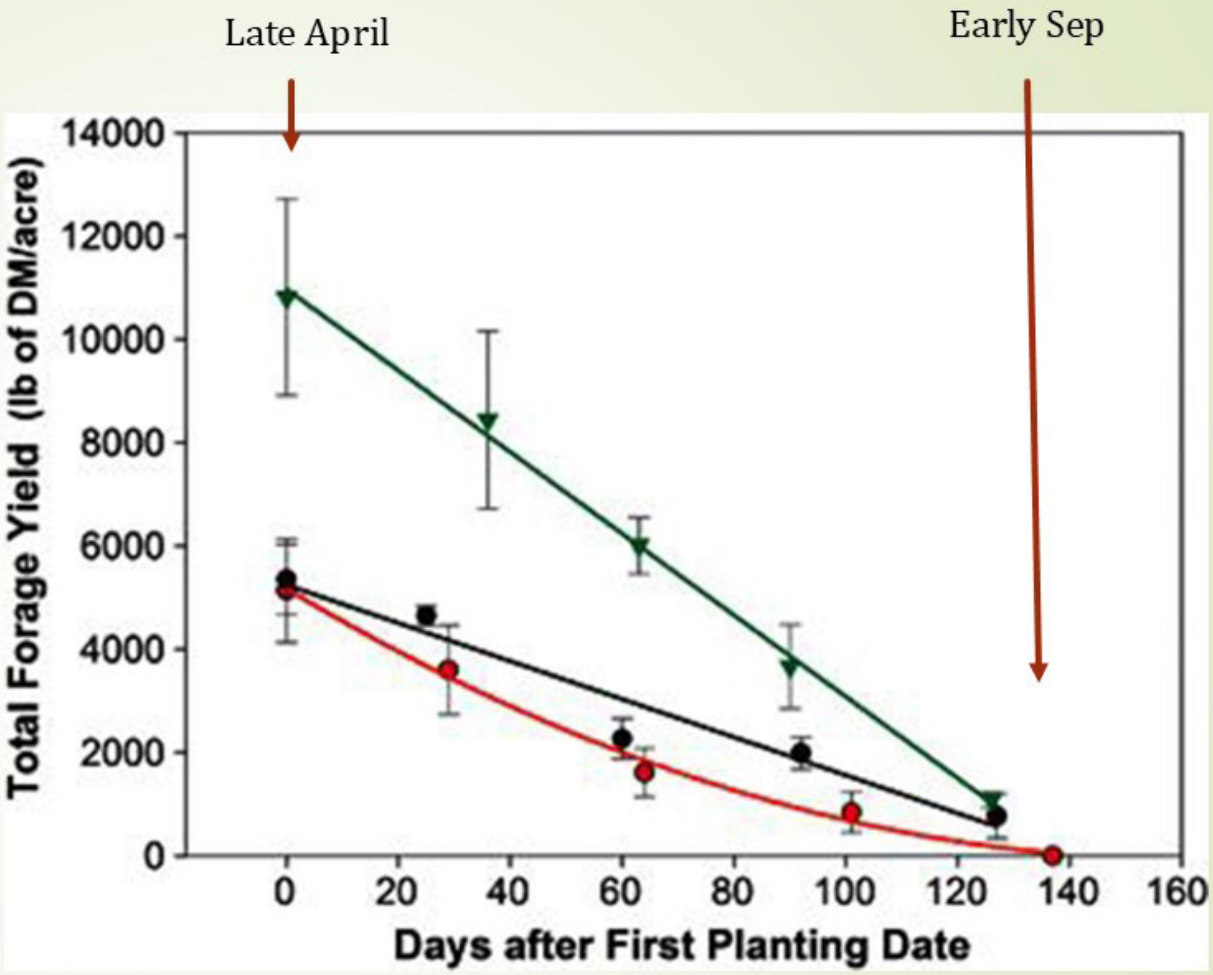
	Spring Planting (April 17)		Summer Planting (Jul 11)	
	H1 (51 DAP - Jun)	**H2** (42 DAP - Jul)	**H1** (47 DAP - Aug)	**H2** (37 DAP - Oct)
	Forage accumulation rate (lbs DM/day)			
Sorghum x Sudan	54	113	82	68
Millet	39	123	85	66

How late can we plant?

Hancock & Durham, 2010

- Watkinsville, GA
- Pearl millet Tifleaf 3
- Five planting dates

Total accumulation affected by the **length of the season** and by the **planting date**



Recommended planting dates

Warm season:

- Spring – April – Sorghum and sorghum sudan
- Summer planting window – **June** – **August** – pearl millet, sunn hemp, cow pea, alyce clover, soybeans, sorghum, sorghum sudan, etc
- Caution – late plantings of sorghum → prussic acid and nitrates

Cool-season

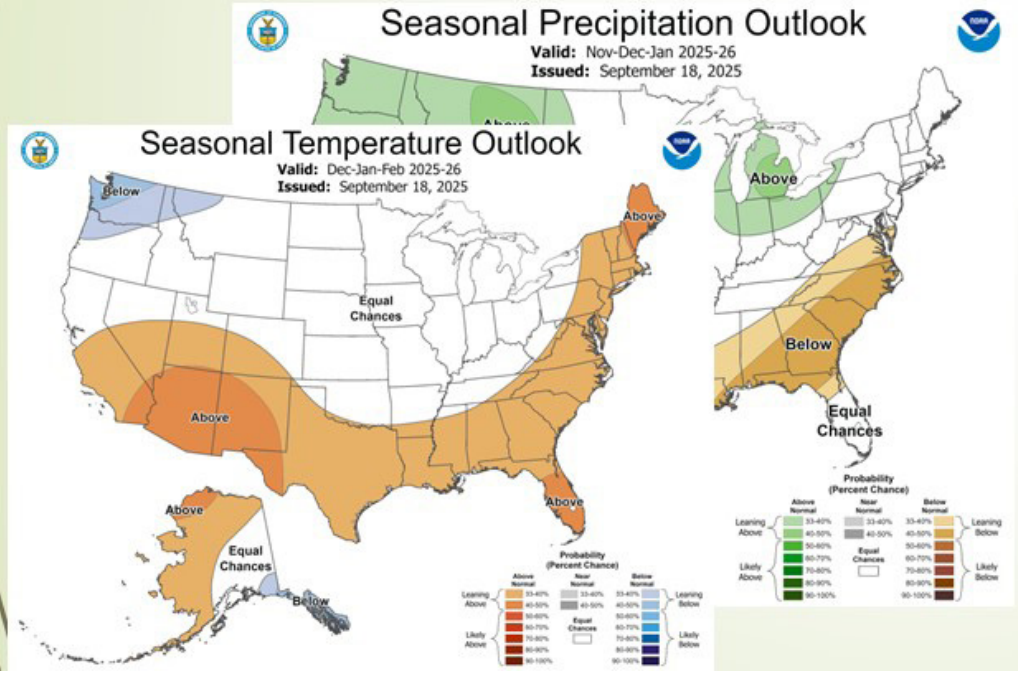
Winter – narrower planting window – **Oct-Dec** – rye, ryegrass, oat, clovers, vetch, triticale

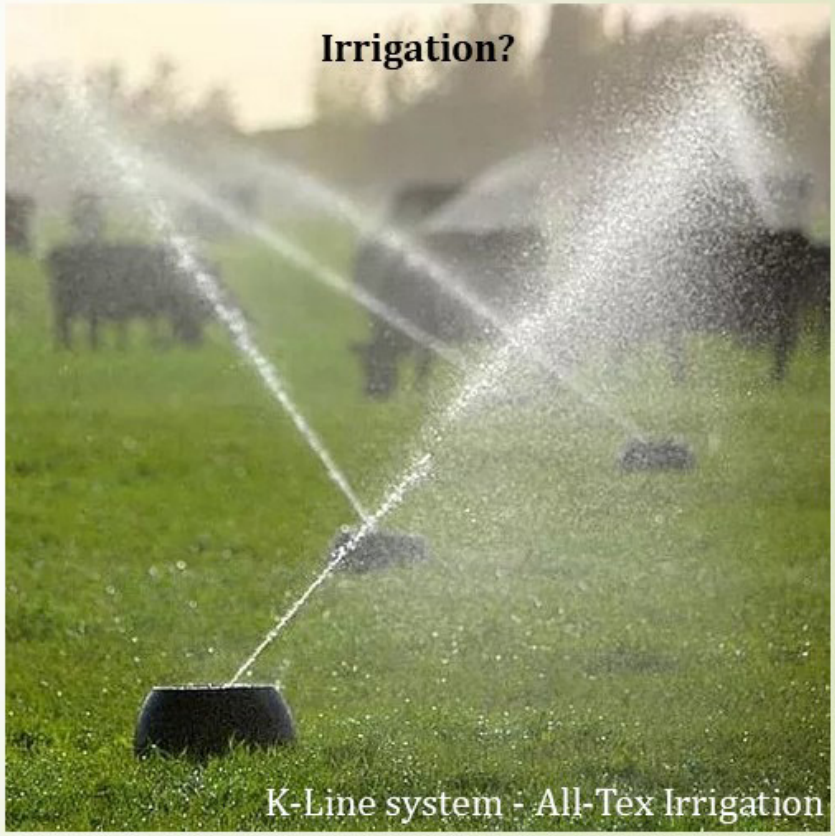
Spring (April/May) and Fall (October/ November) are the driest months in most of **Florida**

