Newsletter of the Vermont Sheep and Goat Association

VERMONT SHEEP & GOAT

FROM THE EDITOR

Thriving vs. surviving

By Mary Lake, Bethel, VT

While I'm hanging up my shearing machine, setting my comb and cutter in place, oiling my handpiece and lacing my shearing shoes, I'm also catching up on the past year. The owner of the sheep or goats I'm shearing shares with me the highlights of the season. The stories range from their successful lambing or the ordeal of a visit from the vet, an epic injury miraculously healed or a fast-moving plague that took out half the flock. There is always a story. One of the most common lessons I've picked up from the tales is that some years are good and some are straight up tough.

This year was a mix of both for me. It was my best lambing season yet. All my girls had twins except one singleton and one set of triplets. I had no bottle babies, and although one ewe prolapsed, a neighbor helped me insert a prolapse spoon and she twinned on her own, no problems.

The trouble came mid July. The sheep had jumped their fence and had scattered. One sheep was limping from a previous jail-break injury, two were lagging behind looking weak and probably parasitic, several were rummaging in burdock, most were headed for their favorite apple tree and one smarty with her lambs bee-lined for the barn, after alfalfa pellets, I'm sure. It was chaos.

My own baby, who had been sleeping in a carrier on my front, started crying. I sat down in the field and nursed him. Even, my one-year-old Border collie gave up chasing and plopped down next to us. We had been beat.

I realized then that my sheep operation had changed this year. My flock had grown, but also my priorities had changed. I was spending more time figuring out how to be a mom and less on being a shepherd. It seemed like my sheep operation was in survival mode. And, I desperately wanted things to be like they were before: growing and thriving.

When I decided to have sheep of my own I promised myself I would take such good care of them that they would never want for much. I waited to buy my starter flock until I felt that I knew enough about sheep that I could anticipate what they needed before they showed signs of deficiency. I waited until I had the means to take care of them properly so as not to lose a sheep to some silly mistake I made. I wanted to honor the responsibility of a sheep owner and be an all-star shepherd. On that day in July, I did not feel like I was keeping those promises I had made to myself.

I sat there in the bristly, grazed field – probably right on a big old pile of sheep turds – feeling very defeated. I took a breath and made a mental list of the issues at hand. Dog, baby and shepherd got it in gear and proceeded to run down the list slowly but surely. It took me nearly all day to do what used to take about an hour, but it got done, and a mental shift happened: I was learning how to be both a mom and a shepherd.

During my time so far as a shearer, I've met a few all-star shepherds, and they really have the best stories, especially from rough years. What resonates to me in their stories is that good year or bad, you learn from your actions and try as best as you can not to make the same mistake twice.

This edition of the VSGA newsletter features articles that push or inspire us to tighten up our operations where we can, get back in line with some of the issues we've been ignoring or neglecting, and take an extra step – whether it be big or small – towards a more efficient and healthy flock or herd.

Many of the articles in this issue are reprinted from other publications. I hope you enjoy them and consider sharing articles that helped you or submitting something of your own in the future. I'd love to hear from you.

The Vermont Sheep & Goat Association Newsletter is edited by Mary Lake (mary.m.lake@gmail.com, (802) 338-2250), and is a venue for sharing stories, images and reports related to sheep and goats. If you enjoy writing or photography or would like to share an idea, contact Mary. Send submissions, comments or questions to the e-mail above.

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Due to the length of articles in this issue of the VSGA newsletter, there is limited space for calendar listings. Visit the VSGA Web site's Events page for current happenings: vtsheepandgoat.org/events/

GRAZING

Maine shepherd supports forage model for profit

I read this recent article in the Maine Sheep Breeders newsletter. I think Dr. Settlemire makes many great points, and I asked his permission to reprint the article in our Vermont newsletter. I don't expect everyone to agree on every point, but I hope the article can stimulate some thought and discussion, which I encourage you to share on the VSGA listserv.

- Joe Emenheiser, PhD, UVM Extension Livestock Specialist

By **Tom Settlemire**
Master shepherd, Brunswick, ME

Originally published in the 2013 winter issue of The Producer, Maine Sheep Breeders quarterly newsletter. To find the MSBA newsletter archive visit www.mainesheepbreeders.com/Producer.

For as many years as I have been in Maine, which is now getting close to 50, we have talked about all of the advantages we have to make lamb production a more important aspect of our state agriculture. Many of you have heard the story. Maine is part of the eastern United States lamb-marketing region where American Lamb Council reports 75% of the lamb is consumed. At one point in Maine's history we were a major producer and had over 800,000 head of sheep in our state. Wow!

In the 1980s, Maine participated in the Blue Print for Expansion of lamb production. On the surface, Maine has the needed ingredients to take advantage of growing and marketing lamb. We have an instate demand for lamb that is growing. And, in the bigger picture we have the land mass and potential to not only grow for our local market but also to become a player in supplying the large lamb consumer markets such as Boston, New York City, Hartford, and Philadelphia and points in between.

So, why are we still looking in to the potential rather than grabbing the gold ring and making lamb production a significant part of Maine agriculture? I would suggest there is one answer we have not focused on: PROFITABILITY.

There are a number of pieces that are part of profitability. Here I want to get you to think with me about only two, but two that could change lamb production in Maine dramatically.

