



## Spring 2023 Newsletter



# Letter from the President

Hello,

I know many of you, like us, are either in the middle of lambing season or doing the busy work of keeping your new lamb crop healthy and thriving. It's now the height of the sheep farming year, and every trip to the barn to collect new lambs is exciting and never gets old for me. Our education committee put together a great group of articles this quarter to help prepare us for some ailments we will likely come across or already have and weren't prepared (I'm looking at you, watery mouth). Don't forget to read the long form blog posts on the website for more valuable information to keep your flock looking and most especially, performing their best.

Our Symposium and Sale committees are busy putting together all of the details on our educational program at our 3rd Annual EAPK Symposium and Sale this July 8th at Morehead State University, Morehead, Kentucky. We'll release the schedule and list of speakers soon but mark you calendars as I can assure you won't want to miss it.

Also as a reminder there will be elections this year for two spots on the board of directors. I would like to encourage all eligible members to please consider running. It is important for the future of the organization that we have a diverse and well rounded board of directors. Nominations with bio's need to be submitted to me by June 8th. Also, this is the annual period where members can suggest any changes to the bylaws. If you have any please send them to me by May 8th. Your input and participation is encouraged.

I hope everyone has a fruitful lambing season and we look forward to seeing everyone in Morehead!

Brad Carothers  
President





# New on the EAPK Website

[Signs & Symptoms: What are your sheep trying to tell you?](#)

[Profile: Dr. Scott Bowdridge](#)

[It all Starts in the Rumen](#)

[Scours: Causes, Treatment and Prevention](#)

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## Upcoming Board of Directors Elections

Interested in running for the EAPK Board of Directors? Contact Brad Carothers (oldslatefarm@gmail.com) with any questions, and submit your bio by June 8th for consideration by the membership. We will vote in-person at the Symposium on June 8th, in Morehead, Kentucky.

Would you like to suggest any changes to the bylaws? Contact Brad Carothers (oldslatefarm@gmail.com) to submit by May 8th. We will vote in-person at the Symposium on June 8th, in Morehead, Kentucky.

# Impact of NSIP Status on Ram Value

By: Dr. Andrew Weaver, NCSU Small Ruminant Specialist

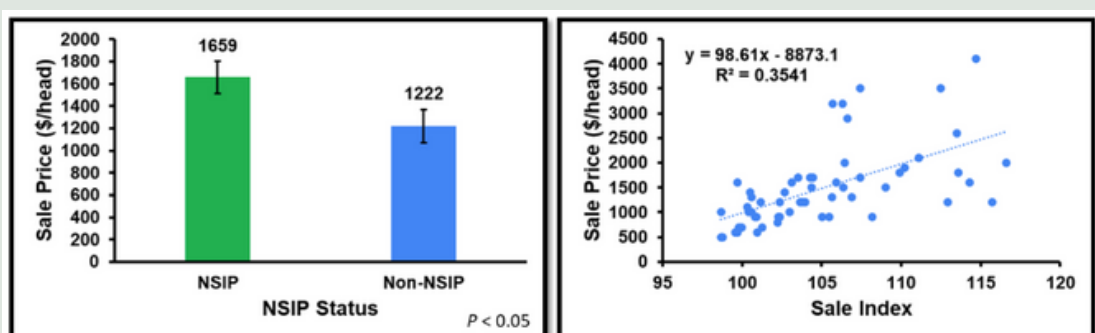
In 2022, the Southwest Virginia Agricultural Research and Extension Center hosted its 10th ram test and sale. Over the years, the program has developed a strong reputation for the development and identification of superior rams for growth and parasite resistance in a forage-based environment. Historically, the test has included rams from NSIP flocks and some rams from flocks not enrolled in NSIP (non-NSIP). The 2022 test and sale data were analyzed to explore the impact of NSIP enrollment on ram performance and value in the program.

