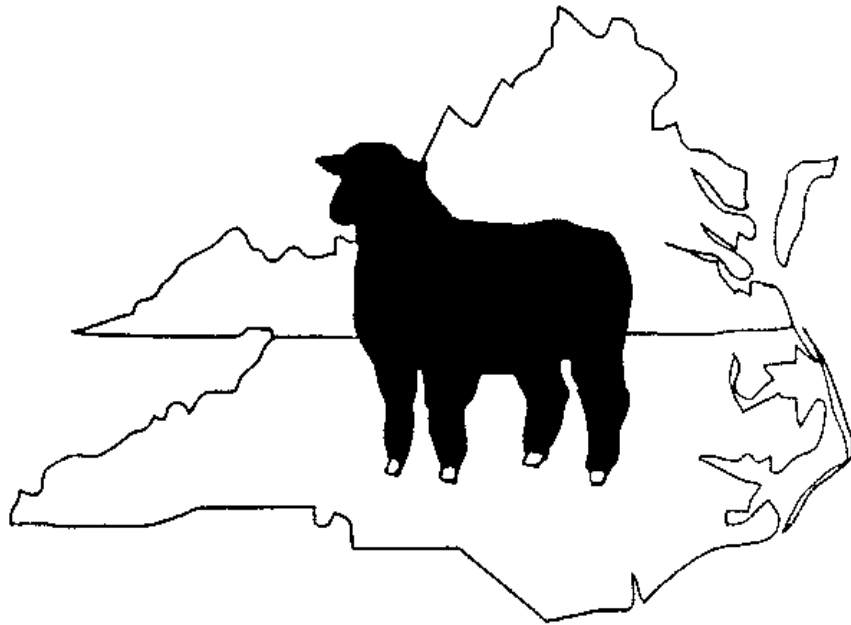


Proceedings

2014

VIRGINIA SHEPHERDS' SYMPOSIUM



January 10 - 11, 2014

*ALPHIN-STUART LIVESTOCK ARENA
PLANTATION ROAD
BLACKSBURG, VIRGINIA*

FRIDAY, JANUARY 10

- 9:00 AM** **Sheep Management 101 Workshop**
*All day workshop for beginning shepherds covering topics related to basic sheep production and lambing management. Workshop will include hands-on activities with sheep.
(*additional registration fee, limited to first 20 participants registered)*
- PM** **Alphin Stuart Livestock Arena**
- 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 11

- AM** **Alphin Stuart Livestock Arena**
- 8:15** **Registration & Commercial Exhibits**
- 9:00** **“Key Components to Successful Flock Health”**
Dr. Hollie Schramm, DVM, Virginia-Maryland Regional College of Veterinary Medicine
- “Lamb Market Situation and Outlook”**
Dr. David Anderson, Texas A & M University
- “The Hale Report – American Lamb Industry Roadmap Project”**
Mr. Bob Leer, ASI Executive Board – Region II Director, Kentucky
- “American Lamb Board and Your Checkoff Dollars”**
Mr. Leo Tammi, Director – American Lamb Board, Mt. Sidney, VA
- Roy Meek Outstanding Sheep Producer Award Presentation**
- Virginia Sheep Producers Association Annual Business Meeting**
- PM**
- 12:15** **Lunch**
- 1:15** **“Coping With Predators: What have we learned?”**
Mr. Chad Fox, USDA-APHIS, Christiansburg, VA
- “Minerals and Vitamins for the Flock”**
Dr. Mark McCann, Dept. of Animal and Poultry Sciences, Virginia Tech
- “Progress Reports on Sheep Research at Virginia Tech”**
Dr. Scott Greiner, Dept. of Animal and Poultry Sciences, Virginia Tech
Dr. Mark McCann, Dept. of Animal and Poultry Sciences, Virginia Tech
Mr. Lee Wright, Southwest AREC, Virginia Tech,
- “Capturing Marketing Opportunities to Add Value”**
Bostic Ridge Farm – James, Sue, Jake and Jenna Bostic, New Castle, VA

Extension is a joint program of Virginia Tech, Virginia State University, the U.S. Department of Agriculture, and state and local governments

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If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Scott Greiner at 540-231-9159 during business hours of 8 a.m. and 5 p.m. to discuss accommodations 5 days prior to the event.*

**TDD number is (800) 828-1120.*

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Presented By
Virginia Sheep Producers Association*

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Sponsors

Augusta Cooperative Farm Bureau, Inc. – Shawna Bratton
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Staunton, VA 24401
540-885-1265, Ext. 231

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Culpeper, VA 22701
540-825-2200

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

Key Components to Successful Flock Health

Dr. Hollie Schramm
Production Management Medicine, VMRCVM
Clinical Professor



Goals of a Flock Health Program

- Improve overall health and welfare (relationship with vet)
- Decrease losses
- Increase productivity
- Maximize profitability of the flock

- HOW can we measure this and be better?
 - Analysis of production, health, and financial RECORDS
 - Then SET GOALS for production parameters
 - Morbidity, mortality, culling, and growth rates

VETERINARY CLIENT PATIENT RELATIONSHIP

- The veterinarian takes responsibility for medical and treatment judgments for the animal(s) and the client agrees to follow the veterinarian's instructions
- The veterinarian has close knowledge of the animal(s) and their medical condition obtained by examination and premise visit
- The veterinarian is available for follow up visits or has emergency coverage in the event of adverse reactions or failure of the treatment regimen

Why is the VCPR important?

- Advice and guidance in the appropriate use of medications
- A better understanding and working knowledge of your animal management practices
- Improved medical judgments
- Assist with withdrawal time determination
- Producers are not approved to make extra-label drug usage decisions

EXTRA LABEL DRUG USE (ELDU)

- Defined as
 - Use of a drug in an animal in a manner that is not in accordance with the approved labeling X
 - Includes but is not limited to X
 - Use in different species
 - Use for indications (disease and other conditions)
 - Use at dosage levels, frequencies, duration or routes of administration other than those stated in the labeling X
 - Deviation from labeled withdrawal times based on these different uses



STARTS WITH PREVENTATIVE Health Care!

- Biosecurity
- Vaccination program
- Good nutrition and feeding management
- Parasite control program
- Hoof care (Not covering)
- Predator management (Mr. Chad Fox)

Biosecurity

Practices that are put in place in order to protect the health of your animals!

- **Bio-exclusion:** Preventing disease entry
- **Bio-management:** Reducing the risk of animal infection and disease
- **Bio-containment:** Containing diseases that are on farm

Applies to everyone and everything used on the farm
Encompasses disease management, excellent husbandry,
and routine health care

What is your herds level of risk?

- **Lowest Risk**
 - Closed flock
 - Animal from known low-risk status flocks, single contact
 - Borrowing or lending animals with low-risk flocks, multiple contacts with other flock(s)
 - Animal from farm of unknown-health status
 - **Highest Risk**
 - Animal from sales barns or in contact with accumulations of animals (*shows*) of unknown health status
-

Design a Protocol Based on Your Flocks Level of Risk

- What steps can be taken to reduce risks?
 - Quarantine new or returning animals for one month; deworm/test/vaccinate
 - Vaccinate new animals entering the herd; vaccination protocols
 - Have treatment records for each individual animal
 - Animals are managed and handled in a specific order
-

Design a Protocol Based on Your Flocks Level of Risk

- More steps to reduce risks
 - Mortality/Abortions submit for diagnostic testing/correct disposal
 - Use rams from herd with high health status/vaccinate
 - Prevent contact with wildlife (cats, dogs also)
 - Contain number of people on farm; protective boots; entry from other farms
 - Clean and disinfect equipment, boots, and hands

Vaccination

- Clostridial (depends on risk of certain diseases)

- CD&T
- 7-Way (not a fan!)
- 8-Way

Group	Vaccination Timing (CD&T)
Ewes	4-6 weeks before lambing
Lambs	4-8 weeks of age
	Booster 7-11 weeks of age
Rams	4-6 weeks before lambing season 8-way: 4-6 weeks before breeding

- Timing depends on:

- Feeding regimen (at highest risk of CD during change in diet)
- Age at weaning (creep feeding)
- Unvaccinated/Unknown vaccination status (lambs 1-3 wks and booster)