Of course, that is assuming profitability is a major factor holding back lamb production in Maine and not one we have made a proper focus. Here I think I am on safe ground. With few exceptions, when you talk to Maine sheep farmers and bring up the word profitability, you don't get that as the reason they are growing sheep. "I just like having them around," "they make great 4-H projects," "I love having a flock of sheep to show at the fairs," "I love wool," "they keep down the grass and weeds." These are all perfectly good reasons, but keeping sheep because they are money-makers is not a common answer.

There are a few farms working to change that image, so maybe there is hope.

Let's take a look at two topics that could change things and make lamb production a significant part of Maine agriculture.

First let me admit that I am not including the importance of wool production in this article. I myself was involved for a number of years in producing high quality fiber via our flock of Rambouillets. Along with four other Rambouillet breeders we harvested and marketed Rocky Shore Rambouillet Yarn from Texas up into Detroit down to Washington, D.C., and here in Maine. My thesis here is that wool production for some can be profitable and important and should remain such and we should look at ways to improve that product and its market. But for the sheep industry to become important on the scale I am hoping for we really need to focus on meat production.

Several years ago, the Maine Sheep Breeders Association brought to Maine one of the resource people of the Pipestone Sheep Program in Minnesota. If you don't know about that program checkout: http://www.mnwest.edu/index.php/management/lamb-and-wool/history. The Pipestone program has earned a high reputation for a lamb production system that results in a profitable, sustainable sheep enterprise and recognized as such not only in the United States but also internationally.

The Pipestone speaker's first comment during his visit to Maine was that having nearly 30 breeds of sheep in Maine producing a range of products means huge product diversity, and that limits your options to combine production from different farms to meet markets that want a volume and consistency of product. What can we do about all this? Believe me, there is no way I will take on the my-breed-is-better than-your-breed argument. But the simple fact is that a key to the success of the Pipestone program is that to be involved in the program you agree to use specific genetics — and along with common production protocols used by participating farms, there is a uniform end product going to market in quantities that attract the largest purveyors of lamb.

I would love for Maine to be the next Pipestone. It would be fantastic for a similar program to be centered in Maine. Maybe call it the Mainely Lamb Production Program. I am sure you can think of a better name. My kids would never let me name our sheep; my suggestions were always vetoed. What do you think? A topic for future discussion, and I would

suggest a proper project for the MSBA board to investigate.

Another key component of the Pipestone profitable lamb production system is cost of production — this is the second area of the two topics of this article and where I really want to focus. We are not Minnesota. So we need to look at what are resources we have that allow us to produce high quality lamb at the lowest cost.

This is something I have thought about a lot as long ago as the late '70s and '80s. I know I am old but don't rub it in. In fact I worked hard on this issue then and believe it or not got a free trip to the annual meeting of the American Sheep Producers Association in Reno, Nevada, to accept an award for efforts thought to be important to the Northeast for lamb production. It was quality production and use of forages for sheep. Little good it did!

A sheep producer friend of mine from New Zealand made an interesting point. He was visiting Maine in the '80s and said, "your biggest handicap to really being a serious producer of lamb is your cheap grain." That is certainly not true now. Grain has approximately tripled in price since then. But his point was that in New Zealand, grain has never been an option. They have learned how to produce meat, milk, and fiber totally on forage and can ship the product around the world and still make money. Wow! We can't even produce milk or meat and ship it 50 miles and see much profit.

Photos submitted by the author

TOP: Ewes grazing on pasture in late fall.
MIDDLE: A February-born Katahdin ram lamb raised on grass, weighing 118 lbs. in August.
BOTTOM: Lambs grazing a mixed grass legume pasture. Similar pastures have tested at 24% protein.

My proposal is: Let's use our ace in the hole and produce natural, high quality lamb using total forage-based sheep production systems. Maine has the landmass, water, climate and the soil to produce high quality forages both for pasturing and for stored forage (hay, silage). We already have some lamb production on islands in Maine where forage is the only option. And a few others using only forage, but few really are exploring the potential of producing high quality lamb only on forages.

Here, I am talking about a system that takes 100% of the grain out of the production program and replaces it with a highly managed pasture and stored forage system that dramatically reduces production costs and produces a highly desired product at a much improved profit.

Like much of sheep production — and key to the success of the Pipestone project — sheep genetics are important. We need sheep in the model I am proposing that are selected for the ability to use high quality pasture and stored forage and turn it into milk and growth. Some of our breeds are better suited to this system than others. A key aspect of a system like the one I am proposing is a constant selection of breeding stock that are raised in a 100% forage program and selecting the stars as our breeding genetics.

Work from Iowa State in 1985 by Health and et al. showed that both sheep and cattle could meet total reproduction and growth needs from a highly managed forage production system. Sheep are the best however, with USDA studies reporting that sheep are 26% more efficient than cattle at converting forage into meat.

The advantage of quality forage systems can be seen when we look internationally. New Zealand and Australia farmers produce meat and milk products that they can ship all the way to our supermarkets AT A PROFIT!! And why is that? Because they have worked hard at putting together a systems approach to production that keeps production costs low by using forages as the protein and energy source. They have a lower cost of production but with an equal consumer price meaning more opportunity for more profit.

Our New Zealand visitor provided a great take home message: You, as a farmer, must think of yourself first as an agronomist. Your product is forage. What grass and legume cultivars do I grow? How do I manage them for the highest protein and energy content? The animal then is simply the harvest machine. If you focus on constantly looking at how in the pasture you can provide the animals with high digestible protein and TDN (total digestible nutrients) via forages you are a long way toward a profitable lamb producing system.

