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J-DSANA is the official publication of the Dairy Sheep Association of North America

www.dsana.org

Editor's notes

Pat Elliott
Symposium Issue

We have some information for this issue that I think is very interesting: MUN levels—what difference do they make and what are they, anyway? Information from Ontario—sounds exciting.

Also read what Scott has to say about networking—I am looking forward to seeing if we can implement it.

Last year I came away from the symposium with 12 firm commitments (I thought) from people to get me something for the newsletter. Only a few came through. I cannot do the newsletter by myself—each of you has something to contribute. I keep bugging the teachers/researchers, but each of you has information that we would all be interested in—something you figured out, a vantage point, a philosophy. Share it. I also need copy for a regular vet column, for a nutrition column, and hopefully, for a marketing column and perhaps a technology column. I like to have an article in each issue about a sheep dairy. Volunteer an article about your farm or an area of knowledge or a few lines about something you just figured out.

I read last week in the Virginia Extension Dairy Facts newsletter that if you supply dairy products to Wal-Mart you now have to provide a packaging scorecard that details your greenhouse gas emissions, product/package ratio, content and package innovation/improvement among a number of other things. I stopped selling to Whole Foods after they asked me to take a test on my shipping knowledge and wanted to know

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Membership ■ L'Adhésion

DSANA welcomes all current or future sheep dairy producers, artisanal farmstead cheese producers, sellers, suppliers, industry professionals, and academic researchers with an interest in sheep dairying, dairy genetics, sheep milk cheese production, and sheep milk based product development. DSANA also welcomes any individual who is a friend of the sheep dairying industry.

DSANA accueille tous les producteurs (trices) de lait de brebis, les transformateurs artisanaux, les fromagers de ferme, les vendeurs, les fournisseurs, les professionnels dans la filière des ovins laitiers, les chercheurs académiques...enfin, tous et toutes qui s'intéressent vivement à la production et à la transformation du lait de brebis. Nous accueillons également les ami(e)s de l'industrie laitière ovine.

Benefits of membership ■ Bénéfices de l'adhésion à DSANA

- ✓ Quarterly DSANA Newsletter • *Journal tous les trois mois*
- ✓ DSANA website • *Site web de DSANA*
- ✓ Discount admission to the Great Lakes Dairy Sheep Symposium • *Tarif réduit pour le symposium annuel des Grands Lacs sur la brebis laitière*
- ✓ Voting rights to help determine the future of the association in the industry • *Droit de vote pour déterminer les orientations de l'Association au sein de l'industrie*

Annual Dues

A principal member is one who is currently milking sheep in a state/province licensed facility, or is actively involved in getting milk to the market, brokering milk sales, producing or distributing sheep milk based products.

Un membre principal producteur de lait de brebis avec un agrément provincial ou d'état, ou êtes-vous activement impliqué dans l'achat ou la vente de lait de brebis aux transformateurs, la production de produits à base de lait de brebis.

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Deadlines for submission of material is three weeks prior to publishing. The editor reserves the right to move material to future issues if needed. Past issues are available on the DSANA website (www.dsana.org).

Marketing tips

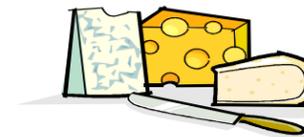
Pat Elliott

1. Don't put all your cheese with one buyer—it will put you out of business when that buyer makes an unexpected change.
2. It is easier to re-attract an old customer than to woo and win a new one.
3. If you want to be in the commodities market, move to China.
4. "Be afraid of our customers, because those are the folks who have the money. Our competitors are never going to send us money." Amazon.com founder Jeff Bezos quoted in the Harvard Business Review.
5. Be sociable and pleasant. It sells cheese.

What about giving samples? Do you? Let me know your ideas on this for the next issue. everona@vabb.com

Tidbits

- ✓ Celtic Shepherd Creamery in Oregon is no longer in operation. Brendan Enright, founder, owner, and a familiar figure at the Great Lakes Dairy Sheep Symposium has decided to close due to too many working hours milking sheep and making cheese.
- ✓ In San Antonio, Texas in July 2007, the American Society of Animal Science honored Yves Berger of the University of Wisconsin-Madison with the International Animal Agriculture Bouffalt Award.
- ✓ The Halligan family of Nebraska is looking for an intern to work with them on the 600 dairy sheep operation. If interested, contact Virginia Halligan at virginiahalligan@yahoo.com.
- ✓ Larry Meisegeier, current president of the Dairy Sheep Association of North America, became a first-time grandpa on October 10. Congratulations Larry and family!
- ✓ In it's September-October issue, Sheep! Magazine published a very good article on Bellwether Farms of Petaluma, California, where they are recognized as a leader in sheep cheese production. Congratulations to Liam and his mother, Cindy Callahan.

