

Winter 2018 – Volume 30, Issue 1

*Hoof*Print

The Small Ruminant Magazine



TIPS FOR
WINTER FEEDING

TALES FROM
**THE KENTUCKY
FIBER TRAIL**

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DISASTER PREPARATIONS: PART 2

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With the Online Only package, you will have access to all the video modules, as well as downloadable files of the presentations and SRPS Notebook materials. Feel free to download and/or print the materials that you need.

- For current KGPA/KSWPA members, \$75.
- For non-members of KGPA/KSPWA, \$105. (You will receive a membership to either KGPA or KSWPA with your registration.)

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(option available as long as supplies last)

With the Online & Print package, you will have access to all the video modules, downloadable files of the presentations and be mailed a copy of the SRPS Notebook in a heavy duty 3 ring binder with dividers (over 400 pages).

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- For non-members of KGPA/KSPWA, \$125. (You will receive a membership to either KGPA or KSWPA with your registration.)

To Register visit:

www.kysheepandgoat.org/srps.html



Collaboration between Kentucky Sheep and Goat Development Office, Kentucky Agriculture Development Fund, University of Kentucky, Kentucky State University, and the KY Department of Agriculture.



Hoof Print Magazine

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HoofPrint: The Small Ruminant Magazine is a periodical to promote better animal health, husbandry, and knowledge among sheep and goat producers. **HoofPrint** is the joint effort of members of the sheep and goat industries and serves as a united voice for all small ruminant producers.

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PHOTOGRAPHY

Dr. Debra Aaron, KY Sheep and Goat
Development Office, KY Department
of Agriculture, Sarabeth Parido, Angie
French, and Dr. Joanna Davis
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ADVERTISING

Kelley Yates

kyates@kysheepandgoat.org
(502) 682-7780



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Frankfort, KY 40604-4709

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Winter 2018 – Volume 30, Issue 1

Hoof Print

The Small Ruminant Magazine

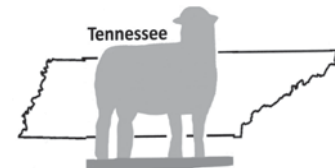
IN THIS ISSUE

- 10 Winter Feeding tips from the Langston Institute
- 12 Developing a Direct to Consumer Market
- 14 Disaster Preparations: Part 2
- 28 Genetic Selection at Your Fingertips



ASSOCIATION NEWS & MORE

- 4 KY Sheep and Wool Producers Assoc.
- 6 KY Goat Producers Assoc.
- 8 TN Sheep Producers Assoc.
- 32 Breeders Pages
- 33 Market Place



SPECIAL FEATURES

17 Tales from The Kentucky Fiber Trail

- 1 Weaving Art with Agriculture
- 2 Today's Wool is not your Grandma's Old Sweater
- 4 Join Us Today!



22 NEWS TO EWES

Annual Ewe Management Programs for Production of Milk-Fed Slaughter Lambs

30 HEALTH & MANAGEMENT

What are the Causes of Abortions in Small Ruminants?

What does KSWPA do for you?

News

- Delivers the most up to date news that affects your flock through email blasts, social media, and HoofPrint

Education

- Assists with Small Ruminant Profit School as subject matter specialists and mentors
- Provides Scrapie education across the state
- Provides dedicated and experienced sheep mentors to new producers on a continual basis
- Sponsored the KY Annual Producer Conference in Bowling Green, KY
- Informs the public about shepherds, sheep and sheep products at the KY State Fair

Promotion

- Conducts Sponsors and coordinates the KY Sheep and Fiber Festival in Lexington, KY each year to over 2000 consumers
- Advocates for sheep production expansion at the Small Ruminant Grazing
- Facilitates the KY Lamb Jam Cook-Off competition in Lexington
- Sponsors the KY Make it With Wool Competition
- Manages the KY Fiber Trail effort to provide education for producers, create a greater marketing venue and elevate consumer knowledge about the natural fiber industry



KSWPA Membership Benefits

- Quarterly issues of HoofPrint Magazine plus the newly designed 2016 Sheep and Goat Management Calendar
- A unified voice for the sheep industry and representation on important state and national committees
- Assistance with new marketing opportunities such as The Kentucky Sheep and Fiber Festival and HoofTrader.com
- Receive a membership to the American Sheep Industry, our national lobbying, marketing and promotional support system.
- Support of various educational and youth activities

Name: _____ Phone: _____ E-Mail: _____

Address: _____ City: _____ State: _____ Zip: _____

Please enclose a check for \$30.00 made out to KSWPA and mail to:

Kentucky Sheep and Goat Development Office

P.O. Box 4709, Frankfort, KY 40604-4709.

JOIN or RENEW TODAY!
Visit www.kysheepandgoat.org

President's Letter

Dear KSWPA Member,

Season's greetings! I hope everyone is well and having a wonderful Christmas and holiday season!

Around this time each year, I begin thinking about what plans I need to make for lambing in the spring. In this regard, I realize that I have a tendency to get a little ahead of myself. The reality is that, as livestock farmers, we all need to focus on how best to protect our flocks and shepherd them through the winter season. Like many of you, I have already begun checking the Farmer's Almanac, searching out some Woolly Bear Caterpillars, and asking my older and more experience buddies to share with me their seasonal weather predictions and plans. As President of the KSWPA, I want to take this opportunity to pass along the best advice I have received over the past 17 years of farming: Prepare for the worst, and hope for the best.

One way to prepare for the upcoming year is to tap into the excellent educational opportunity that the Kentucky Sheep and Goat Development Office (KSGDO), has made available to KSWPA/KSGDO members. We now have an online Small Ruminant Profit School (SRPS) available on the KSGDO website for your benefit and convenience. Because the course can be accessed online, you will be able to learn from the material at a time and place of your choosing.

The SRPS is designed to benefit beginning farmers, as well as any of us who need a refresher course in sound sheep and/or goat management practices. The aim of the course is to help you, as KSWPA members, to increase the profitability of your farm and improve the health and well-being of your flock. Please review the sample SRPS module on line at the YouTube like to follow: <https://youtu.be/HLFioNbPOds>. You can learn more about the program at www.kysheepandgoat.org.

By planning now through sharpening our business practices and honing our animal husbandry skills, I believe we can all look forward to a prosperous new year.

As president of KSWPA, I also hope 2018 will be a prosperous year for our association. To ensure our success, I hope you all will join me in seeking new ways to increase the consumption and popularity of lamb in Kentuckians diets and to grow the membership of the Kentucky Sheep and Wool Producers Association (KSWPA). Let's ask all of your friends and family who



are sheep producers, but not members of the KSWPA, to join our association. Let other sheep producers know that, as members of the KSWPA, they will have access to HoofPrint, our informational magazine; our breeder's directory; our mentoring program; and a variety of educational programs. Please direct them to the following link where they can see all the offerings available to KSWPA members: <https://www.kysheepandgoat.org/kswpa-membership-app.html>

Best Wishes,
Bill Decker, KSWPA President

KSWPA - UPCOMING EVENTS

JANUARY

- 4th** Jessamine County Sheep and Goat Meeting, Jessamine County Ext Office 7pm
- 9th** Central KY Sheep and Goat Association, Marion County Extension Office 7pm
- 11th** South Central Goat and Sheep Producers Meeting, Barren County Ext Office, 6:30pm (CT)
- 23rd** UK Lambing School, Oran C. Little Research Farm Midway, KY
- 30-2** ASI Annual Convention, San Antonio, TX

FEBRUARY

- 1st** Jessamine County Sheep and Goat Meeting, Jessamine County Ext Office 7pm
- 10th** Small Ruminant Grazing Conference, Madisonville, KY
- 15th** Fort Harrod Goat Association Meeting, Mercer County Ext Office, 6:30pm
- 20th** South Central Goat and Sheep Producers Meeting, Barren County Ext Office, 6:30pm (CT)

MARCH

- 1st** Jessamine County Sheep and Goat Meeting, Jessamine County Ext Office 7pm
- 13th** Central KY Sheep and Goat Association, Marion County Extension Office 7pm
- 15th** KSU Third Thursday Goat Field Day
- 20-21** UK Sheep Shearing School, Oran C. Little Research Farm, Midway, KY
- 20th** South Central Goat and Sheep Producers Meeting, Barren County Ext Office, 6:30pm (CT)

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bdecker@cisco.com

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jim@fourhillsfarm.com
- Hannah Nilsson *Windsor, KY*
windsorwoolfarm@yahoo.com



President's Letter

Greetings Goat Producers,

Winter is upon us, and I find myself wondering around the barn more than usual pondering how I can improve my day to day operation. Winter is a great opportunity to make management decision for 2018. For assistance with those kind of decisions, contact Dr. Kenneth Andries, Assistant Professor in Animal Sciences at the Kentucky State University. Dr. Andries offers the KY Herd Health Assessment Program, which gives producers specific recommendations for improvement if day-to-day operations. Another opportunity for producers is The Small Ruminant Profit School. This is an excellent tool to learn from some of the most knowledgeable educators in the industry. Participants can take the course online and access different educational components regarding the industry. For more information please visit www.kysheepandgoat.org.

Starting January 1, 2018 all goats taken to Kentucky livestock markets and swap meets must have an official Scrapie tag in their ear prior to unloading the animals for sale. There will not be any Scrapie tags provided at these livestock markets and swap meets to place in goats that do not have them in their ear prior to arrival. NO goats will be unloaded without scrapie tags present in their ears. Please go to www.kysheepandgoat.org for additional information.



The 2017 Annual Conference was another successful event! I would like to welcome our new board members.

Karen Cooper located in Dry Ridge KY. She dairied until 1996 and started with meat goats in 2001. Her herd began with Boers, crossed Kiko, crossed Spanish, and began crossing with Savanna since 2011. She has received the National Innovative Farmer Award in 2013 at the National Goat Conference and the Honorary Commissioner of Agriculture award in 2014.

Jimmy Dowell is from Breckenridge county. He has served as president of the Meade County Goat Producers Association and Vice President of the Breckinridge County Goat Producers. Jimmy has also served on the KGPA board, is a certified USBGA judge, Myotonic judge and certified US meat judge.

Denise Martin is from Mount Sherman, KY and has served on the KGPA board as a director and the President. Denise is involved in 4-H and has spent several years educating consumers of

the nutritional value of goat.

Emily Robinson, an aspiring first generation farmer that has spent the majority of her life studying sustainable, efficient, and self-sufficient agricultural systems. Emily gained her Associates of Arts from the Jefferson Community and Technical College, and began the process of earning her BA at the University of Louisville, spending time in the Biology, Equine Business, and Communication departments. Emily enrolled in the Small Ruminant Profit School with an interest in gaining more knowledge on the sheep and goat industries within our state, where a new and overwhelming passion was discovered.

We are excited to have our new board members and look forward to working with each one. As a member, you are always welcome to contact any of the board with ideas, suggestions or questions. Your KGPA Board will focus on engaging our membership by reaching out to all areas of Kentucky and bringing the information to you. Please don't forget to renew your 2018 Kentucky Goat Producers Membership. We look forward to seeing you at this year's exciting goat events and thank you for your continued support.

Many Blessings,

Donna Puckett, President
Kentucky Goat Producers Association

KENTUCKY
GOAT PRODUCERS
ASSOCIATION



JOIN or RENEW TODAY!

KGPA Membership Application

Your \$30 membership provides:

- 4 issues of the *HoofPrint* Magazine plus the newly designed 2017 Sheep and Goat Management Calendar
- A unified voice for the goat industry on the state and national level
- Representation on important committees such as the Check-Off and the Animal Care Standards boards
- Support of various educational and youth activities
- Youth Membership forms can be found at kysheepandgoat.org/KGPA.html
- **And much, much more!**

Visit www.kysheepandgoat.org to join today!

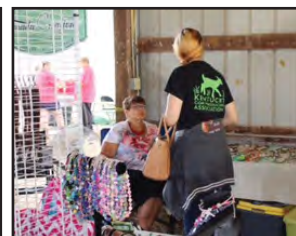
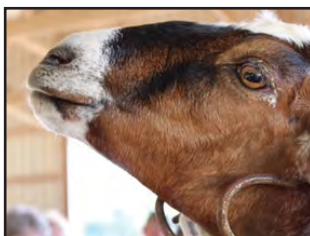
Name: _____

Address: _____ City: _____ State: _____ Zip: _____

Phone: _____ E-Mail: _____

Please enclose a check for \$30 made out to KGPA and mail to:

Kentucky Sheep and Goat Development Office
P.O. Box 4709, Frankfort, KY 40604-4709.