Vaccinations

- Camphylobacter (Vibrio)/Chlamydia
 - Sharing rams with other farms
 - Control disease on farm with infection present
 - Vaccinate ewes one month before breeding season (Ewe lambs: 8 and 4 weeks before breeding season)

- Foot rot, CL, Rabies, Soremouth

- Use to contain and decrease disease in the herd

Vaccination for Respiratory Disease (Pasteurella infection)

- Pneumonia is most often due to
 - Virus→Stress→Bacteria (Mannhemia aka Pasteurella)
 - Primary viruses involved
 - PI-3*, Adenovirus, RSV (Respiratory Syncytial Virus)
 - Bacteria Involved
 - Mannhemia hemolytica, Biberstenia trehalosia, Pasteurella multocida
 - Cattle vaccines are not efficacious for bacteria
-
- CURRENTLY NO APPROVED VACCINATIONS FOR SHEEP OR GOATS

Vaccination for Respiratory Disease

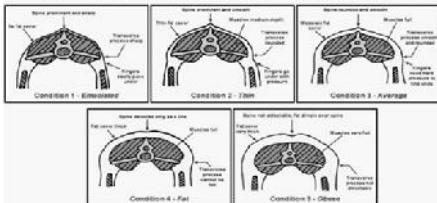
- Vaccination for viral components (controversial)
- Intranasal modified live cattle vaccines available
 - Use for PI-3 and RSV viral components (efficacy is not known)
 - Serotypes for cattle and sheep may not match up
 - Use in high risk herds (show animals, high incidence of pneumonia)
 - Vaccinate dams 4-6 wks before parturition (same time CD&T)
 - In lambs at 1-3 days of age, decreases morbidity
- Can use in the face of an outbreak
- Best to use in small subset of animals in herd first

BODY CONDITION SCORING

Best way to Make Nutritional Decisions!

- A tool for producers to increase production efficiency in their flocks

Body Condition Scores – Sheep/Goats



Adapted from "Body Condition Scoring of Sheep" by J.M. Pennington and H. Moor-Edwards. © 2004. University of Kentucky, College of Agriculture, Department of Animal Science.

Body Condition Scoring

Review Nutrition at Each Exam

Group	Timing	Ideal BCS	Other Herd Health Events
Breeding Ewes	Pre-Breeding	3	BSE, famacha, palpate udders
	Midpregnancy	2.5-3	US and sort, famacha
	Pre-Lambing Lambing	3 3+	CD-T, other vx, lambing management, famacha
	Weaning/Drying off	2+	famacha
Rams	Pre-Breeding	3-3.5	BSE, 8-way, famacha
	Summer	2+	famacha

*Most cases of mastitis occur at weaning time

*

Research and BCS

Oregon State University

- Ewes with a body condition score of 3 to 4 at lambing lost fewer offspring and weaned more pounds of lamb than those with a condition score of 2.5 or less
- There was a 33% difference in total weight of lamb weaned (64 versus 85 pounds per ewe) between ewes with pre-lambing body condition scores of 2.5 to 3.5

Fat and Thin Ewes

Reasons and Consequences

- Why are ewes too thin?
 - Inadequate nutrition, parasitism, inadequate bunk space, inadequate grouping of animals, wasting diseases, chronic diseases, genetics, high milk production (multiple lambs), old (need to be culled)
 - This sets them up for: failure to conceive, less lbs lamb weaned, pregnancy toxemia, parasitism and disease
- Why are ewes too fat?
 - Were not culled, poor milk production (low wean wt), overfed in early-midgestation, dominant ewes
 - This sets them up for: pregnancy toxemia, fatty liver, dystocia, vaginal prolapse

Nutrition for the Pregnant Ewe

- Do not overfeed dams in early or mid-gestation
 - Dry matter intake: 3.5-4% body weight in late gestation (increases w/ # fetuses)
 - Forage must be good quality
 - If poor quality will only be able to eat 2-3% bw
 - Increase concentrate slowly (140 lb ewes)
- 6 weeks: 0.5-1 lbs
 -4 weeks: 1-1.5 lbs
 -2 weeks: 2-2.5 lbs

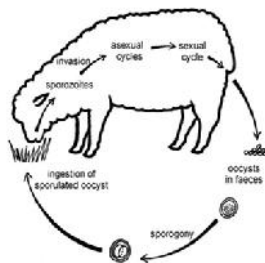
Gastro-intestinal parasites

#1 health problem affecting small ruminants

- Coccidia
- Round worms (aka Strongyles)
 - ✓ *Haemonchus contortus* Barber pole worm
 - *Ostertagia (Teladorsagia)*
 - *Trichostrongyles*
 - *Cooperia*
 - *Oesophagostomum*
- Lungworms
- *Parelaphostrongylus tenuis* Meningeal (deer) worm

Eimeria species

- Protozoan
- Oocysts must sporulate outside the host to be infective
- Likes warm and moist conditions
- Can survive at wide range of temps for years
- Barns and over-crowding
- Hay rings and waterers



Clinical Sign

- Diarrhea (usually no blood)
 - Chronic wt loss (low BCS)
 - Straining (rectal prolapses)
 - Weakness
 - Rough hair coat
 - Anorexia
 - Dehydration
 - Mild anemia/hypoprotecemia
-

Pathology

- Cause necrosis of the mucosal lining
 - Can take weeks for mucosa to heal and malabsorption can persist
 - Permanent scarring results in poor-doing lambs
-

Diagnosis

- Direct Smear , fecal float (bad)
 - BEST: McMaster or Modified-McMasters
 - 5,000 oocysts/gm (quantifies)
 - Chronic coccidia- shed organisms at low numbers
 - Remember number of oocysts does not correlate with severity of clinical disease (consumption does)
-

Treatment

- Amprolium (Corid)
- Best to treat individually (nursing lambs)
- 50 mg/kg (5 times the calf dose)
 - 2.25 mL/10 lbs orally 1x/day for 5 days
 - 5 mL/10 lbs orally 1x/day for 5 days (1:1 dilution)
 - Follow up with fecals
- Herd/Group treatment in water
 - 4 ounces/10 gallons water
 - Follow up with fecals
- Re-Treat in 3 weeks
- 24 hr meat w/d
- Block metabolism of B1 in protozoa EXTRALABEL USE!!
 - Thiamine: 0.25 mL/10 lbs 2-3x/day for 3-5 days

Control

- Sanitation!!
- COCCIDIOSTATS
 - Need to be fed for 4 weeks (except corid)
 - Use only during times of risk
 - Prolonged use of coccidiostats can cause resistance, use fecals to monitor this
- Amprolium
 - Crumbles: 15 mg/kg/day for 3 weeks
 - Liquid: 2 ounces per 10 gallons for 3 weeks
- Deccox (decoquinate)
 - 0.5 mg/kg/day
- Bovitech (lasolacid)
 - 15-70 mg/head/day

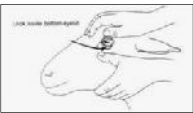


Gastro-intestinal parasites

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The FAMACHA[®] System

For assessing anemia and barber pole worm infection in small ruminants

Clinical Category	Color	PCV	Deworm?
1	Red	≥ 28	No
2	Red-Pink	23-27	No
3	Pink	18-22	?
4	Pink-White	13-17	Yes
5	White	≤ 12	Yes

Parasite Management Principles

1. Do not overstock pastures/pens
2. Don't overgraze (5" min)
3. Adequate nutrition increases immunity
4. Rest pastures sufficiently: Rule of thumb is 3 months
5. Practice selective deworming, not prophylactic deworming = "smart drenching"

Parasite Management Principles

6. Administer drugs properly (do not under dose)
7. Select sheep which are more resistant to internal parasites
8. Practice good sanitation
9. Use coccidiostats
10. Determine which drugs work on your farm (FECRT)

Fecal Egg Count Reduction Test

FECRT

- Absolutely necessary test for every herd
 - Determines if the current dewormer is working in your herd (quantitative test)
 - Take fecal sample before deworming
 - Multiple animals in the herd (minimum of 10)
 - McMaster's performed and # eggs/gm recorded
 - Individual animal test
 - Take fecal sample 10-14 days after deworming
 - Take fecal from same animals
-

FECRT

- Should see 80-90% decrease in the fecal egg count from first to second sample if dewormer is working
 - If lower then this: Change Dewormer(s)
 - Can also use on an individual animal basis to evaluate fecal egg counts (McMasters)
 - Can help determine animals to keep (positive selection) and animals to cull (negative selection)
-

Combination Dewormers

- All herds have resistance to all dewormers to some degree (unless closed herd for >25 yrs)
 - Due to resistance to all dewormers, currently being used much more frequently
 - Recommended for clinical sheep (anemic due to hemonchus)
-

New Developments

- New drug hopefully coming soon
- Monepantel
- Amino-acetyl-nitrile (new class)
- Currently in hands of FDA/Novartis product
- Drug released in 2005 (NZ, AU)
 - Already seeing resistance in these countries

New Developments

- Sericea-Lespedeza pellets available \$\$
- Tannins may react directly with adult worms by attaching to their “skin”, causing them distress, or indirectly by improving protein nutrition of the goat and boosting the immune system
- Appear to reduce the hatching of fecal eggs and development of larvae, perhaps by binding to the larvae
- (Min et al., 2005).