Rainfall --- big factor affecting planting date

Need moisture to plant, non-negotiable

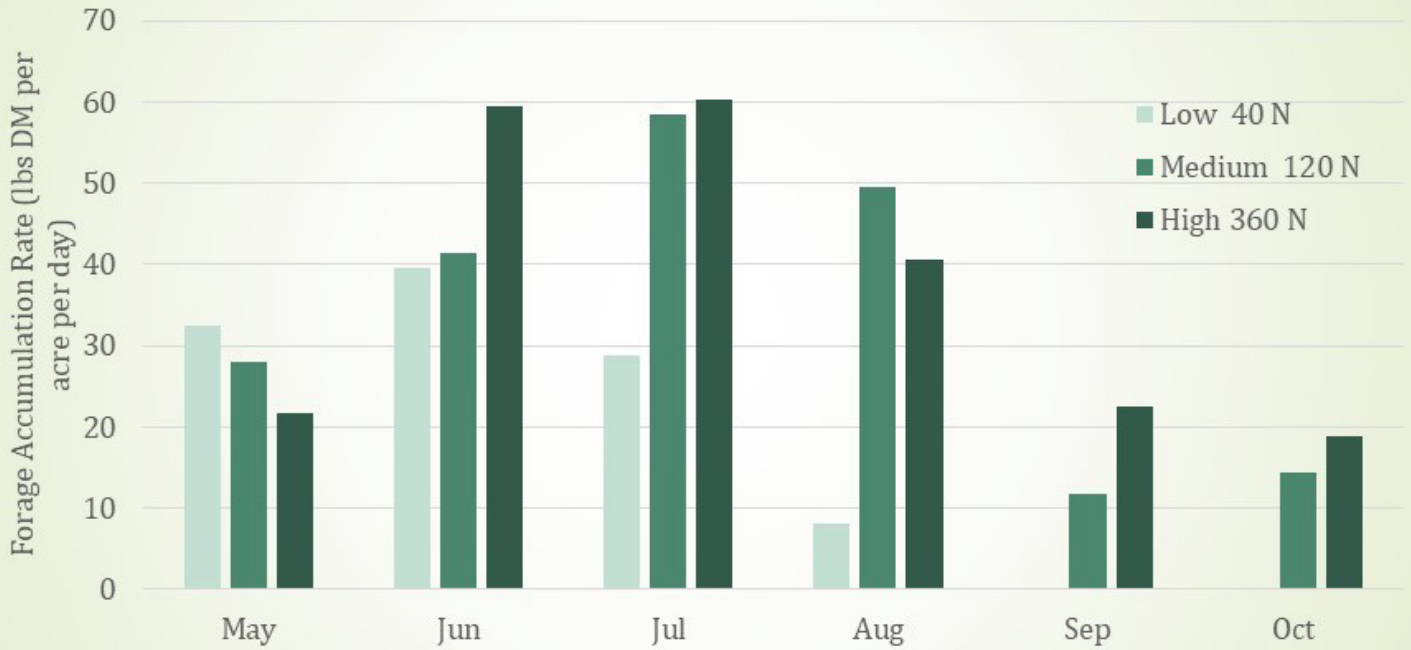
Weather forecast





Fertilization management

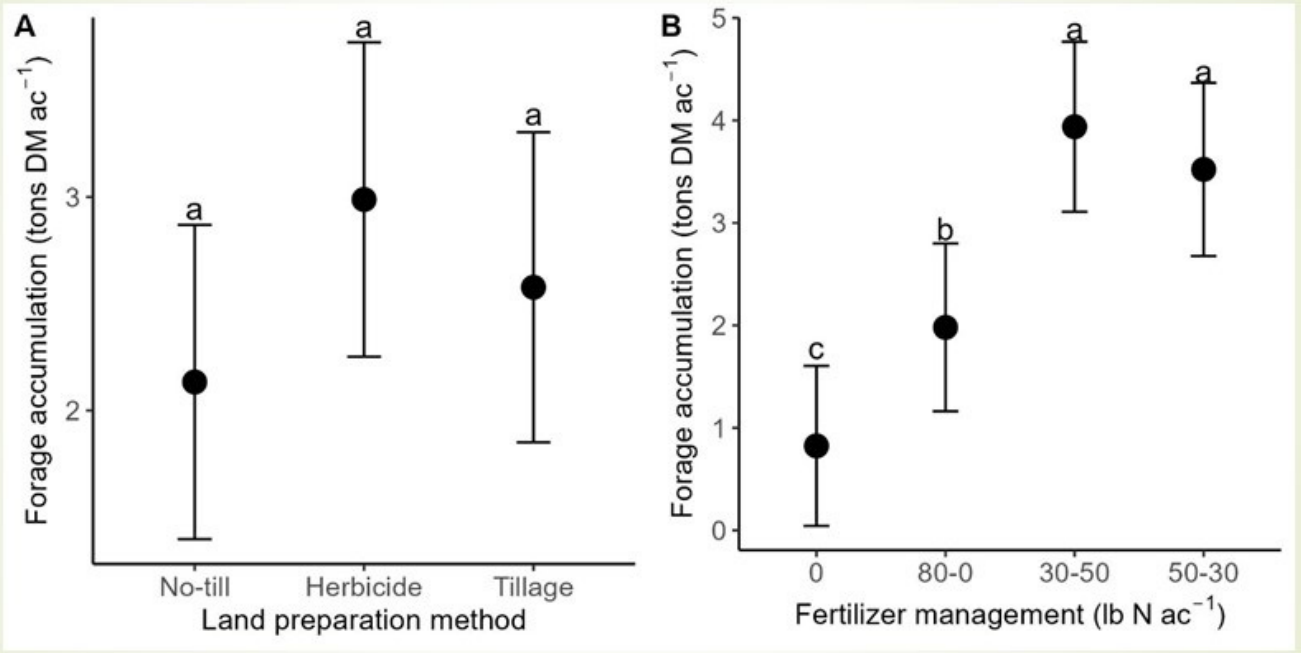
3



Stuart et al., 2007

Herbage production for Argentine (blue lines) and Pensacola (gray lines) bahiagrass under medium (100 lb N/A; solid lines) (Mislevy et al. 2003) and low (53 lb N/A; dashed lines) (Vendramini et al. 2013) nitrogen fertilization.

Split applications of nitrogen fertilizer



Match fertilization management to plant nutrient needs

Rusch et al., under review

However… too late can be too late.

Forage Species	Fertilization date		
	August 23rd	September 23rd	October 23rd
	--------lbs. DM/acre-------		
Bahiagrass	1,600a[1]	1,000b	400c
Bermudagrass	780b	1,000b	250d
Limpograss	1,500a	1,000b	620b
Brachiariagrass	1,400a	2,300a	1,100a
SE		50	

[1]Means followed by the same lower-case letter within column are not different (P > 0.05)

O. Centanni – MS project

4 What about grazing management?

Heavy grazing

(Biomass)

Moderate grazing

Pictures: Martins et al 2015 and Jean Savian

Heavy grazing

(Biomass)

Moderate grazing

Pictures: Martins et al 2015 and Jean Savian

Grazing management

- Graze at the right timing
  - Too early – reduce plant growth
  - Too late – plants are too mature
- Leave residual forage to maintain growth
- Challenges
  - Growth is not "steady" – it will change across the season
  - Diversify, plant at different dates
  - Rotate and stockpile

Delayed grazing = less regrowth and very tall plant

Grazed at the right time = good regrowth and shorter plant

Long regrowth period = more stems = lower quality

A mouth full of *grass*

Pictures: Jean Savian

Three principles to remember:

1. Make sure you have enough
2. Add diversity of species along time and along space
3. Manage grazing in a way to benefit both plants and animals


QUIZ TIME
PICK UP YOUR PHONES

How many forages or combination of forages can you fit in your pastures/ management system?

How many forages or combination of forages can you fit in your pastures/ management system?

Do you think it is feasible for you to implement those forages?

To remember:

1. Make sure you have **enough**
2. Add **diversity** of species over time and space
3. **Manage grazing** in a way that benefits both plants and animals

Thank you!

forages@ifas.ufl.edu

Some other resources for you!

You can reach out to us at forages@ifas.ufl.edu

And remember to contact your **local extension agent**; they are a fantastic resource for you!

Some examples of forage choices

Summer forages

Perennials

Bahiagrass

Bermudagrass

Perennial peanut

Annuals

Millets

Sorghums

Sunn hemp

Cowpea

Buckwheat

Aeschynomene

Alyce clover

Cool season forages

Annuals

Small grains (rye, oat, triticale)

Annual ryegrass

Clovers (crimson, arrowleaf, ball, ...)

Other legumes (winter peas, vetch, lupin)

Brassicas (chicory, turnips, rapeseed)

Perennials

Red and white clover

Forages for small sheep and goat – what do they like?

Animal Species	Type of Diet (%)		
	Grasses	Legumes	Browse
Cattle	65-75	20-30	5-10
Horses	70-80	15-25	0-5
Sheep	45-55	30-40	10-20
Goats	20-30	10-30	30-50
White-tailed deer	30-60	40-50	10-30

Slide: Dennis Hancock - USDA

Sheep nutrient requirement	Protein (CP)	Energy (TDN)
*Rams (220 lb, maintenance)	7%	53%
*Dry ewe (132 lb)	7%	53%
Late gestation (twins) 2.75% BW	10%	66%
Early lactation (twins) 3% BW	15%	67%
Weanling (4 mon, 66 lb, max ADG)		
Early maturing - 5% BW	12%	79%
Late maturing - 3% BW	19%	66%
*Yearling ewes (88 lb)	8%	66%

*Based on dry matter intake of *around* 2% of body weight (NRC, 2007) unless otherwise noted; from Dr. Niki Whitley, Fort Valley State University

Slide: Dennis Hancock - UGA

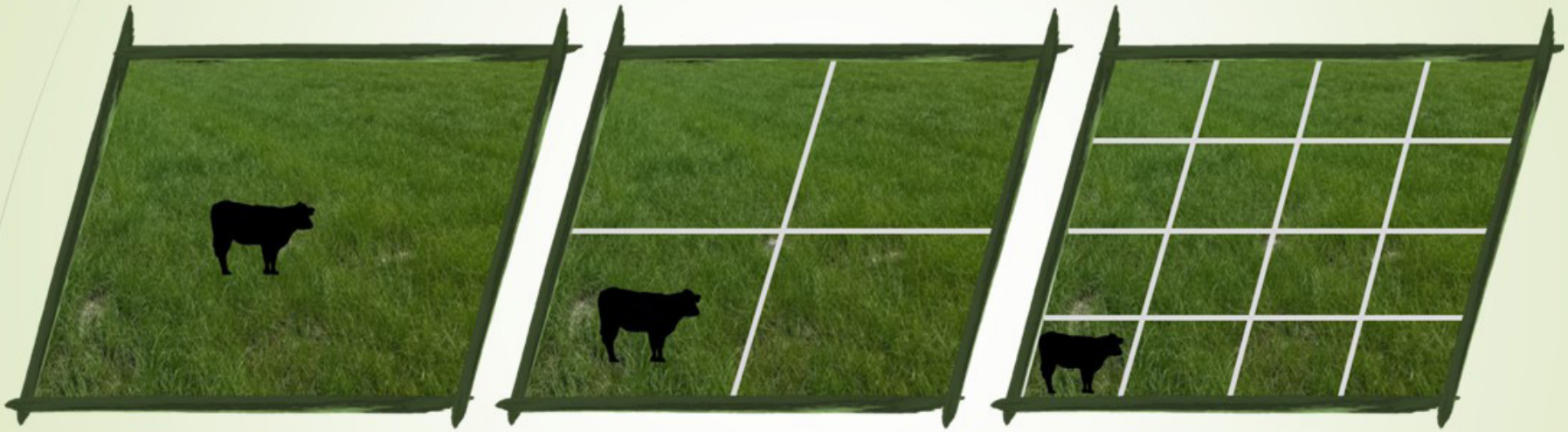
Goat nutrient requirements	Protein (CP) (40%UIP)	Energy (TDN)
Bucks (110-220 lb) 2% BW	7%	54%
Dry doe (88 - 154 lb) 2% BW	7%	53%
Late gestation (twins) 2.5% BW	13%	66%
Early lactation (twins) 3% BW	13%	53%
****Growing kid (30 lb; 0.44 lb/day)**		
Boer (4.0% BW)	25%	90%
Local (3.6% BW)	21%	89%
Yearlings (66 lb Boer, avg growth, 2.5%BW)	15%	66%

*% BW is all feed/forage eaten on dry matter basis as % of their body weight (NRC, 2007)
**Kids gaining less than 0.44 lb/day would require less; from Dr. Niki Whitley, Fort Valley State University

Slide: Dennis Hancock - SUDA

Carrying capacity:

Maximum number of animals or **animal units that your pastures can support** in order to achieve a targeted animal performance without compromising the pasture (Allen et al., 2011)



Stocking rate: The relationship between the number of animals and the total area of the land in one or more units utilized over a specified time; an animal-to-land relationship over time (Allen et al., 2011).

Starting

Residual

Average daily gain 153% greater
Gain per area 43% greater

Pictures and data from Savian, 2017

SMALL RUMINANT PREGNANCY TOXEMIA AND HYPOCALCEMIA

Martha Mallicote, DVM, DACVIM

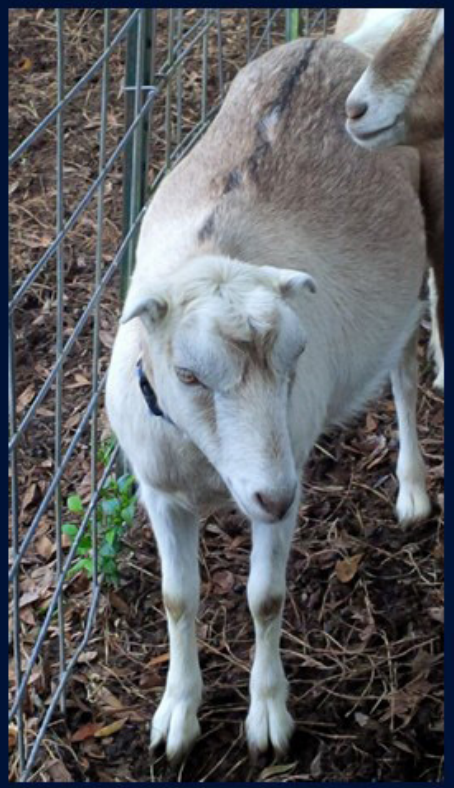
Small Ruminant Short Course 2025

UF | College of Veterinary Medicine
UNIVERSITY of FLORIDA

AGENDA - PERIPARTUM MEDICAL CONCERNS

- **It's all interconnected!**

- Pregnancy toxemia AKA ketosis
- Hypocalcemia – "Low" Calcium
- Mastitis
- GI Parasites



PREGNANCY TOXEMIA – CLINICAL SIGNS

- Vary widely based on severity and management scheme
- Typically, last 4-6 weeks of pregnancy – 70% of fetal growth!