The 2022 test included 119 rams from 10 states. Rams were delivered in late May and the test began June 22. Fecal egg counts, FAMACHA scores and weights were collected every other week until late August. Rams were ranked based on a sale index (see below) that equally weights growth performance (test average daily gain ratio and weight per day of age ratio) with parasite resistance measured by fecal egg count. Rams with higher sale indexes had greater growth and improved parasite resistance relative to their contemporaries on test. This index was not meant to be a selection index. It was simply a way to determine sale qualifying rams and a sale order. The top half of rams were selected for the sale held in late September.

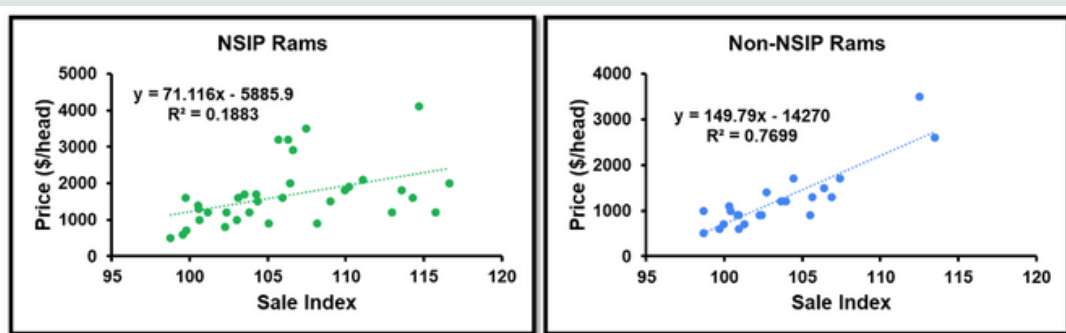
**Sale Index =**

$$\frac{1}{2} \times (\frac{1}{3} \times \text{Average Daily Gain Ratio} + \frac{2}{3} \times \text{Weight per Day of Age Ratio}) + \frac{1}{2} \times \log\text{FEC Ratio}$$

On test, 51% of rams were enrolled in NSIP and 49% were not. When the top half of the rams were identified (Sale Index  $\geq 100$ ), 60% of the rams were in NSIP and 40% were not. When the top 20% of rams were evaluated, 78% were NSIP rams. 57 rams (34 NSIP and 23 non-NSIP) were sold averaging \$1482. The NSIP rams commanded an additional \$437 compared to non-NSIP rams (Figure 1). This led to the question, “How well did the sale index predict sale price?” The sale index did alright, explaining 35% of the variation in sale price (Figure 1). But did it do a better job for NSIP rams or non-NSIP rams?



**Figure 1.** Average sale price for NSIP and non-NSIP rams and comparison of sale price to sale index for all 57 sale rams in the 2022 Southwest Virginia AREC Ram Test and Sale.



**Figure 2.** Relationships between sale price and sale index for NSIP and non-NSIP rams in the 2022 Southwest Virginia AREC Ram Test and Sale.

This comparison is illustrated in Figure 2. The sale index explained 19% of the variation in sale price for NSIP rams while it explained 77% of the variation in sale price for non-NSIP rams. The index did a much better job predicting value for the rams not enrolled in NSIP. Why? NSIP rams have much more data to offer compared to non-NSIP rams. These data are estimated breeding values (EBVs). These EBVs are superior selection tools offering far more accuracy for decision-making. The only data associated with non-NSIP rams are test performance metrics (i.e., sale index). Thus, when making purchasing decisions, NSIP ram buyers have a lot more to consider when determining ram value and overall, value these rams more than non-NSIP rams. Non-NSIP ram buyers base their price determination largely on test performance. Ram tests offer valuable data for both groups. These data help validate EBVs for NSIP rams while providing sought-after, value-determining performance data for non-NSIP rams. We hope you can join us for the 2023 Southwest Virginia AREC Ram Test!

## EAPK Members in the News - 2023 ASI Convention

During the American Sheep Industry's Annual Convention in January, EAPK member **Lisa Weeks** (Virginia) was reelected to represent Region II and **Lynn Fahrmeier** (Missouri) was elected to represent Region IV on the ASI Executive Board.