A Little About Anthelmintics

Anthelmintics commonly used in the U.S. sheep and goat industry

1	BZD	Benzimidazoles	Thiabendazole Fenbendazole Albendazole Oxfendazole	TBZ® ¹ Panacur®, Safeguard® ² Valbazen® ¹ Synanthic®
2	IMID TETR	Nicotinic agonists Imidazothiazoles Tetrahydropyrimidines	Levamisole Moralent Pyrantel	Prohibit® ¹ , Levasol ¹ , Tramisol® ¹ Rumatel® ² , Nematel® Strongid®
3	ML	Macrolytic Lactones Avermectins Milbemycins	Ivermectin Eprinomectin Doramectin Moxidectin	Ivomec® ¹ , Primectin™ ¹ Eprinex® Dectomax® Cydectin® ¹ , Quest®

¹FDA-approved for use in sheep. ²FDA-approved for use in goats.

Questions?

- Great reference for parasite control and famacha
 - Southern Consortium of Small Ruminant Parasite Control
 - www.scsrpc.org
 - National Sustainable Agriculture Website
 - attra.ncat.org
 - To attend FAMACHA course at VMRCVM
 - Email Dr. Hollie Schramm
 - hschramm@vt.edu

THANK YOU!

Lamb Market Outlook

Virginia Shepherd's Symposium

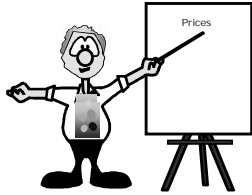
January 11, 2014

David P. Anderson
Professor and Extension Economist
Livestock and Food Products Marketing