WHAT DOES KGPA DO FOR YOU?

Education

- Assists with Small Ruminant Profit School as subject matter specialists and mentors
- Kentucky Goat Producers Field Day- hosted speakers and swap meet on July 15, 2017 in Hart County with 6 speakers, 12 vendors and over 150 participants
- Sponsored the KY Annual Producer Conference in Bowling Green, KY
- Support local goat organizations with educational programming.



Promotion

- Participates in the KY Sheep and Fiber Festival with speakers, vendors and promotion of fiber/ dairy goat industries
- Promotes the consumption of goat products at the Kentucky State Fair
- Promotes goat production at the Small Ruminant Grazing Conference
- Sponsors the Kentucky FFA Sheep and Goat Impromptu Speech
- Sponsors belt buckles for 4-H/FFA youth exhibitors at the Kentucky State Fair
- Sponsor Youth Awards program to promote leadership and competency in the goat industry.
- Support the KY State Fair Sale of Champions



KGPA - UPCOMING EVENTS

Calendar of event items can be sent to kyates@kysheepandgoat.org with date, location and time.

JANUARY

- 4th **Jessamine County Sheep and Goat Meeting,**
Jessamine County Ext Office 7pm
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Marion County Extension Office 7pm
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- 20th **South Central Goat and Sheep Producers Meeting,**
Barren County Ext Office, 6:30pm (CT)

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- Jimmy Dowell Webster, KY – jimmydowell@gmail.com
- Kenny Fenwick New Haven, KY
- Denise Martin Magnolia, KY – martinmeadowfarms@gmail.com
- Emily Robinson Louisville, KY – emilycat6699@gmail.com
- Vicki Watson Auburn, KY – dvwatson@logantele.com

TSPA - UPCOMING EVENTS

Date • Details • Location • Website



ASI CONVENTION / SAN ANTONIO, TX

January 31 – February 3, 2018

www.sheepusa.org/Events_2018Convention

PICK TN CONFERENCE / CHATTANOOGA, TN

February 15-17, 2018

www.picktnconference.com



AGRIBITION LIVESTOCK JUDGING CONTEST / LEBANON, TN

March 10, 2018

www.tnbeefagribition.com/judging-contest.html

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Vice President

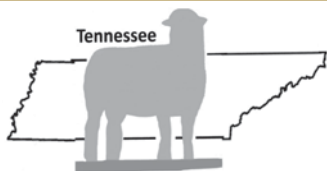
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robert.walker@westforkfarms.com

Secretary/ Treasurer

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shepherdboy1@yahoo.com

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| • Dwight Loveday, <i>Louisville, TN</i> – | hloveday@tennessee.edu |
| • Reyes Rich, <i>Moss, TN</i> – | ginnyridge@gmail.com |
| • Brandon Tavalin, <i>College Grove, TN</i> – | tavalintails@gmail.com |
| • Mark Shedden, <i>Knoxville, TN</i> – | rmnps@bellsouth.net |
| • Kevin Durett, <i>Cottontown, TN</i> – | kevin.durrett@ymail.com |
| • Thomas Greenlee, <i>Rutledge, TN</i> – | jgreenl4@utk.edu |



**JOIN ONLINE
TODAY!**

TSPA Membership Application

Annual Dues: Adult: \$30.00 Junior \$10.00

Name: _____

Address: _____ City: _____ State: ____ Zip: _____

Phone: _____ E-Mail: _____

Breed(s) of Sheep: _____

Please enclose a check for amount made out to TSPA and mail to:
Tennessee Sheep Producer's Association • 4233 Poplar Hill Road, Watertown, TN 37184

Pay dues and join online at www.tennesseesheep.org

If you are interested in a committee
please select below:

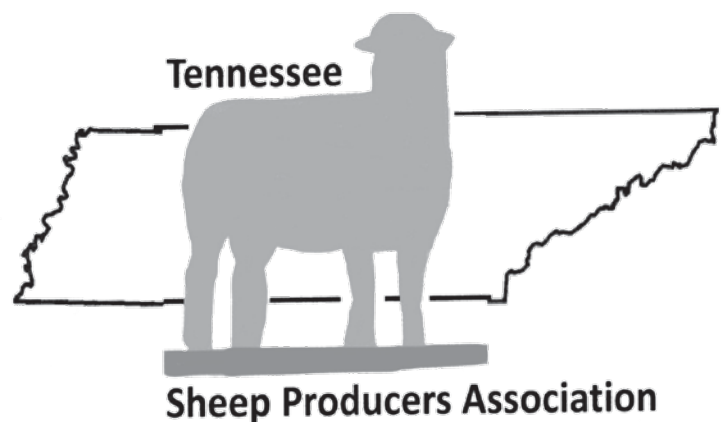
- | | |
|---|--------------------------------|
| <input type="checkbox"/> Wool | <input type="checkbox"/> Youth |
| <input type="checkbox"/> Jr. Expo | <input type="checkbox"/> Sale |
| <input type="checkbox"/> Production Education | |
| <input type="checkbox"/> Membership/Revenue | |
| <input type="checkbox"/> Publicity | |
| <input type="checkbox"/> Annual Meeting | |

Seasons Greetings from Tennessee!

I hope this finds you and your family well. Our farm is anxiously awaiting first lambs as our goal was a fall crop. Writing this the first week of December, you can probably tell things didn't go just right with regard to our plans. By the looks of our ewes, we're getting close!

Tennessee Sheep Producers Association (TSPA) held our annual conference and meeting this past weekend, December 1 and 2 in Lebanon at the James E. Ward Agricultural Center. Topics were right on and fortunately for me (and hopefully others), I learned practices that will certainly help me work towards my flock goal of fall lambs. We were pleased to have Tennessee Agricultural Commissioner Jai Templeton drop by to visit and enjoy lamb hord'oeuvres with our group. We appreciate his support of our industry. He is a farmer too and understands our needs and concerns. Mr. Alan Culham, Let's Grow Coordinator of the ASI Sheep Industry Association, joined us both days for an update on the sheep industry, as well as, an intriguing demonstration utilizing National Sheep Improvement Program (NSIP). If you are a sheep producer and interested in improving your flock genetics, this is a must see website. Go to <http://nsip.org/> for more information. Mr. Culham also talked about crossbreeding to improve commercial flocks. Dr. Dwight Loveday, Associate Professor-Meat Science at the University of Tennessee (and one of our board members), presented information regarding ewe culling which is often a difficult decision for shepherds. Does your grand champion ewe really fit into your breeding flock?

Lastly, Dr. Jennifer Hatcher, DVM of Rock-N-Country Veterinary Services in College Grove, gave an insightful presentation on sheep reproduction, synchronization and AI. As a shepherd herself, Dr. Hatcher provided our group with personal experiences and



practices which I'm sure will be useful. She's a busy lady and we certainly appreciated her joining us on Saturday.

Our conference finished with a wonderful Grilled Lamb Dinner prepared by Chef's Randall Kimes and Steve Officer along with the Wilson County 4-H Club. Plans were made for our next conference to be held tentatively November 30 - December 1, 2018. Please mark your calendars. We are also researching a possible spring gathering. Check our website for updates. Presentations and others have been posted at <http://tennesseesheep.org/> under the heading. If you have questions, feel free to contact presenters, myself or any of our board members if needed.

Best wishes for a wonderful 2018!

Debbie Joines
President, Tn Sheep Producers Association

A Wealth of Information on One Website VISIT [www. tennesseesheep.org](http://www.tennesseesheep.org)



***Check out our online Presentations Section.
From Fencing and Sheep Management to Rope halter contruction
we have the info you need to best manage your flock.***



Winter Feeding

by Steve Hart PH.D

Winter feeding of animals is critically important for subsequent kidding and lactation. While most of the year the animal can graze and seek out what food they need, usually during the winter our goats only have access to what feed we bring to them, be it hay, grain, molasses lick tub or protein blocks. The goat is totally at our mercy since they cannot seek out nutrition due to lack of available forage on pastures and/or the pasture is of poor quality due to being weathered or mismanaged.

The size of herd and herd objectives are often major determinants of winter feeding programs. With a very small herd, you may be limited to feeding small square bales and hand feeding a supplement whereas a larger producer may do such things as stockpile forage, use round bales or sow cool season grasses such as wheat, rye, oats, often with a legume to provide protein requirements. The cost of wintering an animal is a major factor in determining profitability since most feed must be purchased. Therefore, planning

on winter feeding is important both for the pocketbook and for subsequent animal performance.

When feeding hay, you should avoid feeding hay on the ground to avoid animals contracting coccidia or other infectious diseases, and to prevent hay being wasted. Put the hay in a rack if using small square bales. When feeding a round bale, use an elevated hay feeder that cradles the round bale. Savings in hay will pay for the hay rack in just a few years. Generally, one hay feeder can only feed about 30 goats, so have enough hay feeders for the number of animals feeding from it.

Hay should be purchased prior to the winter season and properly stored. Reduced ground contact and protection from the rain will reduce spoilage of hay. Hay should be analyzed preferably before purchase, but certainly before feeding it. Would you buy a sack of goat feed that was merely labeled as goat feed that had no feed tag or analysis of what was in it? A hay analysis costs about \$15.00 and tells you the protein and energy value of the hay, which will determine how much supplemental feed is needed to keep the



animal in good body condition. Your county extension educator can help you to sample and get an analysis on your hay. Sometimes hay brokers sell hay of unknown or poor quality to naïve, trusting goat producers.

How do you know how much of what to feed your goats this winter? First, we determine the current body condition our animals. Hopefully, we managed them to be in a body condition of at least 3.5 before winter (see tutorial on body condition scoring: <http://www.luresext.edu/?q=Body%20Condition%20Scoring>). If this is the case, animals only need to be fed enough to maintain this condition and provide for pregnancy. Pregnancy only requires additional nutrients in the last 6 weeks of gestation. To help with ration formulation, Langston has developed LINC (Langston Interactive Nutrition Calculator) to help producers estimate the amount of supplement to feed.

How to use LINC:

To use LINC, go to Langston web site <http://www.luresext.edu/?q=content/nutrient-requirement-calculator-and-ration-balancer>.

With this calculator, and answering 6 questions, we can:

1. calculate nutrient requirements,
2. select the feeds desired to use within the ration, and
3. then adjust the amounts of feed we want to feed the goat to see if we can meet the requirements.

Here is an example scenario to walk you through the process: assume we are feeding a mature Boer Doe weighing 130 lbs, on day 110 of pregnancy with twins.

Step 1: Answer the Questions

Question 1: select the biotype of goat from a pull-down menu. For Savannah select Boer/Boer cross. For Kiko, select Spanish or indigenous breed. For our example, we select Boer.

Question 2: select the class of goat, either growing goat or mature goat.

For our example we select mature goat.

Question 3: select the gender of the goat from pull down menu (select female in our example) and select the box if, your goat is in late pregnancy.

When you click the box three questions drop down:

- a) How many kids is she pregnant with? We generally estimate 2
- b) Enter the birthweight of your kids. When the breed is selected in the following drop down menu, the average birthweight for that breed is automatically populated. You can enter your own birthweights if, you know what they are.
- c) Enter day of pregnancy. Enter the number of days of pregnancy of the average animal in your herd. The default is 95, because at less than 95 days of pregnancy there is little added nutrient requirement for pregnancy. In our example, we select 110 days of pregnancy and Boer breed.

Question 4: enter the bodyweight of your animal. If you don't know, click on the square to estimate bodyweight. Weight estimations are made by measuring the heartgirth (chest) inches and the genotype of the animal. In some cases, it will ask for body condition. With this information, the calculator can estimate bodyweight of the animal. In our example, we input 130 lbs.

Question 5: enter how much weight you want this animal to gain (exclusive of pregnancy). If body condition score is a little low, you may put in 4-8 lbs/month to increase body condition score. For our example, we select 0. Basically, if the animal gains 10% of their bodyweight, that will increase body condition score by a half score (from 3 to 3.5).

