



Pumpkins as livestock feed

It is common to feed livestock leftover (cull) pumpkins. But are they good feed? As with any by-product or unconventional feedstuff, nutrient composition can vary.

Pumpkins contain a lot of moisture, about 90 percent. For this reason, they should only be fed as part of a ration. According to feed composition tables, pumpkins are a good source of energy, containing about 85 percent TDN on a dry matter basis. Their protein content is good, too, about 16 percent (DM). Their phosphorus content is relatively high at 0.43 percent (DM), so it's important to include them in a balanced ration that contains a proper ratio of calcium to phosphorus, especially for wethers.

While no one should plant pumpkins as a livestock feed, they can be a viable feed, if they are available at little to no cost. It will probably be necessary to cut pumpkins into small pieces to get sheep and goats to consume them. Caution should be practiced when adding pumpkins to rations. As always, new feeds should be introduced (and increased) gradually to prevent serious gastrointestinal problems.

Some producers may have heard that pumpkins are a natural "dewormer." This is because pumpkins contain cucurbitan. Cucurbitan is a bitter-tasting compound that serves as the plant's defense against herbivores. It is purported to have anti-parasitic properties. Unfortunately, there is no scientific proof that it has any impact on internal parasites. Further study may be warranted.

In This Issue

- Pumpkins as livestock feed
- Dairy Goats In The Land Of Chocolate
- Youth Entrepreneurship Project
- 2020 Research Plans
- The Great Yorkshire Dales: Sheep Everywhere
- All Worms All Day Conference
- Comparison of Ram, Wether, and Short Scrotum Lambs
- Sheep Pelts: Asset or Liability
- Sheep Shearing School



Dairy Goats in the Land of Chocolate

By Susan Schoenian

In August, I attended a joint COMBAR-ACSRPC meeting in Ghent, Belgium. ACSRPC is the acronym for the American Consortium for Small Ruminant Parasite Consortium. COMBAR is the acronym for Combatting Anthelmintic Resistance in Ruminants. Both groups strive to develop sustainable solutions to dewormer resistance.

Belgium is a small country, smaller (95%) in size than Maryland, but with a much larger population: 11.4 vs. ~6.0 million people. Belgium is best known for beer, fries (Belgium, not French), and chocolate (and waffles).

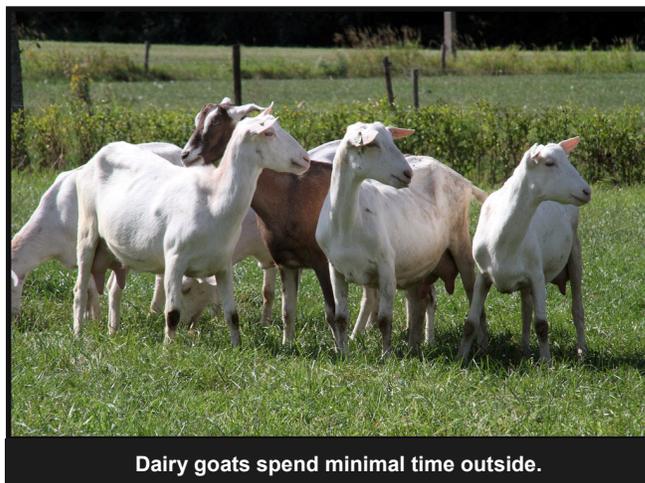


Almost all does are Saanen.

Belgium has a very small small ruminant industry, composed mostly of dairy goats. Texel is the most popular breed of sheep. The Beltex is Belgium's version of the Texel. The Texel sheep are often double-muscled, so c-sections are commonplace, performed on about 20 percent of the births (according to one veterinarian). The Belgium Blue breed of cattle requires an even higher percentage of caesarians. Fortunately, the cost of c-sections isn't as high as it is in the US.

Our scientific meeting included a day of farm visits. We visited two dairy goat farms. The first farm was organic. It milked about 1100 goats, almost all Saanen. Milking was done twice daily in a carousel milking parlor. Milk was picked up every two days. In Belgium, you're not allowed to raise dairy goats unless you first sign a contract with a processor.