**Jim Morgan** recognized for 20+ years of dedicated work as NSIP Board Member supporting the sheep industry.



# Improved Reporting of Genetic Conditions

Tom Hodgman, NSIP Katahdin Breed Rep.

Genomics has provided Katahdin producers with advanced tools for genetic selection. Our breed has the most robust reference population of genotypes (approaching 8,500 individuals) among U.S. sheep breeds and was the first to use Genomic-enhanced EBVs. We've heard for some time that genotyped animals will have access to a wider array of genetic conditions (think scrapie resistance). To date, flocks submitting TSUs to NSIP for genotyping have received reports for parentage and a few genetic conditions. Starting in early 2023, the genetic conditions report will include a larger suite of conditions plus provide greater detail for some important conditions affecting Katahdins in the U.S. Here's a summary of what to expect.

Over at least the past 20 years, many breeds have tested for susceptibility to scrapie. Testing focused almost exclusively on Codon 171, but there are four other codons that influence susceptibility to scrapie. Codons 171 and 136 are the most important at controlling "classical scrapie" and therefore provide the greatest opportunity for selecting for reduced susceptibility in our flocks. Results of tests at both codons will be part of the improved reporting from NSIP.

For some time, genetic testing for susceptibility to OPP has been available using the TMEM154 test. Previously, results from various labs have reported these as a gradient (low/medium/high) or as TT, TC, CC. In reality, there are several haplotypes (i.e., the copy provided by the sire or the dam) influencing susceptibility.



Going forward, NSIP will report on four of these haplotypes: 1, 2, 3, and 4. These will appear as diplotypes for example 1,1 or 1,4 (least susceptible) or perhaps 2,2 or 2,3 (most susceptible). Of course, we may see all possible combinations of haplotypes in our flocks allowing us greater sensitivity when selecting replacements or future sires with low susceptibility to this disease.

Myostatin and Callipyge affect the growth and development of muscling in our lambs. Texel sires possessing the Myostatin mutation have been used to improve muscling in many breeds including Katahdins and are a popular terminal sire worldwide for improving muscling in market lambs without effecting meat quality. The Callipyge mutation is known for extreme muscling. But, unlike Myostatin has detrimental effects on meat quality and is selected against.



The FecB variant of the Booroola fecundity gene influences ovulation rate and consequently litter size. The effect of Booroola FecB is additive meaning that with each copy of the gene variant that is inherited, ovulation is expected to increase approximately 1.6 times. Selecting for individuals that are homozygous for Booroola FecB (i.e., 2 copies) could lead to significant increases in litter size but could also place great strains on our production and management systems.

It's clear that genomic tools are powerful and with thoughtful use can advance our productivity, reduce susceptibility to disease, and increase our carcass weights and quality. It appears that “the breed whose time has come” is more poignant than ever.

# Timely Topic: Watery Mouth

Watery mouth (also known as rattle belly or floppy lamb disease) is an often-fatal disease of newborn lambs caused by ingestion of *E. coli* bacteria usually from a dirty, muddy or wet environment. It affects lambs 12-72 hours old that have not ingested sufficient colostrum. Without the antibodies provided by colostrum, the bacteria rapidly multiply and trigger a chain reaction in the lamb's gut. The gut motility stops and the stomach fills with gas resulting in a painful belly that causes the lamb to flop around in discomfort.

The lamb may present with a wet muzzle caused by excessive salivation and a full belly appearance but will refuse to nurse and is lethargic and/or hypothermic. Lambs presenting with these symptoms or notably, not passing stool at all, should not be fed milk replacer.

Treatment includes veterinary prescribed antibiotics, oral electrolyte therapy (often by tube), and warm soapy enemas to stimulate gut motility. The lamb has a decent chance at recovery if, after a few treatments, the urge to nurse resumes. Lambs most at risk are small multiple lambs born late (when the environment is more contaminated) who don't receive adequate colostrum.