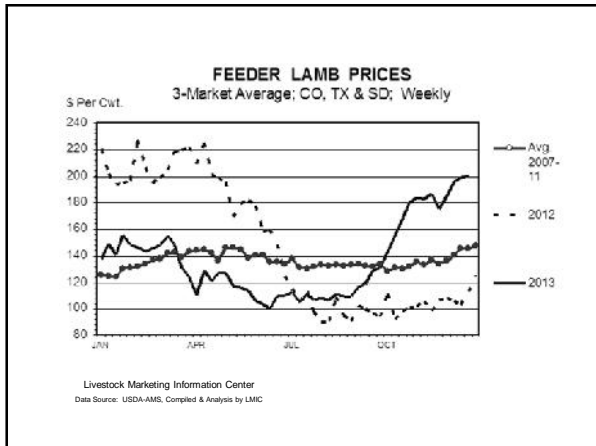


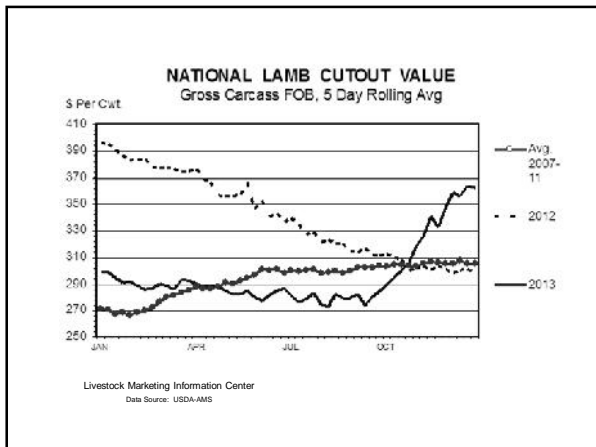
Overview

- Recovery
- Supplies
- Meat Demand
- Wild Cards

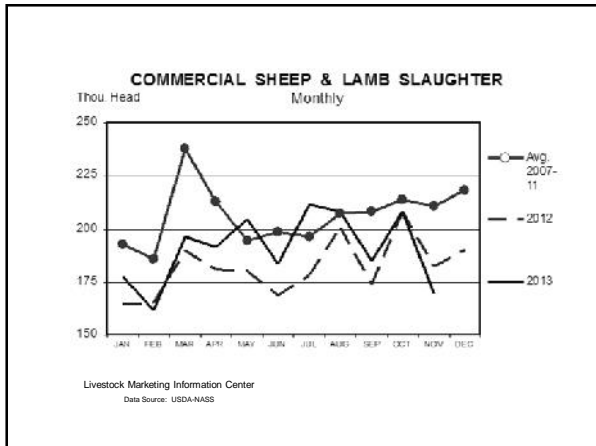


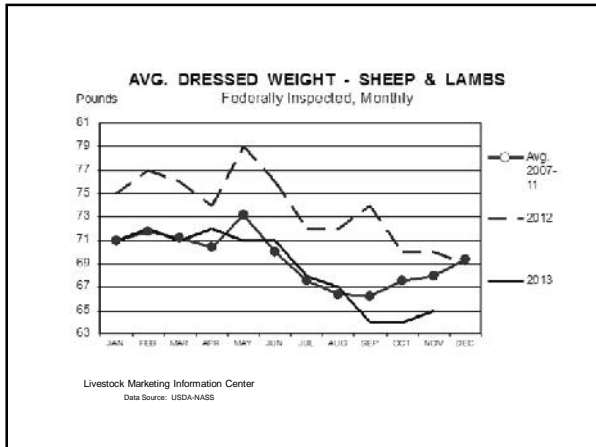
Recovery

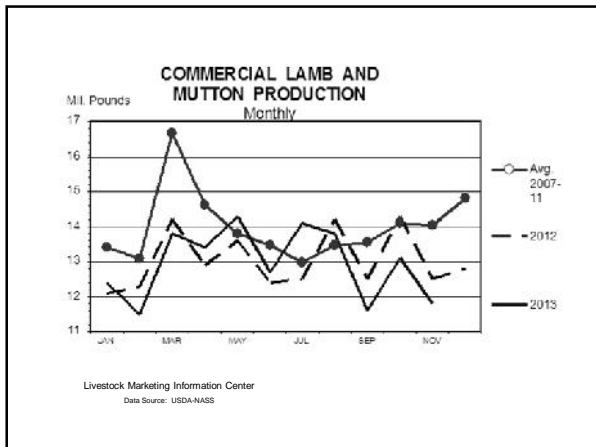


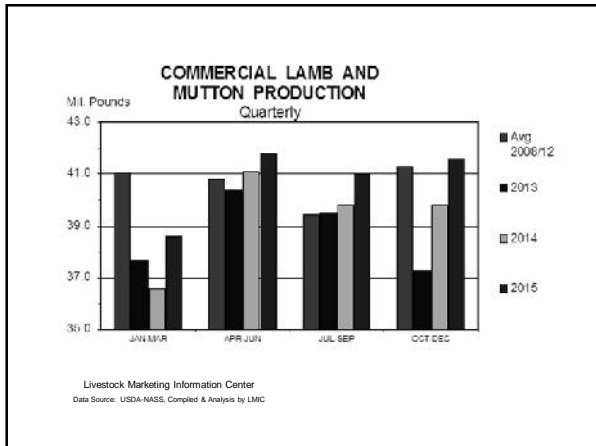


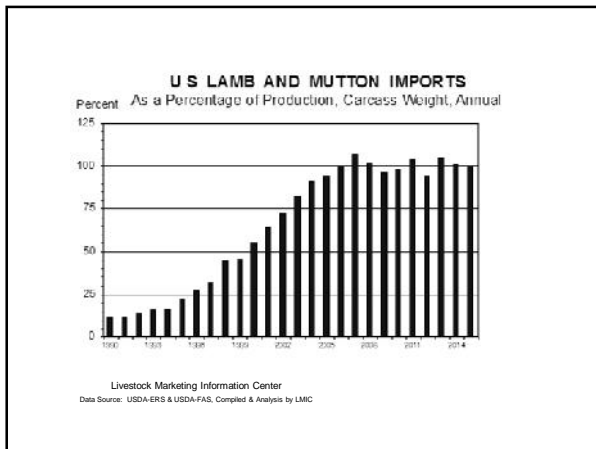
Supplies

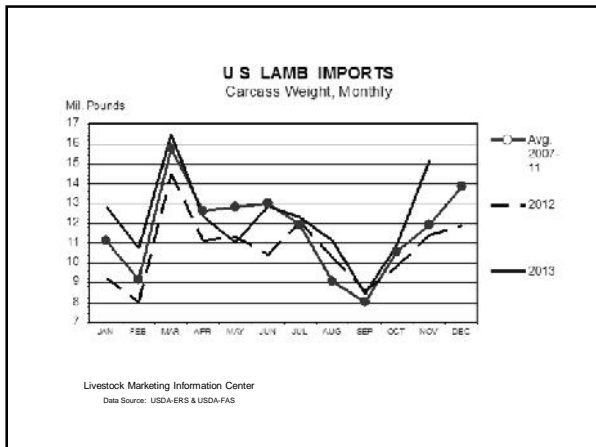








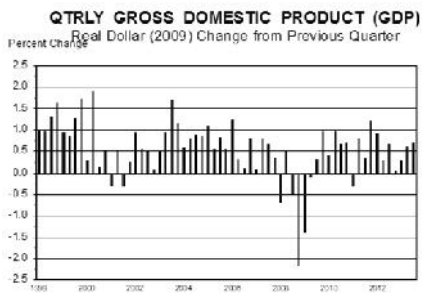




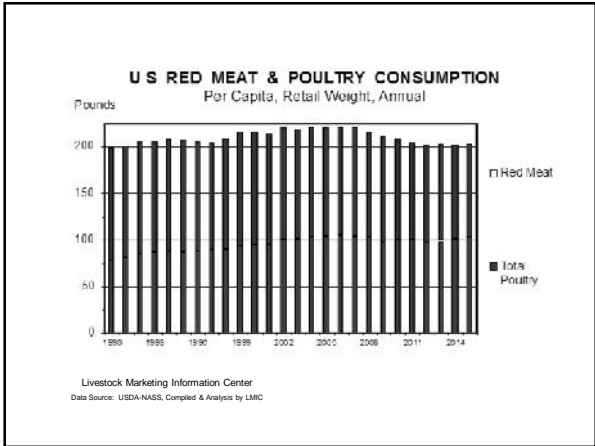
Supply Expectations

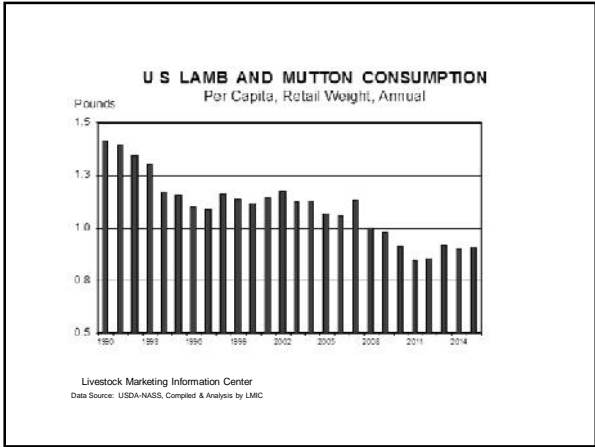
- Stabilizing Inventory
- Carcass Weights
 - A little heavier, but not disastrously heavier
- Small Increase in Lamb Production
- Strong Competition from Imports
 - But, increased China demand pulling lamb off world market

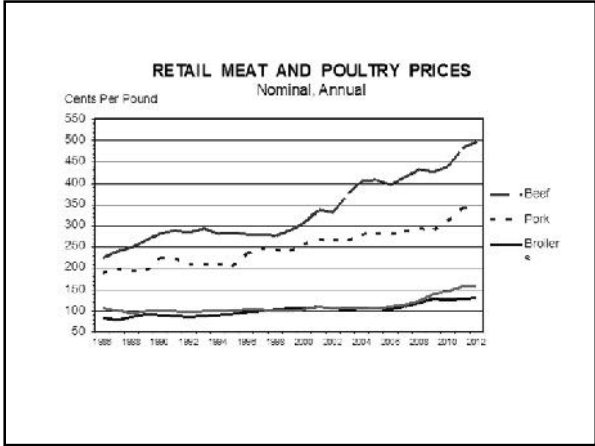
Demand



Livestock Marketing Information Center
Data Source: Bureau of Economic Analysis, Compiled & Analyzed by LMIC



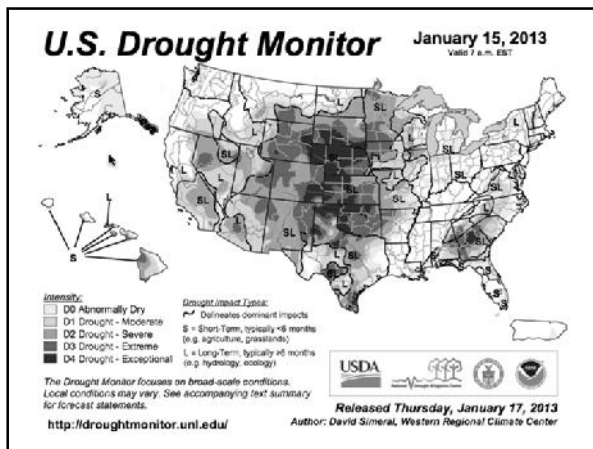


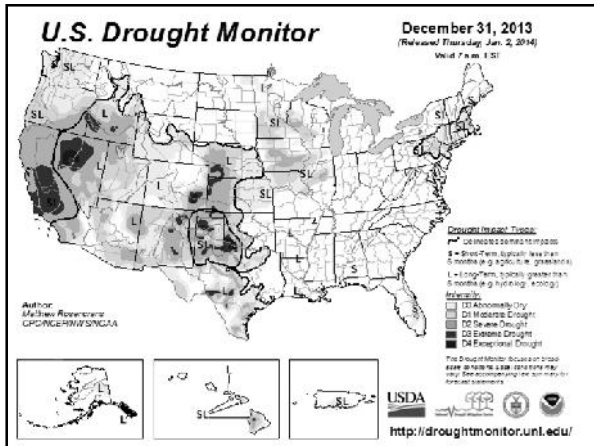


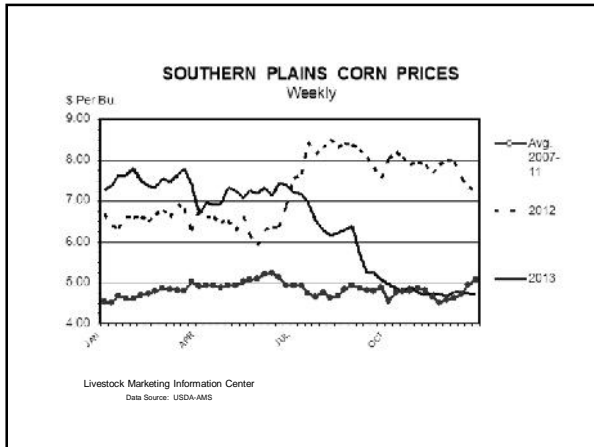
Demand Factors

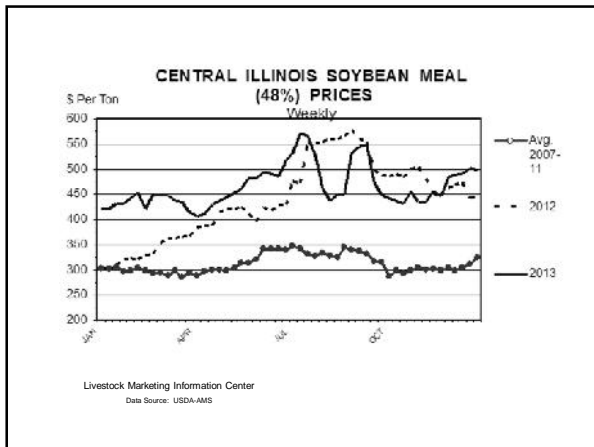
- Growing Economy
 - Faster growth will boost demand
- Price Competition
 - As usual
- Rebuilding Demand That was Damaged by High Prices and Quality
 - Appears to have happened to some degree

