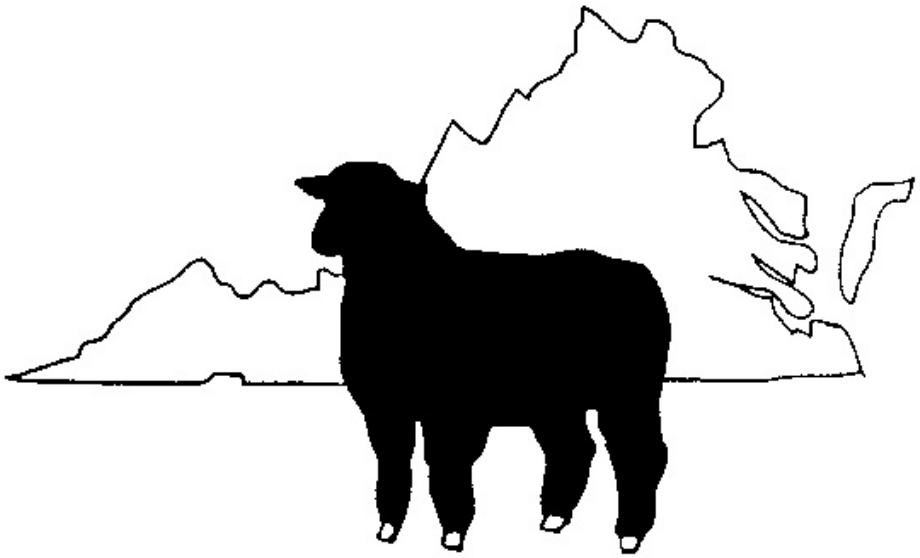
Proceedings

2016

VIRGINIA SHEPHERDS' SYMPOSIUM



January 8 - 9, 2016

ALPHIN-STUART LIVESTOCK ARENA
BLACKSBURG, VIRGINIA

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Virginia Sheep Industry Board
c/o Mike Carpenter
261 Mt. Clinton Pike
Harrisonburg, VA 22802
540-209-9143

Virginia Sheep Producers Association
Dept of Animal & Poultry Sciences
Virginia Tech
Blacksburg, VA 24061
540-231-9163

Table of Contents

2016 VA Shepherds' Symposium
Presented By
Virginia Sheep Producers Association

Page Number

FRIDAY, JANUARY 8

4:00 PM **Virginia Sheep Industry Board Meeting (open to public)**
Alphin-Stuart Livestock Arena

6:00 **Virginia Sheep Producers Association Board Meeting (open to public)**
Alphin-Stuart Livestock Arena

SATURDAY, JANUARY 9

ADULT SESSION

8:30 AM **Organizational Meeting for Virginia Make It With Wool**
Facilitator- Martha Polkey

8:30 **Registration & Commercial Exhibits**

9:30 **Morning Session- Focus on Genetic Improvement**

"Understanding the Opportunities Using NSIP"
Dr. David Notter, Virginia Tech

"**Experiences With NSIP As Tool for Parasite Resistance"**
Dr. Scott Greiner, Virginia Tech

Producer Experiences
Frank Patterson, Shepherds Hill Farm, Raphine, VA
Larry & Lisa Weeks, Triple L Farms, Waynesboro, VA

11:45 ***Roy Meek Outstanding Sheep Producer Award Presentation***

Virginia Sheep Producers Association Annual Business Meeting

12:15 PM **Lamb Lunch**

1:00 **"Update from ASI"**
Mr. Bob Leer, ASI Executive Board-Region II Director, Kentucky

1:30 **"Making the Most of Your Nutrition Program"**
Dr. Bain Wilson, Virginia Tech

"When to Call the Veterinarian"
Dr. Kevin Pelzer, VA-MD Regional College of Veterinary Medicine

"Working Together as Producers" –
Experiences of NRV Sheep & Goat Club
Cecil King, & Sarah Smiley, NRV Sheep & Goat Club

YOUNG SHEPHERD SYMPOSIUM

Youth Session will be concurrent with adult session- all activities will be hands-on and interactive. 4H and FFA youth of all experience levels are welcome.

9:00 am **Registration**

9:30 **Selection/Genetics**
Basic Live Animal Evaluation
Genetic Improvement
Genetic Disorders

Nutrition
Understanding fed tag
Nutritional requirements

12:15 pm **Lamb Lunch**

1:00 PM **Reproduction**
Basic sheep reproduction
Ram breeding soundness exam
Ultrasonography of pregnant ewes
Lambing

3:00 **Adjourn**

Understanding Opportunities
with NSIP
Part 1: NSIP Update

January 9, 2016

David Notter

NSIP to Increase Profits

- National Sheep Improvement Program
  - "A profit driven genetic selection tool"
- Our Mission:
  - To provide predictable, **economically important genetic evaluation** information to the American sheep industry by converting performance records into relevant decision-making tools.

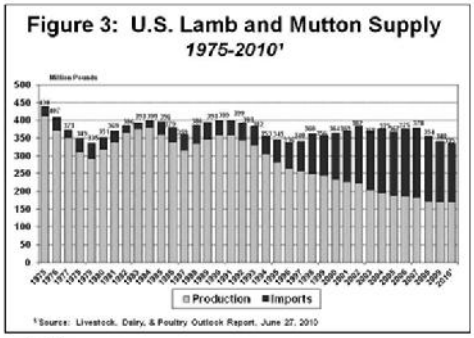
2

NSIP to Increase Profits

- Why do we need a profit driven genetic selection tool for U.S. sheep?

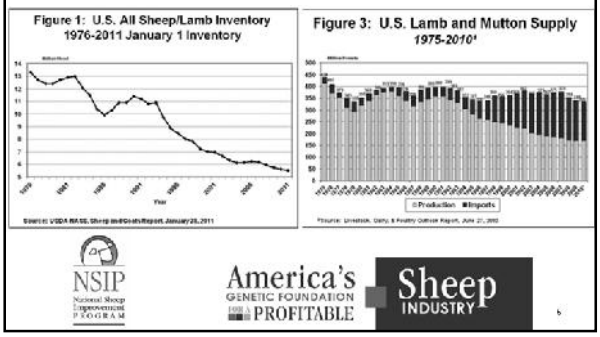
3

Why do we need a profit driven genetic selection tool for U.S. sheep?



NSIP National Sheep Improvement PROGRAM

America's GENETIC FOUNDATION PROFITABLE Sheep INDUSTRY



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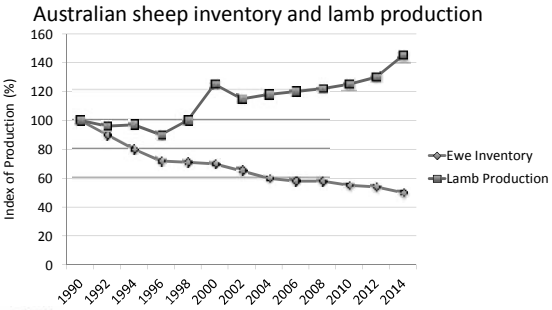

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America's Genetic Foundation for Profitable Sheep Industry

Importance of Genetic Selection

- U.S. Sheep Industry Roadmap
- Productivity Improvement
  - Wider adoption of Quantitative Genetic Selection
- Genetics are the foundation to build upon

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8

Importance of Genetic Selection

Phenotype	=	Genetics	+	Environment

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9

Estimated Breeding Values

- EBVs are tools that:
  - Minimize guesswork of ram selection
  - Assign number values to genetic merit
  - Allows for quick, easy comparison
  - More powerful than actual performance data, adjusted means...
  - Focused on economically important traits

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10

Value of a Ram

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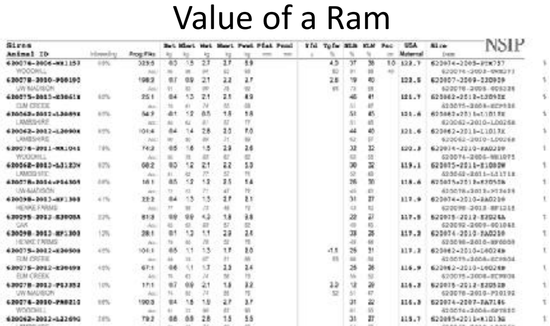
11

Value of a Ram



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12

How do we Get EBVs?