The second farm milked about 200 does, also almost all Saanen. They processed their own milk into fluid milk, (raw milk) cheese, and ice cream and operated a farm store. They also had about 60 cows, enough to support one robotic milker. The cow milk was sold commercially. The farm had a preference for cows, but wanted to keep its options open.



Dairy goats spend minimal time outside.

On both farms the goats were kept indoors, in large buildings with fence line feeding in center aisles. A gate was kept open so that mature does could venture outside. In fact, this is the only requirement (for pasturing) for organic; does must have the option of going outside. One farm said that the goats rarely go outside and only when the conditions are "perfect." The farm with the store thought it was important for the public to see some of the goats outside grazing.

Continued on page 3

Youth Explore Entrepreneurship Through Sheep Pelt Project

By Ashley Travis

In May, Washington County 4-H implemented a new program for youth focused on animal science entrepreneurship. This program allowed youth to explore all facets of operating and owning an agricultural related business. Over the course of the spring, summer, and early fall, youth learned to write and implement a business plan, keep diligent records of income, expenses, and inventory, apply for and manage a loan, write and implement a marketing plan, and strategically market products to customers.

In mid-April, approximately sixty lambs arrived at the Western Maryland Research and Education Center (WMREC) for a study comparing the growth, carcass characteristics, and fertility traits of wether, short-scrotum rams, and ram lambs. The research component of the study concluded in mid-August when the lambs were processed.

Youth who participated in the program completed an application and essay. Seven youth, from three states applied, were accepted, and completed the program. Five of these youth were from Maryland, representing Washington, Frederick, and Allegany counties. The other youth were from Virginia and West Virginia. From June until August, youth participated in bi-weekly programs to teach entrepreneurship skills and assist them in building their very own small business focused on marketing the sheep pelts from the lambs used in the research study. Participants of the program worked with University of Maryland Extension Finance Specialist, Jesse Ketterman to develop their very own business and market plan. Youth learned the processes of loan application, business plan writing, finance management, and marketing.



Ashley Travis and Jesse Ketterman, project leaders

Continued on page 4

Dairy Goats in the Land of Chocolate (continued from page 2)

The requirements for organic (in Europe) differ from those in the United States. It is permissible to give medication (as needed) and not lose organic status. In fact, a survey of European sheep and goat farmers showed that animals are dewormed quite frequently. Treatments are usually whole-flock, and not selective, like we advocate in the US. There is also no requirement for a pasture diet. In the US, animals must obtain at least 30% of their dry matter intake during the grazing season (at least 120 days).

On the two farms we visited, the kids are removed from their dams soon after birth, before they have consumed colostrum. One farm raises the kids (6-8) in plastic cubicles for their first ~10 days of life. This same farm feeds cow colostrum for biosecurity reasons. The other farm fed colostrum from their own does. The kids are weaned at approximately 8 weeks of age. The males, usually weighing about 12-13 kg (26-28 lbs.) are then slaughtered for meat.

Kidding intervals are more than 12 months. The goal of one farm was to breed does to kid at 1, 3, and 5 years of age (and no more). The does must be selected to be able to milk efficiently for two years.

Youth Explore Entrepreneurship Through Sheep Pelt Project (continued from page 3)

In addition to developing their own small business, youth were expected to attend a session in order to prepare their sheep pelts for tanning at a local tannery. The youth scraped and salted sixty-five hides in preparation for tanning. Youth were also given the opportunity to tour Bucks County Tannery where the hides were delivered for tanning. Since completing the tanning process the youth are currently working to sell their products according to their marketing plans.

Pelts were chosen for this project because sheep pelts have very little value in the industry today. The team showcased how a product with little, or no value, can be profitable. This also showcased added value commodities to an existing operation.

Through this program youth are gaining valuable skills that will benefit them in the work place. According to the Network for Teaching Entrepreneurship, “Many of the skills expected of today’s youth, such as perseverance, problem solving, and communication, are associated with an entrepreneurial mindset.” (2015). Youth exposed to entrepreneurship also gain skills in collaboration, creativity, innovation, goal setting, and productivity.