Here in Maine we also must focus on how we harvest and store the highest quality forage for use during the time when pasture is not an option.

Let me say, we need, as producers, to know the difference between forage and high quality forage. Standing forage can vary from as low as 4% digestible protein to as high as 30%. And the energy values supplied by these forages mirror the protein levels. In this article, I can't describe all the forage options we have but want to emphasize the point that all pastures are not the same, and as the protein analysis suggests, we can

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OPINION

Vermont shepherd replies to UK sheep critic

University of Vermont Extension Grazing Outreach Specialist **Kimberly Hagen** responds to New York Times article about the environmental impact of raising sheep.

"The British author and environmental polemicist George Monbiot has largely instigated the anti-sheep campaign, which builds on a broader 'rewilding' movement to bring native species back to Europe. Until he recently relocated, Mr. Monbiot used to look up at the bare hills above his house in Machynlleth, Wales, and seethe at what Lord Tennyson lovingly called 'the livelong bleat / Of the thick-fleeced sheep.' Because of overgrazing by sheep, he says, the deforested uplands, including a national park, looked 'like the aftermath of a nuclear winter.'"

Pastoral Icon or Woolly Menace? by Richard Conniff printed January 26, 2014, New York Times. To see the full article visit: http://www.nytimes.com/2014/01/26/opinion/sunday/pastoral-icon-or-woolly-menace.html?r=0

This article was originally printed in On Pasture on June 9, 2014. On Pasture is an online magazine dedicated to grazing and educating the grazier. They have a long list of quality contributors from all over the country (and world). Check them out: www.onpasture.com

It's not the sheep Mr. Monbiot, it's the people that manage them, THAT is the problem. Ah! What a surprise – to think that people, and our infatuation with bowling green expanses could be responsible. This four legged creature whose historical existence is tightly woven with the human race, providing it with a portable source of food, fiber and material for the pages of writing that history, knows only to do what evolution and humans have directed it to do – eat, roam and procreate with the occasional baa-aaing. For more than just a few centuries, humans relied on this species to provide what it needed to survive. But cultivation agriculture evolved, and the dependence on sheep faded as other foods became an integral part of the human diet. Still, we insist on having them numerously populating our landscape, and Mr. Monbiot is right in stating that the places where they have been looks "like the aftermath of a nuclear winter." It is indeed an ecological disaster as he declares – to the living systems and on par with industrial pollution and climate change - if you are in that camp. The mid-east provides all the evidence needed to see what ruminants will do to a landscape when not managed with care to balance with the existing ecosystem.

So here we are in the 21st century, no longer so completely dependent on that species for survival, yet unwilling to give up the landscape they provide us. The question we should be asking is why? What is it about that landscape that we can't let go of? England is not alone in this green carpet infatuation. I have no idea what the total tally of time, labor, fuel and chemical cost of maintaining the lawns here in the USA might be, but it would probably send everyone but the lawnmower and chemical companies swooning if we really knew. But why are we so attracted to that vision that we ignore all practical and economic reason (and there are many!) against it. This is a very important question because it does need an answer and we can't keep blaming the sheep. That deeply cherished landscape is very, very, very expensive – for everyone.

No doubt anthropological, neurological, or psychological scientists have theories and good explanations about the human attachment to expansive clipped lawns. I leave it to them and look

Do you have grazing questions?

As the grazing outreach specialist with UVM Extension, Kimberly Hagan can help you with your grazing plan for free. Contact her with any questions, especially if you have any regarding Required Agricultural Practices regulated by the State of Vermont, which help protect natural resources. You can reach her at: (802) 656- 3834 kimberly.hagen@uvm.edu

forward to hearing what they are. In the meantime, the timing might be just right for some adjustments – oh boy, here comes another paradigm shift! In other words, since we are nearing a crisis point with our bowling green infatuation, both financially and environmentally, perhaps we should take this opportunity to try and embrace a different landscape – the "scruffy scrub"? We just might get some cake (a smaller piece) and get to eat it as well.

In the "scruffy scrub" landscape, the sheep get to stay, but not as many, and not 24/7. They are confined to a smaller section for a period of time and then moved to a new section. Clipping or mowing is not allowed. It does leave a scruffy, rough unkempt look, although with some evidence of management, as there has been some grazing. The rewards? Birds and insects will populate the habitat, and other bits of wildlife as well – a "rewilding" of sorts, as Mr. Monbiot so fervently wishes. The sheep will be happier as they won't have to work so hard for a mouthful of food, and they will be healthier since the need for chemical worming medication is dramatically reduced when grazing is taking place in the upper levels of forage, and not near the ground where the parasite larvae like to hang out.

Sheep are still important – they are a renewable resource, and still provide meat, and wonderful fiber that is finally enjoying the renaissance it deserves. Hard to believe, but there isn't yet a man-made fiber that can do what wool can do.

So perhaps a gathering of Mr. Monbiot, with Phil Bicknell – the economist for the National Farmer's Union, John Boardman – the Oxford Geographer, Wouter Helmer - of Rewilding Europe, and Paul Lister – of Ecotourism Scotland, to prepare a meal of roasted leg of lamb and potatoes, drenched in rosemary, red wine and garlic, where all would get to eat it too – would be a place to start. The landscape needs a new coverlet, and it's best if knitted together with all the strands. It will be much stronger and last much longer.