**George Haenlein**

Those of you who have known and enjoyed George through the years will want to remember him as he celebrates his 80th birthday on October 27. Instead of being with us in Ontario he will be at a family birthday party.

He would like there to be some discussion at the meeting about his insistence on the importance breeding of for good udders. He notes that in small ruminant newsletters and sheep magazines wool and mutton continue to be emphasized but that "No one makes money with those products." He thinks the farm shows are catering to the 4-H kids and the fair auction and not to economic realities, when they should be promoting dairy sheep. George's phone number is 410-648-6990 and his email is haenlein@udel.edu. Three cheers for George!

Our Mission ■ Notre Mission

DSANA will promote effective dairy sheep management by educating, supporting and encouraging new and established sheep milk dairies, farmsteads, and artisanal sheep milk cheesemakers.

DSANA fera la promotion de la gestion efficace des troupeaux de brebis laitières par la formation, l'encouragement et le soutien des producteurs (trices) de lait de brebis (autant les débutants que les plus expérimentés), ainsi que les fromageries fermières et artisanales.

DSANA will promote cooperation and exchange of information among producers of sheep milk and cheesemakers.

DSANA incitera la coopération et l'échange d'idées entre producteurs (trices) et transformateurs (trices) de lait de brebis.

DSANA will also promote the products manufactured from sheep milk.

DSANA fera la promotion des produits fabriqués à partir du lait de brebis.

DSANA will help producers organize activities for the genetic improvement of dairy sheep.

DSANA soutiendra les producteurs/trices pour les aider à organiser des activités visant l'amélioration génétique des ovins laitiers.

DSANA will endeavor to inform and educate the public as to the merits and availability of sheep dairy products.

DSANA s'efforcera d'informer et d'éduquer le public quant (aux mérites) à la valeur nutritive et à la disponibilité des produits fait à partir du lait de brebis.

DSANA will strive to help foster international understanding and the free exchange of ideas between North American based producers and producers abroad.

DSANA s'efforcera de favoriser une meilleure entente internationale et soutiendra l'échange libre des idées entre les producteurs d'Amérique du Nord, ainsi qu'ailleurs dans le monde.

Progress Report: Effects of prepubertal growth rate of ewe lambs on their subsequent lamb and milk production

David L. Thomas and Yves M. Berger

Introduction

In many sheep production operations, replacement ewe lambs are managed for maximum gains on high-energy diets along with the lambs destined for slaughter. However, this practice may have detrimental effects on their milk production as ewes. While relatively little research has been conducted with sheep to address this issue, much has been conducted with cattle. The majority of well-designed studies have shown that high feeding levels for dairy heifers during the prepubertal period is detrimental to their milk production as cows.

In their review of the cattle and sheep literature on the effects of prepubertal nutrition on milk production for application to the U.S. dairy sheep industry at the 2001 Great Lakes Dairy Sheep Symposium, Bee Tolman and Brett McKusick concluded that U.S. dairy ewe lambs should be restricted in energy intake to about 65 to 75% of their ad libitum intake from 4 to 6 weeks of age through 20 weeks of age in order to increase the rate of mammary growth and to increase the total amount of epithelial tissue that will later develop into milk-secreting tissue.

The objective of this study was to estimate the effects of growth rate of dairy ewe lambs on their lamb and milk production as adult ewes.

Materials and Methods

The study is in progress at the Spooner Agricultural Research Station, University of Wisconsin-Madison. Two hundred fifty two ewe lambs born in the late winter and early spring of 2004 (n = 104), 2005 (n = 85), and 2006 (n = 62) have been utilized in the study. At approximately 45 days of age, ewe lambs were assigned to one of two growth treatments – full feed (FULL) or restricted feed (REST). Both treatment groups were fed a 13 % crude protein grain mix of whole shelled corn and a high protein pellet in straw-bedded pens. A small amount of alfalfa hay was also provided – less than 0.50 lb. per head per day.