This could be due to weakness, sibling competition, underconditioned ewes, difficult birth, mismothering, or inadequate ewe supply of colostrum (e.g., yearlings with multiples).

Watery mouth disease may be prevented by maintaining a clean, dry lambing environment and ensuring at-risk lambs receive adequate colostrum or colostrum replacer. Keep the clinical symptoms of this disease in mind as they can be mistaken for other common newborn lamb illnesses.



# Timely Topic: Scours

Scours or diarrhea is something that most of us see in our flocks over the course of a year.

Animals scour whenever there is a disturbance in the normal processes that regulate how much fluid is excreted in their manure. **Scours is a symptom, sometimes due to a serious disease that requires prompt treatment, but often diet induced and transient, requiring only tincture of time to resolve.** Diet plays a large role in manure consistency; expect looser manure for a few days whenever there is an increase in protein and/or energy or a decrease in fiber in their diets.

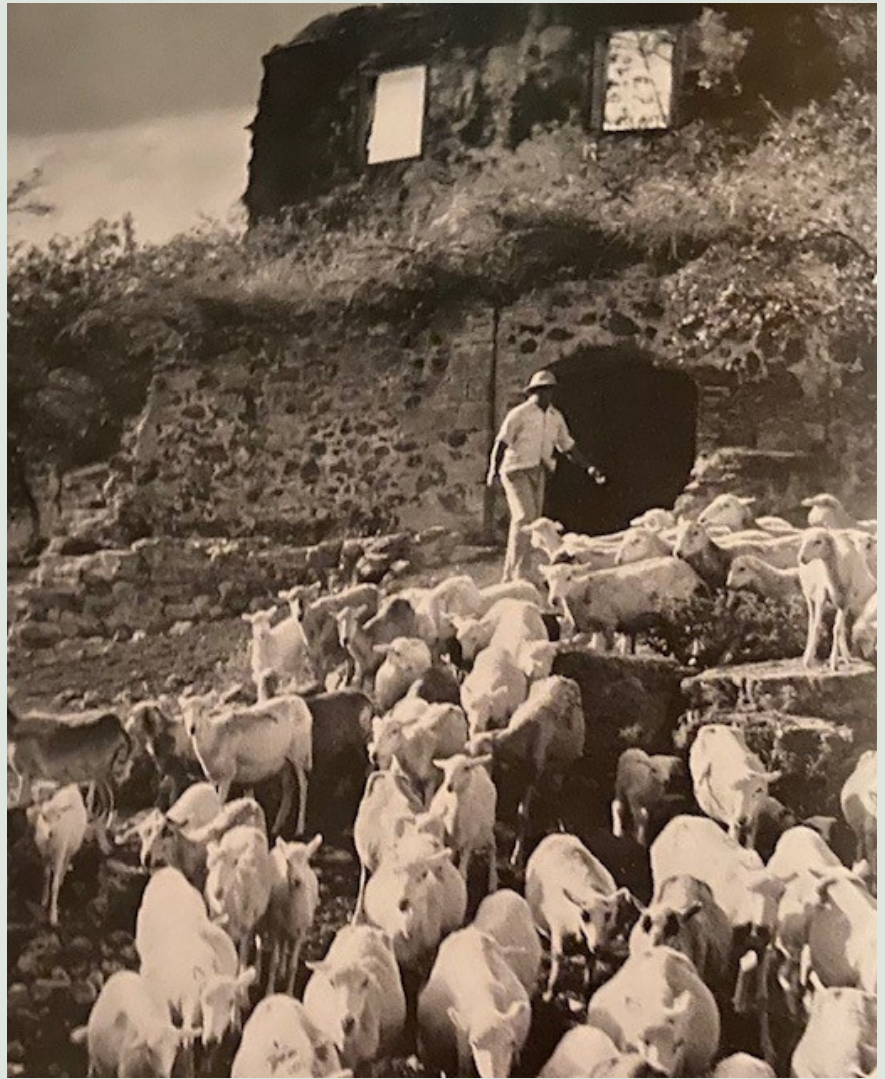
Sheep eating mainly grass hay will have dry pellets while **sheep on a high protein and/or energy or a low fiber diet will have much looser manure without there being a disease process at work.** There are limited ways in which excess fluid ends up in manure to cause scours. To read the full blog and learn more about the anatomy and physiology of the GI tract and the many causes of scours, including treatment and prevention, [click here.](#)