Question 6: indicate if animals have access to pasture. From the drop down menu, you can select stable feeding or intensive management. Selecting stable feeding will increase energy

requirements by 10% to allow for minimal animal movement. Selecting intensive management increases energy requirements by 25% for movement which is the most appropriate for many conditions. For this example, choose "intensive management, temperate or tropical range".

Question 7 and 8 leave the defaults as they are.

Step 2: Click Calculate Requirements

If we did things correctly, requirements are 1.94 lbs. TDN (measure of energy equivalent to a lb. of pure carbohydrate such as sugar), .31 lbs. crude protein, 6.03 grams of calcium and 4.22 grams of phosphorous. Dry matter intake (how much we estimate the goat will to eat) is 2.93 lbs. Goats do not read the program and may eat significantly more or less feed than predicted. Goats can be picky.

Step 3: Select Feed Ingredients

The Selecting Feed Ingredients takes us to a lengthy screen, with various concentrate feeds on top, forages in the middle and special ingredients at the bottom.

Here at the bottom, we can select add/delete feed ingredients from the library. If we have a forage analysis or other feed, we can input the analysis here. *Only the starred rows are required.* For this example, we will select bermudagrass hay (winter) and 16% Dairy feed which is readily available (could also be a 16% meat goat feed).

Step 4: Determine the Amount of Feed

After selecting these two feed ingredients, we will click on Input These Feed Ingredients Into The Ration.

We are then faced with a spreadsheet type of screen that has our two ingredients. We then put amounts beside each one on the column amount fed and evaluate our results.

For example if we choose to feed 2.0 lbs. bermudagrass hay and 1 lb. of 16% dairy feed, click on any square to update totals. Then, look at the totals. Total feed intake is 2.67 and estimated is 2.93. This tells she can eat a little more feed than this. We are significantly low on energy and just meet protein requirements. So to

increase energy in the diet, we need more dairy feed and maybe a little less hay. So we try 1.5 lbs of dairy feed, and while we meet protein and energy requirements, we greatly exceed estimated intake. So we guess 1.8 lbs. for hay. The resulting diet is about 6% low on energy which is tolerable, not over on intake and meets protein, calcium and phosphorus. *This is a guess and try program.* Better to guess with the program than with your animals.

Generally, sweet feed is not a good choice for late pregnancy or lactating animals because of the low protein level. Since the amount of protein required in the diet is about 10.5%, we need some feedstuff that has considerably higher protein to supplement hay which may be of lower protein. So we would likely put out hay free choice and feed this doe 1.5 lbs. of 16% dairy feed. We would monitor her body condition and reduce the amount of supplement if she is getting too fat or cautiously increase it if she is getting too thin.

Conclusion

It is important to remember that this program does not have common sense and is a tool. Therefore, some general management practices to keep in mind are:

- Do not feed less than half of the diet as hay or forage.
- Since this program does not balance for minerals, and you are unlikely to have a mineral analysis for the feeds, provide a free-choice mineral for your animals, preferably formulated for your area.
- It is very important to follow body condition of your animals to fine tune the diet being fed. Goats may consume more hay than the program estimates, or may consume less.

Steve Hart PH.D. has been a Goat Extension Specialist with Langston University for 26 years. He is a nutritionist and has conducted research on forages, weed and brush control and control of internal parasites

Developing a Direct to Consumer Market

by Frances & David Martin

In Volume 29 Fall 2017 issue of HoofPrint, I introduced producers to some of the challenges of creating a direct market meat product. I also introduced you to The Widget Development & Trading Company, LLC that helps producers or potential producers get their products to the marketplace. In this article, I will provide a basic overview of topics producers need to consider when taking a product from Concept to Distribution.

Creating the Widget: The first question, we are generally asked is "What is a Widget? The term "widget" has multiple uses:

1. A Placeholder name for an object or manufactured device. It is an abstract unit of production.
2. In Law, when discussing a hypothetical situation, the term is used to represent any type of personal property. In such use, the "Widget" has whatever characteristics are relevant to the scenario.
3. In accounting and manufacturing, the term indicates a hypothetical "any product" to indicate that the specific "product" is not relevant to the topic of discussion.

As we Create the "Widget", the primary principle we want to convey is that at the beginning stage of the development process, the specific qualities of the "proposed product" are irrelevant.

Instead of getting caught up with the nuances of a specific product, we want to emphasize that there are some principles of business and product development that are applicable across the board to the development of any product.

So the question is now? What is your "Widget", and what has to be done to take your product to market?

Taking Your Product to Market

Is it a new product that is not in the market? If it is not in the market, "Why Not?" Is it because it is a revolutionary idea, or is it because it is not feasible to produce?

We once had someone that wanted to create a "fried chicken skin" similar to pork skins that they had tried at a bar. At the bar, they were served hot and crispy, however, unlike pork skins, when they cooled or were packaged, they were soggy and greasy. Every idea is not feasible as a retail packaged item.

If the product is in the market, is yours a new innovation or improvement, a new package or a new marketing concept? What are the distinctions with your product? Sometimes you can take an item that has been on the market, put it in a new package, add a new marketing spin, and it becomes a success.

Think about this- years ago, in some areas of the country, if you went fishing and caught a Catfish you might have been tempted to throw it back because Catfish were considered bottom feeders. Well, someone developed a marketing spin and now Catfish is sold in packages, at white linen table cloth restaurants, and in several fast food establishments.

The next area of focus is "**Who is your potential Customer-Market Segment?**"

Are you looking to market your product in conventional retail outlets? There are several options that can be considered.

Some avenues are less intimidating and are designed to assist the new producer. These avenues would be your local Farmer's Market, Curb Market, etc., which may allow the sale of produce and value added products. Generally, these facilities are not set-up to accommodate producers of meat products because of the health department regulations. One advantage of these type of markets is they are tailored to a local customer therefore, you are only subject to local health department regulations, not to FDA or USDA regulations.

In addition to the markets listed above, you may have a product that can be sold at a "Vendor Fair" or a "Festival" that allows vendors.

Can you prepare your item and deliver it directly to a local restaurant or diner?

Can you provide catering services, and include your product as an "offering"?

If you think that your product is ready for the next level, you can move forward to have it prepared for presentation for the regional retail grocery store in your community.

The other option is having the product developed for bulk sales for the "Food Service/Institutional" sector. There are advantages and disadvantages in doing food service. The major advantages in pursuing this sector, is that you don't have to spend money on the "fancy" packaging, nor the expense of



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marketing and advertising. The major disadvantage, is that your product will generally not receive any brand recognition because it is served on a food line or on a plate without anyone knowing that it was your product.

Structuring the Business,

If you are serious about moving forward to get your consumable food item to market, you must set up the appropriate structure for your business. Because you are proposing to sell a product to the public, you must create a legal entity to protect your personal assets, from the entity that will be developing, selling or marketing the product.

Even though I had practiced corporate law for many years, it is my recommendation, that the first professional that you talk with about setting up your business is your CPA (Certified Public Accountant), or tax consultant. My main philosophy on business is “that it is not important how much money you make, but how much money you keep”. Generally, this is determined by the tax strategy and structure that are established at the outset of your business venture. It is important to take advantage of the tax write-offs and other business deductions that are available. There are some business tax losses and deductions that can be carried over to help defray your personal tax obligations and liabilities. However, if the business is not structured correctly, then you cannot take advantages of these benefits. You have an obligation to avoid paying taxes: Tax avoidance is a requirement; tax evasion is a crime!! Talk with your tax expert about the difference.

Once it has been decided about the tax strategy and structure, your attorney can create the legal entity to encompass and protect your tax benefits. Once the business has been legally formed, determine if there are any certifications that you and your business can obtain. These would include “Women Owned”, “Minority Owned”, “Veteran Owned” and “Service Related Disabled Veteran Owned”. These certifications may help you secure business opportunities.

The next issue is whether your business requires a type of licensing or zoning. This is really contingent on the types of products that you are proposing to produce.

The next issue is insurance. Realize that you are serving the general public a consumable product that you are producing or having produced for your benefit (more discussion on this later). There is always the possibility that someone can become ill as a result of the product consumption. Most outlets and events where food is served may require that you have produce liability insurance. The range of coverage is generally from one million dollars to five million; however, it can be greater. The next type of insurance is general liability insurance that protects you in the event someone falls or sustains an injury while on your premises, etc. Other insurance coverage is optional, but these 2 are required for your protection.

Then you should apply for a Dun & Bradstreet number. This is the equivalent of your business having a social security number. It may be used to track your businesses credit history, etc. Some companies may require that you obtain a Dun & Bradstreet Supplier Evaluation Rating.

Developing a Team

The other significant thing you will need is a “Team”. The team can include, but is not limited to, the following professionals



THE WIDGET
DEVELOPMENT & TRADING COMPANY, LLC.

The Widget Development and Trading Company was formed to assist clients from around the world develop their products and place them in the global marketplace.

www.widgetdtc.com

or organizations:

- Small Business Development Center (SBDC) (can help develop your business plan)
- Accountant
- Attorney
- Marketing
 - Graphics
 - Printers
 - Writers
 - Media Specialist
- Sales Representatives (Brokers)

Conclusion

There are several things you need to evaluate and understand if you decide to enter into this food industry.

First, it is a “marathon” and not a sprint. In other words, it is not going to happen quickly; it is going to take time to effectively go through all the processes needed.

Second, just because you like the taste of your product, doesn't mean that others will think the same. Even if you have presented the product to good friends and family members to try, realize that they may not tell you the truth. As we say, it's hard to tell someone that their baby is ugly so, we lie. It's the same with a food item because folks may not want to hurt your feelings as they realize that the product is your “Baby”.

Third, and this is going to lead us to the next article titled “Marketing Plan”, sometimes it doesn't matter how good it tastes, it's a matter of whether you have a marketing plan that can sell the product. In some instances, a store buyer may not care how the product tastes, they are only concerned if you can create a “Marketing Plan” to get the product off the shelf and into the customer's basket.

Frances Martin is Chairman of Widget DTC. A native of Philadelphia, Pa. Graduate of Drexel University, with a degree in Design and Merchandising, a MBA in Finance, and a Masters in Project Management from Keller University.

David Martin is President/CEO of Widget DTC. A native of Brunswick, Ga. Graduate of Morehouse College, with a degree in Political Science, and a Law Degree from Rutgers School of Law-Newark.



DISASTER PREPARATIONS: Part 2

by Joanna Davis, D.V.M.

Now that your farm has completed a risk assessment, taken training courses and reviewed preparation websites (see Volume 29, Fall 2017), it is time to work through an inventory and supply list. This is a basic list, but a more extensive check off list may be found in the Penn Extension AgReady handbook <http://extension.psu.edu/prepare/readyag>. It also has a template for mapping your farm so that you may plan your routes and stage supplies, and as a tool for first responders in case of an emergency. Farm MAPPER is a new mapping site that first responders may use by identifying hazards on a farm. More information can be found at <http://www.nfmcfarmmapper.com/Home/About>

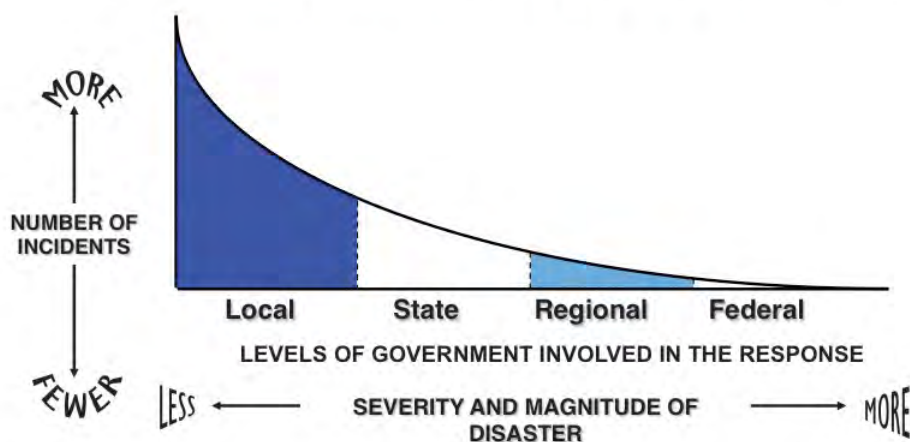
It is vitally important to review all of your insurance policies *before* a disaster strikes to find out what they will and will not cover in the event of a disaster. Be prepared to document what “normal” is on your farm. This should be done at least once annually as policy coverage may change each time it is renewed. Take pictures of your buildings, supplies and equipment once annually, and store them in a safe location (such as a safe deposit box or in the cloud), including serial numbers if applicable. Keep receipts of all purchases so that you have an accurate record of what was paid for a piece of equipment and when it was purchased. It is also important to keep and maintain records of animals purchased or born on your farm, including photographs when feasible. Photographs

should capture any animal identification and distinguishing markings. To receive reimbursement or indemnity for your animal losses, it is important to find out what documentation you will need before the disaster. The Farm Service Agency (FSA) offers disaster assistance programs for livestock producers, but one must be able to document their animal inventory, including age or production cycles of animals, and normal herd/flock mortality rates. Visit FSA's Disaster Assistance page or your state/county FSA office for more information.

https://www.fsa.usda.gov/Assets/USDA-FSA-Public/usdafiles/FactSheets/2017/fsa_disaster_assistance_programs_at_a_glance_oct2017.pdf

Response to Disasters

Most disasters are handled by Local and State governments



FEMA and the Small Business Administration (SBA) may also provide disaster recovery loans. Keep in mind that these loans will not provide immediate relief. It is vital that producers have adequate cash or immediate access to other funds the first several weeks after a disaster. Banks may be closed, ATMs may not work and businesses may not extend credit after a disaster.