Ewe lambs in the FULL group received as much of the grain mix as they could consume, and ewe lambs in the REST group received 73 % of the average per head intake of the FULL group. Ewe lambs remained on the nutrition treatments for approximately 100 days until

they were approximately 5 months of age. After the end of the treatments, all ewes were managed together and fed the same.

Results

By the end of the 100-day feeding/trial period, REST ewe lambs were 14.3 lb. lighter than the FULL ewe lambs, and the average daily gain of the REST ewe lambs was 75 % that of the FULL ewe lambs.

An important finding from this study was that the lower weights of the REST ewe lambs at the end of the trial period did not have a long-term effect on their body weights. The REST ewe lambs had greater average daily gains from the end of the trial to their first mating approximately 2 months later and from their first mating to their first lambing at slightly over 1 year of age and were slightly heavier than FULL ewes at first lambing. Therefore, restricting feed intake to 70 to 75 % of ad libitum intake in ewe lambs should not have any effect on their adult ewe body weight.

Reproductive performance was available on the 2004-born ewes when lambing at 1, 2, and 3 years of age, the 2005-born ewes when lambing at 1 and 2 years of age, and the 2006-born ewes when lambing at 1 year of age. The ewe lamb nutrition treatments had no effect on ewe fertility or litter size with 93 % of all ewes lambing and 1.75 lambs born per ewe lambing.

Lactation performance was available on the 2004-born ewes when lambing at 1 and 2 years of age and on the 2005-born ewes when lambing at 1 year of age. The 2004-, 2005-, and 2006-born ewes have just completed their 3rd, 2nd, and 1st lactations, and these data are yet to be analyzed. The effect of prepubertal nutrition was dependent on the breed of the ewe lamb. Ewes of a majority of East Friesian breeding had higher yields if from the FULL treatment than from the REST treatment, and the differences were quite large: +77.6 lb. for milk yield, +5.2 lb. for fat yield, and +3.9 lb. for protein yield. In contrast, differences between REST and FULL treatments were not significantly different in ewes of a majority of Lacaune breeding, although the REST ewes had slightly higher yields than the FULL ewes. To date, these data do not suggest any advantage in lactation yield from restricted feeding of ewe lambs, and East Friesian ewes may actually perform better if full fed as lambs.

It remains to be seen if these early results will hold up as the ewes accumulate more lactations and as the lactation records of the 2006-born ewes are added to the data set. We are still dealing with a relatively small number of lactation records at this point in time in this study.

Editor's Notes, continued from page 2

my cost of production. A recent card from them said they also wanted to assist with advice on my animal care and a number of other things if I would be interested in selling to them again. They make government issues sound paltry. Again, things we need to be talking about. Perhaps a committee that could develop shipping guidelines and to whom we could refer buyers/government people would be helpful. I spend a lot of time convincing officials that hard cheese is pretty sturdy!

Letter from Ontario

Erik Bzikot

This is my last contribution to DSANA's newsletter for 2007. The symposium edition is always very special as we receive it shortly before renewing our friendships at the meeting.

I always look forward to the symposium, when I can compare notes with people I've met before and get to know folks I'll meet for the first time.

This year's Great Lakes Dairy Sheep Symposium is very special to us since we are hosting it in Ontario, Canada. Ontario is the most populous of Canada's provinces, about one third of all Canadians live here. It's also the economic and financial powerhouse of our country and most importantly a very promising market for sheep milk products.

There is a growing interest in specialty cheeses, both home produced and imported in Ontario. At the same time there is increasing interest in food that is grown locally. Organisations such as "Local Food Plus" and "Buy local- buy fresh" are actively connecting local producers of food with urban consumers. Whether the demand for locally produced food is driven by environmental concerns or because it is more pleasing to the palate, it's all positive to our industry.

Since the desperate times of three years ago when sheep (and cattle) farmers in Canada were in a terrible financial crisis, fortunes have improved greatly. Lamb prices are at record high levels and the price for sheep's milk has been increasing steadily. In general, we have learned to supply our home market rather than look for more risky exports.

This newsletter/Dairy Sheep Association of North America will not be responsible for any mishap resulting from an individual(s) following any advice published in this newsletter.

Materials submitted for articles or advertisements will be subject to the approval of the DSANA. Views and opinions represented in this newsletter are not necessarily those of DSANA.