Age Class	Probable Cause	Actions
< 3 wks	<b>Dam Reared</b> <ul style="list-style-type: none"><li>• Microbes</li><li>• Cryptosporidium</li></ul> <b>Artificially Reared</b> <ul style="list-style-type: none"><li>• Diet / Stress</li><li>• Microbes</li><li>• Cryptosporidium</li></ul>	<ul style="list-style-type: none"><li>• Fecal smear can give an idea of microbes vs cryptosporidium.</li><li>• Thoroughly clean artificially rearing equipment</li><li>• Separate sick lambs</li></ul>
3 wks - 2 mo	<b>Dam Reared</b> <ul style="list-style-type: none"><li>• Coccidia</li><li>• Clostridial infection</li></ul> <b>Artificially Reared</b> <ul style="list-style-type: none"><li>• Coccidia</li><li>• Clostridial infection</li><li>• Diet / Stress</li></ul>	<ul style="list-style-type: none"><li>• Fecal floatation can see coccidia if going on long enough that there are oocyte producing adults present.</li><li>• Treat anyhow if suspicious of coccidia, even if fecal is negative - MOST DAMAGE IS DONE BEFORE COCCIDIA PRODUCE OOCYSTS</li></ul>
> 2 mo	<ul style="list-style-type: none"><li>• Coccidia</li><li>• Worms</li><li>• Stress (weaning)</li><li>• Diet</li><li>• Clostridial infection</li></ul>	<ul style="list-style-type: none"><li>• Check fecals</li><li>• Treat anyhow if suspicious of coccidia or worms, MOST DAMAGE IS DONE BEFORE COCCIDIA PRODUCE OOCYSTS</li></ul>
Adults	<ul style="list-style-type: none"><li>• DIET</li><li>• Parasites when stressed/hypersensitive</li></ul>	<ul style="list-style-type: none"><li>• Check fecals</li><li>• Management change if a large % of flock is affected</li><li>• Consider culling if a small % is affected, especially repeat offenders</li></ul>

# Looking Back

Sixty-seven years ago, Michael Piel of Maine picked up the February 1956 issue of National Geographic and saw this photograph of Caribbean Hair Sheep. Since the value of wool was decreasing while the labor of shepherding increased, he envisioned a breed of meat sheep that didn't require shearing, had better resistance to parasites and exhibited good mothering traits. In the early 1960s, Mr. Piel began a decades long foray into genetic selection by importing some of these hair sheep from the U.S. Virgin Islands that exhibited acceptable conformation and muscling, and a slick hair coat. He initially bred those ewes to his Suffolks to improve carcass traits, and later with Wiltshire Horns (a shedding wool breed), being careful to retain only those animals that showed a propensity for shedding. The rest is history.



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## Timely Tip

### Recording Bottle and Foster Lambs

For those submitting data to NSIP through Pedigree Master, there is often a question of how to enter artificially reared and foster lambs. Here are the basics:

- Enter the lamb as usual, including sire, dam, and birth date, type, and weight
- Enter the correct number reared for each lamb in the litter(s) (the actual number reared by the birth mother and the foster mother, or a rear type of "1" for a bottle lamb);
- Enter the correct contemporary group (foster lambs and bottle lambs will each have their own contemporary group);
- Enter the correct foster ewe ID number (enter a "phantom" foster ewe for bottle lambs).