MEAT & PROCESSING

Natural tannery to launch in 2015

Sheep and goatskins are an inevitable by-product of slaughter and can be a source of additional income or a way to honor an animal. When the processing is done sustainably and locally, the outcome can be even more rewarding.

Photos and text submitted by
Sarah Scully, Tunbridge, VT

Vermont Natural Sheepskins will become the first natural tannery for sheep and goatskins in the United States, following an organic process first developed in the United Kingdom. The owners, Sarah and Rick Scully of Tunbridge decided to start the business after becoming frustrated with a lack of natural tanning option for their own sheepskins. They have made several visits to England to complete their training with the developer of the process.

The method used relies on plant-based tannin, similar to the naturally preserving compounds found in wine and other organic material. Because the process is slower and requires more labor than traditional chrome tanning, the associated costs are a bit higher. However, it is anticipated that customers will be able to command higher prices for these sustainably-tanned, non-toxic skins.

Vermont Natural Sheepskins will be making their debut appearance at the VSGA's Sheep & Wool Festival on October 3 and 4, at the Tunbridge Fairgrounds; please stop by to check out samples of the finished products. For more information about the business please visit: www.VermontNaturalSheepskins.com.

FIBER

How to sell your wool

A series of articles exploring the ways to make money from your fleeces by **Jessica Dillner**, fiber artist and sheep and goat breeder, of Dillner Hillside Farm in Montgomery Center.

#3: Roving and Batts

The art and craft of felting and handspinning are increasingly becoming more popular. Your wool can be processed in several ways by a custom mill to be sold to this specialty market. Spinners and felters use roving or batts to spin yarn or make felt. Roving and batts are made from washed fiber that is *"picked"* open and then carded or "*brushed"*, so that the fibers are aligned. Roving is a long rope-like form that can be several inches wide or "*pencil"* narrow. Batts are long sheets of aligned fibers that can be 2 to 6 feet wide.

As a producer, you have a lot of choices during the carding process. You may choose to first wash all of your own fiber to help reduce the cost or because you wish to dye the fiber different colors before carding. The carding process is also the time when fibers of different animals may be combined together for a uniform blend. Typically, it is best to combine fibers of similar fineness and length. Some examples include: kid mohair or fine young prime alpaca with fine wools like merino or cormo, adult mohair with long wools and older alpaca with medium wools. Different wool breeds can be blended to achieve the qualities of both if the fineness is similar. For example, Blue-faced Leicester with Dorset wool can give the roving/batt the luster of the BFL with some crimpy elasticity of the Dorset. A fine fiber can be added to a coarser fiber but the coarser fibers qualities tend to "overshadow" the fineness so it is best to keep them separate. Dehairing (a process after picking) may be a desired option for those animal fibers that have a dual coat. The longer, stiffer guard hairs are removed from the shorter, finer insulating hairs leaving just the best soft fibers. This process is expensive but results in a very high quality product. It is used mostly for cashmere, llama and pygora.

Once you decide to have roving or batts made, make sure your fleeces are well-skirted. The custom mills do not carbonize or chemical treat the fibers to remove vegetable matter. It is true the carder can remove some chaff but it is best not to send fleeces with excessive hay, felted parts or big dander in it or it will show up in the finished product making it less desirable.

There are several options when having roving made. Generally, roving is a continuous rope of aligned fibers. It can be wide or narrow depending on the mill. Some mills will offer pencil roving or pin drafted roving which is a very slim group of fibers that is very easy to spin. Sometimes mills offer roving wound on center pull bumps to keep the roving packaged and neat. Worsted combed top is the result of having all of the short fibers or noils combed out so the resulting roving has perfectly parallel fibers. These are said to be faster to spin and create a thinner yarn. The finished weight is significantly less due to the losses during the process. If you have questions about what products are best for your fleeces, the mill representatives can help guide you.

Batts are sheets of aligned fiber. They can be thin layers that could be sewn into a quilt or thicker to be made into felt for rugs. The mill will give you thickness, width and length options. Batts can also be used for spinning or needle-felting machines.

If you would like to card in quantity your own wool, a drum carder is a useful addition to a fiber farm. They are quite expensive, but come in small home-use sizes. These give you the freedom to blend and create unique batts of color and different fiber contents.

Once you have the finished carded fiber, you will need to find a venue to sell them. Traditionally, sheep and wool festivals are the most popular places to make sales. But now farmers' markets are becoming popular as well. Your local yarn shop may sell felting supplies and might need to buy colored wool. The Internet is also growing as a venue to sell fiber either through your own farm Web site or Etsy, Ebay, and Ravelry. Over time, your customers will tell you which roving and batts they love to use and this will help guide you to creating new and better products each time!

Here is a sample breakdown of costs to have roving made:
From 10 lbs of well-skirted raw wool sent to the mill, you might pay: $4.50/lb for washing = $45.00. $7.00/lb clean weight (may weigh 7 lbs now) for picking and carding into roving = $49.00. Return of fiber will be 7 lbs – (10% loss in the carder) = 6.3 lbs (or 100 oz) of roving cost $94.00. This costs you $1.07/ oz to make your wool into roving. Then you need to add the value of your raw wool (+/- $8/lb) = $80. So, this is now $174/100 ounces of roving = $1.74 oz (excluding shipping costs). Maybe you sell your roving for $3.00 – $4.00 oz. 100 ounces of roving could be enough for 5 sweaters!