We have at least six processors buying sheep milk in Ontario and another under construction. Closest to my heart is our own Best Baa Dairy which has been processing Ewenity Co-op members' milk since June. Those attending the symposium will be able to visit it. Meanwhile, down on the farm, breeding and selection for better yields is steadily improving production.

All this is a very positive backdrop to the GLDSS of 2007. We have organized what we hope you will find to be an interesting and enjoyable programme. I would encourage those coming from afar to spend an extra day or two and visit some of our local attractions.

The Royal Winter Fair is running at the same time in Toronto and is well worth a visit. Also Niagara Falls, one of the seven wonders of the world, is just 90 minutes drive from Guelph. The 500 metre high CN Tower, no longer quite the world's tallest structure, is another interesting feature of our area.

Welcome to Ontario!

Dave Thomas wins award



Dave Thomas was inducted into the Targhee hall of fame in June of this year, reports The Shepherd magazine. They cited his work in identifying the cause of Spider Syndrome in Suffolks and his work in developing modern genetic evaluation program for several sheep breeds. I know we all concur with their last sentence: "Thomas has a tremendous reputation as an advisor to all breeds of sheep, working for their improvement and the betterment of the American sheep industry."

Networking is important to our industry

Pat Elliott

Scott Burrington is building a new barn. I understand it is up, if not quite moved into yet. He recently shared some excellent insights with me, which I quote: "I guess that I would have to let people know that since this industry is still in a growth stage and young comparatively, we should come up with a way to share information as to what works and what doesn't on our farms. I know that we all get focused on our own businesses (me included), but we need to take a little time to share our experiences. In a (cow) dairy magazine I receive there is a story on farms using the web to share info such as supply and feed pricing. I know our web site is VERY underutilized but we already have the frame in place to put something together. The question then becomes; would we take the time to input information then use it, and do we have the ability to do so without jumping through hoops? If we would like to help each other out in this industry, this may be something to consider. The annual symposium shouldn't be the only place that we have available to network with other people in this industry. That's my input for what it's worth."

Networking is the great thing for me about going to the symposium, and I think that is true for each of us from my observations. Most of us are as isolated from other dairy sheep farmers as if we had a mountain between us and the neighbors. Something happens—I make a mistake or come up with a good idea—I want to share it, to "run it by" someone who's been there, done that—both for the camaraderie and for some feedback. For the same reason I would like to hear from others—support, feedback, new ideas—it is what gives the mind validation in the daily round of repetitive work.

For example, last fall the person who feeds the bulk of my hay and grain was feeding too much, I thought. It is tricky to come off our heavier feeding of June and July and adjust to the less demands on the milking ewe with her production now declining. In addition we read that the ewe should be on an increasing plane of nutrition for breeding. But in September I wanted to back off on the grain though we were still milking. That didn't happen in spite of instructions—the ewes told the person they were still hungry and he continued to feed too heavily (I know now—check on it!) Anyway, we had ewes too fat to have multiple pregnancies, too fat to deliver easily (and more ketosis), and too fat to produce their usual excellent amount of milk. It is something I know—and I see it over and over with my human patients—when I

really discovered this in January and February, I wished to have someone to just discuss with me what was going on—someone to say "wow" or "gosh that's hard" or give me some ideas on how to handle it.

Perhaps we can talk more about this in Ontario. Thanks, Scott, for your input.

Hidden Springs Creamery update

Brenda Jensen

Life is good at Hidden Springs Farm! We have had a great year since the last symposium. The creamery is complete and we've been making and selling a lot of fresh sheep milk cheese. We have added new flavors, and started filling the caves with a washed rind cheese.



Photo courtesy of Agri-View

By adding a van with dry ice storage we can deliver over a thousand pounds of cheese to any location. We are servicing the Twin Cities, Madison, Milwaukee and the Chicago area. Some of our customers include specialty shops, high end grocery stores, co-ops, and high end restaurants. We have over five times the number of customers we had last year.

We have completed some updates on the farm with more permanent paddocks, and automatic all seasonal waters in each paddock. With this we have set up a very successful rotational grazing system. Dean's vineyard is underway with the clearing of trees; he will be plowing in November and planting vines in the spring.

We are very grateful to say that we entered and won in two very prestigious cheese competitions. We won 1st place awards at both the United States Cheese Competition and The American Cheese Society Competition.