<https://www.ready.gov/>

Responding to a Disaster

In the immediate wake of a disaster, it is imperative to “triage” the situation, assessing the health and safety of your family, employees, and animals as well as what damage has been done to structures and equipment. Bear in mind

that depending on the type and scope of a disaster, phone lines and cell towers may be down for prolonged periods of time. Traditional first responders may be on other emergency calls, unable to reach your farm, and have limited resources. In the aftermath of Hurricane Maria in Puerto Rico, over 90% of cell towers were damaged or destroyed, landlines were down for weeks, and many communities ran out of gasoline. Consider an alternative communication system such as a 2 way radio, HAM radio communications or satellite phones. It is important to remember that *all* disaster response begins locally. Some state or federal resources may be staged when a disaster such as a hurricane can be predicted, but local/county resources will respond initially. When local resources have been exhausted (or are expected to be), local governments may request a gubernatorial disaster declaration to provide state level resources to a disaster response. If the state resources are (or expected to be) exhausted, a Governor may request a Federal Disaster declaration to provide federal resources for a catastrophic disaster. Each level of government must request assistance from the next highest level. In most states, the state or federal government may not respond without the request. And it could take days or weeks to mobilize all requested resources to a disaster affected area. It is imperative that your farm is prepared to be self-sustaining in austere conditions in a major disaster. Government resources may be limited and responders may not be able to safely reach your property for several days after a disaster.

Depending on the scope of the disaster, your family should have both an evacuation plan, and a “shelter in place” plan. If evacuating, determine if you will be able to take all or some of your livestock, how they will be transported and where they will be sheltered. If you cannot evacuate the animals, safely mitigate the effects on the animals. If floods are anticipated, try to move animals to higher ground (or build an earthen berm for them to stand on), open gates and fences to animals may escape floods or fires, or cut fencing if needed. **Do not take unnecessary risks with your own life to prepare or rescue your animals.** And if you must evacuate, you may not be allowed back on your farm until law enforcement has deemed the area safe for residents. Have a plan

Suggested Inventory and Supplies for Livestock Evacuation Kit

- 10-14 day supply of feed, hay, supplements, and water
- Feed buckets
- Livestock marking crayon, non-toxic, non-water soluble spray paint, or markers to write on the animal's side
- Bandanas (to use as blindfolds)
- Batteries (flashlight, radio), chargers
- Boots/appropriate footwear, N95 disposable face masks
- Blankets
- Copies of veterinary records and proof of ownership
- Cotton halter
- Duct tape
- Emergency contact list
- First aid kit (see item suggestions in the Saving the Whole Family brochure)
- Flashlight
- Fly spray
- Heavy gloves (leather)
- Hoof nippers
- Hoof pick
- Instructions
 - Diet: record the diet for your animals.
 - Medications: list each animal separately, and for each medication include the drug name, dose and frequency.
- Knife (sharp, all-purpose)
- Paper maps of local area and alternate evacuation routes in addition to GPS (in case of road closures)
- Non-nylon halters and leads (leather/cotton)
- Paper towels, trash bags, disinfectant
- Plastic trash cans with lids (can be used to store water)
- Portable livestock panels and/or rolls of polypropylene snow fencing, stakes for fencing
- Radio (solar, hand cranked and/or battery operated)
- Rope or lariat
- Shovel, hammer
- Tarpaulins
- Trash bags
- Water buckets
- Shepherd's crook
- Wire cutters
- Waste management equipment
- Clippers/shearers

***Adapted from AVMA at www.avma.org/disaster

for either treating or euthanizing animals if necessary, as veterinarians may not be able to reach your farm quickly. Develop a carcass management plan if your farm suffers high mortality from the disaster. Work with your local extension agent, state Departments of Agriculture and Environmental Protection and NRCS to determine local carcass disposal options after a disaster.

Have you considered where you may source hay or feed if the farm's current supply is destroyed during a disaster? Do you have a backup plan to source potable water for your sheep and goats if they cannot reach their water supply, or if there are prolonged power outages and well pumps cannot operate? If animal housing or fencing is damaged or destroyed, do you have access to supplies and equipment to provide temporary enclosures?

Take caution when checking for damage. Buildings and other structures may be unstable, live wires could be exposed, or there may be fire or water hazards that are not immediately apparent. When checking on your animals, be on the alert for dazed, frightened or injured animals so that no one gets hurt. Utilize temporary fencing (panels or webbed safety fencing).

Ensure that your farm has a plan for alternative transportation. If your truck is damaged or destroyed, or there is a

gasoline shortage, consider what your backup means of transportation may be. Keep in mind that debris may block roads and alternative routes need to be considered. Many states were without power for several days in the wake of Hurricane Irma (and as of this publishing, much of Puerto Rico is still without power). Does your farm have a generator and is it an adequate size to meet the needs of the farm?

Finally, do not neglect your own physical and emotional health following a disaster. This may be a particularly stressful period. Response and recovery efforts may last for many months after a disaster and neglecting oneself can have negative long term impacts.

Recovery phase


After the immediate response to save lives has subsided, what will your family and farm do to return to normal? Continuity of operations during recovery is vital to protecting your income and your investment in your livestock. As soon as you are able, submit any claims for insurance, indemnity and reimbursement for losses. In general, reimbursements and indemnity payments for animals are based on market prices and not genetic value. Accurate and up to date record keeping during "peacetime" will facilitate a smoother recovery. It is possible that

livestock markets or other sales channels may be closed for several weeks following a disaster. If animals died or their breeding cycle will be interrupted by the effects of a disaster, consider how to replace the income the farm may lose during the downtime, and how you will restock your farm.

As your farm begins rebuilding after the disaster, consider what you could do differently to mitigate the impacts of a disaster next time. What lessons did you learn and what improvements can you make in preparation for the next disaster? It is important to be a leader before the next emergency, having a plan *and* a backup plan to keep your family and your livestock safe.

“Although the world is full of suffering, it is full also of the overcoming of it.”
~ Helen Keller

Joanna Davis, DVM, is an emergency coordinator for USDA APHIS Veterinary Services in Conyers, Ga. She can be reached at Joanna.S.Davis@aphis.usda.gov for more information.



Quick Reference Wallet- size Emergency Infomation Card

Trailers/Haulers

Grain supplier

Hay supplier

Water supplier

Extension office

Area emergency coordinator

State Veterinarian

Alternate caretaker information
(neighbor, family member)

Veterinarian

Poison Control

Animal control

Police
(Non-emergency)

Fire department
(Non-emergency)

For more disaster preparedness tips visit: www.avma.org/disaster

DIRECTIONS:
CUT along the dotted lines
FOLD along the solid



tales from

Winter 2018

The Kentucky Fiber Trail

Weaving Art with Agriculture *by Sarabeth Parido*

Kentucky has an amazing heritage of agriculture across the state, and through our Appalachian roots, we have a wonderful history in the arts. With the Kentucky Fiber Trail- we wish to weave these two wonderful traditions together and shine a light on the fiber producers, local retailers, agritourism locations and fiber related events across the Bluegrass.

According to the 2012 Agriculture Census, Kentucky has 10,175 sheep, goat and alpaca producers. Of these, approximately 4,070 derive income from raw natural fiber production and/or finished local fiber products. The natural fiber arts and craft industry is steadily growing and the consumer driven trend of shopping locally is booming. Consumers are increasingly concerned with where their product originated because they want assurance that the animals have been raised ethically and locally. Natural fibers, wool, alpaca, angora, mohair and more, are in higher demand as the value of the end product proves to be higher than those made with synthetic, artificial fibers. With the demand growing for natural and local fibers, Kentucky producers can capitalize on their profits through the networking, advertising and educational potential of the Kentucky Fiber Trail.

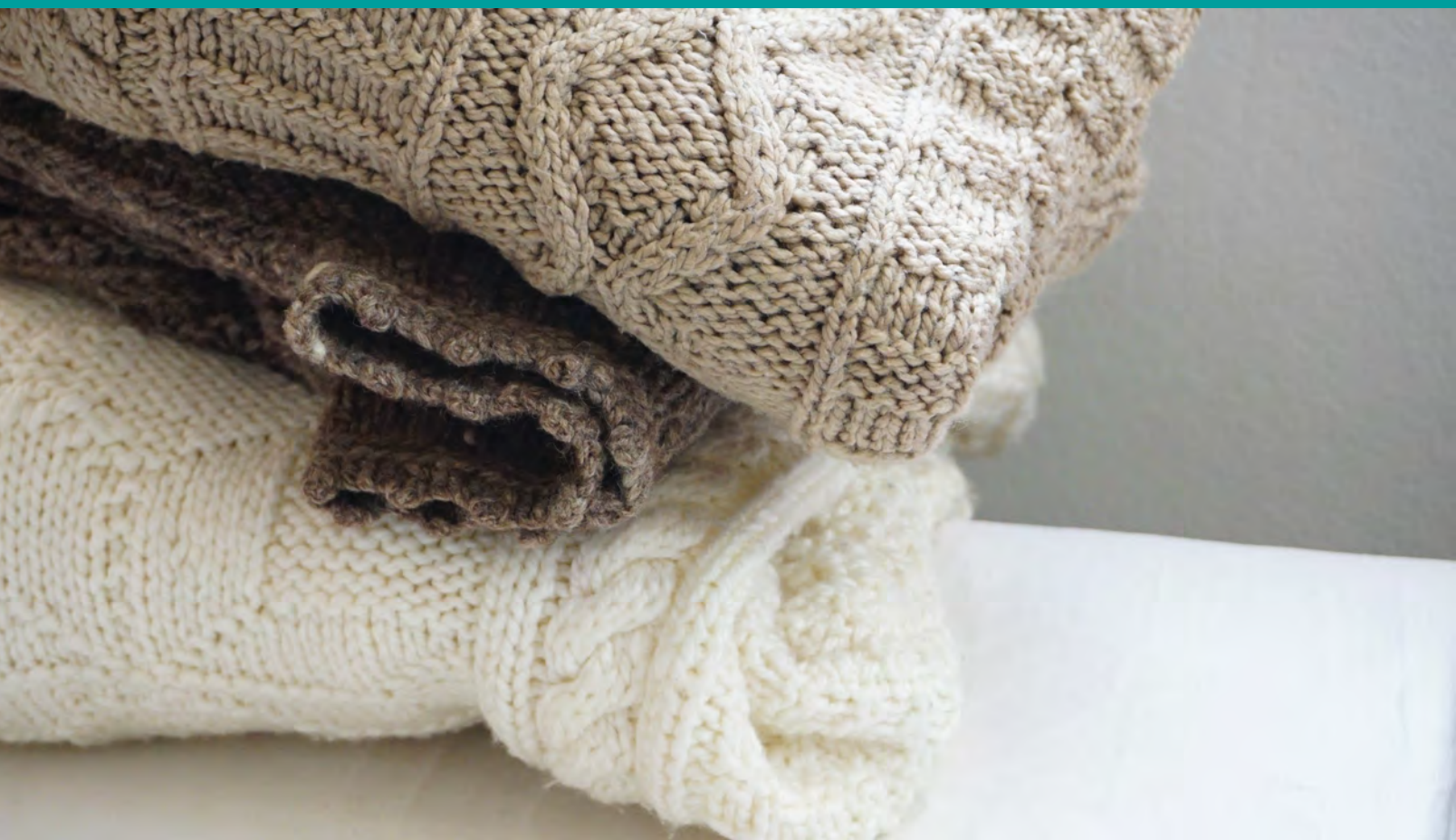
Through our research, we have found several break downs in Kentucky's natural fiber value chain. We have found that many of our producers simply do not know the value of the fiber on their animals. As some producers have brought fleeces to the Kentucky Sheep and Fiber Festival in Masterson Station Park each spring, they have found that what they could bring from multiple fleeces sold by the pound at shearing, they could sell a single fleece for to a private buyer at the festival. Several of our far Eastern Kentucky producers expressed frustration that they simply had no outlet to market themselves in their regions. On the retail side, we found that many local retailers were simply not aware of locally produced product in their areas, many of who were purchasing similar fibers from out of state and from out of country. We have several historic locations across the state which display fiber processing techniques from our rich culture, and agritourism locations are growing throughout the state to allow people to connect to the agriculture around them. We seek to help each of these locations to be highlighted and found by those in and travelling through our beautiful state.