- Step 1: Measure phenotypic traits of animal
  - Body weights
  - Carcass measurements
  - Reproduction
  - Wool Traits

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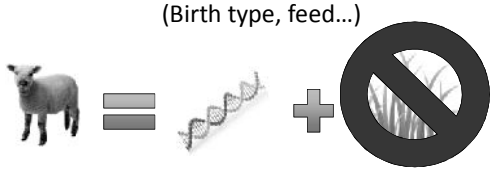
13

Adjust for Variation

- Step 2: Account for environmental differences (Birth type, feed…)



Phenotype	=	Genetics	+	Environment

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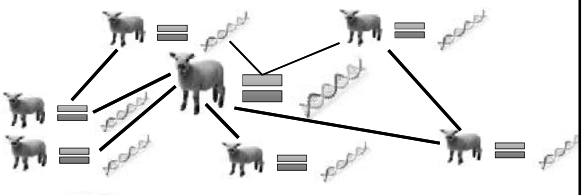
14

Analyze pedigrees

- Step 3: Compare animal to all of its relatives



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15

Analyze Pedigrees

- An individual's performance is compared to every known relative
  - Including relatives in other flocks
- Adjust for genetic relationship (shared genes) and heritability of each trait

16

How do we Get EBVs?

- Isolate the genetic differences between animals
  - Account for know sources of variation
  - Compare to all related animals
- Assign numeric value to genetic merit

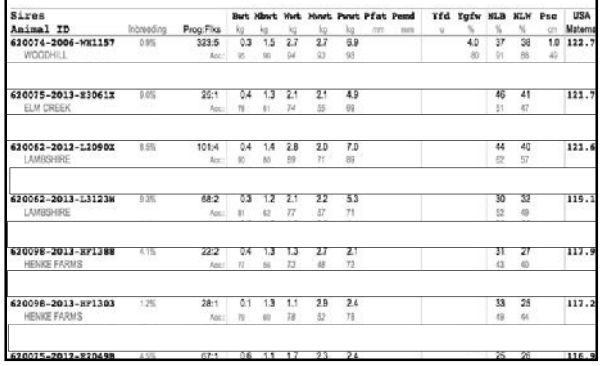
17

The Power of NSIP

- Because environmental differences are eliminated and pedigrees are analyzed, EBVs are more powerful than:
  - Raw data
  - Adjusted weights
  - Ram tests

18

The End Result



Sires Animal ID	Inbreeding	Prog:Fks	Bwt kg	Mbwt kg	Wwt kg	Mwwt kg	Pwwt kg	Pfat mm	Pmsd mm	Yfd u	Ygfw %	NLB %	NLW %	Psc cm	USA Materna
620074-2006-WX1157 WOODHILL	0.8%	323:5	0.3 95	1.5 96	2.7 94	2.7 93	6.9 96				4.0 80	37 91	38 88	1.0 40	122.7
620075-2013-E3061X ELM CREEK	0.0%	20:1	0.4 78	1.3 81	2.1 74	2.1 55	4.9 69					46 51	41 47		121.7
620062-2012-L2090X LAMBSHIRE	0.0%	101:4	0.4 80	1.4 86	2.8 89	2.0 71	7.0 89					44 52	40 57		121.6
620062-2013-L3123W LAMBSHIRE	0.0%	68:2	0.3 81	1.2 82	2.1 77	2.2 57	5.3 71					30 33	33 49		119.1
620098-2013-EF1388 HENKE FARMS	0.1%	22:2	0.4 77	1.3 86	1.3 73	2.7 68	2.1 73					31 43	27 40		117.9
620098-2013-EF1303 HENKE FARMS	1.2%	28:1	0.1 76	1.3 80	1.1 78	2.9 62	2.4 78					33 49	25 44		117.2
620015-2012-E2049R	0.0%	67:1	0.6	1.3	1.7	2.3	2.6					25	26		116.9

The Good News?

- You don't have to worry about doing any genetic calculations!
  - NSIP takes care of all the work
- Enrolled flocks just submit measures and EBVs are returned

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20

What Traits are available?

- Weight:
  - Birth
  - Weaning
  - Post Weaning
  - Yearling/hogget
- Carcass:
  - Eye muscle
  - Fat depth
- Fecal Egg Count
- Fleece:
  - Fleece Wt
  - Fiber Diameter
  - Staple length
  - OFDA histogram traits
- Reproduction:
  - No. lams born
  - No. lambs weaned
  - Scrotal circumference

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21

What Traits are available?

- Production Indexes Combines multiple traits into 1 EBV:
  - Carcass Plus
  - USA Maternal
  - USA Hair
  - USA Range

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22

Importance of Ram Selection

- Rams represent half of the genetics of the next lamb crop
  - Market lambs
  - Replacement ewes
- Does NSIP really improve genetics?

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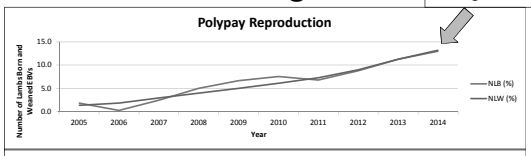
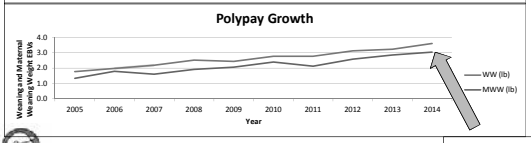
23

Genetic Progress

14 extra lambs/100 ewes lambing!





1.75 pounds heavier @ 60 days=201 more lbs of lamb!$_{24}$

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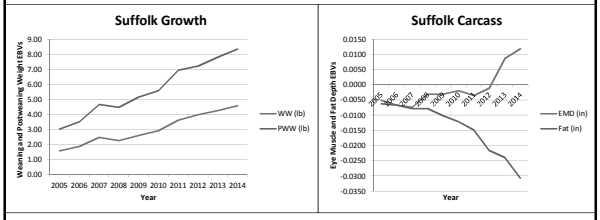
Genetic Progress



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25

How to Get Started

- Using EBVs from NSIP in your ram selection
  - Demand EBVs from your suppliers
- If you are a seedstock producer, join NSIP!

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26

Not a Silver Bullet

- Visual appraisal of ram for:
  - Sound feet and legs, free of foot rot
  - Correct mouth structure
  - Breeding soundness exam
  - Health status and susceptibility
    - Scrapie
    - OPP
    - Spider

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27

Not a Silver Bullet

- Does not replace good management
  - Breeding Program
    - Including cross breeding!
  - Nutrition
  - Marketing

28

Conclusion

LET'S GROW

Visit www.nsip.org for more information including percentile and elite sire reports

Paid for in part by the American Sheep Industry

29

"Should You Join NSIP?"

David Notter
Department of Animal and Poultry Sciences, Virginia Tech

The National Sheep Improvement Program (NSIP) provides tools to manage genetic improvement. One way to utilize NSIP is as an active participant, recording performance data on your sheep, receiving EBVs for each animal, and using those EBVs to drive genetic change in your flock and in the flocks of other producers who buy breeding stock from you. That sounds pretty good in the abstract, but active participation requires enrolling in NSIP, paying annual enrollment and data processing fees, individually identifying all your sheep and lambs, recording accurate lambing information and, at a minimum, weaning weights, entering that information into a computerized data system, and sending those records to NSIP for processing. If you want to achieve a more comprehensive evaluation of your animals, and depending on what sort of sheep you have, you can also consider obtaining ultrasound scans to estimate carcass fat and muscle, detailed measurements of wool quality, or fecal egg counts to monitor parasite resistance. However, all of these measurements come with extra costs and, to be useful, must be taken each year and on at least most (and preferably all) your lambs.

In exchange for this extra work and cost, you should expect a reasonable return on your investment. This return on investment can be realized in one of two ways: 1) through better prices and greater demand for breeding animals from your flock, and/or 2) by increasing the amount and value of lamb and wool that you send to market.

To capture value from genetic improvement by selling breeding animals, you first have to actually sell some, and everyone doesn't do that. If fact, most sheep producers don't do that. They sell lambs and wool. If you want to market a significant proportion of your animals as breeding stock, then you need to achieve, document, and maintain a reputation for genetic superiority for your animals. They need to add value to your customers' flocks. One way to document genetic excellence has been the show ring, but in increasingly sophisticated markets, blue ribbons based only on visual appraisal are no longer enough. A comprehensive set of EBVs, coupled with good customer service and unquestioned integrity, are a better alternative.