Suggested Custom Fiber Mills:
Hampton Fiber Mill
Richmond, VT, 802-734-8615
Narrow roving, batts are 30"X36".
Vermont Fiber Mill
Brandon, VT, 802-236-9158
Roving on center pull bumps, batts are 24"x48".
Still River Mill
Eastford, CT, 860-974-9918
Organic processing mill that specializes in fine fibers.
Zeilinger Wool Co.
Frankenmuth, MI, 989-652-2920
Broad spectrum carding options including combed top and quilt batts.

ME shepherd promotes lamb

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see pastures that are as much as 10 fold different in energy and protein.

I have pulled together a table that summarizes estimated costs of a confined lamb production system versus a high quality grazing system. The numbers tell an interesting story and a huge difference in production costs. See table below.

Grain vs. quality forage

Here is a cost comparison of raising lamb from birth to finish on a grain based program and a high quality forage system. Much of the information below is from a Minnesota program plus information from the forage program at Crystal Spring Farm, Brunswick, Maine.

(Numbers are costs from last month of gestation through lactation for the ewe and two lambs from birth to a finished market lamb weight of 110 lbs. for lambs born in February.)

GRAIN BASED PROGRAM

Grain (16% PROTEIN SHEEP PELLET- Cost: $0.25/lbs.)		
EWE:	- 1 lb. grain per day during last month of gestation	= 30 lbs.
	- 1½ lbs./day during 8 week lactation period	= 84 lbs.
LAMBS:	- creep feed (45 lbs./lamb, birth to 90 days)	= 90 LBS
	- 90 days of age to finish at 110 lbs. (averaged 69 days @ 2.2 lbs./day/lamb for 2 lambs)	= 152 lbs.
TOTAL GRAIN FOR EWE AND TWO LAMBS		= 356 lbs.
Hay for GRAIN BASED PROGRAM		
EWE:	last month of gestation (4 lbs./day for 30 days)	= 120 lbs.
	- 8 week lactation (4 lbs./day for 56 days)	= 224 lbs.
LAMBS:	hay from birth to finish (2 lambs)	= 400 lbs.
TOTAL HAY FOR EWE AND TWO LAMBS		= 744 lbs.

COST SUMMARY FOR GRAIN PROGRAM

Grain for ewe and two lambs (356 lbs. @ $0.25/lbs.	= $89.00
Hay for ewe and two lambs (744 lbs. @ $0.10/lbs.	= $74.40

TOTAL FEED COST FOR EWE AND TWO LAMBS = $163.40

FORAGE/PASTURE BASED PROGRAM

Silage		
EWE:	- last month of gestation (6 lbs./day for 30 days)	= 180 lbs.
	- 8 week lactation (6 lbs./day for 56 days)	= 336 lbs.
LAMBS - silage consumption birth to 8 weeks		
	- 50 lbs./lamb over 8 weeks for 2 lambs	= 100 lbs.
TOTAL SILAGE FOR EWE AND 2 LAMBS		= 616 lbs.
Hay for FORAGE/PASTURE BASED PROGRAM		
	- supplement silage feeding with 1 lb./ewe /day.	
EWE:	- last month of gestation and lactation, a total of 86 days @ 1 lb./day	= 86 lbs.
LAMBS:	- a total of ¼ pound/day for 80 days (2 lbs./day/lamb for 105 day finished period)	= 20 lbs.
TOTAL HAY FOR EWE AND TWO LAMBS		= 106 lbs.

COST SUMMARY FOR FORAGE/PASTURE PROGRAM

Silage for ewe and two lambs - 616 lbs. @ $0.04/lb.	= $24.64
Hay for ewe and two lambs - 106 lbs. @ $0.10/lb.	= $10.60
Lamb pasture cost (fencing, fertilization, seeding) $6/lamb/month for four months for two lambs	= $48.00

TOTAL FEED COST FOR EWE AND TWO LAMBS = $83.24

The summary of costs for grain-based and forage-based systems are based primarily on information from Minnesota. The numbers are simply an estimate to see on paper if there should be advantages in either a grain-based or forage-based program. The grain costs are those being quoted in Maine, mid-November, 2013 (when this article was written). From this analysis a forage-based program would save nearly 50% per lamb in production costs. You may have a program that would narrow the difference, but with the high grain costs in Maine, it would be hard pressed to beat the cost advantage of using a high quality forage system.

Some will say: what about a mix of using forages and grain? Several studies show some interesting complications of this approach. The rumen of our wonderful sheep is designed for forages, not grain. Feeding grain complicates the working of the rumen, limiting animal health. I would suggest we produce a high quality product at a lower cost with more profit using only forages.

There are also other benefits from a forage-based lamb production system. USDA researchers have reported that meat from grass-raised lambs has: 14% less fat, 8 % more protein, and 3 to 5 times the level of conjugated linoleic acid, a family of fatty acids required for good human health. These are all great marketing tools for promoting lambs raised on a total forage system. So, using forage-based production system we get less cost and better product. Wow!

Now a testimonial: For the last few years, we, at Crystal Spring Farm in Brunswick, have been seeing how far we can go to have our sheep operation use only forage as our protein and energy input. Seth Kroeck and myself manage the program. We are on a total forage system for both lamb production and the feeding of the ewe and ram flock.

This year (2013), we finally seem to have all components together and we are very pleased with the results. Just a quick outline:

We lamb in February. The farm is primarily an organic vegetable operation and lambing later than February means serious competition for farm help time due to greenhouse work and other early spring tasks.