As we build the Kentucky Fiber Trail, we seek to create a virtual and physical trail

to be visited. We seek to provide networking opportunities between producers and retailers and help to rebuild the value chain structure. We will host wholesale events throughout the year to connect producers to locally based retailers to improve their marketing reach and host classes and workshops through the established Kentucky Sheep and Fiber Festival on small business and marketing strategies. We will also provide consumers with incentives to travel the trail and increase traffic to Kentucky agritourism locations and fiber related events.

To build the trail, we need participation and members. The Kentucky Fiber Trail is open to all fiber producers across all breeds and species of fiber animals, all retailers selling and utilizing Kentucky raised fibers, all agritourism locations and all fiber related events and festivals in our state. Membership to the trail provides advertising for each participant, directory listings, direct website links, marketing, continuing education opportunities, and custom availability to utilize the site for individual advertising needs. Two membership levels are available- Annual Membership and Annual Gold.

Help us to forge a new trail in Kentucky! Join us, spread the word and let's show our state what we can grow!



Today's Wool is not your Grandma's Old Sweater

by Julie Stepanek Shiflett, PhD

In today's agricultural markets consumers are more educated, and more demanding of their products. Many consumers demand sustainably-raised products with environmentally-friendly properties. The U.S. sheep industry is in step with today's consumer, and in doing so, has expanded the value of U.S. wool.

"Today's wool is not your grandma's old sweater," commented Rita-Kourlis Samuelson, director of wool marketing at the American Sheep Industry Association (ASI), during the rollout of the new wool campaign, AmericanWool.org. Wool is an old fiber, but with new processing technologies and new wool treatments, today's wool is more versatile, durable and comfortable. Wool can be worn close to the skin and worn year-round. Wool apparel is even washable! Some breeds of sheep have more valuable wool than others; but there is a market for all wools, a value that can be optimized without sacrificing lamb production.

Supply Contracting, Demand Strong

There is a strong and growing domestic

market for U.S. wools. The U.S. military purchases a significant volume of domestic wool for blankets, uniforms, and other apparel. The hosiery market has also seen tremendous growth in recent years. There are also many local hand spinners and mills scattered across the U.S., growing niche markets.

The U.S. typically exports about two-thirds of its annual clip. In 2016, it exported 66% of its clip, 63% of which was in its greasy form with the remainder exported as clean (scoured) wool, and other value added products.

Wool faces stiff competition from competitively-priced synthetic fibers. However, wool is carving out its own niche. Wool's value as a versatile, all-natural, sustainably-produced fiber is becoming an increasingly important factor to consumers.

Expanding demand can promote a positive supply response from growers, but the industry needs to reverse its current period of contraction. Wool production in 2016 was 25.74 million lbs., down 5% year-on-year and down 22% in ten years. In 2016, 3.56 million head of sheep were shorn in the

U.S. There are currently pockets of growth within the U.S., fostered by both a strong lamb market and higher year-on-year prices of commercial wool.

Defining Wool Quality, and Price

Wool quality is largely defined by its micron, length, strength, yield, and degree of contamination. Overall, the cleaner the wool, the higher yielding it will be (the portion of clean wool produced in the scouring process), and, thus, the higher the value. Wool can be reported on its raw, greasy basis, or its clean-yield basis. Thus, clean prices are about double greasy prices.

Micron, a measurement of wool fiber diameter, or wool thickness, is the most important price-determining characteristic of wool. The smaller the micron—such as 18 micron—the more valuable the wool. Finer wool produces fine yarns and fine, lightweight cloth. A larger absolute number, such as 26 micron, is a coarser wool. Micron can be determined visually or through a laboratory test.

Wool length is important to defining its end use, the longer the fibers, the more

valuable the wool. Longer fibers can be combed and processed into yarn and cloth. Strength is also important, with stronger wools--without break points--receiving higher prices. Strength can be managed through good nutrition.

Wool's micron and length will largely determine its end use. It is thus significant that like-wools are sorted to ensure maximum value. Longer wools (longer than 3 inches) of fine to medium-fine widths (low micron reading) are channeled into the wool suit or t-shirt markets. Shorter wools with higher micron readings that are coarser, are often used in the lambs wool sweaters and carpet markets.

It Begins at the Farm

Enhancing wool's value begins at the farm. With little effort, and the right know-how, producers can add value to their wool through improved wool preparation. Wool growers that keep their shearing area clean, free of contaminants can add value to their wool. Contaminates picked up in the pasture such as weeds, seeds, and even chaff reduce value. Separating black-faced from white-faced sheep when shearing can also add value. Black fibers can contaminate a white wool clip: Black fibers cannot be dyed and thus reduce wool's value. By contrast, black fibers are desirable in hand-spinner niche markets. A third concern is comingling hair sheep and wool breeds: Hair fibers can also contaminate a wool clip. Yet another concern is polypropylene contamination from baling twine or plastic feed sacks.

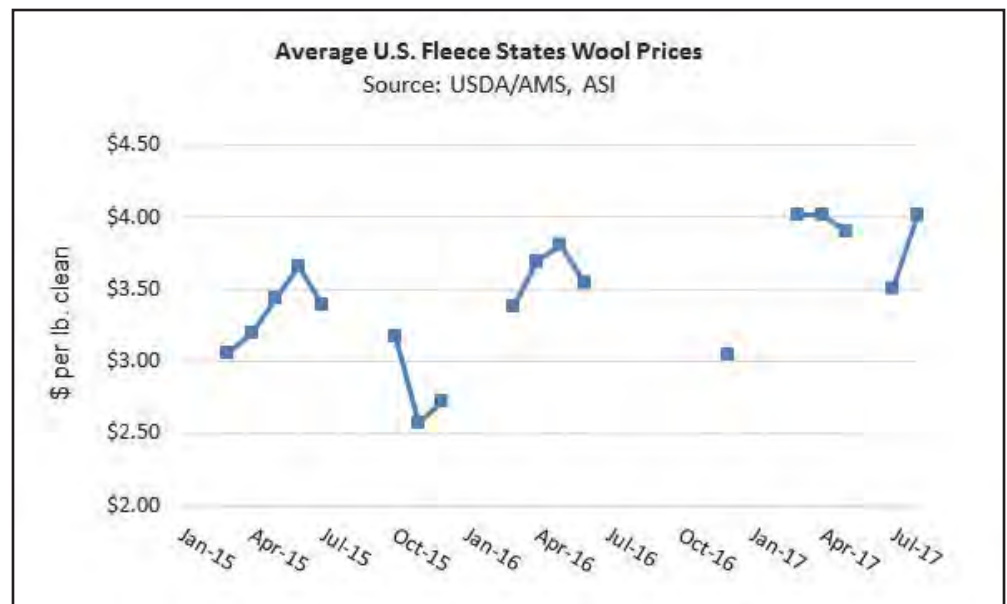
U.S. Commercial Wool Price

Discovery

The U.S. commercial wool clip is sold to large mills such as Chargeurs in South Carolina for further processing or is exported (mostly to China). Because our domestic wools are marketed in an international market, factors affecting the largest wool exporter, Australia, also affect our domestic prices.

Market dynamics in Australia--namely buyer competition in Australian auction markets, tighter supplies due to an Australian drought, or volatile movements in the Australian-U.S. exchange rate--can affect our commercial wool prices.

U.S. wools typically bring 75% to 85% of Australian imported wools due to measurable differences in how U.S. wool is prepared. This past wool season many U.S. wools received around 85% of imported Australian



wools, and many were even higher for good style and well-prepared wools.

Australian wool prices have trended upward for most of the past six years. Prices jumped 17% this year from 2016, and up 26% from 2015. The upward trend is largely due to tighter global supplies. Wool production has contracted sharply in the largest exporting countries of Australia and New Zealand. Australia reported 325 million greasy kgs produced in its 2016/16 season, down 6% annually and down 5% in five years.

Stronger demand has also helped support stronger international prices. Following the 2008 U.S. recession, many wool-consuming countries including Japan, Europe, and the U.S. struggled to regain lost income growth. Only in recent years have consumers expressed renewed economic confidence, as shown in an uptick in wool

apparel purchases.

The growth prospects for wool are tremendous. Rising incomes of Chinese consumers, in particular, is significant in defining wool demand growth in recent years and years to come. As Chinese incomes rise, so too does their interest in all things wool. While China has historically been a net wool exporter, its domestic market is growing rapidly. China's wool demand growth can support U.S. wool prices in this interconnected world.

Value is a Function of Volume

Wool's value is optimized by assembling wool clips from individual growers into larger lots defined by similar micron and quality. Each lot of wool--whether it is finer or coarser wools--will target a distinct market to enhance value. A challenge in

marketing wools in the eastern U.S. is gathering a sizeable volume of like-wools. Sheep producers across the eastern U.S. often run smaller sized flocks than in West. Wool warehouses will grade and sort wools to achieve this marketing goal, but at a cost. This cost is often borne by wool pools or wool warehouses, and therefore means lower payments for growers.

Achieving price premiums for wool in the East is thus a collective effort because farm flocks generally produce smaller clips, of variable quality. When like wools are pooled across growers it is imperative that the wool is uniform in quality. One bag of wool within a larger lot with black fibers, or other contaminates, can ruin the value for all.

Reading USDA Wool Price Reports

U.S. wool prices reported by the U.S. Department of Agriculture (USDA) Agricultural Marketing Service (AMS) can be a good marketing guide for growers. Domestic and imported prices are published regionally, and for greasy and clean wool. Territory States wool refers to western wools, Fleece States refers to midwestern and eastern wools; and the third region, Texas and New Mexico, represent the finest 18 and 19 micron wools. The AMS wool report is titled the National Wool Review, report

U.S. Clean Wool Prices, Fleece States	
\$ per lb. clean	
Micron	April 2017
18	\$5.74
19	NA
20	\$4.59
21	\$4.26
22	\$3.98
23	\$3.85
24	NA
25	\$2.98
26	NA
27	\$2.31
Source: USDA/AMS, ASI	

number GL_LS850, and available at https://www.ams.usda.gov/mnreports/gl_ls850.txt.

This new year resolve to get excited about wool. Wool is a tremendous resource, a marketing opportunity that will not compromise meat production. Talk to your wool buyer about how amazing your wool is and how to maximize its value in the marketplace.