Youth preparing pelts for tanning

A survey was conducted at the beginning and end of the project to assess skills gained over the entire program. Participants reported an increase in how much they know about entrepreneurship, describing what a business plan is and how to use it, describing the steps an entrepreneur takes to start a business, describing elements of record keeping and budgeting, describing the steps of marketing a product, and evaluating options to borrow money.

This program will be implemented again in 2020, with a focus on wool products. Information will be available in late winter for next year’s program!

2020 Research Plans @ WMREC

The University of Maryland Western Maryland Research and Education Center (WMREC) will be doing research with lambs again in 2020. Plans are to do a pasture supplementation study. Half of the lambs will graze only. The other half will be supplemented with feed, probably whole grain. The degree of supplementation has not yet been determined.

The pasture system at WMREC provides about 12.5 acres of grazing area. King’s Grazing Mixture (King’s Agriseeds, Ronks, PA) was planted on 10 acres. The mixture consists of two varieties of rye grass, three varieties of orchardgrass, fescue, red clover, white clover, and chicory. There is another ~2.5 acre paddock of silvopasture. It was planted several years ago in MaxQ™ tall fescue.

The lambs will be handled every two weeks to get weights and determine FAMACHA© scores. Fecal samples will be collected, if there is sufficient worm challenge. All or some of the lambs will be harvested at the end of the grazing period to collect carcass data, including fatty acid profile.

We will probably begin grazing the lambs in early June and end sometime in early October. To learn more about the WMREC small ruminant research program, visit the blog at <https://wmrecresearch.blogspot.com>.



Swaledale Ewe

The Great Yorkshire Dales: Sheep Everywhere!

By Susan Schoenian

In July, I participated in an animal photography workshop in the Yorkshire Dales (in England). The workshop was conducted by Edwin Remsberg, who does photography for our college. We stayed at the (University of) Maryland Study Centre at Kiplin Hall. Kiplin Hall is the ancestral home of the Calverts, Maryland's founding family.

During my stay, I honed my photography skills (I hope) and got a little glimpse into the UK sheep industry. There were sheep grazing at Kiplin Hall. We visited a sale barn. We spent a day at the Great Yorkshire Show. When we stopped at various roadside vistas, we saw lots of sheep. Sheep were everywhere; I was in "heaven!"

It was the regular auction day at Hawes Auction Mart. Lambs and cast (cull) ewes and rams were being sold. It all looked very similar to a US auction. Lambs were weighed, but sold by the head. Sheep were sold by the head. Unlike the US, all sheep in the UK are electronically tagged (it is the law). As the animals left the sale ring, they passed through a gate which read their tags.

In early to mid-July, it appeared that most of the sheep in the Yorkshire Dales had not been sheared. I was told that it was the middle of shearing. England has a different climate (cool, wet) than here. Earlier shearing might expose the sheep to too much inclement weather. I mentioned hair sheep to

2019 Delmarva Small Ruminant Conference

All Worms All Day

Lincoln Memorial University in Ewing, Virginia, will host the 2019 Delmarva Small Ruminant Conference: All Worms All Day. It will be held Saturday, December 7. It is the third All Worms All Day Conference. The first conference was held in 2017 at Delaware State University. Last year's conference was hosted by the University of Maryland.

All topics will pertain to internal parasite (worms + coccidia) control in small ruminants. All speakers are members of the American Consortium for Small Ruminant Parasite Control (ACSRPC; wormx.info): Dr. Dahlia O'Brien, Virginia State University; Dr. Kwame Matthews, Delaware State University; Dr. E. Nelson Escobar, University of Maryland Eastern Shore; Dr. Niki Whitley, Fort Valley State University; and Susan Schoenian, University of Maryland.

The conference will feature concurrent sessions for adults and youth (age 14 and up). The youth program will be taught by a 4-H STEM educator. The registration fee is \$50 per person; \$30 for youth, age 14-18. The registration link is <https://www.ext.vsu.edu/events/2019/12/7/all-worms-all-day-delmarva-small-ruminant-conference>.

For more information, contact Dr. Dahlia O'Brien at dobrien@vsu.edu.