Many seed stock breeders say that their commercial customers don't ask to see EBVs. That is true, but misses the point. Your customers want rams and replacement ewe lambs that work for them, in terms of increasing production and profit. EBVs let you, as a supplier of breeding stock, do a better job of producing the right kind of rams and replacement ewes, and, if you do that, your customers will keep coming back. Over time, there will be opportunities to share your breeding program and use of EBVs with them, to make them more informed and engaged in the selection process, but, first and foremost, your sheep have to work for your customers. EBVs will help you produce that kind of sheep.

If you are a commercial producer and, especially, if your flock is small (10 to 40 ewes) and you normally buy rams from other flocks, then your involvement with NSIP may better be as an informed user of EBVs. You can then become an exceptional ram buyer, actively

supporting and engaging with breeders who provide EBVs. This approach allows you to make decisions about the sort of breeding stock you want to own, search out animals that meet your needs, and reward breeders who provide the necessary information.

Of course, NSIP welcomes commercial and small purebred flocks as members, but before enrolling, there are a few questions to consider. For example:

1) How many breeding rams to you normally use? If it's only one, there is no opportunity to use records to comparatively evaluate different sires based on direct progeny comparisons. The idea of direct progeny comparison of different rams is central to NSIP.

2) Do you frequently keep your own rams? If not, then having detailed lamb performance records will not improve the quality of your sires. Your breeding rams will be reflecting someone else's records and breeding program.

3) Can EBVs pay for themselves by helping you select better replacement ewe lambs? Maybe, but it's easier to make a big mistake in ram selection, so EBVs are most valuable in choosing sires. If you have 100 ewe lambs and need to keep 15 or 20, most of those will be pretty easy to spot based on simple phenotypic measurements. Split out the heavy half of the twin ewe lambs and use simple records on past dam performance to cull out those with underperforming dams. If you have used sires with EBVs, and if they differ in EBVs related to ewe performance (no. of lambs born, no. of lambs weaned, maternal weaning weights), then you can get a little more sophisticated, but a simple set of ewe records and lamb weaning weights will provide most of what you need. However, when buying rams, you could consider buying at least one ram with really good maternal EBVs and preferably keeping replacement ewe lambs out of him. Or, if your flock is big enough, you could buy several rams like that and attempt to sell replacement ewe lambs to your neighbors.

Finally, if you see needs and opportunities to produce a type of animal that is not readily available in the market, can EBVs help you do that? Yes, they can, but the most effective way to take advantage of such an opportunity is to collaborate with other, like-minded breeders to create a critical mass of animals bred for a similar production goal. If you have 40 ewes and commonly use two rams, you can compare two rams from different sources each year, but information and genetic improvement will accumulate slowly. But if five flocks of 40 ewes each work together, sharing rams and sons of rams with the objective of using EBVs to move in a similar direction, then the resulting "superflock" of 200 ewes evaluating 10 rams each year from various sources and sharing the resulting information can move more quickly and more easily merchandize breeding stock. A example comes from Katahdin breeders who have begun to collaborate to generate rams with high levels of worm resistance.

EBVs are thus a tool to meet needs and take advantage of opportunities. They work best in a collaborative environment, but there is plenty of room for different breeding objectives and selection goals within each breed. Whether you choose to be an active participant or an informed user, NSIP EBVs can make a positive contribution to your breeding program.

Experiences with NSIP in the Virginia Tech Flocks

Scott P. Greiner, Ph.D.
Extension Animal Scientist, Virginia Tech

The registered Suffolk and Dorset flocks at Virginia Tech are utilized heavily in the teaching, research and outreach missions of the Department of Animal & Poultry Sciences. The Suffolk flock has been selected for sheep that excel in the traits that have made the breed popular- growth and carcass composition. In addition to these fundamental traits, moderate mature size, maternal performance, longevity, structural correctness and eye appeal, genetic resistance to scrapie, and spider-free genotype are also important in our balanced-trait approach. The Dorset flock is maintained as a fall-lambing flock, with emphasis on out-of-season breeding, maternal ability, growth and carcass traits, and moderate mature size. Extensive performance records, as well as selection technologies such as EBVs and DNA genotypes, are used in the selection decisions for both flocks.

Overview

The flocks have been enrolled in NSIP since its inception in 1990, with complete recording of all ewes and lambs since 1999. Performance data recorded includes birth, weaning, and post-weaning weights, along with post-weaning ultrasound fat thickness and loin muscle depth. Over the past two years, fecal egg count (FEC) and mature ewe weights have also been included in NSIP. “Total flock enrollment” is practiced, whereby available records from all animals are included for NSIP analysis. The Virginia Tech flock has been utilized in the development of procedures and protocols for NSIP traits, such as adjustment factors for ultrasound scan data.

The National Sheep Improvement Program, which provides Estimated Breeding Values (EBVs) generated through LAMBPLAN in Australia. EBVs provide estimates of the genetic value of an animal as a parent (EBVs are similar to EPDs- an EPD is half the value of the EBV). Specifically, half the difference in EBVs between two individuals predict differences in performance between their future offspring when each is mated to animals of the same genetic merit. All known information on a particular animal is used to calculate its EBV, including performance data (weights, lambing records, carcass ultrasound) on the animal itself, information from its ancestors (sire and dam, grandsire, great grandsire, maternal grandsire, etc.), collateral relatives (brothers and sisters), and progeny (including progeny that are parents themselves). EBVs are reported for the following traits:

Weaning Wt. EBV: predicts genetic merit for weaning growth potential (measured in kg). A ram with a +2.0 WW EBV would be expected to produce progeny that average 1.0 kg heavier at 60 days of age when compared to a ram with a +0.0 WW EBV (ram transmits half the difference of the EBV difference to progeny)

Post-weaning Wt. EBV: Provides indication of post-weaning growth potential, and reflects differences in progeny weight at 120 days of age (expressed in kg).

Maternal Milk EBV: Estimates genetic differences in mothering ability and milk production. EBV reflects differences in daughter's lambs weaning weight (kg) primarily due to superior milk production.
Maternal Lambs Weaned EBV: EBV indicates genetic potential for fertility and lamb survival, and is expressed as a percentage. Comparing an animal with a +10 Lambs Weaned EBV vs. an animal which is +5, the animal with +10 Lambs Weaned EBV would be expected to produce daughters which wean 2.5% more lambs (half the difference in their EBVs)
Loin Muscle Depth EBV: EBV reflects genetic merit for loin muscle depth (mm) at constant live weight. Larger EBVs indicate more muscularity. EBV is derived from ultrasound scan data.
Fat Depth EBV: EBV predicts genetic merit for fat thickness at 12-13th rib at constant live weight (expressed in mm). EBV derived from ultrasound scan data.
Fecal Egg Count EBV: EBV predicts genetic merit for parasite resistance based on worm egg counts. Animals with low FEC EBVs are expected to have greater parasite resistance. EBV is expressed as percentage.