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Julie Stepanek Shiflett, PhD *consults for the American Sheep Industry Association. She also consults independently and is an Adjunct Professor of Agricultural at the Western Colorado Community College, a division of Colorado Mesa University, Grand Junction, Colorado. Julie received her PhD in Agricultural Economics from Michigan State University and currently raises Boer goats in western Colorado.*

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—NEWS TO EWES—

Annual Ewe Management Programs for Production of Milk-Fed Slaughter Lambs

by Drs. Donald G. Ely and Debra K. Aaron, University of Kentucky

Introduction

Lambs that are harvested (slaughtered) for highest quality meat contain maximum amounts of lean, optimum amounts of fat, and constant amounts of bone. They are usually labeled as “milk-fed slaughter lambs” and are 3 to 7 months of age when marketed. Lambs are marketed directly “off the ewe” or they can be weaned at 60 to 90 days of age and finished to 100 to 120 lb either in confinement (drylot) or from pasture plus supplemented concentrates. Even though weaned lambs have not consumed any milk since they were 60 to 90 days old, they are classified as milk-fed because they will produce carcasses similar to lambs marketed directly off the ewes. All of these lambs meet the “ideal lean lamb” standards of the American sheep industry because carcasses will have 0.1 to 0.2 inches of backfat, less than 3.5% kidney, heart, and pelvic fat, at least 2.5 sq. in. of loin eye area per 50 lb of carcass, and have a yield grade between 2 and 3. They command a high price per pound at marketing time.

Production systems available for producing ideal milk-fed slaughter lambs

are **January/February lambing (winter)**, **April lambing (spring)**, and **September/October lambing (fall)**. The annual ewe management to produce these lambs is divided into production stages, beginning with nutritional flushing. This is followed by the breeding season, gestation (early and late), parturition (lambing), lactation, post-weaning, and maintenance.

The Production Systems

January and February have been the traditional lambing months for many years. The production stages and inclusive dates (approximate) are shown in Table 1. In general, ewes in the **January/February lambing system (winter)** are bred during a 7-week breeding season and have an average lambing date of January 23. Lambs are weaned on March 24 at an



Breeding



Gestation



Lactation



Maintenance

average of 60 days of age.

After weaning, ewes undergo a 10-day period of reduced feed to allow for udder involution. Then, they are turned to pasture where they are managed at maintenance levels (weight gain is minimal) until the next nutritional flushing period that begins on August 1. Lambs remain in confinement if ewes and lambs were managed in confinement for the 60-day lactation period. These lambs are self-fed a 90% concentrate 10% roughage diet until they are marketed before July 1 weighing 100 to 120 lb each. If ewes and lambs have access to pasture during lactation, lambs are weaned to pasture and self-fed an all-concentrate supplement until marketing before July 1 at 100 to 120 lb. Lambs finished in confinement for market usually gain faster than those finished from pasture and concentrate.

April lambing (spring) has evolved as a viable production system as the numbers of “hair” sheep have increased in the farm flock states east of the Mississippi River. Table 2 shows the production stages and approximate inclusive dates in the spring lambing system. Ewes in this system are bred during a 21-day breeding season. The normal breeding season for most ewes is in the fall (October/November). Estrous activity is still high in late November and early December. Therefore, a 95%, or higher, pregnancy rate is a typical outcome of this 3-week breeding season compared with a similar pregnancy rate from a 7-week breeding season (Table 1) in the winter lambing system. Ewes may lamb outside on pasture, in a lot adjacent to a barn, or pregnant ewes come into a barn immediately before the lambing season begins, but are moved to pasture as lambs become a week old. Similar to winter lambing, lambs are weaned at 60 days of age. While winter-born lambs may be finished to 100 to 120 lb in confinement or on pasture plus a self-fed, all-concentrate supplement, April-born lambs are weaned to pasture plus a concentrate supplement fed daily at 2% of average lamb body weights. After a 10-day udder involution period following weaning, ewes enter a 132-day maintenance period until the next November 1. Post-weaning growth of April-borns will be less than winter-born lambs because they may not have the genetic capability for fastest gains (white-face, maternal breeds) and/or they are produced primarily from forage rather than concentrates. April-born lambs

Table 1. Production Stages for a January/February Lambing System (Winter)

Stage	Dates ^a	No. Days
Flushing	Aug. 1 to Aug. 15	14
Breeding	Aug. 15 to Oct. 7	53
Early Gestation	Aug. 29 to Dec. 26	119
Late Gestation	Dec. 26 to Jan. 23	28
Avg. Lambing Date	Jan. 23	
Lactation	Jan. 23 to Mar. 24	60
Post-Weaning	Mar. 24 to Apr. 3	10
Maintenance	Apr. 3 to Aug. 1	120

^aApproximate dates based on January/February lambing system.

Table 2. Production Stages for an April Lambing System (Spring)

Stage	Dates ^a	No. Days
Flushing	Nov. 1 to Nov. 15	14
Breeding	Nov. 15 to Dec. 6	21
Early Gestation	Nov. 17 to Mar. 16	119
Late Gestation	Mar. 16 to Apr. 13	28
Avg. Lambing Date	Apr. 13	
Lactation	Apr. 13 to June 12	60
Post-Weaning	June 12 to June 22	10
Maintenance	June 22 to Nov. 1	132

^aApproximate dates based on April lambing system.

Table 3. Production Stages for a September/October Lambing System (Fall)

Stage	Dates ^a	No. Days
Flushing	Apr. 16 to Apr. 30	14
Breeding	Apr. 30 to May 31	31
Early Gestation	May 20 to Sep. 16	119
Late Gestation	Sep. 16 to Oct. 14	28
Avg. Lambing Date	Oct. 14	
Lactation	Oct. 14 to Dec. 13	60
Post-Weaning	Dec. 13 to Dec. 23	10
Maintenance	Dec. 23 to Apr. 16	14

^aApproximate dates based on September/October lambing system.

should reach market weights of 100 to 120 lb in October and November.

The production stages and dates in the **September/October lambing (fall lambing)** system are shown in Table 3. This system is unique, compared with winter and spring, in that it requires ewes to breed outside the normal fall breeding season. Theoretically, there are ewes of only three major breeds that are sexually active during the spring (March/April/May) – Rambouillet, Merino, and Dorset (Horned and Polled). Although some success in conception rates can

be obtained with other breeds, like the Polypay, Dorper, White Dorper and Katahdin, pregnancy rates from an April 30 to May 31 breeding season may only be 30 to 60%. However, not all is lost with this pregnancy rate because ewes that don’t conceive in May can be given another chance to become pregnant during an August 15 to October 7 breeding season so they can lamb in January/February (winter). Fall lambing allows for lambs to be born during near ideal weather conditions (mild temperatures, low humidity, and limited rainfall). If

lambing on pasture is an objective, this is the season to do it. Ewes and lambs can be maintained in confinement or they can graze stockpiled forage. After weaning at 60 days (December 13), lambs are self-fed a high-concentrate diet in confinement or supplemented with an all-concentrate diet while grazing winter pasture until marketing at 100 to 120 lb in late February and early March. Concurrently, ewes are fed a maintenance diet of low-quality, inexpensive roughage throughout the winter.

April vs. January/February and September/October Lambing

Lambing in April takes advantage of the normal, seasonal reproduction in ewes (Figure 1). Ewes of most breeds are in anestrus in March/April/May and begin to become sexually active, with regular occurring heat periods, as the length of daylight hours decrease after June 22.

Therefore, breeding ewes from November 15 to December 6 most closely coincides with their natural breeding season. A breeding season from August 15 to October 7, for January/February

Figure 1. Monthly Estrous Activity of the Ewe

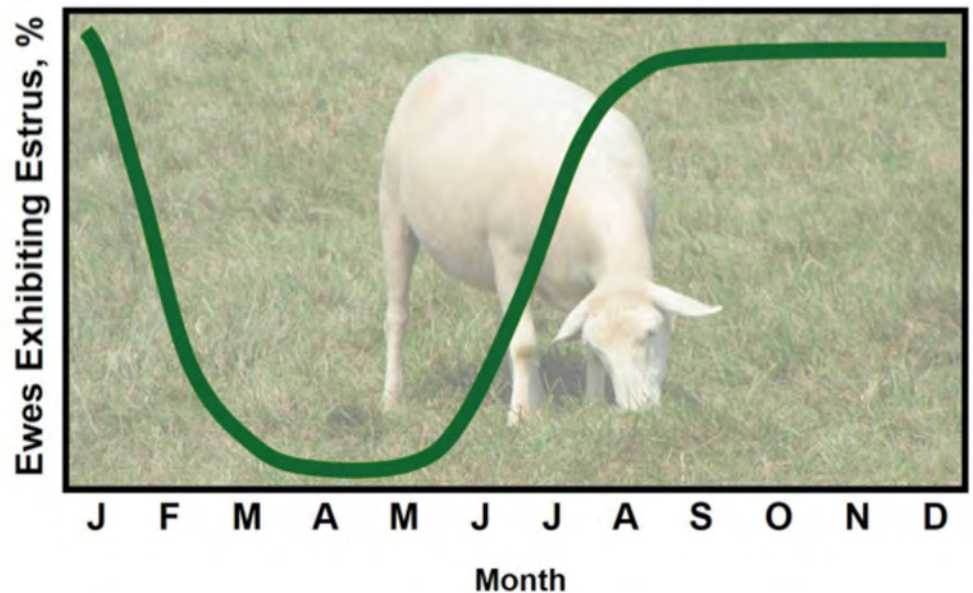
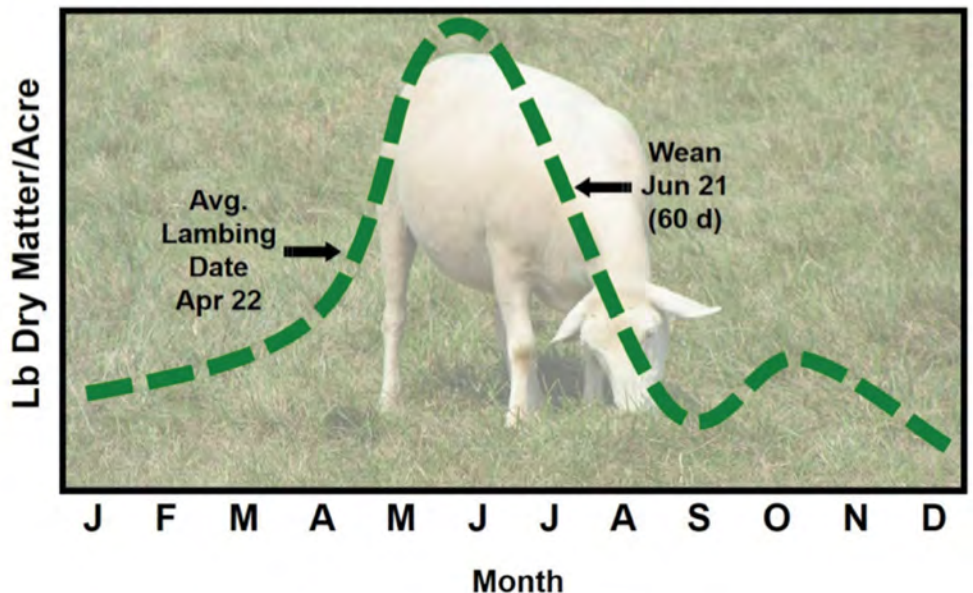


Figure 2. Annual Cool Season Forage Production



lambing, is on the forward fringe of the normal breeding season. Therefore, it takes longer to obtain an acceptable pregnancy rate in the winter lambing system. Attempts to breed ewes in May, for September/October lambs, will be unsuccessful unless they have the genetic capability to breed out-of-season.