- Off feed, decreased/absent rumination, depressed, grinding teeth
- More severe – neurologic signs including ataxia, stargazing, blindness, seizures

- Risk to both dam and fetuses – can be important to prioritize!

PREGNANCY TOXEMIA

- How does it occur?

Decreased feed intake combined w/ increased feed demand

↓

Dam forced to mobilize body reserves – begins to utilize fat reserves

↓

Metabolic limitations lead to buildup of ketone bodies

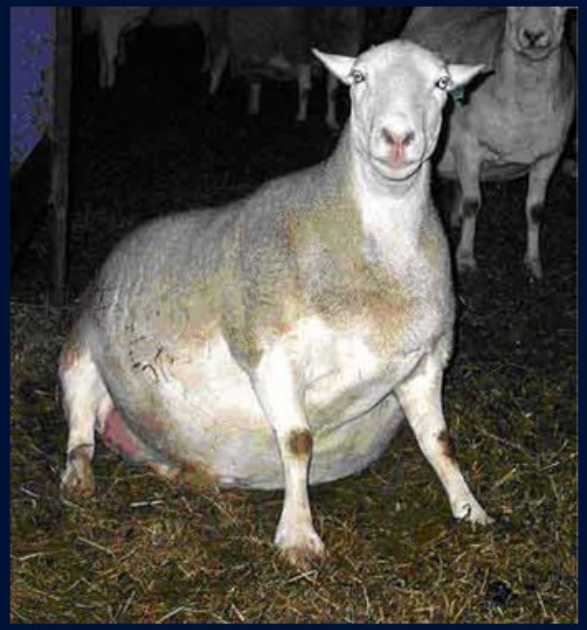
(acetoacetate and ß-hydroxybuterate)

↓

Ketone bodies in blood, also spill over to urine

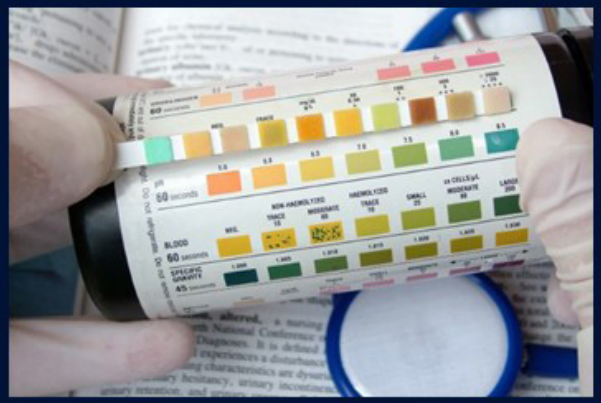
PREGNANCY TOXEMIA

- Risk factors:
  - Number of fetuses
  - Body condition – both over and under!
  - Diet
  - Feed intake/appetite
  - Concurrent disease
  - Genetic influence



PREGNANCY TOXEMIA - DIAGNOSIS

- History and clinical signs
- Testing shows -
  - Increased urine ketones
  - Decreased blood glucose,
    also metabolic acidosis, low calcium and potassium
  - Increased blood ketones –
    ß-hydroxybutyrate (ß-HB)



PREGNANCY TOXEMIA - TREATMENTS

Essential to reverse negative energy balance

- Nutritional adjustments
- Propylene glycol orally (do NOT overuse)
- Consider transfaunation
- IV fluids with electrolytes, dextrose
- If severe, may require intensive fluid therapy

PREGNANCY TOXEMIA - TREATMENTS

- Nursing care
- Correct other systemic diseases, infections
- Consider induction or C-section

PREGNANCY TOXEMIA

- Ketosis can also occur in lactation – especially high lactation dams

- Complication of preg toxemia (particularly in overconditioned animals) →

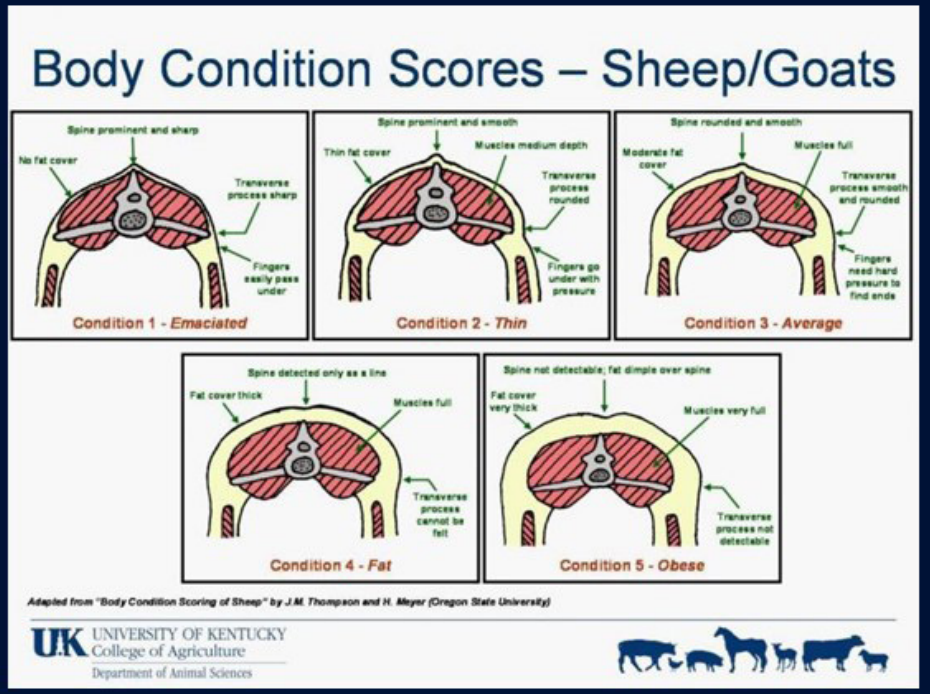
  Hepatic lipidosis

PREGNANCY TOXEMIA – PREVENTION!

- Good nutrition, esp in late pregnancy
  - Screen for fetal number and adjust feed (d 40-80 gestation)
  - Slow introduction of grain
  - Energy dense forages – high TDN/dry matter
- Avoid rapid breed back

PREGNANCY TOXEMIA – PREVENTION!

- Good nutrition, esp in late pregnancy
- Avoid rapid breed back
- Maintain BCS of 3-3.5/5



PREGNANCY TOXEMIA – PREVENTION!

- Good nutrition, esp in late pregnancy
- Avoid rapid breed back
- Maintain BCS of 3-3.5/5
- Closely monitor ewes/does – identify signs early on!

HYPOCALCEMIA

- How does it occur?
  - Overfeeding of Ca-rich diets or supplements prior to kidding
  - Calcium-poor diets fed after kidding
  - Dietary Ca:P ratio should be 1.5:1 or greater

- Lactation requires rapid increase in Calcium absorptive capacity

HYPOCALCEMIA – CLINICAL SIGNS

- Ataxic (“wobbly”) and nervous, appetite poor
- Poor uterine contractions (can lead to dystocia, retained placenta)
- Reduced ruminal motility
- Become recumbent, neuro signs or head turns back
- Eventually cardiac effects!

- Blood tests (stall-side) show low ionized blood calcium

HYPOCALCEMIA – RISK FACTORS

- Diet
- Number of fetuses
- Milk production capability
- Genetics
- Parity

HYPOCALCEMIA - TREATMENT

- Calcium supplementation – intravenous
  - Dangerous if NOT low calcium
- Oral or subcutaneous supplementation
  - Variable oral absorption
- Possible transfaunation, address appetite/feed

HYPOCALCEMIA

- Dairy animals *can* behave more like cattle in this disease
- Require appropriate dietary considerations

HYPOCALCEMIA - PREVENTION

- Dietary manipulations can be helpful OR harmful
  - Use caution with just supplementing calcium

- Work with farm DVM to help with dietary selection and any prepartum dietary manipulations
- Identify and track animals with hypoCA

HYPOCALCEMIA - PREVENTION

- Anionic salts/DCAD manipulation

- Goal is negative DCAD (dietary anion-cation difference)
- Induces metabolic acidosis –>> alters PTH function and improves Ca mobilization
- Monitor urinary pH as proxy for effect

SoyChlor®

MASTITIS

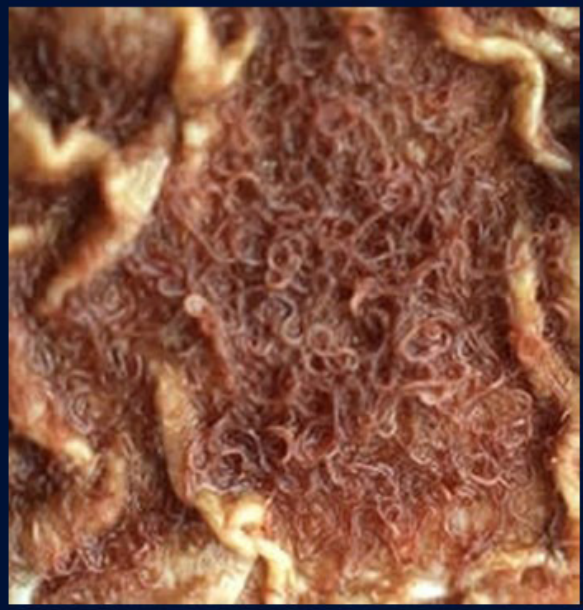
- Clear association between generalized disease and mastitis in dairy cattle
- Udder health *requires* doe health

- Recumbency, low calcium, poor appetite can all contribute to mastitis
- Opportunistic bacterial infections

GI PARASITES

- Known increase in nematode infections in peripartum period

  "Periparturient rise"



GI PARASITES

- Monitor for anemic does – FAMACHA scoring
- Consider alternative control methods during this time
  - Copper oxide wire particles (COWP)
  - Sericea lespedeza

PREGNANCY TOXEMIA AND COMPLICATIONS

- Prevention essential
- Body condition and dietary manipulation are key
- Cannot manage what is not monitored
- Work with farm veterinarian in advance of late gestation season to develop plan
- Be prepared to respond with testing and treatment in late gestation

Questions?

UF | College of Veterinary Medicine
UNIVERSITY of FLORIDA

The shot isn't workin' Doc

What the "docs" wish was understood about antibiotics

Katelyn Menacho, DVM

Background

- 2018 University of Florida UF CVM graduate
  - Certificate in food animal medicine
- 2019 Oak Hammock Large Animal Veterinary Services
- Today 40% of my practice is small ruminants

Roadmap - some questions to answer

- Why should we care about this topic?
- Why do we use antibiotics?
- How do antibiotics work?
- How does experience and knowledge of bacteria change my treatment plan?
- Why do antibiotics don’t work?