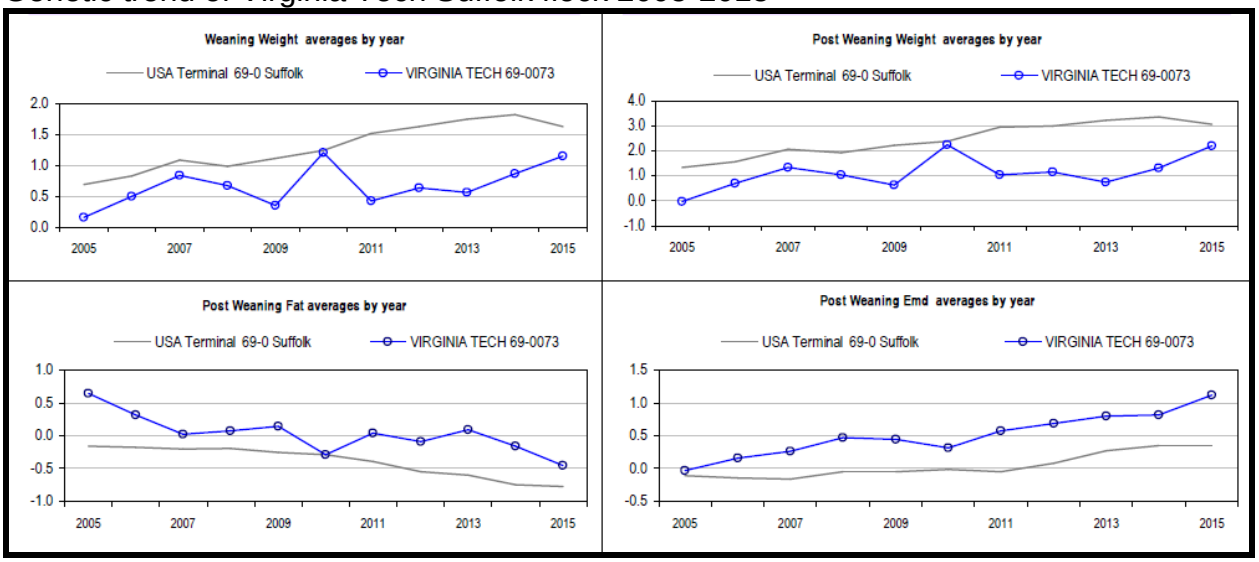
Given the importance of parasite control to sheep enterprises, a concerted effort to establish the genetic merit of both the Suffolk and Dorset flocks for parasite resistance was initiated. The goal of this effort has been to characterize the current status of both flocks relative to their genetic merit for parasite resistance, with long-term goal of utilizing this as selection objective. This was accomplished through the collection of FEC in both the mature ewe flock as well as lamb crops. Protocols for data collection and reporting in NSIP were followed utilizing protocols established for the Katahdin breed. FEC were collected on mature ewes post-lambing, and FEC measures taken on ewe lambs in early fall prior to breeding. In both cases, FEC was measured under natural infection. Ram lambs from the flock are developed at the Virginia Sheep Evaluation Station (Ram Test). In 2015, all ram lambs were artificially challenged with parasites and FEC response measured utilizing standard research protocols. Additionally, a subset of Dorset and Suffolk rams participated in the Southwest forage-based ram test, and FEC data from these animals was also utilized. In total, over the past two years approximately 300 sheep with FEC data have been included in NSIP for the development of FEC EBVs on the VT flocks.

Results

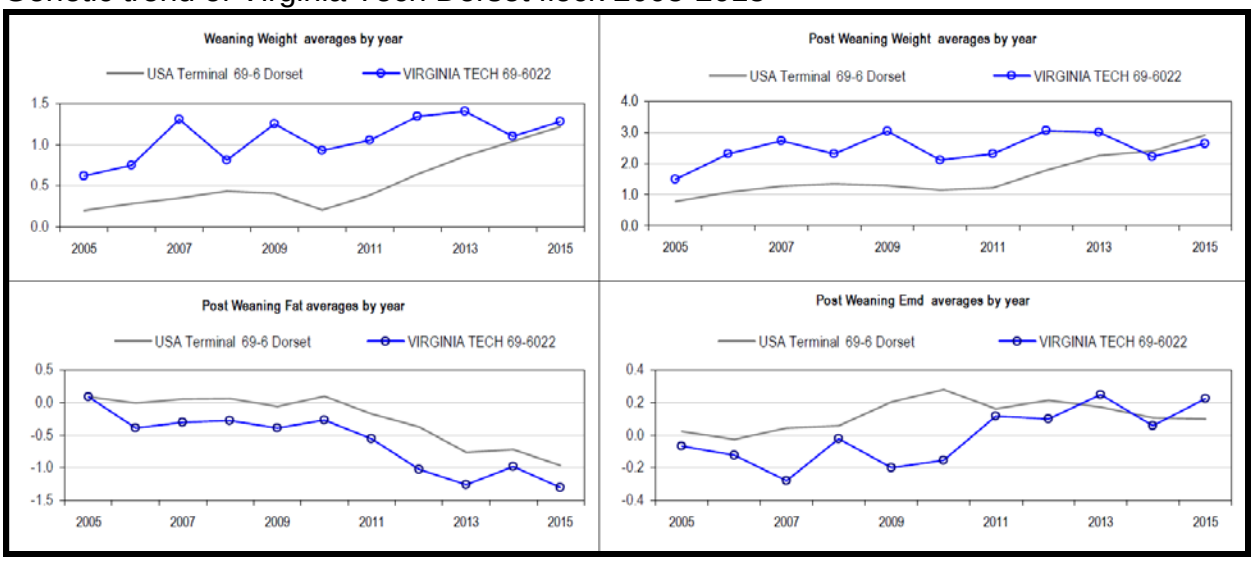
The following graphs depict the genetic trend in the Virginia Tech flocks for growth and carcass traits. Growth traits in the Suffolk flock have followed breed genetic trends, although the mean EBV for both weaning weight and post-weaning weight is lower in the VT flock compared to breed average. In contrast, the VT Suffolk flock has steadily improved loin muscle depth (Emd), accompanied by reduced carcass fatness. Trends are similar for the Dorset flock, although the VT Dorset flock is higher in growth relative to other NSIP Dorset flocks. Most importantly, these graphs indicate that selection to improve these traits is taking place, as genetic merit indicated by EBVs are improving over time. Additionally, these graphs illustrate the differences in breeding goals between the two flocks compared to their breed. The VT Suffolk flock has concentrated on a

balance of growth and muscling, and not selected for extremes in growth (and potential accompanying mature size).

Genetic trend of Virginia Tech Suffolk flock 2005-2015



Genetic trend of Virginia Tech Dorset flock 2005-2015



The following tables summarize the EBVs on the 2015 lamb crops for both flocks. Flock average EBVs provide insight as to the average genetic merit of the current lamb crop, which can be compared to the breed based on percentile ranking. Percentile rankings indicate both flocks are very strong in their genetic merit for muscling and milk, and are slightly below breed average for growth. The VT Suffolk flock is lower in birth weight than the Suffolk NSIP population. The range in EBVs indicate there is opportunity to move the flock in either direction in all traits, as there is substantial variability. Therefore, sires and potential replacement ewe lambs can be selected to make specific genetic change in all traits based on breeding goals and objectives.

VT Suffolk flock 2015 lamb crop EBV summary (n = 123).

Trait	Mean EBV (breed percentile rank)	EBV range
Birth weight, kg	-0.13 (top 25%)	-0.8 to +0.6
Weaning weight, kg	+1.1 (top 60%)	-1.5 to +5.6
Post-weaning weight, kg	+2.2 (top 60%)	-3.1 to +9.2
Maternal milk, kg	+0.2 (top 20%)	-0.9 to +1.5
Maternal no. born, %	-2.2 (top 80%)	-10.7 to +5.5
Maternal no. weaned, %	-0.5 (top 70%)	-6.2 to +5.8
Muscle depth, mm	+1.1 (top 25%)	-0.8 to +4.0
Fat depth, mm	-0.4 (top 65%)	-2.7 to +2.1
FEC, %	+6	-75 to +236

VT Dorset flock 2015 lamb crop EBV summary (n = 144).

Trait	Mean EBV (breed percentile rank)	EBV range
Birth weight, kg	+0.14 (top 65%)	-0.3 to +0.7
Weaning weight, kg	+1.3 (top 55%)	-3.0 to +4.3
Post-weaning weight, kg	+2.6 (top 65%)	-6.5 to +8.7
Maternal milk, kg	+0.2 (top 25%)	-0.9 to +1.5
Maternal no. born, %	-2.8 (top 80%)	-12.5 to +3.8
Maternal no. weaned, %	+0.2 (top 80%)	-5.6 to +4.3
Muscle depth, mm	+0.2 (top 15%)	-1.6 to +2.8
Fat depth, mm	-1.2 (top 20%)	-4.0 to +1.1
FEC, %	-1	-39 to +139

As stated earlier, the goal over the past two years has been to collect pertinent date to characterize the VT flocks for FEC. As of December 1, 2015 with the most recent analysis conducted by LambPlan, all 2015-born Suffolk and Dorset lambs now have a FEC EBV. The range of FEC EBVs in the above tables provide evidence of the tremendous variation that exists within a flock, and also quantifies the opportunities that exist to improve parasite tolerance through selection. This is further emphasized in the tables below with provide the EBV profiles of the existing stud ram batteries for both flocks. Focusing on FEC EBV, it is evident that certain sires are superior relative to others. Note that all of these rams listed are proven sires, with progeny data included in the analysis.