Lambing in April also synchronizes the sheep production cycle with forage production (Figure 2). With an average lambing date of April 13, lactating ewes and their lambs can have access to maximum production of cool season forages in April/May/June. Although these ewes need to be supplemented with at least 1.0 lb of grain (corn, milo, barley, oats) or grain mix

per head daily and lambs must be creep-fed for maximum growth to weaning, the bulk of the nutrients required during lactation (Figure 3) can be supplied by cool season forage. In contrast, lambing in January/February (Table 1), and weaning lambs in March, misses the peak forage production (Figure 2) and requires the bulk of nutrients be supplied to both ewes and lambs by harvested feeds (corn, hay, soybean meal, etc.). Ewes that lamb in September/October (Table 3) also miss the peak forage production, but some of their nutrient requirements can be supplied by stockpiled cool season forages in October and November. Therefore, ewes and lambs in the April lambing system are the

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Figure 3. Annual Nutritional Requirements of Ewes (April Lambing)

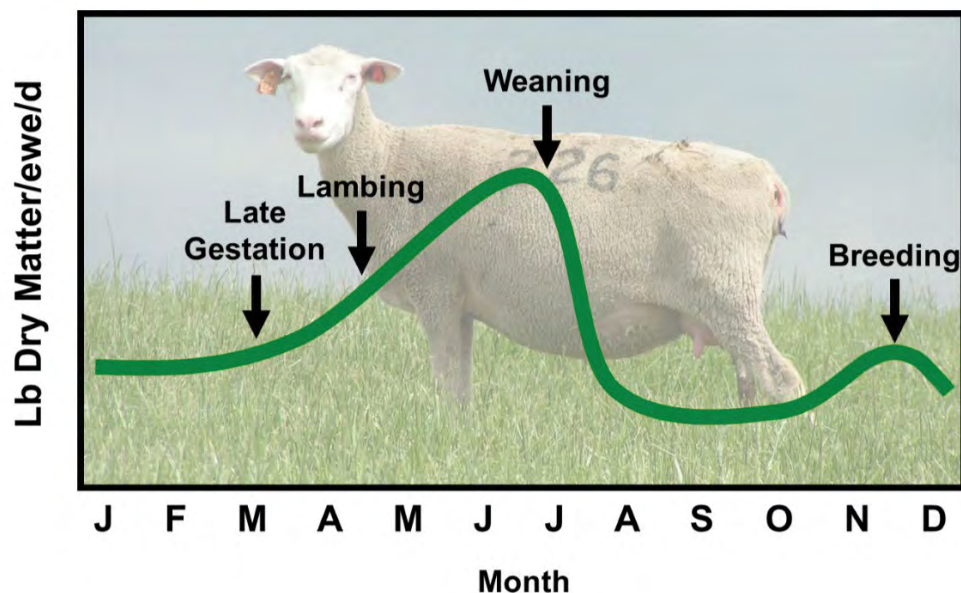
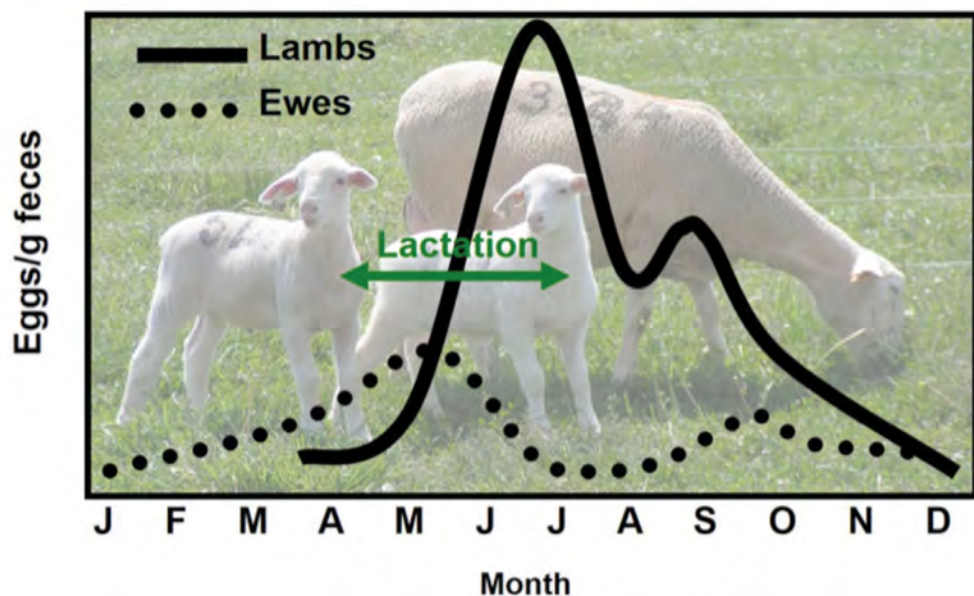


Figure 4. Stomach Worm Epidemiology



forage harvesting equipment during the spring as well as the rest of the year. Even though they may be in the barn for a short lambing season, they will spend about 330 days during the annual production year on pasture. Ewes that lamb in January/February or September/October are usually managed in confinement during late gestation and lactation, but they are still managed on pasture for 275 to 280 days of each production year. However, most of these days are spent at maintenance, whereas April lambing ewes use forage for lactation, along with gestation and maintenance.

April-born lambs encounter significant stomach worm infestations while nursing

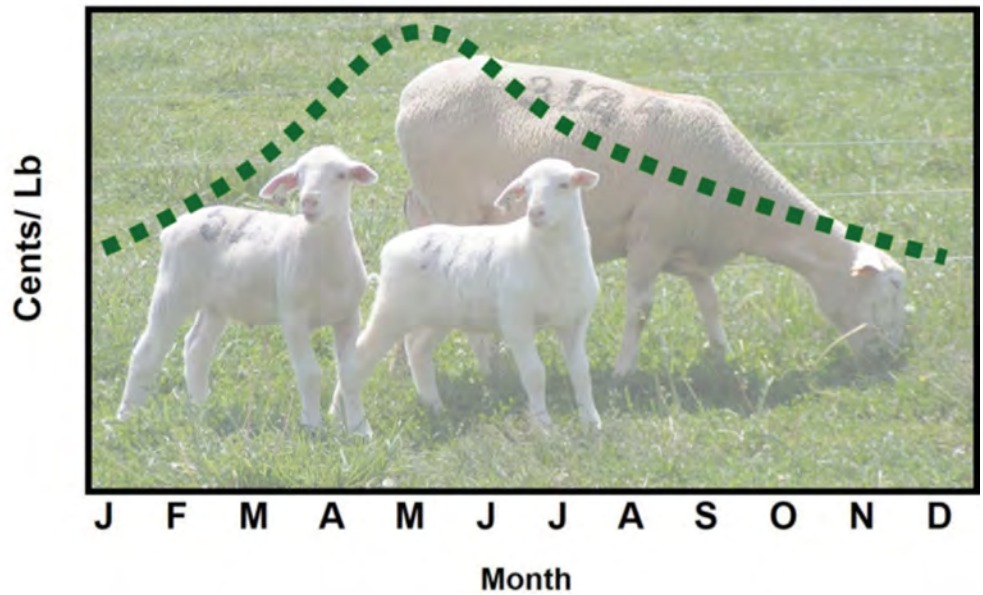
ewes (Figure 4) that are maximizing use of cool season forage (Figure 2) to meet most of their nutrient requirements (Figure 3). **Unfortunately, ewes are the primary infestors of their lambs with stomach worms (Figure 4).** Lambs born in January/February usually do not encounter worm infestations before marketing, either because they are raised in confinement or they are weaned to pastures that should be relatively free of stomach worms (have not been grazed by ewes in spring) and are provided an all-concentrate supplement. Similarly, lambs born in September/October typically do not encounter stomach worm infestations because they may be raised in confinement. If fall ewes and

lambs graze stockpiled cool season forage, the stomach worm concentrations will be decreasing as winter approaches (Figure 4). After weaning on December 13 (Table 3), fall lambs should be relatively free of any stomach worms until marketing in late February/early March.

Traditionally, highest prices for 100- to 120-lb, milk-fed slaughter lambs has been in April, May, and June. This tradition was developed when lambs were born only in January/February. Figure 5, on page 26, shows this to still be true, but the difference in prices received during these months versus the other months of the year are becoming smaller. The main reasons for this difference are the advent of more spring lambings and the marketing of lighter weight slaughter lambs. Still, January/February 100- to 120-lb, milk-fed slaughter lambs command high prices when marketed in April/May/June. Lambs born in April and sold at 100- to 120-lb in October/November typically receive lower prices (Figure 5), whereas those born in September/October and marketed in late February/early March catch the market on the way up towards the peak in April/May/June.

A comparison of April lambing with January/February or September/October shows that breeding and lambing periods are more condensed in late November/early December because of the closeness to the normal mating season for all ewes. Ewe fertility is higher, prolificacy is greater, and, as a result, total pounds of lambs weaned are higher per ewe exposed. The weather for lambing may be more favorable in April than in January/February, but lambing weather is most ideal in September/October. Less labor may be needed at lambing in April than in January/February, but the least labor requirement is in September/October. The feed demand is lowest in the April lambing system because it takes advantage of spring, summer, and fall forages. The feed requirements are highest in the January/February lambing system. The September/October system feed requirements sit in the middle because a large amount of expensive feed is fed in lactation, but lowest quality is fed during winter when ewes are at maintenance. Hair sheep breeds excel in April lambing because they may be somewhat resistant to stomach worm infestations and/or lambs may be sold at light weights (50 to 80 lb) from grass in ethnic markets any time from June to December 31.

Figure 5. Annual Milk-Fed Lamb price Cycle (100-120 lb)



More respiratory problems may be encountered in April-borns because of fluctuating warm and cold environmental temperature tied with rainy April weather. Lamb respiratory problems encountered in January/February are generally easier to manage than those that develop in April because lambs are in confinement and the temperature in a barn is usually more constant than on pasture. Fewest respiratory problems are encountered in fall lambs. April lambs do have more internal parasite problems than the other two systems. Predation may also be a greater problem because the sheep are on pasture 24 hours a day. Pasture management with April lambs requires greater expertise. Also, April lambs typically grow slower than those born in January/February or September/October. Because of these slower gains, lambs marketed at 100 to 120 lb will be older than January/February and September/October lambs and may command a lower price per pound because of the time of year when marketed.

Summary

Lambs produced in any lambing system (January/February = winter, April = spring, September/October = fall) can meet the sheep industry's lean lamb standards when marketed for slaughter (harvest) at 100 to 120 lb and 3 to 7 months of age. Ewes in each of the systems are managed through nutritional flushing, breeding, early gestation, late gestation, lambing,

lactation, and maintenance production stages each year. These ewes are forage harvesting equipment because their annual production is derived from 275 to 280 days on pasture in the winter and fall lambing systems up to at least 330 days in the April lambing system. To stimulate highest production in all of the systems, highest quality forages (roughages) are fed during lactation, lower quality in late gestation, and the lowest quality during early gestation and maintenance. Furthermore, strategic supplementation with a concentrate (grain) mix may be necessary during flushing/breeding, late gestation, and lactation if maximum productivity is to be achieved.

Each production system requires unique resources and management. Winter and spring lambing requires precise forage management and internal parasite control. Fall lambing requires a ewe flock with specific genetic abilities to breed and lamb out-of-season. Even though each system has its own set of idiosyncrasies, the key to any productive sheep enterprise is the efficient and economical utilization of grazed forages and/or harvested roughages.

Dr. Donald G. Ely, *Professor in the Department of Animal and Food Sciences at the University of Kentucky.*

Dr. Debra K. Aaron, PhD, *professor in the UK Dept. of Animal and Food Sciences, teaches animal science and genetics. Her research interests are in sheep breeding and genetics.*

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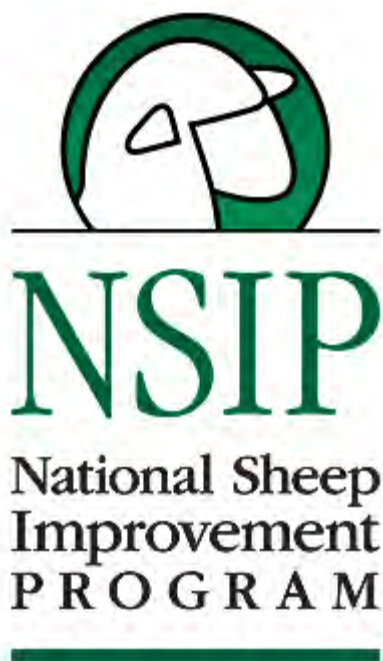
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Working from the need to introduce quantitative genetics identified by the American Lamb Board's Sheep Industry Road Map, the National Sheep Improvement Program has created its system of Estimated Breeding Values, and developed tools such as the *NSIP Ram Buying Guide*.

Now, another NSIP project funded by Let's Grow grant funds takes ram selection a step further, putting pedigree and performance data at your fingertips with an online searchable database.

"This project focuses on disseminating the genetics for enhanced production and profitability into commercial flocks by making it easier to select rams based on EBVs tailored to the individual flock," says NSIP Program Director

Rusty Burgett. "The database will allow producers to search by breed through all rams available that have the desired EBVs for productivity improvement."