Comparison of Ram, Wether, and Short-Scrotum Lambs: Year 2

This was the second year in which we compared the performance, carcass, and reproductive traits of (intact) ram, wether, and short-scrotum lambs. A short-scrotum is a “ram” whose testicles have been pushed up inside his body cavity, but whose scrotum has been banded (removed).

The rationale behind the short scrotum method of “castration” is that the short scrotum “ram” will have the performance and carcass composition of an intact ram (due to having testicles and testosterone), but lack fertility of the ram, due to lack of a scrotum (and thermoregulation).



Lambs waiting their turn for libido testing

Research protocol

This year’s study started with the delivery of 65 lambs to the University of Maryland’s Western Maryland Research & Education Center in Keedysville on April 22. The lambs were single-sourced from the same dairy sheep farm as last year. They were East Friesian x Lacaune.

There were 22 ram, 25 wether, and 18 short-scrotum lambs. Compared to last year, the lambs were 11 pounds lighter and 11 days younger. Starting weights averaged 44.5 lbs. (+/- 11 lbs.). Starting age was 65.1 days (+/- 17 days). The average birth type was 2 (twin). As is customary in a dairy sheep enterprise, the lambs were early weaned, ~30 days.

Like last year, the lambs were fed a combination of hay, grain, and pasture. Pastures were different this year, as we had established perennial pastures last fall (2018). This year, there was only one acre of annual pasture (warm season mix). We fed the same grain mix (whole barley + soybean meal + minerals) as last year, twice daily at a rate of 2-3 percent of body weight. The lambs were fed/grazed for 107 days.

Lambs were weighed bi-weekly and accessed for health. No lambs required deworming. One ram lamb was removed for health reasons (respiratory). On August 6, the lambs were evaluated for reproductive traits. Final weights were determined on August 7. On August 8, the lambs were harvested to collect carcass data (on August 13). The pelts were retrieved for use in the 4-H entrepreneurship program (see article on page 3). The meat is being served in the dining halls of the University of Maryland.

Results

Average daily gain (ADG) averaged 0.74 lbs. per day (+/- 0.09) for all lambs. Final ending weights were 126 lbs. (+/- 15lbs.). Ram lambs were 11 pounds heavier than wether lambs; + 13% ADG. The short-scrotum rams were intermediate (+7.8% ADG). Last year, the short-scrotums had the highest ADG, with rams intermediate.

Ram lambs produced heavier carcasses and had superior leg muscling as compared to the wether lambs; short-scrotum rams were intermediate. The ram lambs had larger rib eyes than wether lambs; short-scrotum lambs were intermediate. However, when adjusted to a common weight (100 lbs), there was no difference in rib eye area of the lambs.

The Great Yorkshire Dales: Sheep Everywhere!

(continued from page 5)

one of the farmers and he had the same reaction as many US producers had a few years ago, “no way,” despite wool being a cost of production as it is in the US (except for fine wool and our niche marketers).

The native sheep of the Yorkshire Dales is the Swaledale. The Swaledale is a hardy, hill breed with curled horns and a black “mask.” To get a more productive ewe, it is common to cross the Swaledale (ewe) with a Bluefaced Leicester (ram). The progeny are called “Mules.” There are several “Mule” type crossings (hill x lowland) in the UK. These were the North of England Mules. For prime lamb production, Mules are then crossed with terminal sire breeds, such as the Texel.

In the UK, lambs are usually marketed at lighter weights (~90 lbs.), but they are meatier than their US counterparts. It was common to see lamb on menus, one or two dishes. I also saw lamb (even lamb gravy) in the grocery stores. It’s all British lamb, no imports. In fact, the UK does a good (better) job promoting domestic product. Despite claims that lamb consumption is declining in the UK, lamb (and sheep) seemed to be commonplace in the English culture.



Supreme Champion Dutch Spotted ewe

Sheep could be found grazing both the dales and moors. The dales are valleys, with gentle rolling hills. The Moors are plateaus, tree-less, uncultivated hill land. In the dales, drystone fences served as the boundaries for fields. The sheep are more densely stocked. The Moors were not fenced. Sheep were scattered. In fact, UK sheep seem to possess less of a flocking instinct than those in the US.