Ewes: during summer are rotated about 3 times each week through grass legume pastures and moved to higher quality pastures before breeding. The major focus of the farm is organic vegetable production and in the rotation of crops some areas are planted to oats and field peas in late summer. These areas are used as early to late fall pastures and provide high protein and energy with high digestibility.

We have tried a few ways to store high quality forage for the ewes to use during the winter and now are making round bale silage to try and capture stored forage that has 14% to 16% digestible protein. The silage is fed the month prior to lambing and during lactation free choice. We give them all they want with dry hay available free choice as well. We think this is important to maintain healthy rumen function. Again high quality forage is the emphasis here, and we still think

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BOARD OF DIRECTORS

JOIN THE BOARD: We always welcome new board members. If interested contact Bay Hammond.

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we have an opportunity to improve this part of our program.

We do offer a creep feed opportunity to our lambs and use alfalfa pellets as the input. We did cheat just a little bit from the no grain bit here. We sprinkled small amounts of soybean meal on top of the alfalfa pellet to encourage consumption by the lambs beginning at an early age.

Results of the above program has resulted in lamb growth only slightly below our previous high grain program with average daily lamb growth rates to 90 days averaging about 85% of the grain program. With that growth coming at much lower cost. I have added some pictures of our operation in progress. Along with a picture of grass fed ram lamb weighing 118 pounds in July.

The lambs also had access to the silage offered the ewes during the barn-feeding period and it was interesting to see how quickly lambs realized silage was good stuff and became big consumers.

There was another advantage that we observed this past spring; the transition for lambs from the barn to pasture for us in the past has seen an adjustment period for the lambs with lower growth rates for two weeks or so. But with the use of alfalfa pellets as creep and quality silage and hay available to the lambs, the adjustment period was virtually non-existent. We think a big reason is that lambs go to pasture with improved rumen development and quickly are set to now use high quality pasture as their only protein and energy input.

I will add here that all sheep on pasture (both breeding stock and growing lambs) have available a sheep salt and mineral mix free choice. Maine soils are low in a few trace elements needed for good sheep health and by far one of the lowest cost ways to good sheep health is via a good sheep salt and mineral mix.

Our program is based on Katahdin genetics. Our ewe flock is high percentage Katahdin. We breed roughly 40% of the ewe flock to a Suffolk, which for us creates a great market lamb. The other 60% of the ewe flock is bred to a Katahdin to produce breeding stock.

The lambs this past summer were grazed on high quality rye grass, alfalfa, timothy, and blue grass mixes. We used portable electric fencing with lambs on a new paddock every two days.

The results have been satisfying for us. We began marketing February-born lambs in July with a goal of 100 lb. live weight.

Do we have the perfect system yet? No, we are still learning to be better agronomists. How do we produce even higher quality forage both for grazing and hay and silage? This is a question we are constantly asking ourselves. But we think we are on track to a more profitable, healthy sheep enterprise, and we have more opportunities still to explore.

If you have questions or comments I can be reached at: tsettle@earthlink.net or (207) 841-6747.

Tom received the American Sheep Industry "Flock Guardian Award" in 1994 for his pioneering work in pasture / forage management and became a member of the Maine Sheep Breeders Hall of Fame as its initial member in 2008.

FIBER

Ag specialists look into wool as building insulation

Can waste wool – low quality wool or the wool skirted out of higher quality fleeces – be processed to make a useful material? Two local enthusiasts map out a possible solution.

Kimberly Hagan and **Suzy Hodgson** of University of Vermont Extension's Center for Sustainable Agriculture are working on a wool insulation project dedicated to using waste wool to make a high quality building material. Here is a summary of their report on determining the feasibility of making such a product and its potential market demand. Their research is supported by the High Meadows Fund, Vermont Agency of Agriculture, Food, and Markets, UVM Extension Center for Sustainable Agriculture, Vermont Sustainable Jobs Fund, and Vermont Sheep and Goat Association.

Sheep wool – a potential local insulation product?

Anyone who wears a wool sweater appreciates the unique attributes of wool, particularly its insulating and hygroscopic properties. Since the first sweater was knitted in the British Isles in the 15th century, there has been a long history of using wool as insulation whether for winter clothing, warm blankets, or as insulation fill in wall cavities.

While the past 50 years have been dominated by synthetic petroleum-based materials in the clothing and insulation market due in part to cheap oil and large-scale production facilities, in recent years, a renaissance in natural materials in the residential building trade has started with increased awareness of climate impacts and interest in healthy and natural lifestyles. In addition to wool, these natural materials encompass fibers such as straw, hemp, cotton, hemp, flax, cork, or wood. Unlike petroleum-derived non-renewable plastic foams, these natural insulation products are based on renewable, raw materials with low carbon footprints.

Here is a summary of the recent findings based on an assessment of the potential for using Vermont sheep wool for a locally-produced insulation product. For more detail, click here for the Report.

Natural insulation marketplace

Architect and builder interest in the future potential of a natural and high-performing wool insulation product in Vermont is relatively high. However, product awareness is low and wool insulation product attributes and performance lack documentation, so estimating potential demand is difficult.

Demand for insulation and natural insulation products is estimated to be growing upwards of 7% a year in the United States. However, the marketplace is crowded with many insulation products competing for attention so product positioning and pricing for sheep wool insulation with expert opinion formers is particularly important.

