

INSIDE THIS ISSUE:

Goat Carcass Evaluation	3
2010 MD-DE Shearing School	4
Beginning a Successful Small Farm –Mini Course	4
Potential Vaccine Break-through	5
Lucy– The World's Oldest Sheep	5
Managing Unwanted Vegetation Using Small Ruminants	5
New Test For Barber Pole Worm	7
2010 Western MD Pasture-Based Meat Goat Test	7
Featured Websites	8
Recipe	8
Calendar of Events	8
Small Ruminant Fun	9

Spring



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Wild & Woolly



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SPRING 2010

Foot Rot or Scald: Which is it?

By: William Shulaw
Extension Veterinarian, The Ohio State University

Wet weather creates ideal conditions for foot problems in sheep and goats. Nearly continuous exposure to moisture softens the hoof's horny tissues and makes it more vulnerable to irritation, injury, and infection. Those flocks that are affected by classic virulent foot rot (sometimes called contagious foot rot) have likely seen a surge in the number and severity of cases if they have not been attempting to control or eradicate this potentially devastating disease.

Those flock owners who have experienced milder forms of lameness in their flocks may assume that they don't have foot rot but have a milder condition called "foot scald" or "scald". Actually there are really two recognized conditions that are sometimes referred to as "scald". At first the difference may seem academic, but for some producers, it may be more than that.



Virulent, or contagious, foot rot is caused by a synergistic infection with two organisms, *Dichelobacter nodosus* (formerly *Bacteroides nodosus*) and *Fusobacterium necrophorum*. This last organism is in virtually all sheep environments and sets the stage for infection with the organism necessary for foot rot to occur - *Dichelobacter nodosus*. This organism produces a powerful proteolytic enzyme that dissolves hoof horn and leads to the undermining of the sole, the severe lameness, the foul smell, and

(Continued on page 2)

Sheep and Wool Skillathon

The 2010 Sheep & Wool Skillathon will be held on Sunday, May 2, 8 a.m. to 12 noon, at the Maryland Sheep & Wool Festival at the Howard County Fairgrounds in West Friendship, Maryland.

The Sheep & Wool Skillathon is open to any youth between the ages of 8 and 18. Individuals and teams (of 3 or 4) from any county, state, or province may participate. Youth compete according to the 4-H age (age as of January 1 of the current year).

Livestock skillathons give youth the opportunity to blend knowledge and skills acquired in livestock judging, demonstrations, and care and exhibition of animals into a single activity. They consist of a series of sta-

tions where youth are tested on their knowledge and abilities related to livestock. Youth do not need to own livestock in order to participate.

For more information or to register for the 2010 Sheep & Wool Skillathon, contact Susan Schoenian at (301) 432-2767 x343 or sschoen@umd.edu. The registration deadline is April 26.

Visit the skillathon web site at <http://www.sheepandgoat.com/programs/>



the abnormal hoof growth seen with classic virulent foot rot. About 20 different strains of *D. nodosus* are believed to occur in the US.

True foot rot does not occur in the absence of *D. nodosus*. However, a less persistent and generally milder condition in which only inflammation between the toes and a slight underrunning of the hoof horn occurs in some flocks. Both *D. nodosus* and *F. necrophorum* can be isolated from these cases, but the strains of *D. nodosus* isolated seem have a reduced virulence or ability to produce disease. This condition is technically referred to as benign foot rot but has also been called foot "scald." It is believed that the strains of *D. nodosus* that are involved are weak enzyme producers and are less able to produce the severe damage seen with virulent foot rot.