Wild Cards





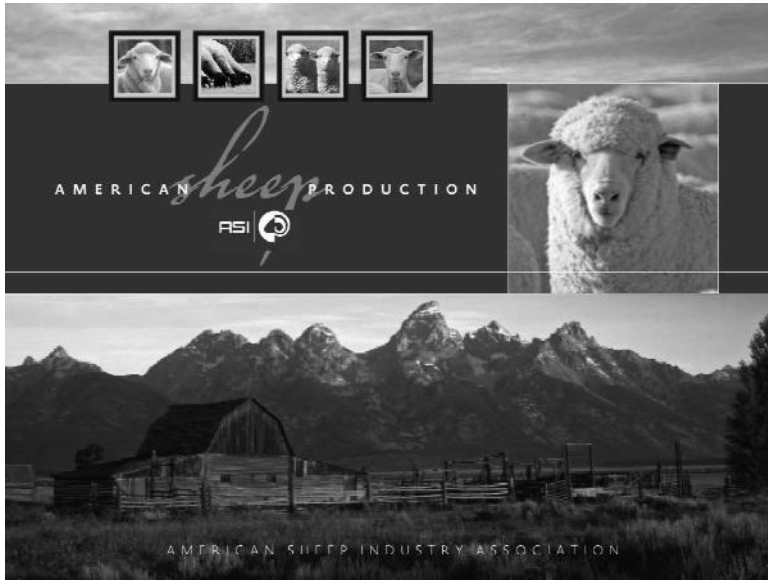




Price Expectations

- Average Lamb Prices
 - Build support for current price strength
 - Lamb prices above 2013
 - Not as high as lamb prices in 2011-early 2012
- Demand Supports Prices
 - Rebuilding demand
 - Growing economy
 - Tough price competition

THANK YOU!



Farm Bill

- Senate version includes:
 - Livestock Indemnity
 - Livestock Forage
 - Wool Loan Deficiency
 - LRP-Lamb
 - Grant program at USDA for similar purposes as the sheep center also reauthorized



Farm Bill

- House approved version includes:
 - Livestock Indemnity
 - Livestock Forage
 - Wool Loan Deficiency
- Sheep Center attacked
- Conferees named
- First meeting was Oct. 30



Export Markets

- U.S. freely traded lamb market
- Markets closed in 2003 because of cattle BSE
- Requesting significant export market prior to TPP
- Lamb companies show interest in Japan, China, Taiwan, Russia and European Union





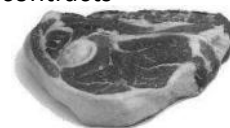
\$12 Million of Lamb Purchases in 2012

- ASI secured \$2 million in early 2012 and then gained an additional \$10 million for lamb in late summer for single largest purchase ever!
- USDA requires the program benefit sheep producers
- In total, dozens of semi-loads of meat – fresh processed and cooler inventory – were removed from the market.
- 2.63 million pounds total in this “mega purchase” by USDA



\$5 Million secured for 2013

- In June, Executive Board requested additional \$5 million. Purchases about the only tool ASI has to impact prices.
- End of August, USDA purchased 1.08 million pounds of lamb for \$4.96 million
 - Mt. States and Superior awarded contracts
 - Most deliveries will be made by year end
 - Feeder lamb prices reacting



Mandatory Price Reporting

- ASI with congressional and livestock support asking USDA to conduct analysis to update Livestock Market Reporting for lamb



- Affects ability to offer LRP-Lamb insurance when data shortages occur in some reporting periods



Lamb Price Reporting

- Lamb program is entirely by regulation so USDA can implement updates without Congressional changes to the law.
 - Confidentiality
 - Imported lamb
 - Carcass trade
- ASI board received report on changes in January with top items at USDA for change.





LRP-Lamb

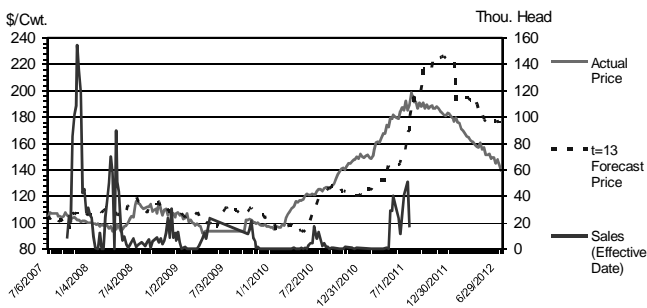
- 2012 sales periods were not always available due to lack of pelt reports some weeks and “circuit breakers” kicking in some weeks.
- 2013 policy sales nearly non-existent as insured levels below a dollar per pound.
- Some in industry question why USDA can’t increase the projected ending values to increase policy sales and lamb prices. (that would make LRP-Lamb a lamb price support, not an insurance product).

LRP-Lamb

- LRP-Lamb in customary five year review by USDA for insurance products this year.
- Analysts documented that no more than 200,000 to 250,000 lambs out of 1.25 million slaughtered in any year have been insured.



LRP LAMB PRICES AND SALES
Weekly, By Effective Date



Senators Support Lamb Producers

- October 2012 Letter from 8 Senators made following requests of Secretary Vilsack:
 - Investigate lamb market
 - Availability of LRP-Lamb Insurance
 - Force open export markets for American Lamb
 - Support updates to mandatory price reporting and price discovery reports compiled by USDA
 - Investigation report in November???



Lamb Initiatives

- Opportunity to establish a tenderness certification for lamb with USDA. Could apply to 90% of product.
- Instrument grading of lamb a possibility with companies securing “lambcam”
- Lamb to Europe with hormone free certification
- ALB Industry Assessment – Hale Group Roadmap



Lamb Carcass Maturity Directive -- 2013

Directive Passed by ASI Board of Directors on 1/26/13

BE IT DIRECTED that ASI works with USDA to propose a more accurate definition of the maturity window for the grade standard that currently exists for yearling mutton, and

BE IT FINALLY DIRECTED that ASI works with USDA to propose a more industry agreeable term for yearling mutton.



Livestock, Dairy, and Poultry Outlook (USDA ERS Feb. 2013)

- The sheep inventory registered a smaller decline than in the previous 2 years. Despite the drought conditions in most of the sheep-producing areas, the “grow our flock” program by the sheep industry appeared to slow the decline.
- 2012 imports were down 6 percent from 2011 and lowest tonnage compared to US commercial production in six years.
- Continued tight supplies and fairly stable demand are expected to contribute to the improved prices.

Iowa and Minnesota Sheep Numbers Down 10%





Legislative Action Council

- In July, ASI hired Jim Richards of Cornerstone Government Affairs as Washington, DC lobbyist.
- Jim worked for Joe Skeen (NM), Henry Bonilla of (TX) and covered sheep issues in House for a decade.
- Also contracted Northwest Natural Resources for strategy on wild sheep controversy



Animal Rights still after Wildlife Services

- ASI led a letter to Congress with 158 county, state government, local and national agriculture and sportsmen groups to oppose any efforts to cut or eliminate USDA Wildlife Services.
- ASI led defeat of the Humane Society of U.S. sponsored amendment in June 2011 to gut Wildlife Services for any livestock protection. Vote was overwhelming at 284 – 132.
- Airline and Airport organizations joined us this year!



Oppose Animal Rights Egg Legislation



- Livestock groups joined forces to oppose a HSUS legislation to mandate production practices of eggs.
- Dangerous precedent to have legislation via animal rights sponsorship affecting farms and ranches.
- We kept the provision out of the Senate Farm Bill.



H-2A Legislative Subcommittee



- ASI, WRA and MPAS coordinating on 113th Congress immigration reform legislation
- Codify the three year contract and annual visa with range livestock and range housing
- Codify special procedures
- Senate package includes special procedures industries which would be first time appearing in law.