We will begin to receive milk from our Amish neighbors John Henry and Mary Miller in January. John is working hard on trying to provide milk to us year round. We hope next year to make fresh cheese from fluid milk year round between the two farms. (I have not let Dean stop milking yet this year, sales are too good!). John and Mary just had their 8th child on October 21st, Noah; another sheep milker!

Milk urea nitrogen in dairy sheep

Claire Mikolayunas

Dietary Protein Sources

In sheep, protein is essential for tissue and wool growth, milk production, and gluconeogenesis. Dietary protein can be divided into two categories. Rumen degradable protein (RDP) is utilized by rumen microbes for growth or degraded into ammonia. The growth of the microbial population is critical for lactating animals, as microbial protein can account for up to 60% of the protein absorbed by the ruminant (Wattiaux, 1999). Keeping the rumen microbes healthy, through a combination of protein and energy (both non-fiber carbohydrates (NFC) and fermentable carbohydrate or neutral detergent fiber (NDF)) is critical for microbial protein absorption and milk production.

Dietary protein can also bypass degradation in the rumen and is termed rumen undegradable protein (RUP). Rumen undegradable protein is absorbed directly by the small intestine. The benefit of dietary RUP is the quantity of protein reaching the small intestine, as the microbial population cannot supply all of the protein needed for high producing dairy ewes. All diets contain a combination of RDP and RUP, as feedstuffs vary in their protein degradability due to feed source and feed processing.

Milk Urea Nitrogen

Milk urea nitrogen (MUN) is a measure of the concentration of urea in milk and is an indicator of nitrogen excretion and dietary protein utilization (Cannas, 2002). When excess dietary protein is consumed, the unutilized portion is transported to the liver and converted to urea, a neutral form of nitrogen which can be recycled in blood or saliva, or excreted via urine and milk. Milk urea nitrogen levels are high when (a) an excess of RDP is fed (ammonia is absorbed across the rumen wall and transported by the blood to the liver), (b) an excess of RUP is fed (protein absorbed by the small intestine), or (c) the level of RDP is not balanced with non-fiber carbohydrates (microbes cannot incorporate RDP into microbial protein because of a lack of NFC and ammonia is absorbed across the rumen wall).

Based on data from Italian dairy ewes, the recommended level of MUN in sheep milk ranges from 14 to 22 mg/dl (Cannas, 2002). Milk urea nitrogen analysis is routinely conducted by commercial milk labs, since MUN can also be used to assess protein utilization in dairy cattle. Note that the recommended levels in sheep are

higher than the recommended levels for dairy cows. Due to high variation of MUN levels between ewes, MUN samples for analysis should be compiled from 8-10 ewes of a similar age and in a similar stage of lactation.

Milk urea nitrogen levels below 14 mg/dl indicate that ewes are not receiving adequate dietary protein. Levels of MUN above 22 mg/dl indicate that ewes are either consuming excess dietary protein or have insufficient dietary NFC for rumen microbes to capture the rumen ammonia and incorporate it into microbial protein. Table 1 displays RDP and RUP levels for some common feedstuffs. In grazing animals, the majority of dietary protein from pasture will be highly degradable. Therefore, high MUN of grazing animals may indicate excess dietary protein from pasture or insufficient NFC supplementation. In trials at the Spooner Agricultural research station, MUN levels have ranged from 10 to 34 mg/dl during the grazing season. The MUN levels of unsupplemented ewes were correlated ($R^2 = 0.61$) with pasture crude protein levels and research is currently being conducted to more closely identify the relationship between pasture crude protein and MUN.

Table 1. Composition of feeds.

	Pasture Grass	Pasture Mix	Pasture Legume	Corn	Barley	Soybean Meal
NDF	50	44	38	9.5	18.1	14.9
NFC	17.5	17.5	22.5	76.4	64	28
RDP	14.7	17	19.7	5	10.6	32.6
RUP	5.3	5	4.3	4.4	2.6	17.3

(Complied from Combs, 1999 and NRC, 2007)

Why do you care?

Underfeeding protein can reduce milk yield. Overfeeding protein can be expensive, lead to an increase in nitrogen excretion into the environment and may reduce reproductive performance. Pasture management choices, which may include fertilization, species choices, or restrictive grazing, can be used to regulate the amount of dietary protein ewes are consuming from pasture. Milk urea nitrogen levels can also be used as a gauge for confinement rations, to monitor the balance of RDP, RUP and NFC.

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