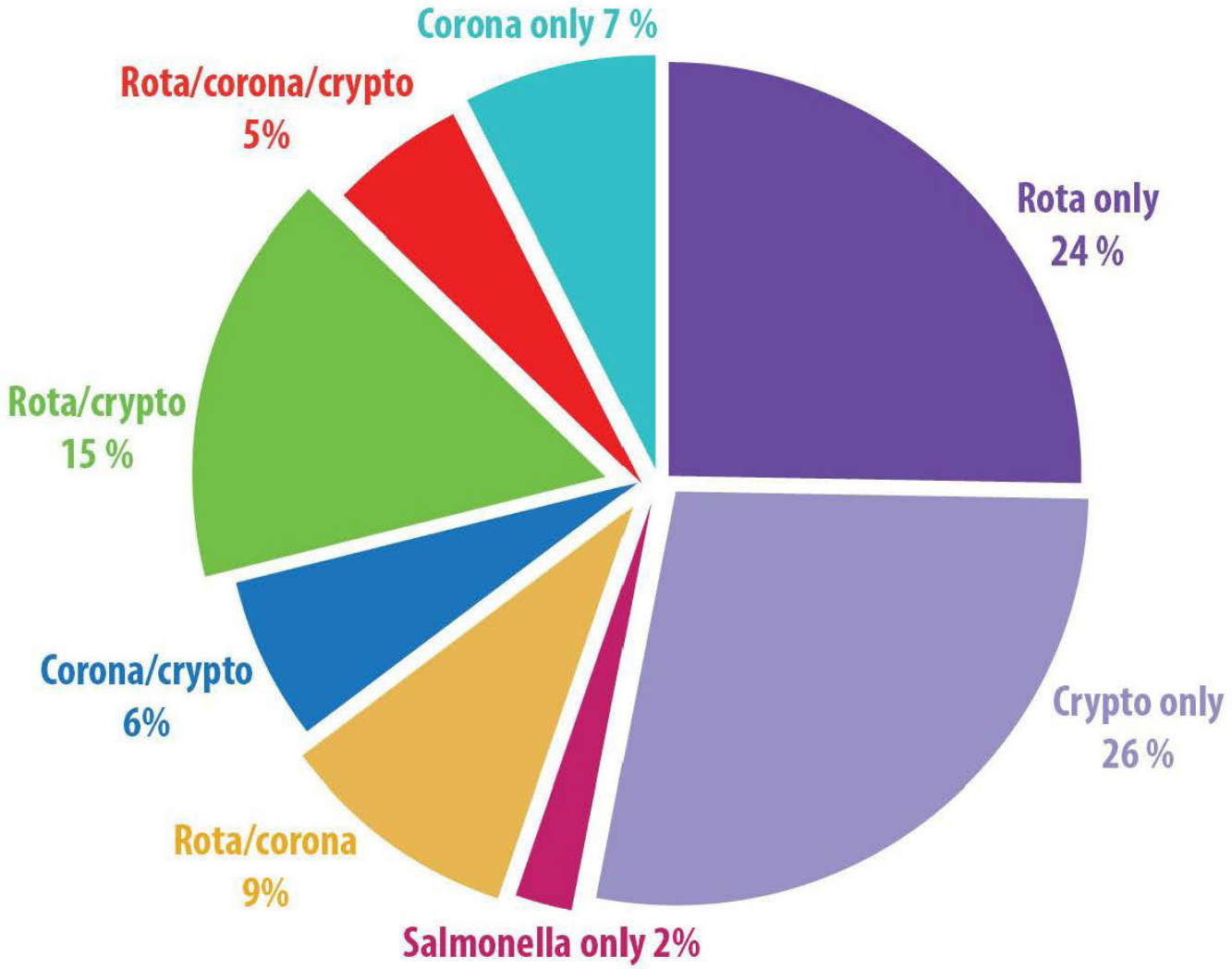
Why should we care?

- Antibiotic resistance
  - FARAD - food animal residence avoidance database
  - https://www.farad.org/
- Animal stewardship
  - Under constant scrutiny from anti-agricultural groups
  - Responsibility to raise safe byproducts
- Microbiome
  - Today's choice can have a several week to month affect on an animal's microbiome
  - Rumen atony = poor prognosis

Why do we use antibiotics?

- Antibiotics are used to kill bacteria
  - Before a problem occurs (prophylactically)
  - After there is bacteria present
- They are not effective against viruses
  - However, sometimes viruses weaken the immune system and a commensal bacteria can proliferate
  - Commensal bacteria = bacteria that live within a host that do not cause harm or provide benefit
- Sometimes secondary translocation of bacteria is a consideration
  - “Leaky gut” leading to sepsis
  - Not all cases of scours need antibiotics; many do not need antibiotics at all!

KSVDL Bovine Neonatal Diarrhea PCR Results, 2017 & 2018

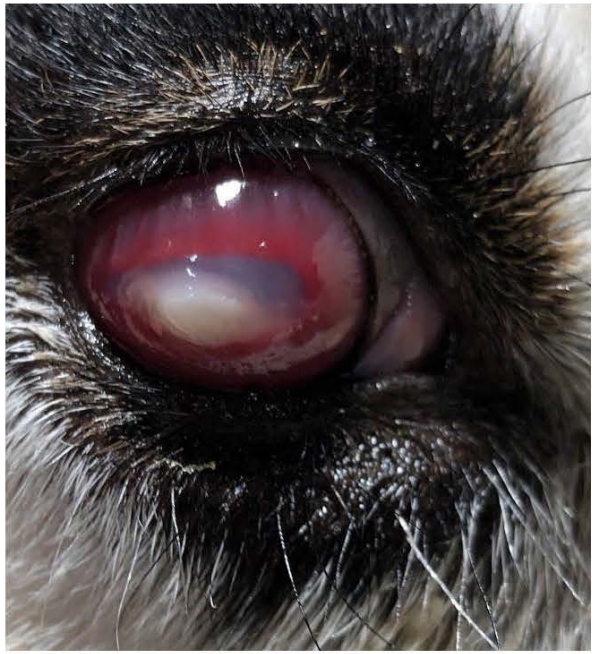


How do antibiotics work?

- Time vs concentration dependent
  - Tortoise and the hare comparison
  - One is not better than the other
- Bacteriostatic vs bacteriocidal
  - Static = slow down the bacterial
  - Cidial = kill it directly
  - This is very important for two main reasons:
    - How fast do I need this product to work?
    - If I want to combine two types of products, a cidal and a static may not work the best together
- Certain antibiotics work the best against specific types of bacteria
  - Gram negative vs. gram positive
  - Aerobic vs anaerobic

How My Brain Works

- In school we learn about how different viruses and bacteria present
  - Morbidity/mortality
  - Age of animals
  - Location of the issue: lungs (respiratory) vs skin vs diarrhea (intestinal)
- Real life application
  - Skin issues are typically gram + or mixed
  - Diarrhea is typically a virus, parasites, or gram - (e coli, salmonella)
  - Mycoplasma has no cell wall making it very difficult to treat!
  - A ~~Picture~~ Necropsy is worth a 1,000 words
  - Life still continue to surprise me
    - Listeria culture from a “pink eye”



Why don't antibiotics work?

- Basics
  - Inappropriate weight estimation
    - Visit a sale barn to train your eye
  - Improper storage
    - Room temperature vs hot florida barn vs stable refrigerator
    - Light sensitivity
    - Compounded products
  - Incorrect route of administration
    - SC vs IM
  - Improper dose
    - Outdated drug labels and few studies on small ruminant bioavailability
- Poor tissue penetration
  - IE may not "get to" the brain, udder, or ear canal
  - How does this relate to tissue cultures?
    - In vivo (live organism) vs in vitro (in the lab)
  - Data collection vs data interpretation and application

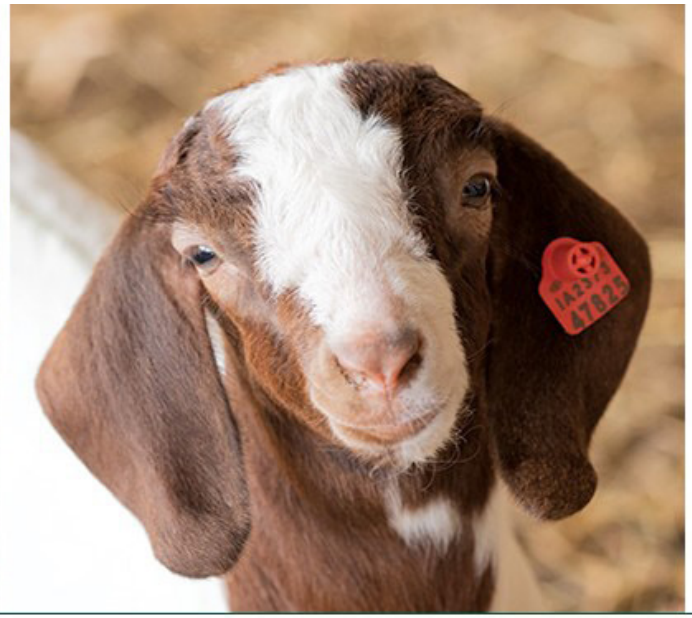
Why don't antibiotics work?

- Poor bioavailability
  - Often oral medications are not absorbed by ruminants due to how their digestion works
- Not long enough duration
  - Drug A is working fine and just needs to be given longer
  - I often see people jumping around between 3-4 different antibiotics
- Too late to the party
  - Bacteria have already caused sepsis leading to a breakdown in body functions
- There was something else going on
  - Postpartum septic abdomen
  - Parasites
  - Cancer
  - Bluetongue

Wrap Up - The End!

My goal today was to improve everyone's critical thinking process when choosing (or not choosing) antibiotics.

Questions - remember a veterinary client patient relationship needs to be in place to answer specific case questions



National Scrapie Eradication Program:
Highlights of USDA sheep and goat identification

USDA APHIS Veterinary Services, Sheep and Goat Team
September 2025

US Sheep Industry
(NASS 2025)

- 5.05 million total sheep
- 3.68 million head of breeding stock
- 88,853 US farms and ranches with sheep (2022 NASS census)
- Meat breeds including hair sheep
- Wool breeds
- Fiber breeds
- Dairy Breeds

Sheep Industry: Value of Processing and Manufacturing Secor

Table 7 Processing and Manufacturing Sector: Value of Production

Industry	Value ($)
Lamb Slaughter and Processing[a]	$640,478,275
Mutton Slaughter and Processing[a]	$33,520,032
Offal Exports	$955,000
Dog Food Manufacturing (rendered by-products)	$526,980,391
Pelt Exports	$6,852,000
Finished Shearling Wholesale	$3,750,000
Wool Exports	$22,135,100
Wool: Mill Use[b]	$19,632,540
Wool: Military Mill Use and Dress Uniform Manufacturing[b]	$107,797,677
Wool Grease/Lanolin Exports	$4,994,000
Cheese Manufacturing	$22,589,644
Total	***$1,389,684,659***

[a] Includes export value; [b] Wool mill output serves as inputs for cut and sew contractors. To avoid double counting, non-military mill uses, and military mill uses were treated separately.

Source: U.S. Sheep Industry (sheepusa.org) November 2023

US Goat Industry
(NASS 2025)

- 2.51 million goats
- 2.07 million head of breeding goats
- 87,291 farms with goats (NASS 2022)
- Dairy Goats
- Meat Goats
- Fiber Goats

Get to know the S&G Team

RHC Sheep and Goat Health Team

We promote the health, productivity and marketability of the U.S. sheep and goat populations by:

- Developing regulations and policies to prevent, control and/or eliminate diseases that affect the sheep and goat industries including scrapie, brucellosis, tuberculosis, and foreign and emerging diseases.
- Supporting FiOps and States in implementing program disease eradication and surveillance, traceability, and emergency preparedness and response efforts.
- Supporting scrapie research, CEAH commodity management and health studies, and S&P Import/Export staff.