Something else interesting was the public foot paths. In England, the public has a legal right of way or “right to roam.” It doesn’t matter whether the land is public or private. People can even bring their dogs (properly leashed) onto private land, so long as they follow the paths. Nor did it seem like a right that was being abused. In fact, other than the occasional attack by domestic dogs, predation doesn’t seem to be a problem with sheep in England. Guardian animals aren’t common, so someone traveling along a public foot path isn’t likely to encounter an angry Great Pyrenees.

The parasite issues are also different in England because of its cool, wet climate. Coccidiosis is similarly a problem, but the barber pole worm less so. The most predominant worm parasite in sheep (in England) is *Nematodirus battus* (threadnecked roundworm). It affects the small intestines where it disrupts absorption and causes diarrhea. Other parasites that cause digestive upset and diarrhea are more common in the UK than many parts of the US, where the barber pole is more endemic.

Continued on page 9

Sheep Pelts: Asset or Liability?

By Susan Schoenian

It depends.

Nationally

According to the American Sheep Industry Association “there is currently no market for American sheep skins.” The highest quality unshorn premium pelts have lost 95% of their value since March. In the past, it was common for the US to export more than 1 million pelt pieces worth an estimated \$15 million.

Over 80% of the pelts had been going to China. China is the biggest importer of sheep and lamb hides, receiving 74% of all skins exported worldwide in 2015. Turkey, Russia, and Italy import smaller numbers of pelts.

Everyone knows we are now embroiled in a “trade war” with China. The significant loss in Chinese demand for US sheepskin is due in part to the tariffs now being imposed on lambskin exports to China. At the same time, there are other contributing factors to the decline in value of sheepskins.

There is less demand for sheepskin products among Chinese consumers and consumers worldwide. The demand for synthetics is increasing. The value of the US dollar relative to Chinese currency has made pelts more expensive for the Chinese to purchase. Tougher environmental standards has driven many small Chinese tanneries out of business. Lower prices for Australian wool also affects sheepskin prices.

In the past, it was common for producers in the West and Midwest to receive “pelt credits” when they sold their lambs. This is money that the processor would pay to the producer. The pelt usually accounted for the majority of the by-product (drop) value of a lamb. As a result, pelt values could have a significant influence on slaughter lamb prices. High quality, unshorn wool pelts were worth the most. In fact, the “pelt credit” was considered one of the greatest disadvantage to marketing hair sheep lambs, as a good quality pelt could add \$5-\$10 to the value of a lamb.

In the East, we have never received “pelt credits” for our lambs. While some of the larger processors would salt and sell the pelts, the producer did not benefit, at least not directly. In smaller processing units, the pelts were (are) simply discarded as a waste product.

A Missed Marketing Opportunity

The Utah Wool Growers are marketing lamb pelts for \$100 apiece. There is a farm in California that is selling out of pelts, priced as high as \$675. These are colorful pelts are from rare Navajo Churro sheep. Many other producers are niche marketing their pelts for prices somewhere in between.

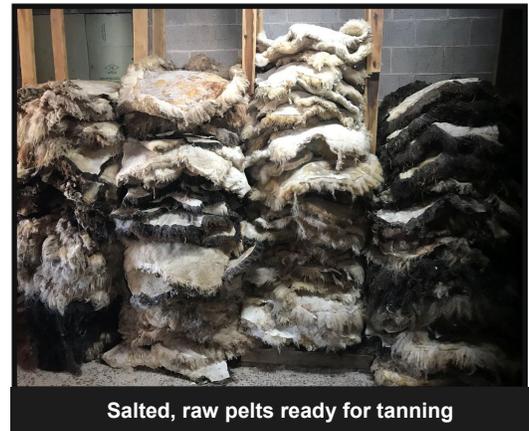
Pelts are an excellent way to add value to a sheep enterprise, especially for small farms that tend to have much higher production costs. While it's possible to tan your own pelts, it's more common to have the pelts professionally tanned. Bucks County Fur Products (www.buckscountyfurproducts.com) in Quakertown, Pennsylvania, is the tannery of choice for niche marketers of sheep pelts.