A complete explanation with examples can be found on the [NSIP website here](#)





# Virginia Tech Southwest AREC Forage-Based Ram Test 2023 Test & Sale Update

By Lee Wright - SWAREC Superintendent

Just a quick reminder about this year's ram test. As usual, nomination forms will be due **May 1, 2023**. All pertinent information and forms will be included in a packet that will be emailed out to our mailing list in a few weeks. Or, keep checking our website for updates that will be posted soon, linked here:

<https://www.apsc.vt.edu/extensionandoutreach/Sheep-Extension/sheep-programs/swarec-ram-test.html>

**Rules & Regulations** for the 2023 program will be the same as they were listed within the 2022 info currently on our website. If you have any questions regarding the rules and regulations, please feel free to contact me at the office (276-944-2200) or email ([Lwright@vt.edu](mailto:Lwright@vt.edu)). Here is some key information with changes we incorporated last year, and I feel were a great success for the program!

- **Ram Age-** Registered rams born January 15-March 15 are eligible.
- **Pre-Test Management-** Rams should be acclimated to feed, however rams fed for high rates of gain prior to delivery will likely not perform as well on test. Additionally, rams that have not had prior exposure to internal parasites may not be able to fully express their potential for parasite resistance.
- **Sale Policy-** A sale will be held in conjunction with the program. Only the top ~50% of the rams tested will be sold based on a Sale Index which combines growth and parasite resistance.
- **Costs/Payments-** Test Expenses of **\$200 per ram are due at delivery**. This will cover all feed, health, yardage, and typical costs associated with the test (does not include sale expenses or codon 171 genotyping). See Rules and Regulations for details.

The change in sale qualification guidelines is to better assure we are offering the best rams in the test for the sale, for the benefit of consignors and buyers alike. We feel the SWAREC Ram Sale has become a premier venue to buy performance tested rams. This new procedure for identifying and ranking those rams qualifying for the sale will eliminate any question about which animals have excelled in test performance. Sale animal selection will be done in a similar fashion as the state Bull tests.





# University of Florida Ram Test and Sale

By: Dr. Brittany Diehl, DVM, MS – UF College of Veterinary Medicine

We are excited to announce our 3rd annual ram test and sale at the University of Florida! This program is designed to standardize environmental conditions to evaluate and quantify individual ram performance in the harsh southeastern US, with a primary emphasis on natural parasite resistance and growth.

This is a forage-based ram performance test where the rams will have continuous access to Bahia grass pastures and will be supplemented daily with the 'UF Ram Test' concentrate ration. Upon entry to the program, all rams will receive anthelmintics to ensure the rams entered into the test do not harbor drug-resistant parasites. After the 12-day acclimation period, the rams will begin the 84-day gain test. Throughout the test period, measurements of body weight, body condition score, FAMACHA score, and fecal egg count will be obtained.

New this year, both registered and commercial rams will be eligible for the test and sale. Eligible rams must be born between 12/1/22 – 2/15/23 and weaned by 5/1/23. Sale eligibility is based on both fecal egg count and growth indices during the test period. Sale order priority will be given to rams registered within a recognized breed association, followed by commercial rams.

**For full program details and registration forms, please visit our website:**

**<https://animal.ifas.ufl.edu/smallruminant/ramtest/>**

Important dates:

- May 22 Pre-registration deadline
- June 3 Rams arrive at the UF Sheep Unit in Gainesville, FL
- June 15 84-day gain test begins
- September 7 84-day gain test ends
- September 29-30 Small Ruminant Short Course and UF Ram Test Sale

This event is open to any breeder in the United States and we welcome your participation and an opportunity to work with you. Please feel free to contact us with any questions: Clay Whitehead at (904) 796-0441, e-mail [jacobcwhitehead@ufl.edu](mailto:jacobcwhitehead@ufl.edu), or Dr. Brittany Diehl at (352) 294-4387, e-mail [bn.diehl@ufl.edu](mailto:bn.diehl@ufl.edu).

# KHSI Update

## Dan Turner, KSHI President

Joining any association can be a little like a magic carpet ride - you have no idea where membership and participation will take you. There are the obvious benefits of membership. For EAPK these include a listing in the membership directory on the website, the ability to list items in the classified section of the website and, for voting members, the ability to consign animals enrolled in NSIP in the EAPK sale.