Sheep and Goat Team: Responsibilities and Contact Information

S&G Team Mailbox: VS.SP.Sheep.and.Goat@usda.gov

Small Ruminant Health Staff		
Diane Sutton diane.l.sutton@usda.gov	(+1) 240-461-4050 Eastern (UTC -5:00)	**Assistant Director**
Sheep and Goat Health Team VS.SP.Sheep.and.Goat@usda.gov		
Linda Detwiler linda.detwiler@usda.gov	(+1) 609-738-5511 Eastern (UTC -5:00)	• Scrapie (Liaison to Districts 1 and 2) • ASI and AGF Cooperative Agreements • Stakeholder Calls/Meetings • Import/Export/WOAH Liaison • SFCP Policy Lead
Randy Pritchard randy.w.pritchard@usda.gov	(+1) 970-214-4478 Mountain (UTC -7:00)	• Surveillance Planning and Reporting • Data Management, and Analysis • National Scrapie Surveillance Plan • RSSS and Goat Genotyping Project
Stephanie Ringler stephanie.ringler@usda.gov	(+1) 717-599-9957 Eastern (UTC -5:00)	• Scrapie (Liaison to Districts 3 and 4) • TB, Brucellosis, Coxiellosis, etc. • NLRAD and One Health Liaison • Tag Policy and Contracts • VSLS Transition to VSISM Lead

Agenda

Review of ID Requirements and CFR

Record Keeping Requirements

Key Points of the OSS/OHS

Always check for State requirements

Official ID requirements for S/G

Sheep and goats are REQUIRED to have official individual ID	• On change of ownership * • Before entering interstate commerce* • If exposed to scrapie, suspect or test-positive for scrapie, from noncompliant flocks
There are exceptions to this rule and recordkeeping requirements	• Covered in later slide
There are also documents that may be required for movement	• Interstate certificate of veterinary inspection (ICVI) or Owner/Hauler statements

*There may be exceptions

Types of Official Identification

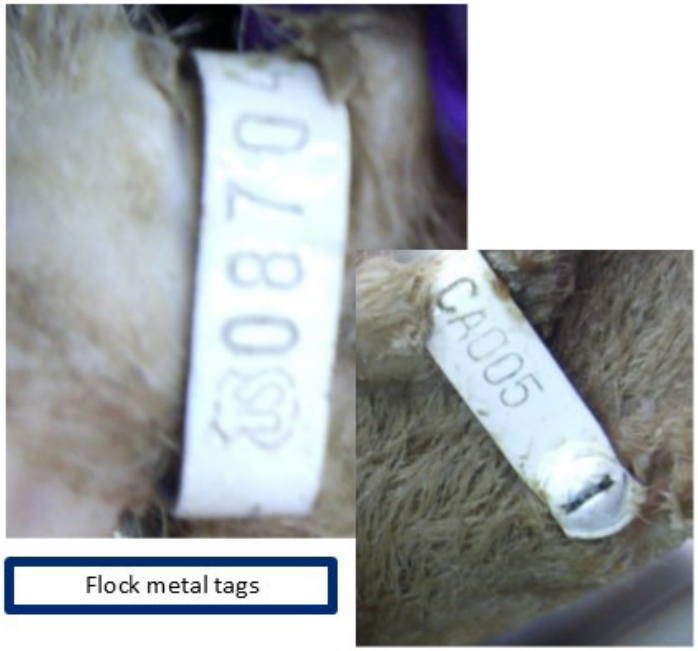
- Official Eartags
- Registry Tattoos or EIDs with certificate
- APHIS assigned Flock ID number tattoo with individual #
- EIDs for animals from flocks in NSD with certificate or owner statement
- Official backtags for animals moving directly to slaughter

USDA

They come in many shapes and colors, plastic or metal, but ALL official tags have the **US shield**. Sheep and goat tags have State postal code

Plastic Flock Tags

Metal Tags



Flock metal tags

Blue “Meat” Metal Serial Tag; “slaughter only” use

Orange Metal Serial Tag

RFID Tags


MOSER 61834
MOSER 61833
MOSER 61832
MOSER 61831
MOSER 61830
MOSER 61829
MOSER 61828
MOSER 61827
MOSER 61826


UNLAWFUL TO REMOVE
840 003 123 456 789
UNLAWFUL TO REMOVE


XX123456
123456
TO REMOVE
XX123456
123456

Government Provided Tags

Metal serial tags

- For markets, +/- dealers (tags only, no applicators)
- For Field Office for redistribution - at AVICs discretion

Plastic tags (Shearwell non-RFID)

- Up to **100 Flock ID** tags for new producers
- Serial tags or flock ID tags for disease investigation/control
- Flock IDs for producers for on-farm surveillance

Shearwell applicators cost approx. $28 for producers!

Official USDA tags are free (up to 100) for first time orders!

Toll Free at 1-866-USDA-TAG

Shearwell tags are the current free tags offered.

“Earless” Goats

- Can attach ear tag to a durable strap or collar
  - Animals that cannot be ear tagged because of absent or injured ears
  - If ear tag would obscure an official tattoo
- Collars must accommodate for animal’s growth
- Neck strap with ear tag may not be removed
- Strap or ear tag would have to be destroyed to remove.

USDA

Collar Options for “Earless” Goats

Breed Registry Tattoos

- Registry must be **approved** by **APHIS and listed on website**
- A copy of the registration certificate must accompany the animal at all times
  - This certificate must have tattoo information printed on it from registry and must correspond to tattoo in animal's ears
  - If not in the same name of the current owner, a copy of the **completed application for transfer** of ownership is permitted, assuming the sale occurred in the last **60 days.**

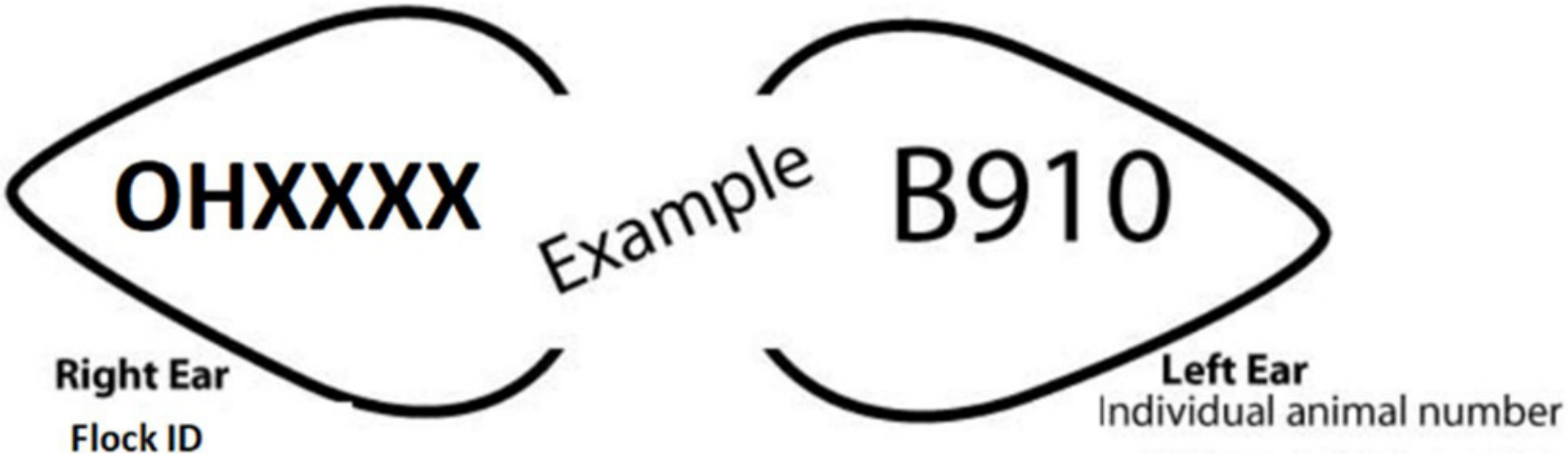
Breed flock/herd registry number

EX: ADGA ID V316

Tattoos for Sheep/Goats

- **Breed registration number (for movement)**
  - As long as ICVI lists it
  - As long as animal travels with registration papers matching ICVI
  - Animals over 18 months in slaughter channels or any age going through a market (not in slaughter channels) must have an official ear tag with rare exceptions!

Flock ID Tattoos for Non-Registered Animals



Non-registered animals can be tattooed with the APHIS assigned flock/herd ID and individual animal number

- These must be shown in SCS SCR database: SCS SCR herd flock ID OH1234

Electronic Implantable Identification Device

- Not acceptable as the only official ID for slaughter channels or markets*
- The implant must be placed either:
  - Between the skin and the cartilage at the base of the ear
  - Between the skin and the bone of the tail near the base of the tail
  - Tattoo “E” or “ET” in ear or if no ear the tail fold to indicate where implant is
  - “E” if base of ear
  - “ET” if in Tail

EID Guidelines

- **Unregistered Animals**
  - The animal must also be legibly tattooed with the Flock ID in the ear (in addition to the "E" or "ET" tattoo)
  - In the case of earless animals, in the tail fold or flank (if tail fold is too small)
- **Registered Animals**
  - The implant number must be recorded on the registration certificate accompanying the animal

- Animals must be accompanied by an implant reader
  - Readers must be made available for use by APHIS or State authorities
  - Must be ISO compliant (frequency of 134.2 KHz) and 15 digits long with country/manufacturer code
- "Implant" is an APHIS approved 840 sheep and goat implant (see Scrapie Program Website) OR was applied before March 11, 2015.

**Note: Some States have different guidelines related to use of EIDs.

Don’t forget that you must have a Premises ID (PIN) and a Flock ID to use RFID tags or implants.

Back Tags

- Considered official ID for animals that
  - **Are moving direct to a slaughter establishment through a restricted market (if ≥ 18 months must be identified to flock-of-origin)**
  - Cannot be ear tagged because of absent or injured ears or because the ear tag would obscure an official tattoo
- Apply APHIS-approved backtag within 3 inches of the **poll**

Goats and Back Tags

≥ 18 months, horned, sexually intact , unsafe to tag

- Goats must be going direct-to-slaughter through a restricted market**
- Use must be approved by AVIC & SAHO
- Apply backtag to back

When are official IDs needed for movement?

Official ID requirements for S/G

Sheep and goats are REQUIRED to have official individual ID	• On change of ownership * • Before entering interstate commerce* • If exposed to scrapie, suspect or test-positive for scrapie, from noncompliant flocks
There are exceptions to this rule and recordkeeping requirements	• Covered in later slide
There are also documents that may be required for movement	• Interstate certificate of veterinary inspection (ICVI) or Owner/Hauler statements

*There may be exceptions

A sheep or goat enters interstate commerce if it:

Is transported across a State line or sold to an out-of-state buyer

Commingles with any animals that have been handled in interstate commerce off the premise of the flock

Is loaded or unloaded at a premises or animal concentration point where **any animals** have been received or from which **any animals** have moved in interstate commerce

Leaves the premises on which it currently resides if it is **owned by a person who engages in interstate commerce of animals**

Exceptions to official individual ID requirements

- Wethers < 18 months of age
- All sheep and goats < 18 months of age in slaughter channels*
- Single flock-of-origin animals moving to a federally approved market where the market has agreed to act as an agent to apply official individual ID*
- Animals moving for management or grazing purposes between premises owned or leased by the same person with no commingling with other unidentified animals from another herd*

*Owner hauler statement with group ID number or ICVI required for movements in interstate commerce

USDA

Slaughter Channels

Animals in slaughter channels include any animal that is sold, transferred, or moved either directly to or through a **restricted animal sale or restricted livestock facility** to an **official slaughter establishment** that is under Food Safety and Inspection Service (FSIS) jurisdiction per the Federal Meat Inspection Act (FMIA) or under State inspection that FSIS has recognized as at least equal to Federal inspection or to a **custom exempt slaughter establishment** as defined by FSIS (9 CFR 303.1) for immediate slaughter or to an **individual for immediate slaughter for personal use** or to a **terminal feedlot.**

Restricted Animal Sale or Restricted Livestock Facility

A sale where any animals in slaughter channels are maintained separate from other animals not in slaughter channels other than animals from the same flock of origin and are sold in lots that consist entirely of animals sold for slaughter only or a livestock facility at which all animals are in slaughter channels and where the sale or facility manager maintains a copy of, or maintains a record of, the information from, the owner/hauler statement for all animals entering and leaving the sale or facility. A restricted animal sale may be held at a livestock facility that is not restricted.