While the natural, local, environmental and intrinsic material properties of a wool insulation product are attractive to potential clients, more empirical data is needed on performance (R-value at specific densities in wall assemblies, hygroscopic properties in comparison to cellulose) to build confidence in a new product.

Wool supply

At current levels of wool production in Vermont, a new enterprise producing an insulation product would also need to source wool from New York, as there is not sufficient supply in Vermont. New York has four times the number of sheep compared to Vermont. The wasted wool – low quality wool or wool skirted out of higher quality fleeces – could potentially increase this supply. Mary Jeanne Packer of Battenkill Fibers, who helps organize the Eastern New York Wool Pool and University of Vermont Extension's livestock specialist Joe Emenheiser estimate that in New York and Vermont at least 50% of sheared sheep wool is wasted wool, appropriate for use in making insulation. An insulation product could provide a market channel for this lower grade wool, which commands a wool pool price of less than $0.50/lb.

It is possible that the current wool pools coordinated by the respective sheep trade associations in New York and Vermont could provide the initial volumes required to develop a local sheep wool insulation product.

Sheep wool insulation and price points

While sheep wool insulation is more costly to produce, some conversations with green builders indicate a willingness to pay a premium of 30% to 50% for a natural product such as sheep wool insulation, according to the National Association of Home Builders. Other conversations point to the already significant costs for insulating higher performance homes and any increase in costs for environmentally acceptable insulation choices other than cellulose could be difficult to justify. In these cases, in order to choose sheep wool over cellulose insulation, the client would need to be passionate about the product.

Sheep wool insulation is one of many natural products in a crowded marketplace and at a higher price point of at least 30% more than cellulose insulation; it will be a niche product as its market potential is likely to be more limited. However, its product attributes are relatively unknown and its market potential has not yet been tapped.

Next Steps

The potential development of a sheep wool insulation product would benefit from increasing the awareness and recognition of the unique attributes of sheep wool as insulation, which could be realized through a local demonstration project. With this goal in mind, VSGA member Kimberly Hagan has met with material, building and energy experts at Vermont Technical College this past month. The plan is to scope out a design project to develop and measure a wall assembly with Vermont sheep wool insulation and compare it to a wall cavity with cellulose insulation.

Testing the thermal properties of sheep wool, whether a Vermont prototype or an existing wool insulation product and documenting the performance in specific wall assemblies would lead to better understanding of the thermal and other unique material properties of this "new" product and help build the marketplace for a locally produced product.

HEALTH

Vet describes varying abscesses in goats

Common lumps cause controversy among goat owners; some are harmless, all should be tested

The following explanation and illustration of caseous lymphadenitis (CL) in goats was originally published in the October 2014 edition of Willi's Notebook in the Canadian magazine, GoatKeeper. To learn more about the magazine visit www.goatkeeper.ca

by **Christine S. F. Williams**
BVSc, MRCVS

Caseous lymphadenitis, caused by Corynebacterium ovis (syn. C. pseudotuberculosis), is one of the more common bacterial diseases in goats. It results in abscesses in some or all of the external regional lymph nodes. 'Abscesses' is the common name for the disease, but not all abscesses in the goat occur in the lymph nodes; neither are they all caused by C. ovis.

The disease caused by C. ovis is well known to most experienced goat owners, and is the generator of considerable controversy. There are those who maintain that, unless evidence is produced to the contrary, a goat with a grossly enlarged lymph node can be presumed to have lymphadenitis, a contagious disease, and therefore, should be barred from the show ring. Naturally, this opinion is unpopular with owners of abscessed show goats, and a considerable number of those owners maintain that abscesses really do not matter, and that a goat with an unripe abscess is not infectious.

Figure 1 shows C. *ovis* abscesses in the parotid lymph nodes. These lesions have burst, granulated, and recurred. Surgical removal of early unburst abscesses is often successful in controlling the infection, but surgery can be extremely difficult or impossible. This is especially so if granulating masses obliterate the view of the adjacent blood vessels, nerves, salivary glands, etc.

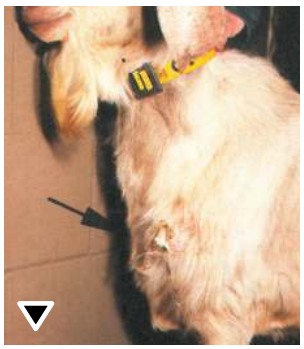


Figure 2 shows caseous material oozing from a prescapular lymph node abscess, which has burst spontaneously. This is the source of contamination of hay feeders, and other goats. Deposition of the organism C. *ovis* usually results in an abscess in the regional lymph node.

Figure 3 shows a cluster of C. *ovis* abscesses in the brisket region of an aged goat. Although the possibility of a tumor exists, the probability of an abscess is always far greater whenever a slow-growing, painless mass of long duration is found on a goat.

Figure 4 shows an abscess in the prefemoral lymph node. Before they burst, abscesses caused by C. *ovis* cause loss of hair on the overlying skin, making these lesions resemble slow-growing skin tumors.

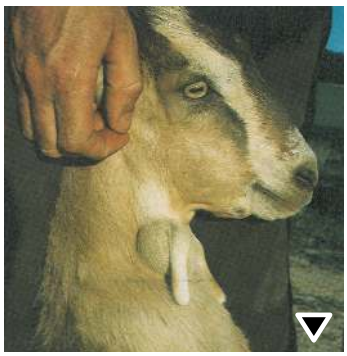
However, since the introduction of an abscessed goat into a previously clean herd often results in a wave of abscesses during the next two or three years, the disease merits consideration. Because of the rapid increase in the number of goats in North America, and most practitioners' lack of familiarity with this species, a misdiagnosis of caseous lymphadenitis is a distinct possibility.