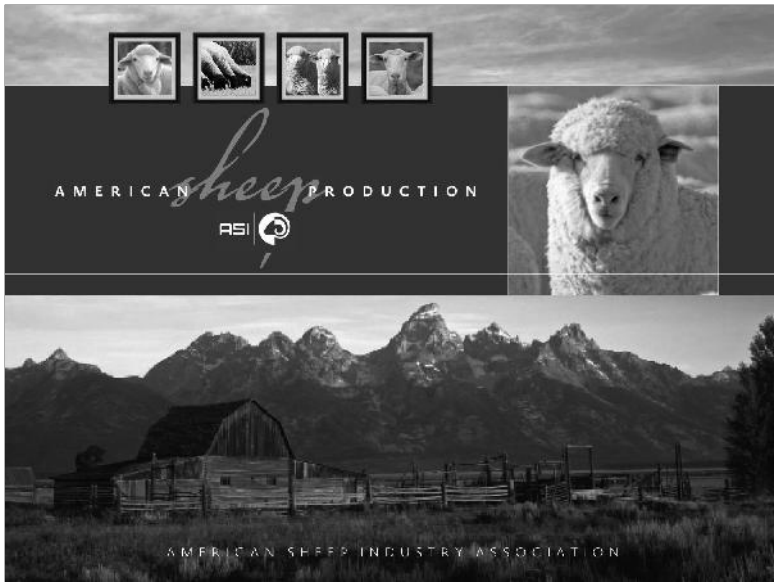
EBV profile of current VT Suffolk stud rams.

Sire	BW	WW	PWW	Milk	NLB	NLW	PMD	PFAT	FEC
BH 2896	0.3	4.8	9.1	-0.1	-2.1	-4.4	1.23	-2.92	98
MGR 9094	-0.2	0.5	-2.0	0.1	-6.9	+6.2	2.76	1.05	18
MGR 3007	-0.9	-0.9	-0.5	-0.8	-7.9	-2.9	3.37	0.40	56
Kimm 13073	-0.2	0.5	1.2	1.3	-2.3	-5.5	1.32	-0.40	-20
SU 328	0.0	1.0	1.5				1.05	-0.92	48
VT N221	-0.2	1.2	0.2	-0.2	-6.0	+3.3	2.23	0.47	-61
VT S277	-0.1	0.8	1.1	-0.2	+1.3	+0.4	0.31	0.32	-41

EBV profile of current VT Dorset stud rams.

Sire	BW	WW	PWW	Milk	NLB	NLW	PMD	PFAT	FEC
HTR 5887	0.1	0.7	2.4	-0.9	0.0	+4.2	1.58	-3.75	-13
HEIS 1263	0.3	2.9	4.8	-0.8	-0.2	-1.4	-0.84	-0.09	-25
HEIS 3083	0.2	-1.2	-3.0				-0.43	0.13	5
VT S036	-0.1	1.0	2.9	0.4	-7.8	+0.7	1.58	-2.33	44

Several excellent resources exist for additional information on NSIP and EBVs and their application and utilization:
NSIP website- http://nsip.org/ (details on enrollment, current breed and flock information, educational resources)
Katahdin NSIP- http://www.katnsip.com/index.html (collection of educational resources applicable to all breeds)



Lamb Price Reporting

- U.S. House of Representatives approved a 5-year reauthorization of Mandatory Price Reporting
- Includes ASI priorities to increase the number of firms that report (domestic & import) to help ensure reports are available every week.
- Must be done by Sept. 30, 2015
- On the President's Desk to Sign

Country of Origin Labeling of Lamb

- The U.S. House of Representatives in June approved legislation to retain the mandatory labeling of lamb at retail (COOL)
- Same legislation removes beef, pork and poultry from the law.
- ASI cut this deal in the Farm Bill and gratified Congress recognized the unified message of sheep producers that the program is important.

LRP-Lamb

Key Risk Management Tool for Sheep Industry

- Price insurance for lamb was available for sale again in May of 2015.
- The insurance product went through an extensive update beginning in 2014.
- Product is owned by ASI's Sheep Venture Company.
- www.sheepusa.org for more information and links to sales agents.

Open Export Markets

- U.S. most freely traded lamb market yet most of world will NOT accept American lamb due to 2003 BSE in cattle.
- Taiwan officials visited US lamb processors in late 2014.
- Government of Japan is now addressing resumption of American lamb

USDA Purchase of Lamb

- USDA responded to ASI's request for purchase of excess lamb by making up to $10 million available.
- Two Buys:
  1. 480,000 pounds for $2.7 million – Aug-Nov Delivery
  2. 600,000 pounds for $3.13 million – Nov-Feb Delivery
- ASI cited surge of imported lamb, record levels of lamb in the cooler inventory, currency advantage of importers and back-up of slaughter lambs in feedlots.
- Program must benefit farm-gate price of lambs

Wool Superwash

- Huge success story for industry.
- A shrink-resist treatment line that makes wool products machine washable and dryable without shrinking meeting Total Easy Care standards.
- Use in commercial and military products.
- This line exceeded its production projections by more than 40% in the first year.
- ASI and Sheep Venture Co. making loan payments

Wool Council Meeting with Shearers

- In July, ASI Wool Council met with the U.S. Sheep Shearers Association
- Discussed Priorities / Issues facing shearers
  - Foreign Labor Issues -- Recruiting New Shearers
  - Shearing Trailers and Balers
  - Shearing Handbook and Schools
  - Wool Quality
  - Animal Welfare

H-2A Legislative Subcommittee

- US Department of Labor issued new rules for special procedures of the H-2A sheepherder program in April -- Entirely rewrote the wage formula and redefined the ranches eligible to hire herders.
- Wage would triple.
- Ranches that graze within sight of fences or facilities 50% of the year would not be eligible to hire herders.

H-2A Bicameral Letter – July 2015

- Rep. Lummis (Wyo.) spearheaded letter to DOL stressing opposition to H-2A Special Procedures Proposed Rule.
- Support from 34 members of Congress.
- Will impact entire sheep industry if implemented due to lack of infrastructure.

38% of American Sheep are Herded

- H-2A herders care for a huge share of our sheep inventory. Two lamb companies estimate 60% or more of their processing is dependent on this production style.
- More than 500 comments filed by June 1, 2015, with ASI joining other groups to propose a sustainable wage formula and workable definition of livestock grazing production.
- Final rule expected before November 2015.

Domestic and Bighorn Sheep Conflict

- Region 4 Forest Service Framework
  - Agreement with Western Watersheds to avoid lawsuits
  - Identify sheep allotments and wild sheep viability
  - Governors in Utah, Wyoming, Idaho and Nevada informed that analysis of sheep grazing allotments and alternative permits will be done 2015

Domestic and Bighorn Sheep Conflict – Cont.

- Bi-Cameral letter of Congress in June 2014 to Secretaries of Agriculture and Interior addressed threat to industry
  - 37 members of Congress signed with all western states.
  - A follow up letter from these U.S. Representatives and Senators sent in April 2015

Domestic and Bighorn Sheep Conflict – Cont.

- ASI supporting language in the Interior Appropriations bill to require:
  - Offer of alternative allotments similar in forage amounts and types, capacity, water, ease of access, season of use and proximity
  - Place alternative allotment on rescissions schedule to fulfill required environmental analysis.

U.S. Sheep Experiment Station

- June 2014 – Secretary Vilsack recommended to House Appropriations to reprogram sheep station funds
  - Claiming lack of budget, however, the real reason is harassing lawsuits of Western Watersheds
- Only sheep research station in America would have closed by November 2014

U.S. Sheep Experiment Station – Cont.

- USDA refused to alert state or federal officials or industry
- Letters of support for station from ASI, congressional delegations of ID, MT, OR and WA, PLC and Idaho Governor, County Commissioners, University officials
- Station unique in location and ability to do research on rangelands similar to 70% of sheep production in U.S.
- U.S. House Appropriations rejected USDA request in 2014
- President's budget calls for abandonment of station in November 2015 so Congress will have to step in again.