Bucks calls themselves “the sheepskin specialists”, as they specialize in tanning sheep, goat, and deer hides. They are a family run-business that has been in operation since 1954. They receive sheepskins from all over the US. Most are shipped in and shipped out.

Preparing pelts for tanning

It is not difficult to prepare skins for professional tanning. What's important to remember is that the skins are perishable. They need to be salted soon after slaughter or they will spoil. If you can't get your pelts soon after slaughter, ask the butcher to hang the pelts, flesh side out, over something. When you get the pelts, spread them out flat and salt them generously. Be sure to rub salt into the edges so the edges do not fold over. You'll need 2 to 5 pounds of salt per pelt, depending upon size. Don't use coarse or rock salt; use a finely granulated salt. Be sure to trim fat, meat clumps, and body parts from the pelt. The pelts need to dry. At least two weeks is recommended. After shaking off excess salt, dried hides can be rolled for shipping to the tannery.

Source: www.sheepandgoat.com/pelts



Salted, raw pelts ready for tanning



2020

Maryland Sheep Shearing School

The 2020 Maryland Sheep Shearing School will be held Friday and Saturday, March 13-14 (9:30 am to 3:30 pm each day) at Dale Lehman's farm in Fairplay, Maryland (Washington County).

The shearing school is open to anyone wanting to learn commercial sheep shearing techniques and who is physically and mentally capable. Fifteen participants will be selected from applications.

The annual shearing school is sponsored by the Maryland Sheep Breeders Association. Instructors will be Aaron Geiman and Emily Chamilin.

Request a registration form from mdsheepshearingschool@gmail.com. The \$100 registration fee includes a shearing manual and instructional CD from the American Sheep Industry Association (ASI). The registration deadline is February 1, 2010.

The Great Yorkshire Dales: Sheep Everywhere!

(continued from page 9)

The Great Yorkshire Show was a real treat. We spent a day there, but could have used more time. Despite its size, it is only a 3-day event. They advertised having 8,000 animals (of all kinds; no pigs this year because of disease), including 3,000 sheep. I saw sheep breeds I had heard of, but never seen.

The Supreme Champion sheep of the show was a Dutch Spotted ewe. This is a very new breed to the UK and one I had never heard of. Like other terminal sire breeds in England, it was stocky and round. It was obviously spotted and had a very light covering of wool. I read where it had already birthed a set of lambs. A Texel was reserve champion. The Texel breed also claimed the top pair designation, as well as the top spots in the carcass contest.

According to the show catalog, the biggest sheep show was for Beltex (Belgium Texel). Texels had the second largest show. There was a tent with rare breeds. Sheep exhibitors wear white coats, but show their own sheep. There were multiple show rings. There isn't 4-H in England, but there was competition for young handlers. There was also a "people's choice" category.

The fleece show wasn't nearly as large as the one at the Maryland Sheep & Wool Festival. A Shetland fleece garnered top honors. The shearing competition drew a big crowd and featured competition for both machine and blade shearing.

"The Sheep Show" was similar to New Zealand's Agrodome Farm Show. The British version was more humorous and featured nine breeds of sheep, each with historical significance to the UK sheep industry. In the show's finale, all of the sheep (except for Susie the Southdown) performed a "dance" step.

There is always much to learn when you visit farms in other places and chat with people who share a common interest. If you like sheep, the Yorkshire Dales should be on your "places to go" list.

Source: <https://www.sheepandgoat.com/yorkshiredales>



Sheep grazing in front of Middleham castle

Comparison of Ram, Wether, and Short-Scrotum Lambs: Year 2 (continued from page 6)