Another infectious and inflammatory condition which involves only the skin between the claws *without* significant undermining of the horny tissue has been termed ovine interdigital dermatitis (OID), and it has *also* been called "scald". The bacteria associated with this condition are *F. necrophorum* and *Actinomyces pyogenes*; both of which tend to be common in typical sheep environments. *D. nodosus* is not involved. The disease usually only occurs when the weather and other conditions on the farm damage the skin and allow these bacteria to create skin infections. Because the term "scald" has been applied to both OID and benign foot rot, the use of that term can be misleading. Both conditions usually cause only mild or temporary lameness that may be obvious only in wet periods of the year. From a practical standpoint, the two conditions are difficult to distinguish from one another, and laboratory capability to isolate and serotype *D. nodosus* is generally not readily available. Foot baths and soaks with 10% zinc sulfate usually result in improved healing of either condition. Foot "scald" often disappears when the environmental conditions become dry.

So if the two conditions called "scald" are not easy to differentiate and they both tend to clear up with foot bathing or dry weather, why even bother to make the distinction? There are two reasons that may be important to some produc-

ers. The first is that all the strains of *D. nodosus*, whether they produce virulent or benign foot rot, are maintained in the flock by sheep that harbor the infection in cracks and crevices on their feet – carrier animals. That means that most likely, unless an attempt at eradication is made, benign foot rot will be back again as soon as the weather conditions favorable for foot softening and transmission reappear. Because some flocks have substantial numbers of sheep that are affected by benign foot rot when conditions are favorable, it can be an economically important problem.

Secondly, there appears to be some breed-related susceptibility to *D. nodosus* infections. Some breeds, such as Merinos, appear to be especially susceptible to this organism, and what appears to be a relatively mild problem in one flock may be more serious when the infection is introduced into another flock. In other words, what seems to be just "scald" in one flock, may be much more serious, and look like virulent foot rot, if it is introduced to another. OID is not considered a transmissible disease in that the bacteria that cause it are in most sheep environments and only cause trouble when environmental conditions are very favorable.

The word biosecurity seems to be used a great deal today – in reference to both human and animal populations. In the National Animal Health Monitoring System's Sheep 2001 survey and report, foot rot had been diagnosed or believed to be present on 34.9% of US sheep operations. No data was collected on "scald". It seems wise for producers considering addition of new sheep to their flock to question the seller about the presence of foot rot, "scald", and other disease conditions in the source flock. And in light of the fact that *D. nodosus* infections seem to be common (both virulent and benign foot rot), it is also wise to use an isolation protocol and to rigorously inspect for signs of foot rot or scald before those animals are allowed access to the flock or the pastures the flock uses. The American Sheep Industry Association has an excellent fact sheet on biosecurity at: <http://www.sheepusa.org/Biosecurity>.

Originally published in OSU Sheep Team Newsletter August 2003. Reprinted with permission from author.



To prevent hoof problems, this goat is standing in a foot bath containing a zinc sulfate solution

Goat Carcass Evaluation

Goat carcass evaluation

One of the goals of the Western Maryland Pasture-Based Meat Goat Performance Test is to evaluate and compare carcass characteristics of meat goats consuming a pasture-only diet.

Nine bucks from the 2009 test were harvested by LambCo LLC. The goats were weighed immediately before slaughter. Live weights ranged from 62 to 86 pounds and averaged 72 lbs. Hot carcass weights were determined soon after harvest and ranged from 24.8 to 34.9 lbs. and averaged 31.0 lbs.

Dressing percentage

For the nine goats, dressing percentage (hot carcass weight divided by live weight) ranged from 38.8 percent to 49.2 percent and averaged 43.1 percent. The dressing percentages observed in these goats was within the expected range. The carcasses contained very little fat, as the goats had been consuming a pasture-only diet since early June. Grass-fed livestock also tend to have more gut fill.

After chilling overnight, cold carcass weights were determined. They ranged from 23.8 lbs. to 33.6 lbs and averaged 29.9 lbs. Cold carcass weights are less than hot carcass weights, as the carcasses lose moisture during chilling. Cold carcass weights were used to calculate carcass yields.

Kidney and heart fat

Kidney and heart fat was removed from each carcass and weighed. While goats are known for depositing more internal fat than other livestock species, these goats had very minimal internal fat. Kidney and heart fat ranged from 0.121 to 0.435 lbs. (per carcass) and averaged 0.30 lbs.. Percent KH fat ranged from 0.32 to 2.08% and averaged 0.98% of cold carcass weight.