Let's Grow Funding

- ASI board approved $500,000 to coordinate and fund programs to improve production efficiency and profitability.
- First of three year commitment funded 11 grants for more than $250,000
- Details available on Let's Grow projects at the www.growourflock.org
- Second round of grant apps opened Sept. 1 – Due Nov. 11

Let's Grow Committee

Mike Corn – NM, Chair
John Fine – OR
Ben Lehfeldt – MT
Wes Limesand – ND
Lesa Eidman – CA (Superior Farms)
Dr. Stanley Poe – IN
Rick Powers – SC/TX (Lempriere USA Wool and Rafter 7 Ranch)
Rob Rule – IA (Producer/Feeder/Packer)
Bill Sparrow – NC
Dr. Dennis Stiffler – (Mountain States packer)
Susan Shultz – Road Map Chair
Wes Moser – IA

Let's Grow Upcoming Webinars

- If you missed any of the 2015 Webinars, the material is available at:
  www.sheepusa.org/Growourflock_Resources_EducationalWebinars
- 2015 Webinars
  - Dietary Supplements: A Necessity or Folly?
  - Using EBVs to Achieve Your Breeding Goals
  - Optimizing Reproductive Efficiency in Sheep Production with Strategic Nutritional Management
  - Farm Security and Crisis Management: Dos and Don'ts in Hiring

Let's Grow Mentor Program

$24,000 awarded to 24 state organizations to support mentor programs at the local level.

ASI

AMERICAN sheep PRODUCTION

QUESTIONS

QUESTIONS

MEETING EWE NUTRIENT REQUIREMENTS THROUGHOUT THE PRODUCTION CYCLE

Bain Wilson

Animal and Poultry Sciences, Virginia Tech

The development of an adequate nutrition plan for the ewe flock requires knowledge of ewe nutrient requirements that are to be met. Because nutrient requirements change throughout the production cycle, sheep producers are left trying to hit an ever-changing target to optimize their nutrition plan. Stages of the ewe production cycle that require different nutritional management are shown in Table 1 along with typical ewe ADG during each stage of production. Maintenance requirements are for ewes that are non-pregnant and non-lactating and needing to maintain body weight and condition before the next breeding season. Flushing is the practice of increasing ewe plane of nutrition approximately 2 weeks pre-breeding through 3 weeks post-breeding to increase ovulation rate and resulting lambing rate. Ewe nutrient requirements are relatively low during early and mid-gestation (approximately the first 15 weeks of pregnancy). However, meeting ewe nutrient requirements during this time are essential to placental development and fetal development. Nutrient restriction during early gestation negatively affects development of placental membranes, decreasing nutrient flow to the fetus throughout the remainder of gestation. Because the majority of fetal growth occurs during the last third of gestation, ewe nutrient requirements increase substantially during the last 4 weeks of gestation. Nutrient restriction during late gestation can negatively affect lamb birth weight and lamb survivability. However, too high a plane of nutrition during late gestation can result in ewes being in excessive body condition, increased lamb birth weight, and problems with dystocia. It is understood that ewe nutrient requirements are greatest during early lactation with peak milk production occurring approximately 26 day after lambing. If ewes are still nursing lambs after 6 to 8 weeks of lactation, nutrients requirements decrease because milk production is not as persistent and lambs may begin to utilize supplemental feedstuffs.

Typical ewe dry matter intake (DMI) throughout the production cycle is shown in Figure 1. Ewe DMI is heavily dependent on nutrient composition of feedstuffs, forage quality, dry matter of feedstuffs, and feeding method among other factors. Estimating DMI of ad libitum forage is often one of the greatest challenges when devising a nutrition plan. As forage quality, and digestibility, increases, voluntary forage DMI is expected to increase. Ewe DMI of low, moderate, and high quality forages are approximately 1.5%, 2.0%, and 2.5% of BW, respectively.

The main nutrients of interest when formulating ewe rations are TDN (total digestible nutrients), CP (crude protein), and the minerals calcium and phosphorus. The TDN content of many feedstuffs that are fed to sheep have been analyzed to predict their energy values. Other systems to measure energy of feedstuffs and animal requirements exist, notably the net energy system exist; however, TDN remains a proven and relatively easy way to formulate rations to meet ewe energy requirements. Supplements should be formulated to fill the gap between nutrient

requirements and nutrients provided by estimated forage intake. Calcium and phosphorus should be considered during ration formulation because of the high calcium requirement during lactation, their importance to the skeletal system and other bodily functions. The calcium to phosphorus ratio should be maintained between 1.2:1 and 2:1 in ewe rations. Providing salt and a high quality sheep-specific mineral can then be relied upon to meet requirements for the other macrominerals and trace minerals. Requirements for TDN, CP, calcium, and phosphorus during each stage of production are shown in Figures 2, 3, 4, and 5, respectively.

Ewe prolificacy serves to affect nutrient requirements during gestation and during lactation the number of lambs born and reared. The nutrient requirements provided in Tables 2, 3, 4, and 5 are for ewes with ab expected 130 to 150% lambing rate that are nursing twin lambs. A greater expected lambing rate would serve to increase ewe nutrient requirements during late gestation. Increased nutrient requirements corresponding with an increased lambing rate of 180-225% relative to a 130-150% lambing rate are shown in Table 2. Ewes nursing single lambs would be expected to have lower requirements than ewes nursing twin lambs during both early and late lactation (Table 3).

References

American Sheep Industry Association. 2003. SID sheep production handbook. 7th ed. ADS/Nightwing Publishing, Centennial, CO.

National Research Council. 1985. Nutrient requirements of sheep. 6th ed. National Academies Press, Washington, DC.

Umberger, S. H. 2009. Sheep grazing management. Virginia Tech, Blacksburg. https://pubs.ext.vt.edu/410/410-366/410-366.html (Accessed 6 January 2016.)

Table 1. Stages of the ewe production cycle

Stage of Production	ADG, lb./d	
Maintenance	0.02	Non-pregnant, non-lactating
Flushing	0.22	2 weeks pre-breeding through 3 weeks post-breeding
Early and mid-gestation	0.07	First 15 weeks gestation
Late gestation	0.4 – 0.5	Requirements increased substantially
Early lactation	-0.13	First 6-8 weeks lactation
Late lactation	-0.06	Last 4-6 weeks lactation

Table 2. Percent change in nutrient requirements during late gestation for ewes with expected lambing rate of 180–225% relative to expected lambing rate of 130-150%.

Nutrient	Percent change in requirement with greater lambing rate
DMI	106%
TDN	119%
CP	111%
Ca	123%
P	80%

Table 3. Percent change in nutrient requirements during lactation for ewes nursing singles relative to ewes nursing twins.

	Stage of lactation	
Nutrient	Early	Late
DMI	87%	74%
TDN	87%	66%
CP	79%	58%
Ca	85%	66%
P	85%	81%

Figure 1. Typical dry matter intake of ewes.

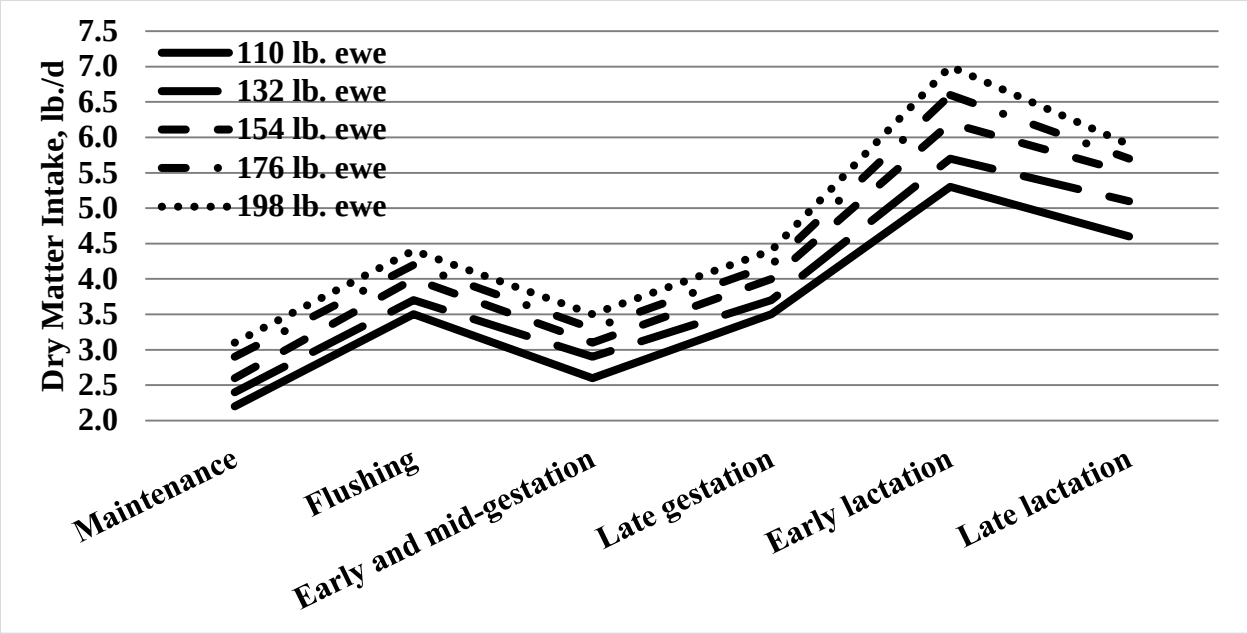


Figure 2. TDN requirements of ewes with expected lambing rate of 130 to 180% nursing twins.