Types of federally approved auctions

Unrestricted federally approved auction - all class sales

- Sexually intact animals from out-of-state arrive officially identified to flock/herd of birth or with OHS allowing them to be IDed to flock/herd of birth by the market
- Animals arriving do not require an ICVI including from out-of-state (unless required by the State)
- Animals can be sold for any purpose
- Animals leaving the market/sale are examined by a veterinarian at the sale and if going out-of-state an ICVI for movement from the sale to the destination is written
- Animals NOT meeting the requirements for unrestricted sale **must be sold restricted to slaughter channels or rejected**

Restricted federally approved auction – slaughter only sales

- Animals over 18 months arrive with **official ear tags** or **official ear tags** are applied by the market– no other ID type is accepted in slaughter channels
- If market applies tags only blue meat or slaughter only tags can be used
- Out-of-state animals and animals that were restricted to slaughter channels before arriving must arrive with **O/H statement** with an official PIN, LID, or flock/herd ID on statement. For other in state animals, owner may complete an OHS or equivalent dock slip at the market.
- **Unidentified animals >=18 months of age** must be identifiable to their flock of origin (with some exceptions) or market may sell in accordance with compliance agreement

Types of auctions that are not federally approved

Unrestricted auction - all class sales

- Animals from out-of-state **must arrive** officially identified to flock/herd of birth
- Market may be approved (State must agree) to apply official ear tags on arrival to in state animals
- Animals from out-of-state must arrive with **ICVI**
- Animals can be sold for any purpose
- Animals leaving the market/sale are examined by a veterinarian at the sale and if going out-of-state an ICVI for movement from the sale to the destination is written
- Unrestricted markets can hold restricted sales (see requirements for restricted auction)
- Animals NOT meeting the requirements for unrestricted sale must be sold restricted to slaughter channels in accordance with a compliance agreement or rejected

Restricted auction – slaughter only sales

- Intact animals < 18 months do not require individual identification
- Out-of-state animals > 18 months **must arrive with official ear tags**– no other ID accepted in slaughter channels
- Market may be approved (State must agree) to apply official ear tags on arrival to in state animals; blue meat or slaughter only tags must be applied (a compliance agreement is required for the market to tag out-of-state animals)
- Out-of-state animals and animals that were restricted to slaughter channels before arriving must arrive with **O/H statement** with an official PIN, LID, or flock/herd ID on statement. For other in state animals, owner may complete an OHS or equivalent dock slip at the market.
- **Unidentified animals >=18 months of age** must be identified to their flock of origin or market may sell in accordance with compliance agreement

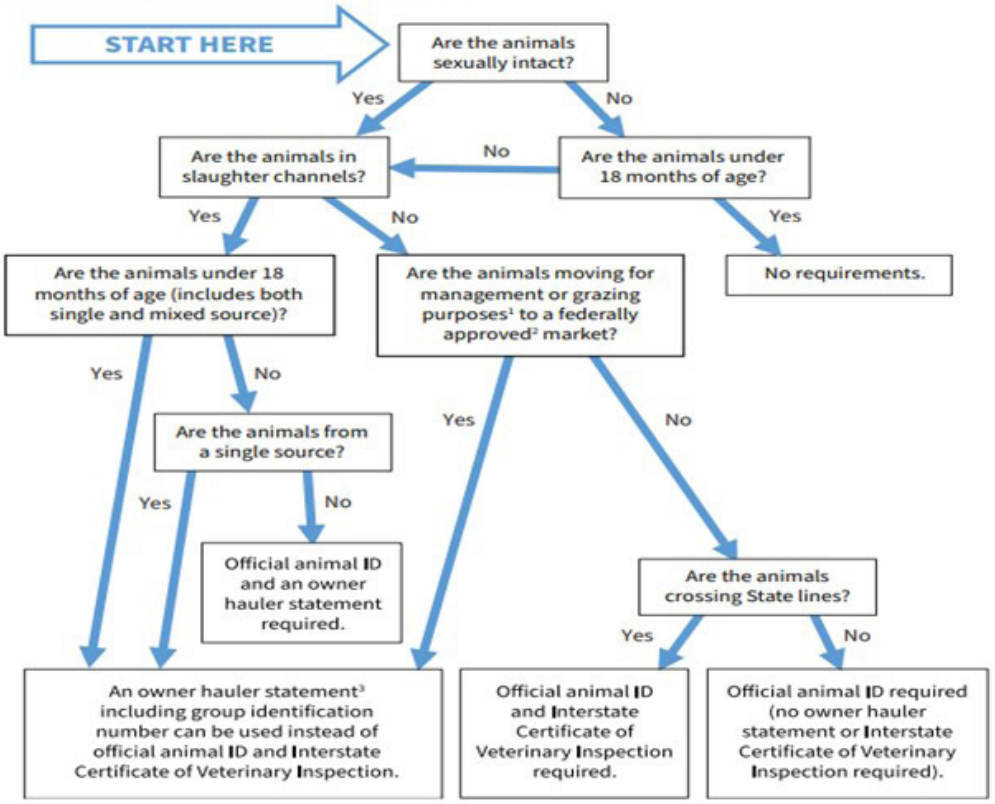
Under 9 CFR an animal is restricted to slaughter channels when…

Identified with a **slaughter only and/or MEAT tag or tattoo**	Sold at a **restricted sale**	Moved on an **OHS** indicating they are in slaughter channels
Moved without the required official ID, OHS or ICVI that would have been required for them to legally move unrestricted	Sold with a **bill of sale** marked slaughter only or **MEAT**	Unloaded/resided at a **terminal feedlot, a slaughter establishment, or a restricted animal sale**

USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Federal Sheep and Goat Official Identification Decision Tree for Animals in Interstate Commerce

Identification rules apply when the animal first enters interstate commerce, such as unloading animals at markets, sales, exhibitions or other sites where interstate commerce occurs; moving animals across a State line; selling animals to an out-of-State buyer; or when people who engage in interstate commerce acquire animals. The animals' State of residence or the recipient State may have additional requirements.



9 CFR Part 79.2 (j)requires that each animal have only one official identification (as of April 24, 2019) with the following exceptions:

- Both tags bear the same official identification number as an existing one (Flock pair set)
- Cases when the need to maintain the identity of an animal is intensified (*e.g.*, such as for export shipments, quarantined herds, field trials, experiments, or disease surveys), a State or Tribal animal health official or the Veterinary Services, Field Operations, AVIC responsible for the State involved may approve the application of a second official eartag. (must be recorded)
- An eartag with an animal identification number (AIN) beginning with the 840 prefix (either radio frequency identification or visual-only tag) may be applied to an animal that is already officially identified with another eartag. Must be recorded.
- An official eartag that utilizes a flock identification number may be applied to a sheep or goat that is already officially identified with an official eartag if the animal has resided in the flock to which the flock identification number is assigned.

USDA

Owner/Hauler Statements (OHS)

- **Required for sheep or goats in interstate commerce:**
  - Moving in slaughter channels as defined in 9 CFR
  - Moving without official ID

- When animals are in slaughter channels, the OHS must also include a statement that the animals are ***in slaughter channels***
  - Likewise, any bill of sale regarding the animals must indicate that the animals were sold for slaughter only

EXAMPLE: OWNER / HAULER STATEMENT FOR SHEEP AND GOATS

OWNER NAME AND ADDRESS	DESTINATION NAME AND ADDRESS
Name:	Name:
Address:	Address:
City/State/Zip:	City/State/Zip:
Phone:	Phone:
HAULER NAME AND ADDRESS	**Date Animals Moved:**
Name:	
Address:	**Scrapie Flock ID or PIN*:** **Premises ID Number*
City/State/Zip:	
Phone:	

ANIMAL INFORMATION

Number of Animals	Sheep or Goats	Breed (If unknown: For sheep, include face color; for goat, include type: milk, meat, fiber)	Class (Cull ewes/does, rams/bucks, feeder lambs/kids, slaughter lambs/kids, etc.)	Group Lot ID Number (Flock ID—MMDDYY—sequence number)

☐ **These animals are in slaughter channels.**

Owner/Hauler Signature:

_____

I hereby certify that the information stated above is correct and the livestock listed are properly classified.

OWNER / HAULER STATEMENT FOR SHEEP & GOATS

NAME AND ADDRESS OF OWNER	NAME AND ADDRESS OF DESTINATION
Name:	Name:
Address: 1	Address: 3
City/State/Zip:	City/State/Zip: EX: Slaughter facility OR market
Phone:	Phone:

NAME AND ADDRESS OF HAULER	Date Animals Moved:
Name: 2	4
Address: Optional if owner is the hauler	Scrapie Flock ID or PIN*: *Premises ID Number
City/State/Zip:	5
Phone:	

ANIMAL INFORMATION

Number of Animals	Sheep or Goats	Breed (If unknown: for sheep include face color, for goat include type; milk, meat, fiber)	Class (Cull ewes/does ram/buck, feeder lambs/kids, slaughter lambs/kids, etc.)	Group Lot ID Number (Flock ID—MMDDYY—Sequence number)
		6 Traceability Details		

Owner/Hauler Signature: 7

I do hereby certify that the information stated above is correct and the livestock listed are properly classified.

Flock ID and Premises ID are assigned by VS or State. IDs are recorded in SCS system.

Group Lot ID #, see next slide

Group Lot ID (GIN)

Groups of animals may be identified with a GIN in lieu of official individual identification if allowed by 9 CFR 79.3.

Consists of:		
Flock ID or PIN	6-digit date the group was assembled	Sequential number for each group assembled that day

Can dock slips satisfy the components of the OHS/OSS?

YES!

GREENCASTLE LIVESTOCK MARKET, INC.
GREENCASTLE, PA 17225

DATE:

NAME AND ADDRESS OF OWNER: _____

Scrapie Flock ID

Group/Lot ID
(Flock ID-MMDDYY)

Kind	Total Head	Face Color or Type	Blue Ear Tag Applied (SLAUGHTER ONLY tags)	

Hauled by:

Owner/Hauler Signature:

MORRISON COVE LIVESTOCK AUCTION
Martinsburg, PA 16662
ID# PA 6026

MARKET EVERY MONDAY
SHEEP & GOATS

Date: _____

Name: _____

R.D. # _____

Address: _____

Phone: _____

Premise ID or Flock ID: _____

Group ID (for dealers): _____

PEN	MARKS	HEAD	KIND	DESCRITION	BLUE (SLAUG

Hauled by: _____

Owner/Hauler Signature: _____

Date Shipped:_____**20**_____ **Trucker**_____

New Holland Sales Stables, Inc
101 W. Fulton St., New Holland, PA 17557
Phone: 717-354-4341
SHEEP & GOATS

Owner:_____

Address:_____

City/State/ZIP_____

Phone:_____

Premises ID or Flock ID:_____

Group ID (for dealers):_____

# OF HEAD	PAINT MARK	Description: Sheep/Lambs - Face Color Goats/Kids - Meat or Dairy	Pen #	# Days
		Scrapie Tags Applied at Market:		

SAMPLE

Point of Origin Name/Address/Phone, If Different Than Owner:

_____

ANIMALS IN SLAUGHTER CHANNELS ONLY

OWNER/HAULER SIGNATURE:_____

NOTICE: WE ARE NOT RESPONSIBLE FOR STOCK DELIVERED WITHOUT A BILL OF LADING PROPERLY SIGNED.

RECEIVED BY:_____

USDA

Recordkeeping requirements for producers and/or markets:

- The flock ID # of the flock-of-origin (if known), name and address of the current owner, and the name and address of the owner of the flock-of-origin (if different)
- The date the animals were officially identified;
- The breed if known and class (i.e. cull ewes, feeder lambs, breeding does, etc.) of the animals
- If breed unknown, face color or type (milk, fiber, or meat) must be recorded instead
- The official ID numbers applied
- Identification number (GIN) applied in the case of a group/lot;
- Whether the animal was identified with a **"Slaughter Only" or "MEAT" tag;** and
- And any GIN with which the animal was previously identified.

Note: These items also correlate with the details needed for an OHS.

Note: Records must be kept for 5 years after the animal is sold or otherwise disposed

FOR SHEEP AND GOATS									
Official Scrapie ID#	Management ID Tag	Breed	Sex	Date Official ID Applied	Born on Farm?	Name/Address of previous owner/s (if applicable)	Date Acquired/Date Sold	Name/Address of Buyer	Genotype

Example of on-farm records

Records must be kept for 5 years after the animal is sold or otherwise disposed.