Goats that are fed to the point that they deposit external fat would be expected to have much higher percentages of kidney and heart fat. I am reminded of a carcass study in Texas in which feedlot goats, fed to a high degree of finish, had 3 to 6 percent kidney and heart fat.



Rib eye area

Rib eye area was measured between the 12th and 13th rib using a 1-centimeter grid. Each dot on the grid represented 0.1 square inches of measurement. There is a degree of subjectivity when using a grid to measure rib eye area. To reduce the subjectivity, each side of the rib eye was measured and an average value was used.

Rib eye measurements ranged from 1.45 to 2.20 square inches and averaged 1.79 square inches. The actual rib eye measurements were considerably larger (about 0.5 square inches) than the ultrasound measurements. The goats had been ultrasounded on September 10.

Fat

Ultrasound back fat was very minimal (less than 0.05 inches) and could not be differentiated between carcasses. In goats and lambs, body wall thickness is considered to be a better indicator of fat cover. It was measured and ranged from 0.30 to 0.55 inches and averaged 0.40 inches.

The carcasses were completely deboned. Fat and lean were separated from the bones, resulting in separate "piles" of bones, fat, and lean, which were weighed to determine carcass percentages. Fat trim ranged from 1.10 to 2.55 lbs. (per carcass) and averaged 1.78 lbs. Percent fat ranged from 3.6 to 10.1 percent and averaged 6.1 percent of cold carcass weight.

Bones ranged in weight from 8 to 11 lbs. (per carcass) and averaged 9.5 lbs. Bones comprised from 28.2 to 36.9% of cold carcass weight, an average of 32 per-



Goat Carcass Evaluation (continued from page 3)

cent. Lean tissue ranged from 14.3 to 21.8 lbs. (per carcass) and averaged 18.3 lbs. Percent lean ranged from 57.4 to 65.5 percent and averaged 60.9 percent.

Percent lean

As a percentage of live weight, lean ranged from 22.6 to 30.7 percent and averaged 25.4 percent. The buck with the highest percentage of lean (carcass and live weight basis) was a purebred Kiko consigned by Craig Adams from Litchfield, Illinois. Adams also had several of the top-performing bucks on test, including the high-selling buck. The other goat with outstanding carcass data was a 3/4 Kiko x 1/4 Spanish buck consigned by Wes Pinneo from

Kincaid, Kansas.

Next year, we would like to harvest more goats from the test and perhaps incorporate a carcass contest into the performance testing program. For information about the goat carcass evaluation and/or Western Maryland Meat Goat Performance Test, contact Susan Schoenian at (301) 432-2767 ext. 343 or ssschoen@umd.edu. Information can also be found on the blog at <http://mdgoatatest.blogspot.com>.

You can read the full carcass report at: <http://www.sheepandgoat.com/programs/GoatTest/2009/09carcasseevaluation.html>

2010 Maryland-Delaware Shearing Schools

The 2010 Maryland-Delaware Beginning Sheep Shearing School will be held Friday and Saturday, March 26 and 27, 9:30 a.m. to 3:30 p.m. at Ridgely Thompson's farm at 1942 Uniontown Road, Westminster, MD 21157. A school for advanced shearers (those who have attended previous schools and sheared at least 150 sheep) will be held Saturday, April 3, 9:30 a.m. to 3:30 p.m., at the same location.

For the beginning school, the registration fee is \$80 per person and includes a copy of ASI's Sheep Shearing Notebook and instructional DVD. The registration deadline is March 17. Participation is limited to the first 25. The registration fee for the advanced school is \$25 per person. The registration deadline is March 26. Participation is limited to the first 10.

The New Zealand method of shearing will be taught. Shearing machines will be provided. Blade shearing will not be taught.