On the next page: Abscesses should be cultured to determine the causative agent. There are other causes of swellings on the head and neck of goats. The remaining photographs (figures 5 – 12) accompanying this discussion show some of the conditions that must be considered in the differential diagnosis of C. ovis caseous lymphadenitis.

Figure 7 is an example of impacted cud. This usually results from the loss of a molar and consequent shifting, misalignment, and overgrowth of the other molars. In severe cases, loss of condition occurs because of disturbances in chewing. Proper examination of a goat's molars is virtually impossible without anesthetizing the animal.

Figure 5 (above, left) shows a penetrating abscess of the cheek. Goats eat thorns and thistles far more readily than sheep. This may account for the frequency of small abscesses situated in the cheek muscles of goats. When the abscess was lanced on this goat, a sinus opening into the mouth was found (Figure 6, above, middle). Generally a pyogenic bacterium such as *Corynebacterium pyogenes* or *Staphylococcus aureus* can be isolated, and drainage and topical treatment are sufficient to cure the condition.

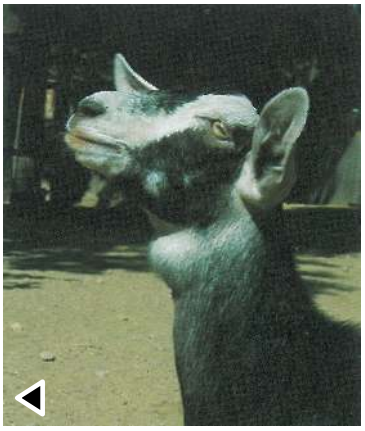
Figure 8 illustrates a salivary cyst. These cysts resemble the penetrating cheek abscesses, but they can be differentiated by the fact that some of them fluctuate and some of them can be emptied by digital pressure and will refill. Rarely do these lesions cause problems, but clients may request corrective action for one of two reasons: the cysts might be considered disfiguring for a show goat, or any swelling might be interpreted as a sign of the dreaded abscesses caused by C. *ovis*. Concerned owners do not want casual observers to conclude that the herd is riddled with C. *ovis* abscesses just because one goat has a salivary cyst.



Cysts of the branchial cleft are shown in Figure 9. These occur at the base of the wattles. Because many owners remove the wattles when goats are born, branchial cysts can be seen on apparently wattle-free animals. These cysts are thin-walled and contain a clear, thin liquid. If aspirated, they will refill. They can be excised intact, but they lay against the jugular vein.

Bottle jaw (Figure 10) occurs as soft fluctuating swellings under the jaw and is usually indicative of severe anemia. Often the lips swell, but there is never any edema or swelling in any other parts of the body. Bottle jaw is a sign of critical illness and immediate remedial action is required.

Figure 11 shows a soft-tissue abscess. This may be caused by a foreign body reaction and therefore be similar in origin to the penetrating cheek abscess. Usually C. pyogenes or Staphylococcus is isolated from the copious quantity of foul-smelling liquid pus. This tends to be an individual problem of an individual goat. Therefore the consequences are not long term as with C. ovis lymphadenitis.



Thyroid goiter is shown in Figure 12. In severe cases of iodine deficiency, kids are born with large goiters and probably will not survive. In marginal deficiencies, growing kids develop a swelling at the junction of the head and neck.

CALENDAR

Due to the length of articles in this issue of the VSGA newsletter, there is limited space for calendar listings. Visit the VSGA Web site's Events page for current happenings: vtsheepandgoat.org/events/

October 3 & 4

Annual Vermont Sheep and Wool Festival: This October marks the 27th year of the Vermont Sheep and Wool Festival. The dates for this year's festival are October 3 and 4 at the Tunbridge Fairgrounds in Tunbridge, Vermont.

As always the festival will offer a showcase of farms and vendors from around the state and nearby region. Many of these farms sell strictly through sheep and other fiber shows. They are small and local in character and offer an opportunity to buy limited edition fibers and yarns as well as finished products, supplies and equipment. In addition a number of processors will be open to pick up fleeces for processing.

We welcome folks from the Green Mountain Spinnery who are sponsoring and organizing the contests this year. The category opportunities are greatly expanded and while the focus is on fiber categories, there will also be an opportunity to enter a photograph or poem. For more information please go to: http://vtsheepandwoolfest.com/festival-contests-2015/.

VSGA member Kristen Judkins is again organizing the fleece contests and fleece sale. Consider entering some of your best fiber in the contest or bringing fleeces to consign to the sale. The festival keeps 5% commission on each sale. More information is available at http://vtsheepandwoolfest.com/activities-events/fleece-show-sale/

Each year our roster of food vendors grows. We are lucky to be able to bring in vendors with a range of good local food to the festival.

The festival depends on volunteers to work the gate, sell shirts and other tasks. In exchange for a two- hour work slot the festival offers a free one-day pass. To volunteer contact the festival at vtsheepandwoolfest@gmail.com. VSGA members have been very generous to the festival in offering their time.

We are finalizing the Fiber and Producer workshops which will be on the festival website very soon.

For a complete list of activities and vendor listings please visit the Vermont Sheep and Wool Festival Web site, www.vtsheeandwoolfest.org.

Vermont Sheep & Goat Association

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