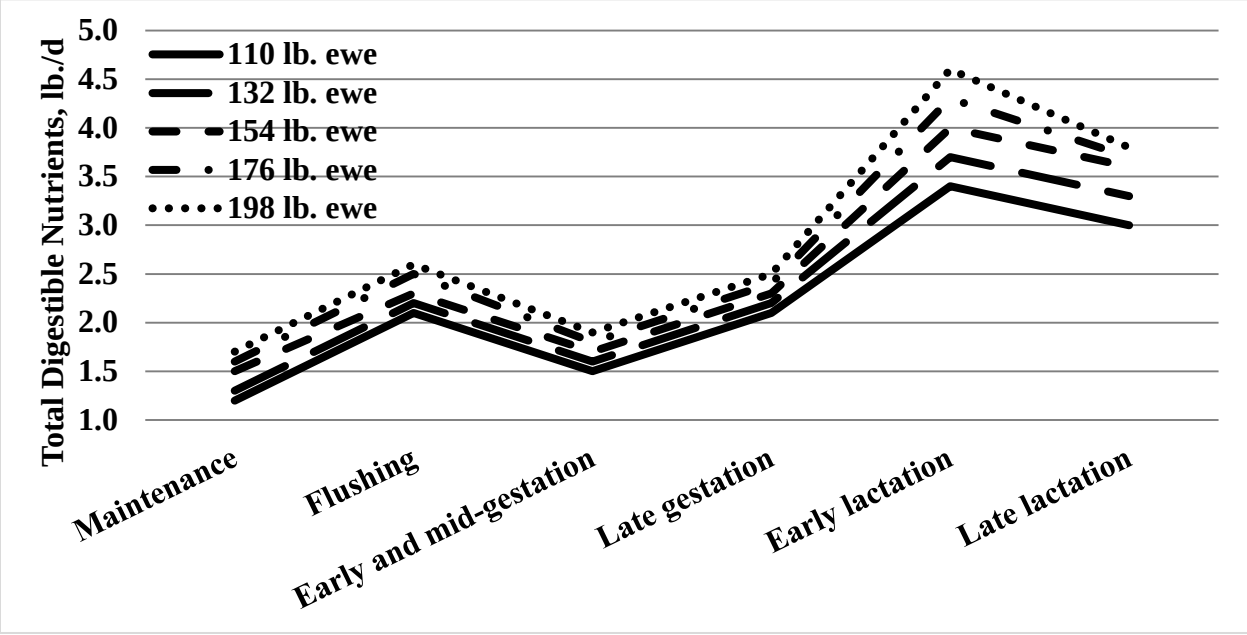


Figure 3. CP requirements of ewes with expected lambing rate of 130 to 180% nursing twins.

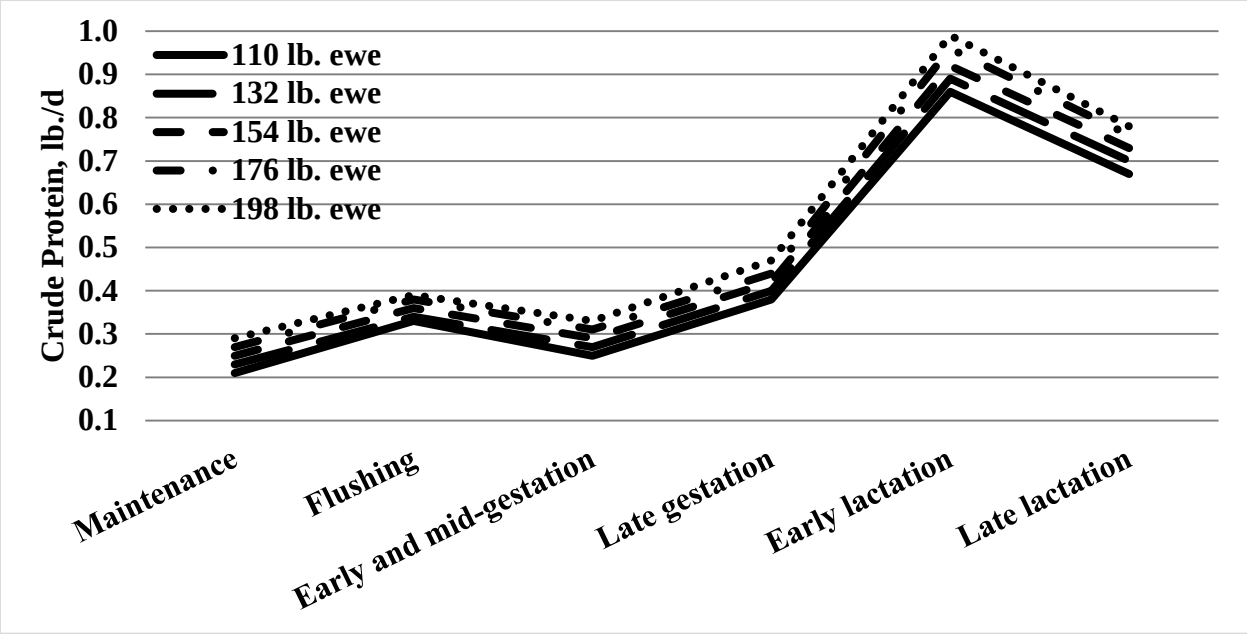


Figure 4. Calcium requirements of ewes with expected lambing rate of 130 to 180% nursing twins.