The schools are sponsored by University of Maryland and Delaware Extension, the Maryland Sheep Breeders Association, and the Delaware Sheep and Wool Producers Association. Instructors are David Greene, Dr. Richard Barczewski, and Aaron Geiman.

<http://www.sheepandgoat.com/programs/10shearschoolbeg.pdf>
<http://www.sheepandgoat.com/programs/10shearschooladv.pdf>



WV Shearing School

There will be a shearing school at the WVU livestock farm in Morgantown, West Virginia, on March 19. You can register at <http://www.simpleforms.scripts.wvu.edu/srp/MorgantownSchool/>.

Beginning a Successful Small Farm

Everyone is invited to participate in the upcoming mini-short course, "Beginning a Successful Small Farm: Small ruminant Management". This mini course will be held on three Thursday evenings from 7 p.m. to 9 pm. The dates are May 6, May 13 and May 20. All classes will be held at the Frederick County Extension Office at 330 Montevue Lane in Frederick MD.

This short course series is being presented by the University of Maryland Extension and is designed to provide the basic knowledge needs by new farmers as they begin the process of starting their new farming operation or enterprise, or are just trying to improve their farming skills. Small ruminants includes sheep, goats, Alpaca and llamas. Follow-up surveys of previous short course participants have shown that these small farm courses have helped participants to be more knowledgeable about their farming operations and to help them to have a better understanding of farming as a small business.

To register or for more information, contact the Frederick County Extension Office by calling 301-631-3576 or by emailing smarouli@umd.edu. Space is limited so register early.

Potential Vaccine Breakthrough

Scientists at the Moredun Research Institute in Edinburgh, Scotland, have successfully immunized sheep against the barber pole worm (*Haemonchus contortus*). The barber pole worm is a blood-sucking parasite that causes significant livestock losses in warm, humid climates.

The highly effective vaccine developed at Moredun won't kill 100% of the parasite, but it will reduce the worm burden by 80-90%, according to researcher David Smith. The vaccine works by killing the worm and preventing development of eggs.

The vaccine is currently being tested on 100 grazing lambs in Australia and when successful, plans are in place to start making it commercially in Australia.

Currently, there are no commercially available vaccines for any roundworm species of any host, including man.

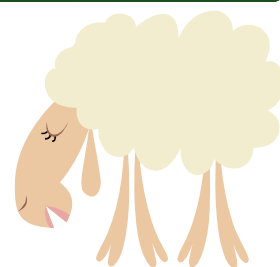


The World's Oldest Sheep

Lucky was the world's oldest sheep. She died in November 2009 at the age of 23, twice the life expectancy of a sheep. Lucky succumbed to the effects of a heat wave in southern Australia and died peacefully after a short illness.

The previous record for longevity was held by George, a Merino wether, also from Australia. George died in his sleep in 2006 at the age of 21.

Lucky and George were both pets. Both were recognized by Guinness World Records as the world's oldest sheep.