The database is easily accessible though the NSIP website and easy to use. Simply plug in the breed group, breed, gender, and preferred birthdate of breeding stock. Then supply the desired range of specific EBVs to meet your flock's needs.

"The app will guide producers selecting rams based on EBVs for economically important traits," says Burgett, who showcased the app at this season's ram sales and will continue to educate producers on its use through upcoming workshops around the country.

"What this does, is increases access to NSIP for people not previously buying breeding stock according to EBVs," says Let's Grow Program Coordinator Alan Culham. "For producers who are used to using NSIP's quarterly percentile rankings, this goes a step further to show



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how available sheep differ in any one, or all, traits."

Culham adds there are limitations, like the inability to compare performance across breeds. "But it's still infinitely better than what was available a few years ago."

The searchable database also gives a boost to breeders wanting to expand their market. "There are breeders out there who are better at breeding than marketing," says Culham. "This provides greater access to their stock by potential buyers."

"Shopping by the numbers" is common in other species of livestock. Beef, with its Expected Progeny Differences, set the stage decades ago, yet still lacks a comprehensive searchable database. Specific breeds have developed similar models, and provided viable examples for NSIP's effort.

"The sheep industry definitely has the advantage of not having to re-invent the wheel," says Culham. "Much of the research has been done, and the mistakes were made by other industries."

"This tool will allow the commercial sheep producer the ability to see the same kind of returns as the NSIP members," says Burgett. "By finding the right rams, you can add pounds to the truck at shipping and greater returns on the check. NSIP members have reaped these benefits over the years but now this will help the commercial sector capitalize."

Sheep breeds that have utilized NSIP EBVs have made progress. Over the past 10 years, the Polypay breed has increased total weight of lambs weaned per ewe by 10 pounds. The Suffolk breed has increased market weight by 5 pounds, while increasing loin eye area and decreasing fat. The Targhee breed has increased total weight of lamb and wool produced per ewe by 10 pounds, while maintaining wool quality. And the Katahdin breed has increased total weight of lambs weaned per ewe by more than 6 pounds, while increasing internal

parasite resistance.

"These measured improvements could also be seen in commercial lamb production with wider adoption of the technology," says Burgett. "Both maternal and terminal traits can be improved, leading to more pounds of lamb produced with a constant ewe flock size."

"We simply have to do more with less," adds Culham. The multiple birth factor, with a heritability of 10-15 percent, is a good example. "We're not able to drive twinning without the use of EBVs. You can't look at a ram and know his daughters will produce 20 percent more lambs. It takes data to identify the genetics that can do that. If you're going to buy a ram, why not look at the value his daughters are going to have in your flock?"

Choosing the right ram is using money wisely. That goes beyond lambing rates. The right genetics can improve lamb consistency and quality, ultimately creating demand as consumers grow more familiar with the product.

"Utilizing terminal sires selected for carcass merit increases the ability to sire lambs with the genetic potential to produce lean meat with reduced fat deposition, at an accelerated rate of gain, to harvest lambs at an earlier age," says Burgett.

It's one of the ways NSIP seeks improved alignment of all sectors of the industry.


"Our primary objective is to increase the use of EBVs in ram selection by making selection decisions easier for producers," says Burgett. "That's how we will meet our common goals, and increase the productivity of sheep flocks industry-wide over time."

It's one more way to make sheep more productive, efficient and profitable.

More information on NSIP, including a link to the searchable database can be found at nsip.org under the "Resources" tab.


<http://nsip.org/searchable-database/>

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WHAT ARE THE CAUSES OF ABORTIONS IN SMALL RUMINANTS?

by Dr. Beth Johnson, Kentucky
Department of Agriculture, Field
Veterinarian, Office of State Veterinarian

As I await the new arrivals this coming season, I often live on pins and needles until they make it safely here. We spend so much time lining up the breedings, and making sure the does and ewes are in good shape from breeding to delivery, that the last thing we want is to find an aborted fetus. There are several causes of abortions which will be discussed in this article as well as preventative and treatment protocols.

BACTERIAL/PROTOZOAL CAUSES

Historically, the two major causes of abortions in sheep are *Campylobacter* and *Chlamydiosis*. These two diseases are increasing in incidence in goat herds which possibly could be due to commingling sheep and goats.

Campylobacter is caused by *Campylobacter fetus* or *C. Jejuni*. It can be spread throughout a flock or herd via feed contaminated by fecal matter or by environmental contamination from aborted fetuses, placentas and uterine discharges. It is usually seen as a late term abortion, stillborn or as weak lambs and kids. As you can see, it may be introduced through a persistently infected sheep or goat which contaminates the feed source with their feces in addition to aborted fetuses!

Chlamydiosis (Enzootic Abortion of Ewes, EAE) is caused by *Chlamydia abortus*. Chlamydiosis is spread primarily through aborted fetuses, placental membranes and fluids. It is highly contagious and causes abortions 60 to 90 days after the animal becomes infected. If a sheep or goat becomes infected in late term it will usually cause weak lambs and kids at birth. Abortion can occur at any time in the pregnancy but more prevalent in late term. Sheep will usually only abort once in their life from this organism, but those that do abort may remain infected for years and shed the organism during ovulation in subsequent breeding cycles. The organism infects the ram or buck and can be spread venerally. Nonpregnant sheep and goats that become infected may harbor the organism and abort

during their next pregnancy.

There is a commercially available vaccine to protect sheep from *Campylobacter* and *Chlamydia* abortions. Although not approved for use in goats, it has been used effectively. It should be given prior to breeding for optimum effectiveness but can be given in the face of an abortion storm. The vaccines do not provide long term protection; therefore, these vaccines should be given prior to each breeding season.

Q fever is caused by a rickettsial organism, *Coxiella burnetii*, and can survive in a dried condition for extended periods of time in the environment. A pregnant ewe or doe may become infected with this organism through inhalation or ingestion of the bacteria. The organism is concentrated in the placental tissue and fluids and can be spread through these tissues and fluids as well as milk, urine and feces. Although there may not be any clinical signs of infection in nonpregnant animals, an infected pregnant doe or ewe may be depressed and anorexic for several days prior to the abortion. The disease causes a necrotizing placentitis in pregnant ewes or does resulting in abortion. After abortion occurs the animal may become immune to abortions but may remain subclinically infected. The infected doe or ewe can carry the organism indefinitely, sporadically shedding it in the milk and at future parturitions. This disease carries huge zoonotic implications in humans consuming raw milk from animals harboring and shedding *C. burnetii* in their milk as well as individuals handling aborted fetuses and placental membranes and fluids.

Toxoplasmosis is caused by *Toxoplasma gondii* which is a protozoa primarily transmitted by infected cats. Cats are definitive hosts of this infectious organism and shed oocyst (eggs) in their feces. Consumption of feed (grain, grass or hay) that is contaminated by these oocysts infects pregnant sheep and goats causing abortions, weak lambs and kids, stillbirths, birth defects and mummification of fetuses. Infected cats do develop immunity and only shed oocyst once in their lifetime; therefore,

kittens under 6 months of age are more likely to transmit this disease. One method of prevention is to spay/neuter all barn cats and only allow cats that are over one year of age to be present in the barn. There is no vaccine available in the U.S. for toxoplasmosis.

Other bacterial causes of abortions, stillbirths and weak kids may be *Neospora caninum*, *E. Coli*, *Salmonella* sp., *Listeria monocytogenes*, *Brucella* sp. and *Leptospira* sp..

VIRAL CAUSES

Bluetongue infection is caused by an orbivirus primarily transmitted by biting midges of the *Culicoides* sp. in the fall of the year. It can cause a transient fever and swelling of the face, muzzle and ears with small ulcers on the roof of the mouth primarily in sheep. In goats, you may not see any of these signs except for fetal issues. It can also cause inflammation of the coronary band resulting in lameness. Fetal infections result in abortions, stillbirths, weak lambs/kids, fetal mummification and congenital brain malformations. There are no vaccines commercially available in the United States at this time. One method of control is to breed when the midges are not present, i.e. after a hard freeze.

Border Disease is caused by a pestivirus which is similar to the virus causing Bovine Viral Diarrhea (BVD) in cattle. Usually only seen in sheep. Infection is usually introduced by a persistently infected animal or can be transmitted venerally by an infected ram. Abortion occurs at any stage of pregnancy but this virus can also cause weak lambs and congenital abnormalities. Live infected fetuses usually are undersized, and they often have congenital tremors and an abnormally hairy coat (hairy shaker lambs).

Cache Valley virus is a mosquito-transmitted *Orthobunyavirus* sp. virus and causes infertility, abortions, stillbirths, and multiple congenital abnormalities in sheep and goats. Infection before 32 days of pregnancy results in early embryonic death. Whereas infection between 32 and 37 days of pregnancy results in musculoskeletal and CNS lesions such



Cache Valley fetus

as cerebral and cerebellar hypoplasia, arthrogryposis, scoliosis, and torticollis. Infection between 37 and 48 days results in primarily musculoskeletal lesions.

There is no vaccine available for this disease, and similar to bluetongue, control is limited to breeding in seasons where risk of infection is low. If a flock or herd can switch to late fall or winter breeding then the risk is greatly reduced since it is a vector transmitted disease.

Conclusion

As you can see, there are many causes of infertility, abortions and congenital

abnormalities. It is a wonder that we ever have a live, normal fetus, but many are born every day! Two main factors with abortifacients is that most of them are zoonotic and control depends on good biosecurity to prevent introduction. The zoonotic potential is greatest for pregnant women. It is highly encouraged that pregnant women avoid the lambing/kidding areas. If possible, protective clothing/gloves should be worn when delivering lambs/kids. And, of course, proper sanitation should be a must after delivery.

Biosecurity begins with isolating any new purchases for a minimum of 10-14 days. If possible, purchase virgin rams/bucks. These males have never been exposed to ewes/does at the time of purchase. When purchasing older females, be sure to receive a breeding history and avoid those animals that have aborted or unsuccessfully raised their lambs/kids. Also, ask the seller if they have experienced any infertility/abortion issues in their flock/herd. Good reputable breeders will provide this information.

If you experience an abortion,

contact your veterinarian immediately. Determining the cause of an abortion is sometimes very difficult but certain diseases can be ruled out through submission of the fetus, placental tissue and serum on the ewe/doe. After determining that an abortion problem exists, many veterinarians elect to use chlortetracycline(CTC)/oxytetracycline (oxytet 200 or 300mg/ml injectable) to prevent future abortions. Use of a CTC orally through the feed requires a Veterinary Feed Directive from your veterinarian so it is always wise to establish a veterinary-client-patient relationship (VCPR) with your local veterinarian early on so they will be available when you need them most. Hope that your kidding/lambing season ends up with many bouncing kids/lambs!

Dr. Beth Johnson is a Staff Veterinarian in the Kentucky Department of Agriculture and has 40 years of experience raising and treating small ruminants. Her family farms in Parksville, KY where she raises Gelbvieh cattle and Boer goats.



The **Kentucky Sheep and Goat Check-Off Program** began in 2010 and collects \$.50 for every \$100 worth of sheep and goats sold in the Commonwealth. According to Kentucky law, Check-Off funds must be used for the purpose of promoting the increased use and sale of sheep and goats.

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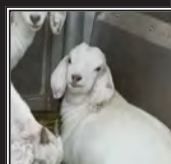
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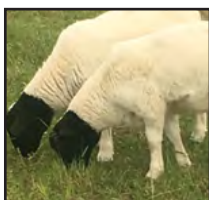
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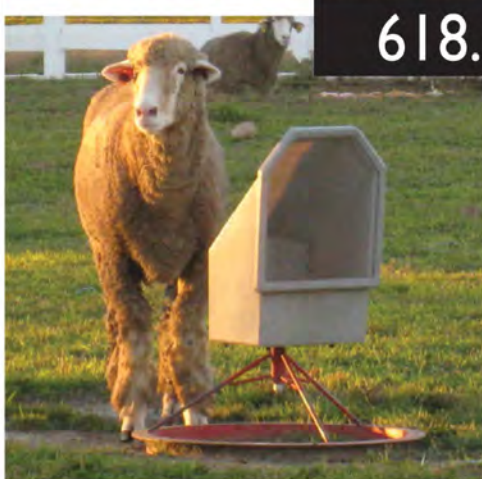


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