Trait	Ram (n=21)	SS (n=18)	Wether (n=25)	Probability
Start weight, lbs.	45.1	45.1	43.5	
Final weight, lbs.	127.8 ^a	124.7 ^a	116.8 ^a	P<0.0001
Average daily gain, lb/d	0.773 ^a	0.745 ^a	0.684 ^a	P<0.0001
Hot carcass weight, lb.	63.0 ^a	60.1 ^{ab}	58.6 ^b	P<0.0076
Cold carcass weight, lb.	60.1 ^a	58.3 ^{ab}	56.3 ^b	P<0.0045
Dressing percent	51.2 ^a	50.1 ^a	52.3 ^b	P<0.0040
Rib eye area, in ²	3.01 ^a	2.83 ^{ab}	2.71 ^b	P<0.0276
Adj. rib eye area, in ²	2.47 ^a	2.38 ^a	2.45 ^a	P<0.7090
Back fat, in.	0.083 ^a	0.100 ^a	0.142 ^b	P<0.0001
Body wall thickness, in.	0.529 ^a	0.514 ^a	0.558 ^b	P<0.2552
Kidney and heart fat, %	2.24 ^a	2.38 ^a	2.28 ^a	P<0.6141
Leg conformation score	13.0 ^a	12.4 ^a	12.6 ^a	P<0.0982
Yield grade, 1-5	1.23 ^a	1.40 ^b	1.82 ^b	P<0.0001
BCTRC, %	49.75 ^a	49.48 ^{ab}	49.04 ^b	P<0.0173

Numbers with different superscripts are significantly (statistically) different.

Like last year, wether lambs were the fattest. They had the highest dressing percentage and most back fat. With that said, none of the lambs were over-finished; in fact, many (especially rams) were under-finished (average back fat was only 0.111 inches), despite the heavy weights and grain feeding. Lambs with less than 0.08 inches of back fat fail to qualify for the USDA Choice grade, regardless of maturity, muscling, and flank streakings.

The short-scrotum rams displayed similar mating behavior as the ram lambs and produced a similar amount of semen. Unlike last year, some sperm cells were detected in the ejaculates of short-scrotum rams. Compared to last year, the ram lambs had lower motility and sperm concentration. A possible explanation is that the ram lambs weren't as far along in pubertal development (they were 11 days younger) as last year.

Sex	#	Libido			#	Semen		
		Mounts #	Services #	Time sec		Volume ml	Mobility %	Concentration billion/ml
Ram	21	1.50	1.30	217	7	0.56	45.0	1.52
Short scrotum	18	1.24	0.45	244	7	0.49	5.7	0.049

Conclusions

Leaving rams intact or making them short-scrotums will increase growth rates and carcass weights and improve carcass composition. However, while short-scrotum rams would not make good breeders, there is no guarantee that they would not impregnate females. We believe that the short-scrotum procedure needs to be done very early in life (< 7 days) in order to render the lambs infertile, like last year.

To learn more about the study, visit the blog at <https://wmrecresearch.blogspot.com>.

Upcoming Events



November 9-10

Small Ruminant Management & Fiber Conference

Morrison Hall, Cornell University, Ithaca, New York

Info: <https://www.eventbrite.com/e/2019-small-ruminant-management-and-fiber-conference-tickets-61240114832>

December 7

Delmarva Small Ruminant Conference:

All Worms All Day

Lincoln Memorial University, Ewing, Virginia

Info: <https://www.ext.vsu.edu/events/2019/12/7/all-worms-all-day-delmarva-small-ruminant-conference>

Virginia Bred Ewe Sale

Augusta Expo, Fishersville, Virginia

Info: www.vasheeproducers.com

January 22-25, 2020

American Sheep Industry Association Convention

Phoenix, Arizona

Info: www.sheepusa.org

March 13-14, 2020

Sheep Shearing School

Dale Lehman's farm, Fairplay, Maryland

Info: mdsheepshearingschool@gmail.com

April 7-8, 2020

Mid-Atlantic Nutrition Conference (will include sheep/goat section)

Hunt Valley, Maryland

Info: <https://ansc.umd.edu/extension/mid-atlantic-nutrition-conference>

More Information On Sheep & Goats Can Be Accessed At:

<http://www.sheepandgoat.com>

<http://www.acsrpc.org> or wormx.info

<http://wmrecresearch.blogspot.com>

<http://www.sheep101.info>

<https://www.facebook.com/MDSmallRuminant>

<http://issuu.com/mdsheepgoat>

<https://www.youtube.com/c/MarylandExtensionSmallRuminantProgram>

<https://www.instagram.com/umesheepgoat/>



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