Managing Unwanted Vegetation Using Small Ruminants

By: Dr. E. Nelson Escobar,
University of Maryland Eastern Shore

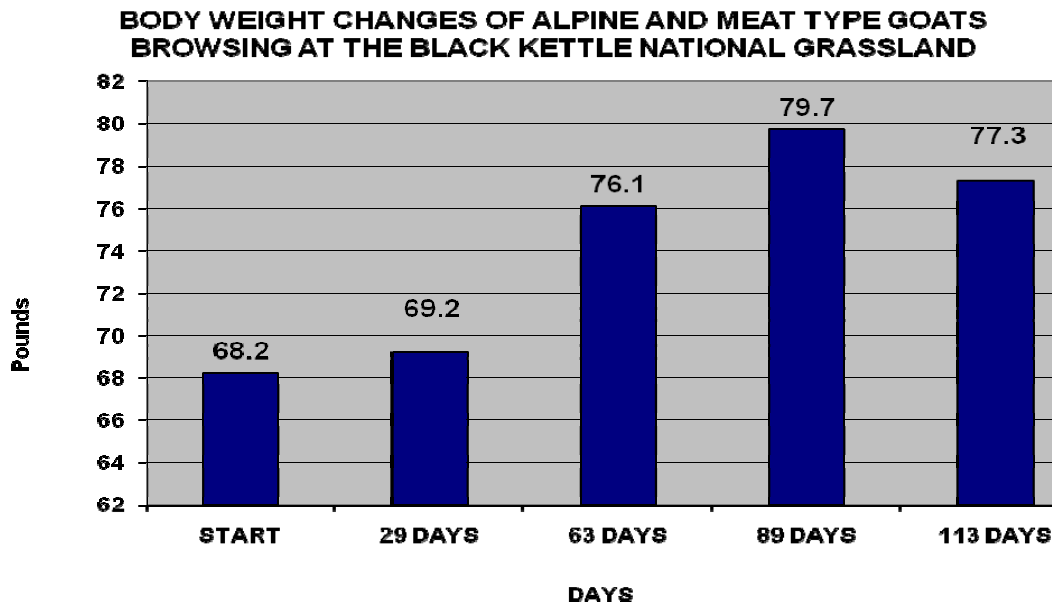
The Fall 2009 issue of Wild and Woolly had an article which brought some facts to mind (Vol. 9 Issue 3, pg. 8, *Feed or Weed?* By Jeff Semler) about past experiences in Oklahoma. To learn more about managing unwanted vegetation using small ruminants, the USDA-Forest Service, the USDA-NRCS and the USDA-CSREES funded demonstrations and research projects to determine the dynamic effects that goats have on plant species.

The following is one example of successful use of small ruminant to manage vegetation in rangelands and forest situations. In Cheyenne, Oklahoma, sand shinnery (*Quercus havardii*) is a plant native in many thousands of hectares in western Oklahoma and Texas. Over time, sand shinnery can thicken above tolerable levels limiting conventional agricultural uses and competes drastically with the more desirable native lovegrass (*Eragrostis sp.*). Chemicals, fire, mowing and mechanical methods have been used to manage shinnery with mixed results at a significant monetary cost.

A demonstration sponsored by the USDA-Forest Service, the USDA/NRCS, the Great Plains RC&D and Cooperative Extension Program/Langston University implemented a trial, dividing 79 acres of the Black Kettle National Grasslands (Cheyenne, OK) into eight plots. Meat type (Spanish) goats and Angora goats were introduced at different stocking rates and grazing strategies. The chart below shows the positive animal response expressed as body weight gain.



Managing Unwanted Vegetation Using Small Ruminants (continued from page 5)



After three years of goat browsing, plant species frequency counts (expressed as percent of species occurrence in sampling spots) revealed 55% oak and 59% lovegrass in the grazed target pasture vs. 100% shinnery and 20% lovegrass in ungrazed plots. Note that this is not a population count but represents the times that the plant species, shinnery, lovegrass or both, were present in the sampling spots. Another benefit to the soil was that grazing goats allowed some of the vegetative nutrients to be recycled back into the soil. Soil tests revealed an increase (pounds/acre) in nitrogen, phosphorus, and potassium and a slight decrease in pH. That information is condensed in the following table.

SOIL NUTRIENTS CHANGE IN SHINNERY PLOTS AFTER THREE YEARS OF GOAT BROWSING		
Item	CONTROL PASTURE	GRAZED PASTURE
pH	6.7	6.4
lbs/acre	0.9	18.7
lbs/acre	4.5	20.5
lbs/acre	106.1	277.4

In this study on shinnery, goat browsing reduced the competition between shinnery and other species, allowing native grasses to rejuvenate.

Some general suggestions derived from this study which may be applied to other unwanted vegetation grazing trials are:

- Introduce the goats to the targeted pasture as soon after bud break as possible (early spring).
- Designate one pasture as a "target pasture".
- Graze goats until they have defoliated 80% of the targeted species in the target pasture (about 7 days), then move goats into a rotation.