Resources

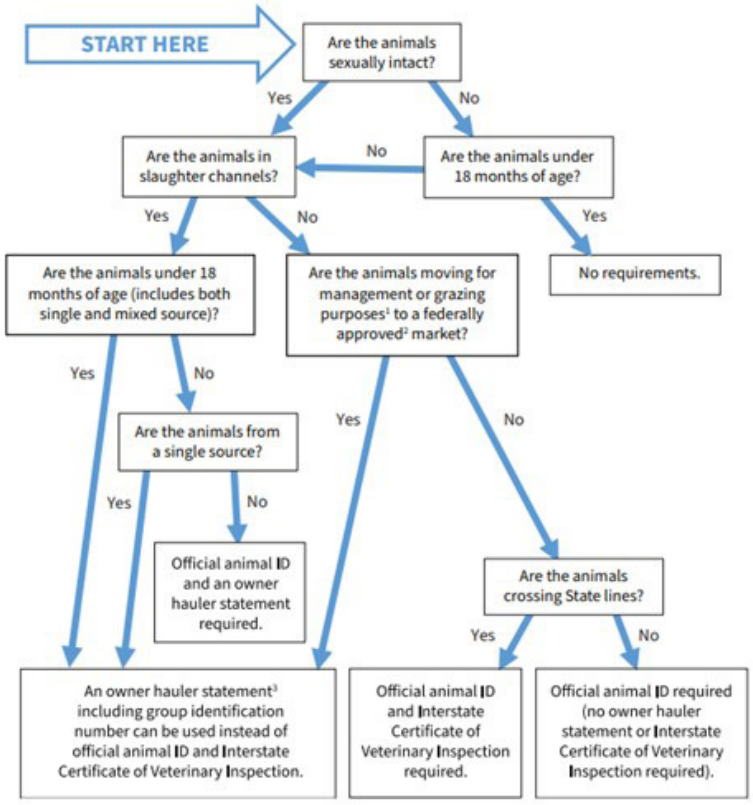
- https://www.aphis.usda.gov/livestock-poultry-disease/sheep-goat
- https://www.aphis.usda.gov/livestock-poultry-disease/sheep-goat/scrapie
- https://www.aphis.usda.gov/animal-disease/sheep-goat/scrapie-tag
- https://www.aphis.usda.gov/sites/default/files/finish-fight-scrapie-english.pdf
- https://www.aphis.usda.gov/sites/default/files/fs-scrapie-recordkeeping.pdf

USDA

USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Federal Sheep and Goat Official Identification Decision Tree for Animals in Interstate Commerce

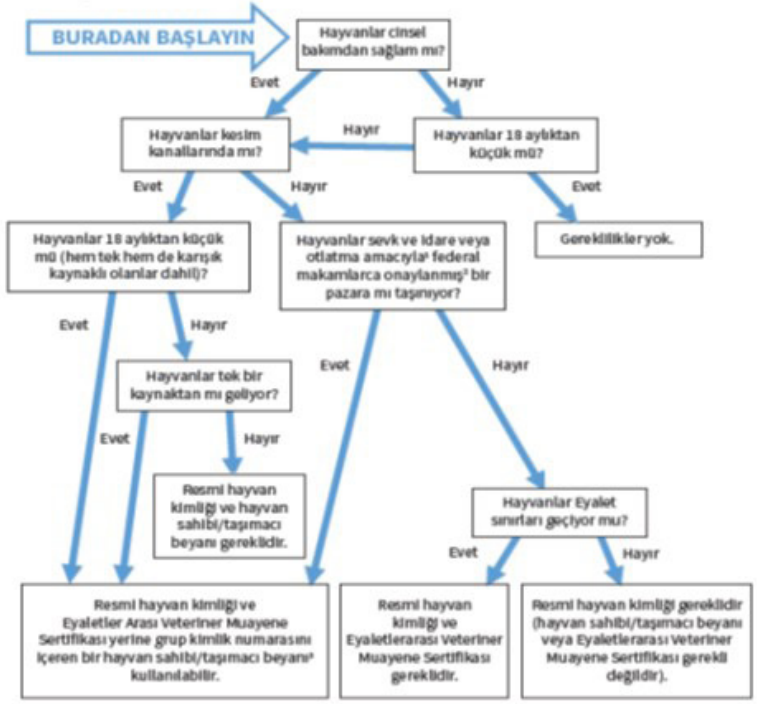
Identification rules apply when the animal first enters interstate commerce, such as unloading animals at markets, sales, exhibitions or other sites where interstate commerce occurs; moving animals across a State line; selling animals to an out-of-State buyer; or when people who engage in interstate commerce acquire animals. The animals' State of residence or the recipient State may have additional requirements.



USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Eyaletler Arası Ticarete Konu Hayvanlar için Federal Koyun ve Keçi Resmi Tanımlanması Karar Ağacı

Tanımlama kuralları, ilgili hayvan eyaletler arası ticarete ilk girdiğinde, söz gelimi hayvanlar pazarlarda, satış yerlerinde, sergi yerlerinde, ya da eyaletler arası ticaretin gerçekleştiği diğer mahallerde indirildiğinde; hayvanlar bir Eyalet sınırından geçirildiğinde; hayvanlar Eyalet dışındaki bir alıcıya satıldığında; ya da eyaletler arası ticaretle uğraşan kişiler hayvanları iktisap ettiklerinde uygulanır. Hayvanların ikamet Eyaletinde veya alıcı Eyalette ek gereklilikler uygulanıyor olabilir.



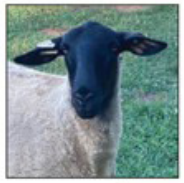
[1] Yalnızca her iki tesisin de aynı kişiye ait olduğu veya aynı kişi tarafından kiralandığı ve başka bir sürüden kimliği tespit edilemeyen diğer hayvanlarla karışmadığı durumlarda geçerlidir.

[2] Onaylı bir pazar, tanımlanmamış karışık kaynaklı sağlam hayvanları tanımlamak ve kısıtsız olarak satmak üzere kabul ederse. Bu tür hayvanlar kesimde koordineli olarak satılmalıdır. Mevzuat uyarınca, 18 aylık ya da daha büyük olan hayvanların kabul edilebilmesi için hayvan pazarlarının da bir uygunluk sözleşmesi imzalamış olması gerekmektedir.

[3] Kesim kanallarında olmayıp da Eyalet içi bir pazara giden resmi ve ferdi olarak tanımlanmış hayvanlar için hayvan sahibi/taşımacı beyanına gerek yoktur.

USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Attention Sheep and Goat Owners!



Most sheep and goats moving in commerce must have official scrapie tags.

To purchase official scrapie ear tags, your flock must have a flock ID number. You must provide it to the tag company when you order tags. Please call 1-866-USDA-Tag (866-873-2824) to request a flock ID number or to place a first-time tag order.

Scan here for the most up-to-date scrapie tag information.

Are You New to the Sheep and Goat Identification Program?

The U.S. Department of Agriculture (USDA) will provide up to 100 plastic flock ID tags free-of-charge to first-time participants (as long as funds last).

USDA-Approved Official Scrapie Tag Manufacturers

AllFlex USA, Inc.

Phone: 833-SCRAPIE (833-727-2743)
Fax: 972-338-3445
Email: scrapiefullaf@merck.com
Online: www.allflex.global/na/product/scrapie-tags/
- Regular and Scrapie-Free Flock Certification Program (SFCP) plastic tags
- Radio frequency ID (RFID)
- Plastic ear tags in several colors

Premier 1 Supplies, LLC

Phone: 800-282-6631
Fax: 800-346-7992
Email: info@premier1supplies.com
Online: www.premier1supplies.com
- Regular and SFCP plastic tags
- Plastic ear tags in several colors

National Band & Tag Company

Phone: 859-261-2035
Fax: 859-261-8247
Email: tags@nationalband.com
Online: www.nationalband.com/
- Metal ear tags in several colors

Shearwell North America, Inc.

Phone: 800-778-6014
Email: SalesUSA@shearwell.com
Online: www.shearwell.com
- Regular and SFCP plastic tags
- RFID
- Plastic ear tags in several colors

Tag applicators are different for each company's tags. You must purchase applicators at your own expense. They are not included with tags provided by USDA.

USDA is an equal opportunity provider, employer, and lender. Issued September 2023 | APHIS-23-033

USDA Animal and Plant Health Inspection Service
U.S. DEPARTMENT OF AGRICULTURE

Dikkat Koyun ve Keçi sahipleri

koyun ve keçilerin çoğunda ticarete konu olan resmi scrapie küpesi bulunması gerekir.

Sürünüze resmi scrapie kulak küpesi satın almak için sürü kimlik numarasına sahip olunmalıdır Sağlamalısınız Küpe siparişi verirken bu numarayı küpe şirketine Lütfen Talep için 1-866-USDA-Tag (866-873-2824) numaralı telefonu arayın. Sürü kimlik numarası talep etmek veya ilk kez küpe siparişi vermek için. En güncel scrapie küpe bilgileri için burayı tarayın.

Yeni misiniz Koyun ve Keçi Kimlik Programı?

ABD Tarım Bakanlığı (USDA) 100 adede kadar destek sağlayacaktır. ücretsiz plastik sürü kimlik küpeleri ilk kez katılacaklara (sürece fonlar devam ettiği)

USDA Onaylı Resmi Scrapie Küpe Üreticileri

AllFlex USA, Inc.

Telefon: 833-SCRAPIE (833-727-2743)
Fax: 972-338-3445
E-posta: scrapiefullaf@merck.com
Çevrimiçi: www.allflex.global/na/product/scrapie-tags/
- Normal ve Scrapie'den Ari Sürü Sertifikasyon Programı (SFCP) plastik küpeler
- Radyo frekansı kimliği (RFID)
- Çeşitli renklerde plastik kulak küpeleri

Premier 1 Supplies, LLC

Telefon: 800-282-6631
Fax: 800-346-7992
E-posta: info@premier1supplies.com
Çevrimiçi: www.premier1supplies.com
- Normal ve SFCP plastik küpeler
- Çeşitli renklerde plastik kulak küpeleri

National Band & Tag Company

Telefon: 859-261-2035
Fax: 859-261-8247
E-posta: tags@nationalband.com
Çevrimiçi: www.nationalband.com/
- Çeşitli renklerde metal kulak küpeleri

Shearwell North America, Inc.

Telefon: 800-778-6014
E-posta: SalesUSA@shearwell.com
Çevrimiçi: www.shearwell.com
- Normal ve SFCP plastik küpeler
- RFID
- Çeşitli renklerde plastik kulak küpeleri

Etiket uygulamaları her şirketin etiketi için farklıdır. masrafları size ait olmak üzere aplikatör satın almanız gerekir. USDA tarafından sağlanan küpelere dahil değildirler.

USDA fırsat eşitliği sağlayan bir hizmet sağlayıcı kuruluş, işveren ve kredi kurumudur. Yayınlanma Tarihi Eylül 2023 | APHIS-23-033

USDA

EXAMPLE: OWNER / HAULER STATEMENT FOR SHEEP AND GOATS

OWNER NAME AND ADDRESS	DESTINATION NAME AND ADDRESS
Name:	Name:
Address:	Address:
City/State/Zip:	City/State/Zip:
Phone:	Phone:
HAULER NAME AND ADDRESS	**Date Animals Moved:**
Name:	
Address:	**Scrapie Flock ID or PIN*:** **Premises ID Number*
City/State/Zip:	
Phone:	

ANIMAL INFORMATION

Number of Animals	Sheep or Goats	Breed (If unknown: For sheep, include face color; for goat, include type: milk, meat, fiber)	Class (Cull ewes/does, rams/bucks, feeder lambs/kids, slaughter lambs/kids, etc.)	Group Lot ID Number (Flock ID—MMDDYY—sequence number)

☐ **These animals are in slaughter channels.**

Owner/Hauler Signature:

I hereby certify that the information stated above is correct and the livestock listed are properly classified.