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



Let's Grow Efforts

- Focus on management efficiency.
- 3 Webinars presented with great participation.
- “We need to maximize efficiency of lambs born and lambs/wool shipped every year to be profitable much less grow production.”

www.growourflock.org



Let's Grow Efforts – New Loan Program

- ASI and NLPA Sheep Loan Fund offering new load program for flock expansion
- \$35,000 minimum loan – fixed rate and fixed at five years
- Must be used to purchase breeding animals

Call -- 800-237-7193



ASI Market App

- Provides wool and lamb markets
- All reports come from USDA
 - 7 Auction Reports
 - National Reports
- Designed for iPhones & Androids
- Download from Apple's App Store or the Android Store
- More than 750 downloads to date





2014 ASI Calendar



- Uses Photo Contest Winners
- Will ship in your December *Sheep Industry News*

150th Anniversary in 2015



- ASI dates back to 1865
- Successor to the National Wool Growers Association
- Oldest National Livestock Association in the United States



**2014 ASI Convention
January 22-25**

Charleston

Registration forms will be in boxes the middle of November.

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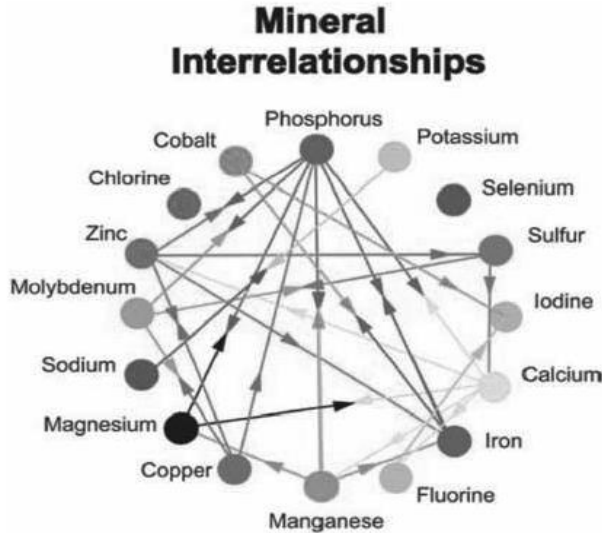


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MINERALS AND VITAMINS FOR SHEEP

Mark A. McCann, Extension Animal Scientist

Of sheep nutrition topics, mineral and vitamin nutrition are rarely considered the most interesting. A couple factors probably contribute to the issue. One is that we are primarily concerned when there is too much or too little of a particular element. Most nutritional symptoms are related to toxicity or deficiency levels. In between the two extremes there is little visual we can detect that would indicate mineral status. Another contributing factor to diagnosing issues related to minerals is there are several key interactions between several minerals which can impact absorption or utilization. The figure below depicts the interrelationship between various minerals.



In most production situations, forage in the form of hay or pasture supplies the majority of minerals needed. Proper fertilization, harvest maturity and incorporating legumes into grasses all positively impact the mineral content of forages. Since forage provides the bulk the minerals needed, providing a quality mineral supplement can make up the difference between forages and animal requirements. In Table 1 are shown the various minerals of concern, levels found in good forage, and the requirements for these nutrients by various classes of sheep. The requirements are based upon the

Nutrient Requirements of Sheep, Sixth Edition (1985), and the forage values based upon pasture and hay samples taken in southwest, central and the Shenandoah Valley areas of Virginia over the last several years.

Table 1. Minerals in Forage and Required by Sheep

Nutrient	Good Forage	Class of Sheep and Their Requirements (in diet Dry Matter)		
		Mature Ewe		Young Lamb
		Early Pregnancy	Nursing Twins	Fast Gain
Calcium, %	.62	.25	.4	.55
Phosphorous, %	.32	.2	.3	.25
Potassium, %	2.3	.5	.8	.6
Magnesium, %	.25	.12	.18	.12
Sulfur, %	.25	.15	.25	.15
Sodium, %	.02	.10	.15	.10
Iron, PPM	354	40	40	40
Copper, PPM	9	10	10	10
Manganese, PPM	70	40	40	40
Zinc, PPM	31	30	30	30
Selenium, PPM	.15	.3	.3	.3

Macro-minerals are required in larger amounts, with that requirement expressed as a % of the diet or as grams per head per day. In Table 1, above, they are shown on the first 6 rows of the table. Some of these are already in sufficient quantity in forages, so supplementation is not needed. Others are never in adequate amounts, so they must always be in a supplement. Finally, there are those that are marginal in forage and supplementation is sometimes needed.

- Adequate Potassium
- Deficient Sodium (when combined with Chlorine, makes salt)
- Marginal Calcium, Magnesium, Phosphorous, Sulfur

Calcium is often in adequate amounts in forages, and legumes have higher levels than do grasses. It is a relatively inexpensive mineral to add to feeds or mineral supplements. Grains and grain crop silages have high levels of phosphorous and very low levels of calcium. Many grain byproducts such as distiller's grains, corn gluten feed and wheat midds have higher phosphorus content than the grain. In many situations forage phosphorus is low due to soils are low in phosphorous fertility levels. Because phosphorous is important to reproduction and growth, it is often included in minerals for the ewe flock year around. It is the most expensive macro-mineral to add to a mineral supplement. Magnesium is often low in lush forage growing in early spring or when spring-like conditions occur. A deficiency of Magnesium causes grass tetany, a problem in cows that rarely occurs with ewes.

Micro-minerals or trace minerals are needed in very small quantities. The requirement by animals for these minerals is expressed in milligrams per head per day or in parts per million. Just as with the macro-minerals, some are adequate, others are deficient, and several are marginal.

- Adequate Manganese, Iron, Copper
- Deficient Selenium
- Marginal Zinc

Iron is often added to minerals (iron oxide or ferric oxide on the tag), even though the required amount is included in the forage that is consumed in the basal diet. The reason it is added is to give minerals the typical reddish-brown color. However, iron can interfere with the uptake of other minerals that are not in large amounts, such as zinc. Thus, it is recommended that iron not be added to complete minerals for sheep.

Zinc, Copper, and Selenium are all important in many physiological functions, including the immune response and disease-fighting ability. Our soils are often deficient in Selenium, making forage grown on those soils also deficient. Consequently, it is strongly recommended to include Selenium in mineral mixtures for sheep of all ages. The rules, for adding maximum levels of Se for sheep, are:

- 0.3 Parts per Million (PPM) in the total diet
- 0.7 mg per head per day
- 90 PPM in a free-choice mineral mixture

Because Se is not stored in the body for very long, frequent intake or dosing of Se is critical. A good sheep mineral needs to be available at all times that contains at least 50 or 60 PPM of Se. Assume Se is not included in a mineral product. If it is included, the amount must be stated on the label of the product. It often is stated as a percent. To convert % to PPM, move the decimal 4 places to the right. Thus, a product with 60 PPM would be stated to include 0.006% Se.

Copper (Cu) can be toxic to sheep. Although there is an important function of Cu in the body, and thus it is a required mineral, excess amounts are concentrated in the liver rather than being excreted. Over time, this excess of Cu can destroy liver tissue, resulting in death of the animal. Our soils, and thus the forages grown on them, contain Cu levels that are close to the animals' requirements. Consequently, sheep minerals for the mid-Atlantic region should not have any Cu added to them.

****Note** These levels are too low for cattle and goats, thus properly formulated minerals for these species always have Cu added to them. Mineral mixtures formulated for cattle and goats can be toxic to sheep if used for a long time.

Vitamins

Sheep, with their ruminant digestive system, can make vitamins from the raw materials consumed in their diet. They do this very well with all of the B-Vitamins; thus these are not any concern with sheep.

Vitamins A and E are made from compounds found in green forage. Vitamin A can be stored in the liver for 2 or 3 months after sheep have been eating green forage for several months. Consequently, when eating fresh pasture or hay no supplemental vitamins are needed. However, when sheep are eating forage that is old, weathered, mature, or otherwise low in Vitamin A precursor (carotene), then this Vitamin should be added to the mineral mixture. Other feeds that will result in inadequate Vitamin A levels are corn silage, corn stalks, and straw.

Vitamin D is made from exposure to sunshine. For sheep housed indoors for more than 2 to 4 weeks, such as lambs being finished in confinement, Vitamin D should be included in the diet.

Most commercial minerals for sheep designed for free-choice feeding will contain added Vitamins A, D, and E. When making a total mixed ration, vitamin premixes can be added inexpensively to the formulation if a free-choice mineral is not going to be fed.