New Test For Barber Pole Worm

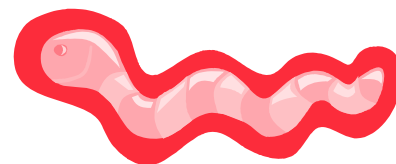
Researchers have developed a new test to determine the predominance of *Haemonchus contortus* (barber pole worm) in a herd's worm population.

The new lectin staining test is based on a peanut agglutinin that binds to eggs of the parasite and can be easily visualized with a microscope using ultraviolet light. It is an improved version of a previous technology developed by scientists in Australia.

The test was developed by microbiologists and veterinary doctors at Oregon State University and the University of Georgia, and is now available through those institutions. The test requires only a small amount of feces, and results are available in as little as two days.

Anyone interested in obtaining the test can get information on sampling, test results, and fees from the Veterinary Diagnostic Laboratory at Oregon State University or from Bob Storey (famacha@uga.edu) at the University of Georgia College of Veterinary Medicine Department of infectious diseases.

<http://oregonstate.edu/vetmed/haemonchus-contortus-identification>
<http://www.vet.uga.edu/id/>



2010 Western MD Pasture-Based Meat Goat Test

No significant changes are planned for the 2010 Western Maryland Pasture-Based Meat Goat Performance Test. The test will be conducted from June 4 until October 2, 2010, at the University of Maryland's Western Maryland Research & Education Center in Keedysville, Maryland.

The test is open to weanling male goats of any breed or breed cross, with or without registration papers or registration eligibility. The goats must be born between December 15, 2009, and March 20, 2010 and weigh from 35 to 70 lbs. upon delivery to the test site on June 4. The test is open to breeders from any state. A breeder may consign up to five goats. Half-sibs are recommended. A maximum of 70 goats will be accepted for the 2010 test.



The nomination period is April 1 through May 15, 2010. A \$20 nomination fee must accompany each nomination. The total fee for testing a goat remains unchanged at \$85 per goat. Nomination forms and other documents pertinent to the test may be

downloaded from <http://mdgoattest.blogspot.com>. Nomination packets may also be requested via mail from Pam Thomas at (301) 432-2767 x315.

The Western Maryland Pasture-Based Meat Goat Performance Test was initiated in 2006 to evaluate the performance of meat goats on a pasture-only diet with natural exposure to internal parasites. The test is suitable for breeders who raise their goats mostly on pasture, with little or no grain supplementation.



The Annual Western Maryland Field Day & Sale will be held at the Washington County Agricultural Education Center near Boonsboro, MD, on Saturday, October 2. The top-performing bucks will be sold, along with does. A youth goat skillathon will also be held.

You can download a brochure describing the goat testing program at <http://www.sheepandgoat.com/programs/GoatTest/2010/goattestbrochure.pdf>

Featured Websites



West Virginia Small Ruminant Project

The West Virginia Small Ruminant Project recently unveiled its new web site: sheepandgoats.wvu.edu. The old url (<http://www.caf.wvu.edu/avs/sheep>) still works, but will re-direct you to the new site.



The web site is still under construction so not all previous information has been transferred yet. Something new is a blog (Have "Ewe" Heard?) where current information can be read and subscribed to via RSS with sites such as Google Reader.

The goal of the West Virginia Small Ruminant Project is to help farmers increase the economic efficiency and overall profitability of their small ruminant enterprises through improved production practices and through the introduction of new technologies and to help revitalize the industry in West Virginia.

www.sheepandgoats.wvu.edu

Notes On Goats

Notes on Goats is a comprehensive web site dedicated to providing the latest research, information, and news about goats. The author of the web site is Dr. Sandra Solaiman, Professor and Director of Small Ruminant Research at Tuskegee University in Tuskegee, Alabama. Dr. Solaiman's major contribution to goat production is her extensive study and research on copper requirements for goats.

www.notesong goats.com



Recipe

Irish Stewed Goat

From Ireland comes this dish. Instead of lamb, many crofters (a tenant farmer) are turning to goat for their meat as well as for the milk.