EJEMPLO: DECLARACIÓN DEL PROPIETARIO/TRANSPORTISTA PARA OVEJAS Y CABRAS

Example: Owner/Hauler Statement for Sheep and Goats

NOMBRE Y DIRECCIÓN DEL PROPIETARIO Owner Name and Address	NOMBRE Y DIRECCIÓN DE DESTINO Destination Name and Address
Nombre: Name	Nombre: Name
Dirección: Address	Dirección: Address
Ciudad/estado/código postal: City/State/Zip	Ciudad/estado/código postal: City/State/Zip
Teléfono: Phone	Teléfono: Phone
NOMBRE Y DIRECCIÓN DEL TRANSPORTISTA Hauler Name and Address	**Fecha en que los animales se trasladaron:** Date Animals Moved
Nombre: Name	
Dirección: Address	**ID o PIN* de rebaño con tembladera:** **Número de identificación de las instalaciones* **Perzeel-ID-nommer* Scrapie Flock ID or PIN
Ciudad/estado/código postal: City/State/Zip	
Teléfono: Phone	

INFORMACION SOBRE LOS ANIMALES

Número de animales Number of animals	Ovejas o cabras Sheep or Goats	Raza (Breed) (Si se desconoce: en el caso de las ovejas, incluya el color de la cara; en el caso de las cabras, incluya el tipo de leche, carne y fibra).	Clase (Class) (Ovejas o ciervas de sacrificio, carneros o ciervos, corderos o cabritos de engorde, corderos o cabritos de matadero, etc.)	Número de ID de lote de grupo (Group Lot ID Number) (ID de rebaño—MMDDAA—número de secuencia)

☐ **Estos animales están en canales de matanza.** (These animals are in slaughter channels)

Firma del propietario/transportista (Owner/Hauler Signature):

Por la presente certifico que la información indicada anteriormente es correcta y que el ganado enumerado está debidamente clasificado.

Questions?

2025 University of Florida Ram & Buck Test Data Overview

Brittany N. Diehl, DVM, MS
Clinical Assistant Professor & Small Ruminant Extension Specialist
UF Ram & Buck Test Co-Coordinator

Clay Whitehead
Manager, UF Small Ruminant Unit
UF Ram & Buck Test Co-Coordinator

UF IFAS University of Florida | UF Animal Sciences | UF College of Veterinary Medicine University of Florida | UF IFAS Extension University of Florida | UF IFAS University of Florida | Small Ruminant Program

Management

- Rams and bucks were received on June 9, 2025
  - Eligible rams must be born between 12/1/24 and 2/15/25
  - Eligible bucks must be born between 12/15/24 and 3/1/25
  - Upon arrival, administered three anthelmintics: Cydectin, Fenbendazole, Levamisole
  - Initial data parameters were recorded
- Fecal Egg Count Reduction Test (FECRT) on 10-14 days later
  - Individuals with fecal egg count (FEC) > 500 epg were dismissed from the program due to anthelmintic resistant parasites
- 84-day test period
  - 27 rams participated in the entire test period
  - 66 bucks participated in the entire test period

Nutrition

- Bahiagrass pastures
  - Continuous access
  - Pasture remained > 5 inches in height
  - Pasture rotation every 14-21 days
- Purina SE FL small ruminant ration (16% CP)
  - Rams fed at a target consumption of 2% BW
  - Bucks fed at a target consumption of 1-2% BW
- Purina free choice mineral available always
- 12 inches of rainfall this year during test period
  - Very dry the last 4 weeks of test period

Data Collection

- Collected every 14 days throughout the test period:
  - Body weight (BW)
  - Body condition score (BCS)
  - FAMACHA score
  - Fecal egg count (FEC)

- Collected at test start, mid-point, and final data collection:
  - Scrotal circumference (SC)

FEC Management Parameters

- Any **ram** with a fecal egg count above 3,000 epg will indicate a threshold for deworming.
- Any **buck** with a fecal egg count above 2,500 epg will indicate a threshold for deworming.
- The ram/buck will be allowed the opportunity to mount an immune response (14-days).
- If the ram's FEC is >3,000 epg or buck's FEC is >2,500 epg at a given collection interval and the FEC remains at the following collection interval (14-days later), this will result in deworming.
- A FAMACHA score of >4 and BCS <1.5 also indicates deworming will be performed.
- **Disqualification from ram/buck test sale eligibility occurs after one deworming during the test period.**

Performance Data

- Final weight (CW)
  - Weight at the conclusion of the 84-day gain test
- Test ADG
  - Average daily gain in pounds per day for the entire 84-day test period
- Final WDA
  - Weight-per-day-of-age at the conclusion of the test period
  - Calculated by dividing the final weight by days of age
  - Indicative of the individual's growth since birth and includes growth prior to arriving at the test

Performance Data

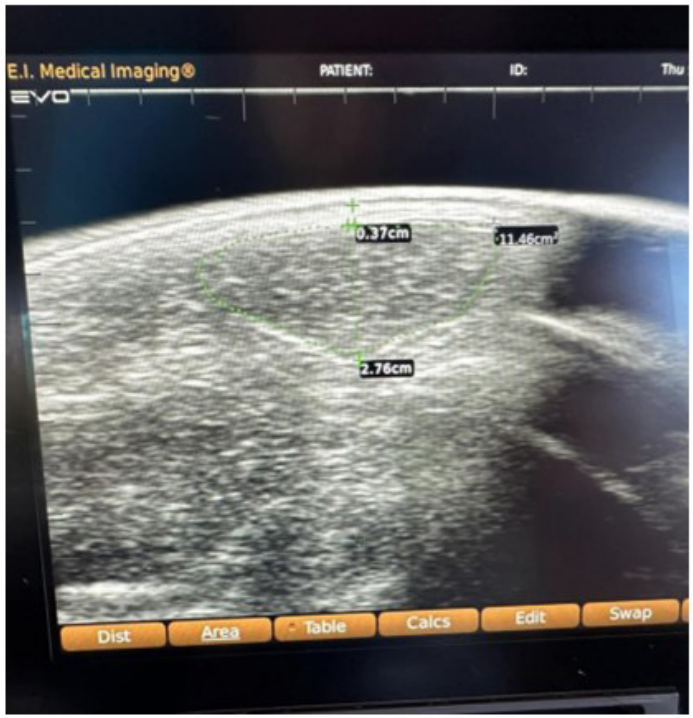
- ADG Ratio
  - Expresses an individual's ADG as a percentage of the average ADG for the entire test group
- WDA Ratio
  - Expresses an individual's WDA as a percentage of the average WDA for the entire test group
- Growth Index Ratio
  - Expresses ADG ratio and WDA ratio for an individual as a percentage of the average performance of all individuals on test
  - Considers both pre-weaning and post-weaning growth
- **Ratio of 100 is average, 110 is 10% above average, and 90 is 10% below average**

Performance Data

- Average FEC
  - Average fecal egg count in eggs per gram for the entire 84-day test period
- FEC Ratio
  - Expresses FEC for an individual as a percentage of the average performance of all individuals
  - Ratio of 100 is average, 110 is 10% above average, and 90 is 10% below average
- Codon 171 genotype associated with resistance to scrapie
  - Presence of at least one *R* is associated with resistance

Performance Data

- LMA – Longissimus Muscle Area
  - The measure of the total area of the loin or ribeye (longissimus dorsi muscle) between the 12th and 13th rib (in cm^2)
  - *Data adjusted to 125 lbs body weight*
- BF – Backfat Thickness
  - External fat thickness (back fat) is quantified at the 12-13th rib and measured directly over the ribeye muscle (in cm)
  - *Data adjusted to 125 lbs body weight*
- LED – Loin Eye Depth
  - The depth of the eye muscle or loin is measured between the 12th and 13th ribs (in cm)



Sale Qualification

- Overall index **greater than 90** for BOTH:
  - Fecal Egg Count ratio
  - Growth Index
    - Expresses WDA and ADG ratios
- All individuals being sold were **NOT** dewormed on test

Sale Qualification

- Achieve 'Satisfactory' Breeding Soundness Evaluation
  - Performed by UFCVM licensed veterinarians within <30 days of the sale

Sale Lot Order

- Sale order will be determined by test performance with those individuals who performed the best, highest FEC Ratio and Growth Index, will sell first

- Sale order will be determined in descending order beginning with the highest ratioing animal for the combined traits of Fecal Egg Count and Growth Index.
  - In the event of a tie, the tie will be broken by the Fecal Egg Count ratio

Willoughby Livestock Sales

- Our sale format is online.
- Sale is open for 24 hours, **beginning October 10 at 11 AM and closing October 11 at 11 AM EST**.
- Ram Test Sale
  - https://wlivestock.com/auction/29876
- Buck Test Sale
  - Unfortunately, we will not be holding a UF Buck Test Sale this year. Of the bucks that made sale eligibility, the consignors have elected to retain their genetics.

WILLOUGHBY SALES

Acknowledgements

- UF Ram & Buck Test Committee
  - UF IFAS Animal Sciences faculty & staff
    - Dr. Diwakar Vyas
    - Dr. Chad Carr
    - Audy Spell
    - Clay Whitehead
    - Jack Eck
    - Matti Moyer
    - Savannah Linzmaier
  - UF College of Veterinary Medicine faculty
    - Dr. Brittany Diehl
- UF Ram Test Producer Steering Committee
  - Roxanne Newton
  - Louise Hall
  - Ruth Taber
  - Carol Postley
- UF Buck Test Producer Steering Committee
  - Joe Knetter
  - William Chapman
  - Jeff Lamote
  - Jimmy Carroll

Acknowledgements

- Ram Test Consigning Producers
- Buck Test Consigning Producers
- UF Ram Test Sale buyers & bidders
- UF IFAS Extension Agents
- UF IFAS Animal Science Student Ambassadors
- UF Animal Science Small Ruminant Unit Student Employees & Volunteers
- UF Horse Teaching Unit Student Employees & Volunteers
- Small Ruminant Short Course attendees

https://animal.ifas.ufl.edu/smallruminant/ramtest/

https://animal.ifas.ufl.edu/smallruminant/buck-test/

Certificates

- Champion & Reserve Champion
  - Overall Index
  - Overall FEC Index
  - Overall Growth Index
  - REA

2025 UF Ram Test Certificates

- **Champion Overall Index Ram:** University of Florida (UF2502, FL Native)
- **Reserve Champion Overall Index Ram:** Fruitful Earth Farms (UF2506, Katahdin)

- **Champion Overall FEC Index Ram:** Fruitful Earth Farms (UF2506, Katahdin)
- **Reserve Champion Overall FEC Index Ram:** University of Florida (UF2502, FL Native)

- **Champion Overall Growth Index Ram:** Red Cypress Ranch / Denton & Katherine Erickson (UF2520, Katahdin)
- **Reserve Champion Overall Growth Index Ram:** University of Florida (UF2501, Katahdin)

- **Champion REA Ram:** University of Florida (UF2508, FL Native)
- **Reserve Champion REA Ram:** University of Florida (UF2501, Katahdin)

2025 UF Buck Test Certificates

- **Champion Overall Index Buck:** Warriors Path Kikos / Andy Roller (UF2552, Kiko)
- **Reserve Champion Overall Index Buck:** Jill Zink (UF2508, Kiko)

- **Champion Overall FEC Index Buck:** Warriors Path Kikos / Andy Roller (UF2552, Kiko)
- **Reserve Champion Overall FEC Index Buck:** Warriors Path Kikos / Andy Roller (UF2553, Kiko)

- **Champion Overall Growth Index Buck:** S&R Triple Bar Kikos / Jim Stewart (UF2527, Kiko)
- **Reserve Champion Overall Growth Index Buck:** Two One Seven Farms / Joseph Allen Miles (UF2539, Kiko)

- **Champion REA Buck:** DenDar's Kiko Goats / Dennis Higgins (UF2535, Kiko)
- **Reserve Champion REA Buck:** Ashfield Farm Kikos / James & Ashley Mansfield (UF2551, Kiko)

Thank you!

Sponsors

Refreshment Break

NINE TWENTY COMPANY

CHIEFLAND ACE Hardware
FARM SUPPLY
Proud To Be Locally Owned and Operated
352-493-4294

Gold

FARM CREDIT OF FLORIDA

Silver

WINDLESTONE RANCH

Cargill®

Shearwell Data
Livestock Systems

MEAT SHEEP ALLIANCE OF FLORIDA
SERVING PRODUCERS IN FLORIDA AND THE SOUTHEAST

Exhibitor

EST 2020
EASTERN ALLIANCE FOR PRODUCTION
Katahdins

Oak Hammock
Large Animal Veterinary Services

Springhill Equine
Veterinary Clinic, P.A.