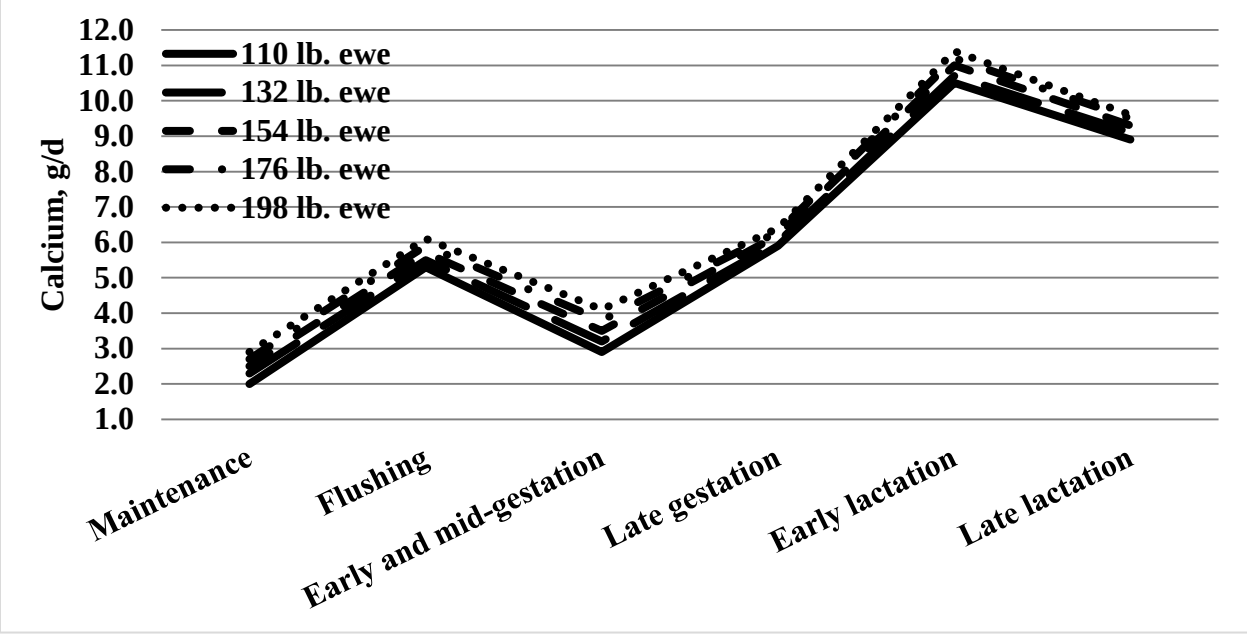
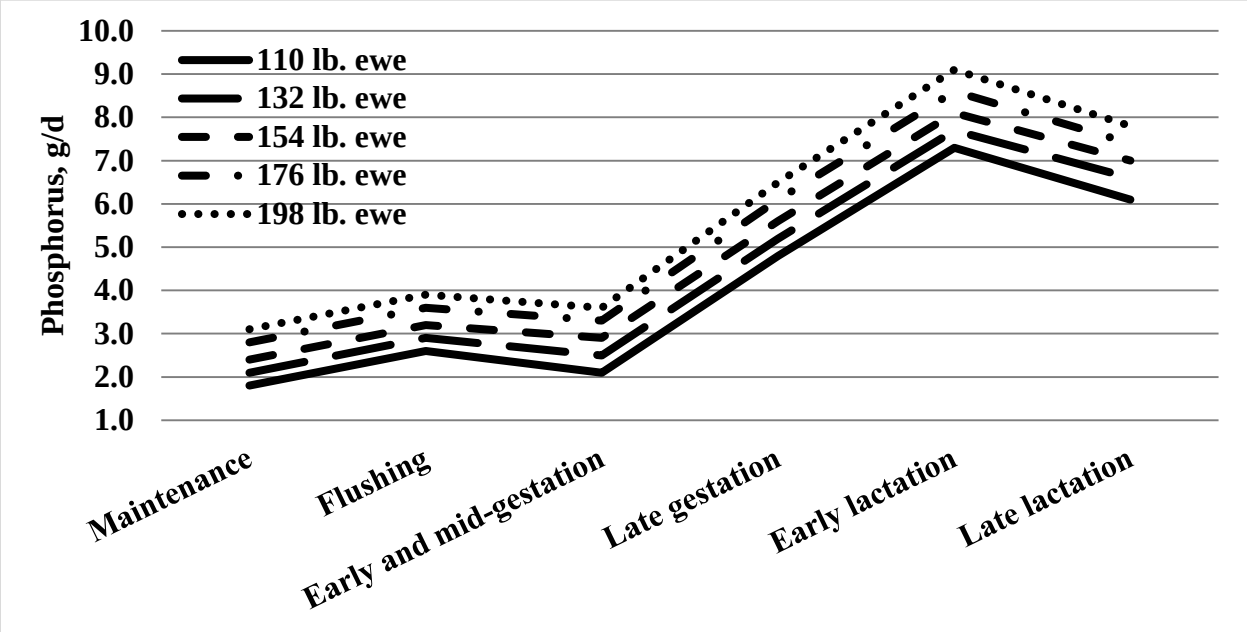


Figure 5. Phosphorus requirements of ewes with expected lambing rate of 130 to 180% nursing twins.



When to call the veterinarian

Virginia Shepherds' Symposium
January 9,2016

Kevin Pelzer, DVM
Professor, Production Management Medicine/Epidemiology
Virginia-Maryland College of Veterinary Medicine

Veterinarian Client Patient Relationship

- Exists when your veterinarian knows your animals well enough to be able to diagnose and treat any medical conditions your animal develops. *21 CFR 530.3(i)*
- Is established only when your veterinarian examines your animal in person, and is maintained by regular veterinary visits as needed to monitor your animal's health.
- Extralabel use means actual use or intended use of a drug in an animal in a manner that is not in accordance with the approved labeling.
- January 2018 – no over the counter sales of antibiotics in California

Extra-Label Drug Use

- Dosage for a cow is not always the same for a sheep.
  - Amprolium, Corid®, for coccidiosis
    - Cattle – 10mg/kg for 5 days treatment, 5 mg/kg prevention
    - Sheep – 50mg/kg for 5 days treatment, 15mg /kg prevention
  - Cydectin
    - Cattle – 0.5mg/kg pour-on
    - Sheep – 0.2 mg/kg drench

Meat Withdraw

- Amprolium, Corid®, for coccidiosis
  - Cattle – 5 days
  - Sheep – 15 days
- Cydectin
  - Cattle – 0 days
  - Sheep – 7 days
- Zactran
  - Cattle – 35 days
  - Sheep – 90 days

Off feed for 24 hours

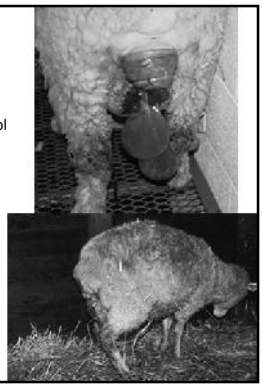
- Sick sheep is a dead sheep
  - Good at hiding clinical signs
  - Recognition of illness is delayed
  - Disease process has gone on too long
- Earlier the better
- Treatments aren't working
  - Wrong drugs
  - Wrong diagnosis
  - Antibiotic resistance

Pale Sheep

- Parasites
  - Blood transfusions
  - Review of Parasite Control
    - Deworming strategies
      - Copper Oxide wire particles
    - Evaluation of effectiveness of dewormers - Coordination of samples
      - Fecal Egg reduction tests
      - DrenchRite® Assay

Pregnancy Issues

- Off feed for 24 hours
  - Pregnancy toxemia – need more than Propylene glycol
  - Evaluate feeding program
  - Prevention plan
- Dystocia
  - Ringwomb
  - Malpresentations
    - Sooner better than later



Pregnancy Issues

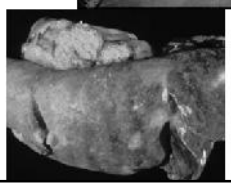
Diarrhea in Lambs

- Diagnosis
  - Parasites
    - Coccidia
  - Diet
  - Bacterial infection
    - Salmonella
    - E. coli
    - Clostridium
- Treatment
  - Fluid therapy
  - Antibiotics

Male issues

- Off feed for 24 hours
  - Urinating?
  - Blockage – urinary calculi
    - Treatments
    - Prevention
- Breeding Soundness Exam

Sick sheep is a dead sheep



Where to find us.

- http://www.aasrp.org/search/
- 23 in VA

Questions

Outstanding Sheep Producer Award Recipients

2014 – Jeff Lawson, Augusta County
2013 – Laura Begoon, Rockingham County
2012 – Sonny and Ashley Balsley, Augusta County
2011 – Leo Tammi, Augusta County
2010 – Bobbi Hefner, Highland County
2009 – Mac Swortzel, Augusta County
2008 – David Shiflett, Augusta County
2007 – Doug Riley, Augusta County
2006 – Mike Carpenter, VDACS
2005 – Jim Wolford, Wythe County
2004 – Martha Mewbourne, Scott County
2004 – David Redwine, Scott County
2003 – Martha Polkey, Loudoun County
2002 – Carlton Truxell, Augusta County
2001 – Corey Childs, Clarke County
2000 – John Sponaugle, Rockingham County
1999 – Bill Stephenson, Page County
1998 – Gary Hornbaker, Clarke County
1997 – Bruce Shiley, Clarke County
1996 - Weldon Dean, Rockingham County
1995 - Bill Wade, Augusta County
1994 - John Henry Smith, Russell County
1993 - Robin Freeman, Chesapeake
1992 - Courtland Spotts, Pulaski County
1991 - Ted Bennett, Halifax County
1990 - Clinton Bell, Tazewell County
1989 - Rex Wightman, Shenandoah County
1988 - Tim Sutphin, Pulaski County
1987 - Zan Stuart, Russell County
1986 - J. W. Riley, Augusta County
1985 - John Bauserman, Fauquier County
1984 - Roy Meek, Pulaski County
1983 - Jonathan May, Rockingham County