Ingredients:

5 lb (2.25 kg) goat shoulder
2 cups (480 ml) water
1 large onion
2 cloves garlic
Worcestershire sauce
Salt
Pepper



Put goat meat into roasting pot with water. Sprinkle well with salt, pepper and Worcestershire sauce. Add chopped onion and garlic. Put on lowest heat on stove. Cook for 5 hours. Add potatoes 1/2 before serving.

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Calendar of Events

March 19

Morgantown Shearing School
West Virginia University, Morgantown, West Virginia
Registration form: <http://simpleforms.scripts.wvu.edu/srp/MorgantownSchool>

March 26-27

Beginning Sheep Shearing School
Ridgely Thompson Farm, Westminster, MD
Info: David Greene at greelamb@gmail.com

March 27, May 15, June 5, and June 26

Sheep-raising workshops
Owens Farm, Sunbury, Pennsylvania
Info: www.owensfarm.com

April 3

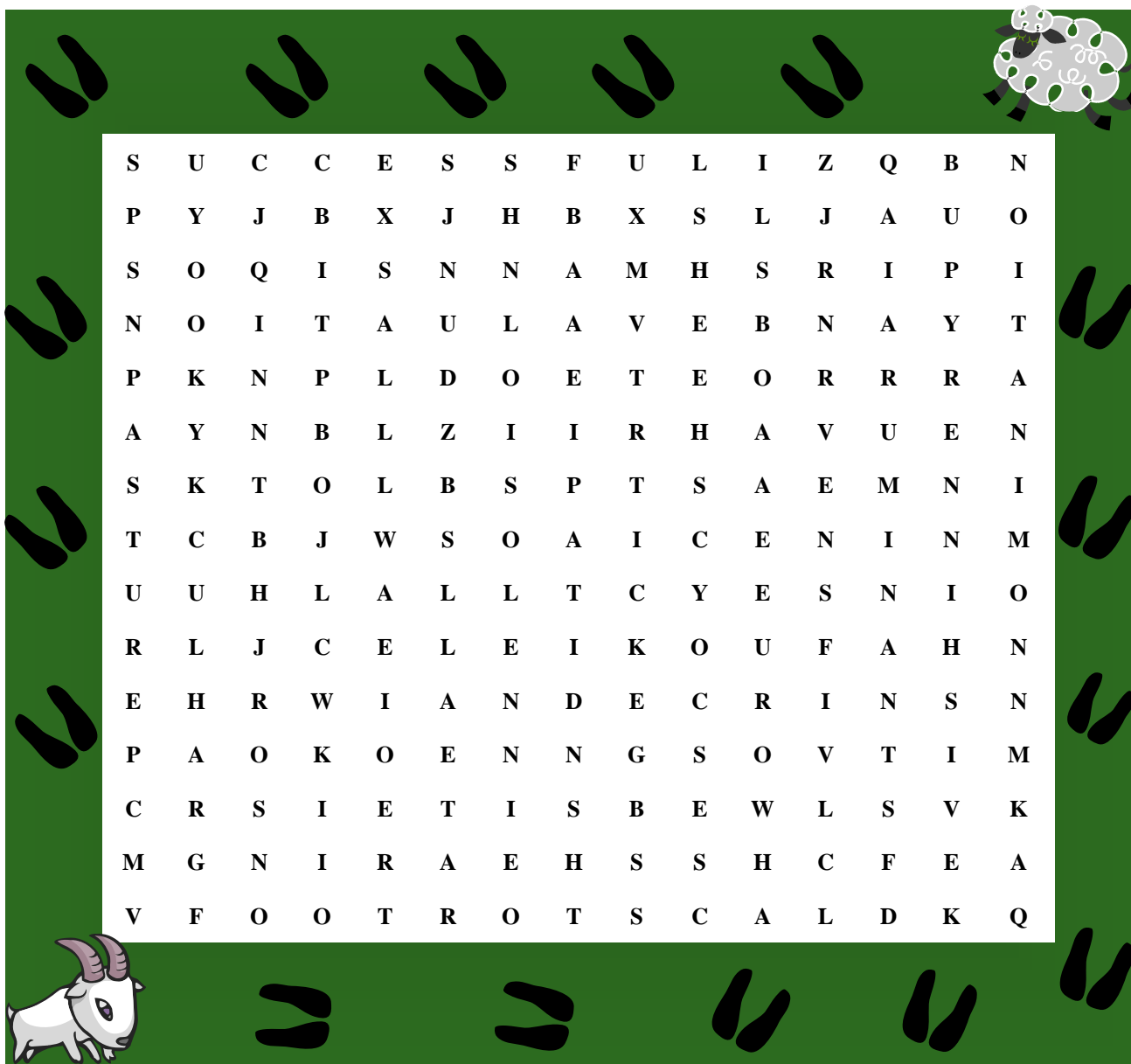
Advanced Sheep Shearing School
Ridgely Thompson Farm, Westminster, MD
Info: David Greene at greelamb@gmail.com