Table 2. Vitamins in Forage and Required by Sheep

Nutrient	Class of Sheep and Their Requirements (in diet Dry Matter)			
	Good Forage	Mature Ewe		Young Lamb Fast Gain
		Early Pregnancy	Nursing Twins	
VitA, IU/lb DM	50,000	1000	1200	500
Vit D, IU/lb DM	500	100	100	100
Vit E, IU/lb DM	10	7	7	7

Intake of Mineral

Sheep do not eat the same amount of mineral throughout the year. They have a craving for salt, and consume a complete mineral to get salt. Some ingredients, such as dicalcium phosphate and especially magnesium oxide, are not very palatable; thus intake may be lower when these ingredients are included. Often grain products or artificial flavor enhancers are added to mineral mixes to encourage higher intake. Intake is higher when consuming lush fresh forage, such as in the early spring. During the dry summer months intake is lower, this is also the case when sheep are eating hay. If a water source is nearby intake is higher than when water is a great distance away. In addition to nearby water, intake is higher if mineral feeders are located in shady areas or along paths frequently traveled by sheep.

Composition of Minerals (Feed Tag Information)

By law the tag on a mineral product must contain certain information. It must contain guarantees of various minerals included in the product. The minimum information to be stated is:

- Minimum and Maximum Calcium
- Minimum Phosphorous
- Minimum and Maximum Salt
- Minimum and Maximum Copper (if added, or if it exceeds 20 PPM)
- Minimum Selenium
- Minimum Vitamin A

Information about other minerals and vitamins may be displayed on the label. If a product contains a feed additive (antibiotic, ionophore or coccidiostat), it will say "Medicated" on the label, and the FDA-approved purpose and feeding directions for that additive will be stated. FDA-approved coccidia control products include Lasalocid (brand name Bovatec) which is to be fed at between 15 and 70 mg per head per day in a complete feed. Monensin (brand name Rumensin) is not approved for sheep, but is approved for goats in a complete feed at the rate of 20 g/ton. Decoquinatate (brand name Deccox) is approved for both sheep and goats at the rate of 22.7 mg/100 pounds of bodyweight.

Form of Mineral Supplement

Minerals and salt products are available in loose, granular form and in block form. Because blocks are hard enough to shed rainwater, it is sometimes difficult for sheep to get enough mineral from licking them. In addition, sheep have broken their teeth on blocks. Finally, few if any complete minerals are in block form. Loose minerals must be put in a covered feeder of some type to keep rain out so they don't cake and become hard. Loose mineral mixes are the recommended form of mineral for sheep.

Types of Mineral Supplements

Sheep producers with forage-based feeding programs normally provide minerals in a self-feeder to their animals. They normally do not mix minerals with other feeds that are fed each day, as is the case with pigs, poultry, dairy, and beef feedlots. There are several types of free-choice mineral mixtures available to sheep. These are:

White Salt The only minerals this contains are Sodium and Chlorine. This is not an adequate mineral supplement. Often contains Iodine, and is therefore called Iodized Salt.

Trace Mineral Salt (TMS) TMS is White Salt with added Trace Minerals. No macrominerals are included. Often colored red from the Iron compounds added. Unless specifically stated, TMS contains no added Selenium, although there are some TMS products that do. TMS with added Selenium is considered to be the minimum acceptable mineral supplement for sheep, and only then sheep consuming high quality pasture.

Complete Mineral A mixture containing salt, the macrominerals Calcium and Phosphorous, and trace minerals. May or may not have added Selenium. Magnesium may be added, but perhaps not enough to prevent grass tetany. Often the ratio of Calcium to Phosphorous is in the product name, such as 2:1 or 4:1. Because Phosphorous is the needed item and Calcium is normally adequate, a lower ratio is more appropriate for forage-based feeding programs. A higher ratio just dilutes the Phosphorous with Calcium-containing ingredients.

Lambs fed a high-grain diet

The rapidly growing lamb fed a high grain diet can experience many nutritionally related problems. One of these is called urinary calculi, a blockage of the urinary tract caused by "stones" that develop. An unsupplemented high grain ration contains an excess of phosphorous and small amounts of Calcium. The requirement (table 1 is for calcium in higher amounts than Phosphorous. This reversal of Ca:P ratio results in a change in the pH of the urine and the development of mineral-based precipitates in the urinary tract.

One solution to this problem is to use ammonium chloride in the ration. This changes the pH of the urine back towards normal, thus preventing the precipitates from forming. However, the Ca:P imbalance still persists. This is best fixed by feeding the lamb a mineral supplement that provides lots of Ca and little or no P. Ground limestone (feed grade) added to a complete ration at the rate of 1% of the mixture is recommended. In this way the diet will contain the recommended Ca:P ratio of at least 2:1, even though the actual amounts of both Ca and P will greatly exceed the animal's requirements for these minerals. Many lamb feeders use added limestone plus ammonium chloride in the same feed.

Summary

Mineral supplementation need not be complicated or expensive. Intake of minerals by sheep needs to be monitored to ensure that amounts adequate to meet the needs are consumed. Excessive intake is costly and does not result in higher production. By focusing on forage production and quality first, then providing minerals that are likely to be deficient, producers can cost effectively meet the mineral needs of their sheep.

Adapted from Minerals and Vitamins for Sheep, Mark Wahlberg (2004). Disclaimer: Mention of specific brand names is for information only. No recommendation or endorsement is implied.

Experiences With CIDRs in the Virginia Tech Dorset Flock

Scott P. Greiner and Mark McCann
Extension Animal Scientists, Virginia Tech

Fall lambing appeals to sheep producers for a variety of reasons. Fall-born lambs typically are well-suited to take advantage of strong winter or early spring market prices. Additionally, there is growing demand for fall-born lambs to meet the needs of youth which have spring market lamb shows. Favorable weather and forage production associated with fall lambing compliment these marketing opportunities. The primary limitation to fall-lambing is the ability to get a suitable percentage of ewes pregnant during a spring breeding season. Among the options producers have to enhance spring breeding success is hormonal control of the estrous cycle to induce ovulation in ewes. The sheep EAZI-BREED CIDR provides producers a user-friendly, readily available option to enhance spring breeding. The CIDR is a vaginal insert which releases progesterone, and is labeled to induce estrus in ewes during seasonal anestrus. The CIDR is a simple, easy-to-use device that is inserted into the ewe for five days, with ram introduction to immediately follow. Following is a summary of results of utilizing CIDRs in the Virginia Tech Dorset flock located on campus.

The use of CIDRs to enhance fall lambing in the VT Dorset flock was initiated in Spring 2010. The primary goal was to increase the number of ewes lambing in the fall for use in the APSC teaching program as well as meet the demand for fall-born rams for commercial producers. The following summary will present results from spring and fall breeding and lambing seasons over the past three years. Breeding season protocols were similar across years. For spring breeding, CIDRs were administered late April through mid-May. All ewes had been isolated from rams prior to synchronization. Ewes were mated in single-sire breeding groups, and rams had passed a breeding soundness evaluation prior to the breeding season. Any ewe not conceiving in the spring breeding season was subsequently exposed to rams starting in August to lamb in January-February. No synchronization protocol was used in the fall breeding season. Rams remained with the ewes for approximately three estrus cycles. Differences in synchronization treatments over the three years are outlined with results below.

2011-2012 Season

In 2011, a total of 59 registered Dorset ewes were synchronized with CIDRs. CIDRs were administered in late April or late May, and removed after 5 or 7 days following insertion. Ewes were mated to Dorset rams in single-sire breeding pastures. A control group (no CIDR) of 32 ewes were introduced to the same rams on the same day as the synchronized ewes. All ewes had lambed either fall 2010 or winter 2011. Open ewes from the Spring 2011 breeding were bred August-September for subsequent lambing in winter 2012. The following table summarizes breeding and lambing information for each lambing season.

	Fall Lambing 2011		Winter Lambing 2012
	CIDR ^a	Control	
No. Ewes	59	32	36
No. Ewes Lambing	35 (59%)	14 (44%)	34 (94%)
Lambs born/ewe lambing	1.48	1.46	1.76
Lambs weaned/ewe lambing	1.21	1.31	1.67

^a Includes ewes receiving CIDR for 5 or 7 days.