Participating in association events, whether virtual or in person, is a great way to gain new experiences. Even if you are one who likes sheep way more than people, you will be amazed at how you can fit in at an association event, because we are there for the sheep. You will find commonality and opportunity just by attending.

The first KHSI Expo for us was all educational with very minimal social interaction, though we attended all the events. I think that we knew the names of five people after that event.

At the next expo we leveraged those five people into about ten. Each Expo after that has introduced us to many more people, and we recognize these “friends” at other sheep events. We now have connections across the country from a variety of management systems who we can contact for help and information.

Our level of satisfaction in our sheep production has grown so much by participating in associations and related events, that we want to encourage everyone to get out and mingle.

Go to the Expo, a convention, the EAPK symposium, your state sheep meeting, a local field day, a virtual webinar or an online meetup.

Your membership in an association has benefits beyond yourself. Having a strong membership base helps associations in lobbying for your interests, promoting your products and providing clout to suppliers, researchers, veterinarians, and government programs. Without those associations being properly supported, your resources would dwindle.

So, when you find yourself asking, "what value do I get from joining this?", maybe the only answer needed is that you are supporting the future of an industry that you are obviously interested in - supporting it for yourself and for others.





# Hobby Farm or Farm Business?

By: Allison Rudd, EAPK Communications Committee

If your farm has cash flow and makes enough to offset expenses, it may be lucrative to create a small business for your farm operation. Small business laws vary state to state but federal income tax laws are relatively generic in their requirements to maintain a business versus a hobby farm, such as a business plan, separate accounts, and accurate financial records. It is important to work with your accountant or tax advisor as you move forward with creating your business, as there will be changes to your yearly tax return filings and you should be aware of those changes before taking the plunge.

You'll also want to consider your insurance needs. In many cases, incidental farm liability on a homeowner's policy will cover a few sheep, but if you have a business, you may need an actual farm policy. Check with your insurance agent as rules and regulations vary by state and insurance company.

Whether your farm is an existing enterprise or a new idea, the guidelines to implementing the status of *business* remain the same. A necessary starting point is to create a business plan. Then once you are satisfied with your plan, contact your local Farm Services Agency. They should be able to guide you through the process of legitimizing your farm and helping you follow the correct path into establishing your business license with the state in which you reside.

Once you are considered a farming "business", many opportunities such as grants, funding, and capital could become available through the USDA and NRCS. These benefits could allow you to expand or improve your farm considerably. There is a tremendous amount of information found at the USDA's website [farmers.gov](http://farmers.gov) outlining all the programs and services available. Other resources include your state's Farm Bureau and your local Extension office. Business plan templates can be found at the National Center for Appropriate Technology's ATTRA website: [ATTRA – Sustainable Agriculture \(ncat.org\)](http://ATTRA-SustainableAgriculture.ncat.org)



# Timely Tip

## Quick Leg Splint

A cheap, easy, and lightweight way to stabilize an injured leg is to use a foam pool noodle. First wrap the leg with cotton undercast padding. Measure the area to be stabilized, usually from the hoof to just above the hock. Cut the noodle to the right length with a razor knife. Then cut the noodle lengthwise on one side (not all the way through). On lambs, no other cuts are needed, the leg fits snugly into the opening. Then use vet wrap to secure it from above the hock to the hoof. On adult animals, the lengthwise cut may need to be widened for the thicker leg to slip in. This splint will stabilize the leg until a vet can assess and stabilize the injury.







## Upcoming Events

**July 8th, 2023 - EAPK Annual  
Symposium and Sale,  
Morehead, KY**

The 3rd Monday of each month  
at 7PM EST - Open Forum  
Discussion via zoom

<https://us02web.zoom.us/j/81720266013>

### **Board of Directors**

Brad Carothers - **President**

Tom Hodgman - **Vice President**

Kathy Bielek - **Secretary**

Roxanne Newton - **Treasurer**

Robert Walker

Lisa Weeks

Lee Weight