May 1-2

Maryland Sheep & Wool Festival
Howard County Fairgrounds, West Friendship, Maryland
Info: www.sheepandwool.org

(Continued on page 10)

Small Ruminant Fun



BARBER POLE WORM
CARCASS
EVALUATION
FLOCK
FOOT ROT
INFECTIOUS
KNOWLEDGE

LEAN
LUCKY
NOMINATION
PARASITE
PASTURE
RUMINANTS
VACCINE

SCALD
SHEARING
SHINNERY
SKILLATHON
SUCCESSFUL
WEBSITE

Calendar of Events Continued



UNIVERSITY OF
MARYLAND
EXTENSION
Solutions in your community

May 2

Sheep & wool Skillathon

Howard County Fairgrounds, West Friendship, Maryland

Info: Susan Schoenian at (301) 432-2767 x343 or sschoen@umd.edu
or www.sheepandgoat.com/programs/skillathon/skillathon.html

May 6, 13, 20

Beginning a Successful Small Farm

Small Ruminant Management

Frederick County Extension Office

Frederick MD

Info: Frederick County Extension 301-631-3576 or
email to smarouli@umd.edu

June 16

Maryland Wool Pool

Maryland State Fairgrounds, Timonium, MD

Info: Richard Barczewski—email rbarczewski@desu.edu

September 12-15

National Goat Conference

Florida A&M University, Tallahassee, Florida

info: www.famu.edu/goats

October 2

Western Maryland Goat Field Day, Sale, and Skillathon

Washington County Agricultural Education Center,

Boonsboro, MD

Info: Susan Schoenian at (301) 432-2767 x343 or sschoen@umd.edu

Wild & Woolly, is published quarterly by the University of Maryland Extension. It is written and edited by Susan Schoenian, Sheep and Goat Specialist, at the Western Maryland Research & Education Center (WMREC), 18330 Keedysville Road, Keedysville, MD, tel. (301) 432-2767 x343 or 315, fax (301) 432-4089; e-mail: sschoen@umd.edu or Pamela Thomas, Administrative Assistant, pthomas@umd.edu. The cost of receiving the newsletter by mail is \$10 per year, payable to the University of Maryland. The newsletter can be accessed for free on the Internet at <http://www.sheepandgoat.com/news/index.html>. Internet users can ask to be added to a list to receive an e-mail message when a new newsletter has been posted to the web.

Comments and suggestions regarding the newsletter are always welcome. References to commercial products or trade names are made with the understanding that no discrimination is intended and no endorsement by University of Maryland Extension is implied.

More information on sheep, goats, and upcoming events can be accessed at:

<http://www.sheepandgoat.com/>

<http://www.sheep101.info/>

<http://mdsheepgoat.blogspot.com>

<http://www.sheepgoatmarketing.info>