	All Service Sires		Service Sire A		Service Sire B		Service Sire C	
	CIDR ^a	Control	CIDR ^a	Control	CIDR ^a	Control	CIDR ^a	Control
	No. ewes	59	32	23	13	15	8	21
No. ewes lambing	35 (59%)	14 (44%)	16 (70%)	9 (69%)	2 (13%)	0 (0%)	17 (81%)	5 (45%)

As shown above, overall pregnancy rate for ewes synchronized with CIDRs was 59% compared to 44% for control ewes. Lambs born per ewe lambing was similar for synchronized vs. control ewes. Evaluation of the effect of service sire revealed one sire group (Sire B) had much lower pregnancy rates as a result of poor ram performance. Excluding ewes exposed to Sire B, overall pregnancy rate was 75% (33 of 44 ewes) for ewes receiving CIDR and 58% (14 of 24) for control ewes. Comparing fall vs. winter lambing ewes reveals a substantial difference in number of lambs born and weaned per ewe lambing.

2012-2013 Season

In spring 2012 a total of 40 Dorset ewes were synchronized with CIDRs. All synchronized ewes lambed January 15 –February 15 and were weaned on April 5. CIDRs were inserted on May 3 and removed after 5 or 7 days. A control group of 41 ewes were introduced to rams the same day as the synchronized ewes. All control ewes had lambed fall 2011. Control ewes received no CIDR. Open ewes from the Spring 2012 breeding were bred August-September for subsequent lambing in winter 2013. Results are presented below.

	Fall Lambing 2012		Winter Lambing 2013
	CIDR ^a	Control	
No. Ewes	40	41	43
No. Ewes Lambing	25 (63%)	19 (46%)	36 (84%)
Lambs born/ewe lambing	1.25	1.58	1.79
Lambs weaned/ewe lambing	1.05	1.42	1.68

^a Includes ewes receiving CIDR for 5 or 7 days.

In the spring 2012 breeding season, there was no difference in pregnancy rate among the four sires utilized. Overall pregnancy rate (54%), and pregnancy rate for CIDR and Control ewes was very similar to that observed in Spring 2011. Additionally, there was no difference in pregnancy rate between 5 vs. 7-day CIDRs in either 2011 or 2012. At breeding, all ewes were weighed and Body Condition Scored. There was a tendency for thinner ewes (BCS = 2) to have slightly lower pregnancy rates than ewes in BCS 3 or 4 (50% vs. 56%). Ewes that became pregnant were an average of 13 pounds heavier at breeding compared to ewes which failed to breed in the spring. Pregnancy rates were similar across ewe ages (all were mature ewes). As was observed in the previous year, Dorset ewes lambing in the winter vs. fall drop and wean a larger lamb crop. Additionally, observations from fall lambing ewes in both 2011 and 2012 showed fall lambing tended to have a higher incidence of stillbirths and low birth weight lambs resulting in more mortality from birth to weaning compared to winter lambing ewes.

2013 Season

In spring 2013 a total of 38 Dorset ewes were synchronized with CIDRs. All synchronized ewes lambed January–February and were weaned on March 27. CIDRs were inserted on May 16 and removed after 5 or 7 days. One half of the ewes receiving CIDRs were administered PMSG 24 hours prior to CIDR removal. A control group of 41 ewes were introduced to rams the same day as the synchronized ewes. All control ewes had lambed fall 2012. Control ewes received no CIDR. Results for the synchronization treatments are shown below.

	Fall Lambing 2013		
	CIDR ^a	CIDR+PMSG ^b	Control
No. Ewes	19	19	36
No. Ewes Lambing	14 (74%)	14 (74%)	21 (58%)
Lambs born/ewe lambing	1.53	1.79	1.43
Lambs weaned/ewe lambing	1.31	1.79	1.19

^a Includes ewes receiving CIDR for 5 or 7 days.
^b Includes ewes receiving CIDR for 5 or 7 days, + PMSG.

In spring 2013, pregnancy rates were similar for ewes receiving CIDR compared to those receiving CIDR+PMSG. Both synchronized and control ewes had higher pregnancy rates in spring 2013 compared to the spring breeding seasons of 2011 and 2012, and this difference was

most notable for the control, non-synchronized ewes (58% pregnant vs. 44% and 46% previous two springs). No differences in pregnancy rate among the three sires utilized in Spring 2013 were observed. Ewes receiving CIDR+PMSG had higher lambing rates than those receiving CIDR alone, although pregnancy rate was the same. Given the small number of ewes in both treatment groups, this observation requires further investigation.

Collectively, these on-farm experiences underline several key points when synchronizing ewes for spring breeding:

- Ram fertility and libido is critical, conduct BSE on rams and observe closely; use of a marking harness will increase accuracy of monitoring
- Ewe:ram ratio should not exceed 18:1 and may need to be lower depending on the age and capacity of the ram. Single ram flocks should stagger CIDR removal (every 2-3d) to avoid overworking the ram
- Ewes should be in good body condition, weaned and recovered from the weaning process
- Ewes should not be exposed to rams prior to synchronization
- Minimize stress on ewes during and immediately following breeding season (heat, transportation)
- Lambing rates will be significantly lower for fall vs. winter/spring lambing ewes

LAMB MEAT PROJECT



**Jake
Bostic**
Bostic Ridge
Farm
Craig County

How it all got started.....

Showing
lamb as a
4-H project



WHY LAMB MEAT?

- When live weight prices were up all was good, then that dropped....
- Off set show lamb expenses
- Friends in the community requesting lamb
- Business project with parents storefront as a way to sell.



PREVIEW

- Lambs
- Slaughter facility / Freezer storage
- Pre-order form & pricing
- Pick-up & Delivery
- Pre-orders vs Direct Marketing
- Insurance, Business license, Regulations

LAMBS

- Home raised - pasture + grain (not show lambs)
- Show Lambs - mostly grain fed

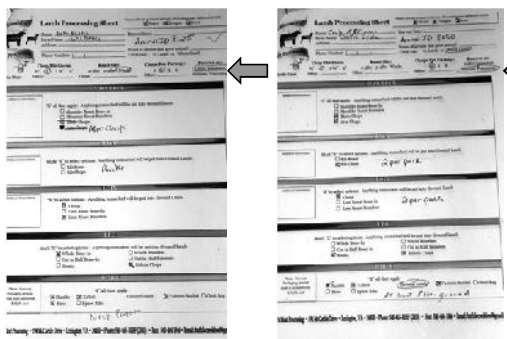


SLAUGHTER FACILITY/FREEZER

- Find a slaughter house that will USDA inspect and custom package meat. Nice packaging and a professional look is important.
- Weighed, packaged, priced & farm name on label.
- Coolers and a freezer are needed.



CUT SHEET



PRICING & PRE-ORDER FORM

- Pricing was determined by comparing Kroger, Vt meat center, Donald's Meats
- A simple pre-order form was put together
- Started taking orders from those who had called in past years.



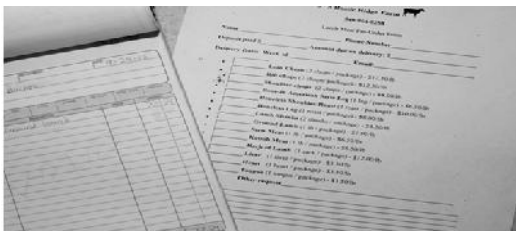
PICK-UP & DELIVERY TO CUSTOMER



A transportation & storage plan is very important.

RECORD KEEPING

I use a receipt book and my order forms to keep track of what I have sold and to maintain contact information of customers.



SALES

- Pre-orders, word of mouth, local paper article were 71% of sales.
- Storefront , Joe's Trees Ad in Roanoke Times, Facebook, & general walk-ins 29% of sales.
- Of all meat sales at Joe's Trees retail store lamb was 74% of those sells



LIVE WEIGHT TO ENDING PRODUCT

4 Lambs

- Total live weight = 565 lbs
- Total Carcass weight = 340 lbs
- Final retail cuts = 211 lbs

INSURANCE, LICENSE, FEES

- Insurance to cover storage and any health issues that may arise from the consumer
- Is a business license required? I fall under my parents business.
- Farmers Markets have requirements/fees

QUESTIONS:



Outstanding Sheep Producer Award Recipients

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