

The North Dakota Sheep Industry

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Newsletter
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A joint publication brought to you by the North Dakota Lamb and Wool Producers Association and the NDSU Extension Service

- AN UPDATE FROM THE EDITOR -

Three exciting opportunities are on the horizon. On January 23rd & 24th we are planning to host a **Beginner Sheep School in Hettinger, ND**. The first day of this event will include sheep production basics on nutrition, reproduction, health and general management. There will also be an intensive hands-on experience in the HREC lambing barn. The second day of this event will include a tour of some of the top sheep operations in the southwest corner of the state.

The second event you are invited to attend is the **Annual NDLWPA Convention in Mandan, ND**. This event has been taking place since 1979 and gives you a chance to hear from numerous sheep industry speakers throughout the Midwest. For more information on this event please refer to the President's Message below.

Finally, in our June/July Newsletter (No. 42) I invited sheep producers from throughout the state to take part in an artificial insemination project. Since then, I have received numerous calls from producers who are interested in using this technique to advance their flocks. In preparation for the 2007 AI Project, I would like to offer a **Ram Semen Collection Workshop at NDSU** on December 13th. Even if you are not interested in being involved in the AI project, this workshop will give you the opportunity to have semen stored on your elite flock sire(s).

For more information on all of these events please give me a call at 701-231-7993. We are dedicated to meeting your needs as a North Dakota Sheep Producer.

Justin S. Luther, Ph.D.

North Dakota Sheep Industry Newsletter Editor

- A MESSAGE FROM OUR PRESIDENT -

Greetings, I look forward to seeing you at our annual convention on December 1-2 at Seven Seas in Mandan. We have a range of speakers lined up. Hayes Goosey from Montana State University will discuss integrating sheep grazing to manage farming systems; focusing on grazing to manage pest weeds and insects of small grains and alfalfa. Hayes research also involves management of internal and external parasites of sheep.

David Johnson, graduate of Michigan State University in Animal Science with 10 years experience as a packer buyer for Wolverine Packing in Detroit, MI. David, and wife Deb, have operated a grass based sheep and cattle operation. David is currently Marketing Vice President for Equity Cooperative Livestock specializing in sheep and veal. David currently markets lambs by way of internet allowing for a more public sale.

Dr Sara Veil is a professor of strategic communication at the University Oklahoma and a consultant on the Biosecurity, Disease Surveillance and Food Safety Grant at North Dakota State University. Dr. Veil will evaluate the potential of radio frequency identification as a tool for mitigating livestock disease outbreak.

Dr. Chris Schauer, HREC Director/Animal Scientist, will discuss the future of the Hettinger Research Extension Center. Chris will discuss research with utilization of by-product in the sheep operation. With prices of feed grain going up, this could become a new option.

Dr. Justin Luther, NDSU Sheep Extension and Research Specialist, will give two talks. Friday evening Justin will talk on Scotland's sheep industry. Justin spent time there working on his doctorate. Saturday, Justin's talk will work with integrating a fall lambing system.

Dr Cory Tebay, veterinarian at Steele Veterinarian Clinic, will talk on health issues concerning the sheep industry. Cory will also take questions on herd health.

Phil Mastrangelo and John Paulson, USDA Animal Damage Control, will give update on controlling coyote population. John will talk on using Mountain Curs for hunting coyotes.

David Trotter, American Lamb Board, and Burdell Johnson, ASI President Elect, will give update and take questions on their respect organizations.

As you see we have a very busy convention. We would appreciate your donations for our fund-raising auction on Friday evening. The money is used to support NDLWPA. Come join the fun. I look forward to seeing you.

Brent Stroh, NDLWPA President

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THE USE OF DRIED DISTILLERS GRAINS AND DRIED CORN GLUTEN IN EWE AND LAMB DIETS

Christopher S. Schauer, Ph.D.
Director and Animal Scientist
NDSU-Hettinger Research Extension Center

The use of coproducts (often referred to as by-products) in lamb and ewe diets in North Dakota is increasing as producers realize the economic benefits of replacing a portion of their grain or protein supplement with a cheaper alternative. Two such products, dried distillers grain and dried corn gluten, are widely available across ND and may at times economically replace a protein supplement or a portion of grain in lamb and ewe rations.

Dried Distillers Grain

Following the distillation of corn into ethanol the possible coproducts remaining are: dried distillers grain (DDG), wet distillers grain (WDG), and condensed distillers solubles (CDS; sometimes referred to as syrup). The solids portion may be sold as WDG or DDG, or combined with CDS and marketed as DDG with solubles (DDGS) or WDG with solubles (WDGS). The WDG and WDGS are approximately 30% dry matter (DM) while the DDG and DDGS are approximately 90% DM. The wet coproducts have greater energy than the dried coproducts because some of the volatile compounds are given off during the drying process. Additionally, some plants may market a modified WDGS, which are a partially dried product and are approximately 50% DM.



Chris S. Schauer

Because of the high moisture content, transportation and storage costs must be considered when purchasing WDG or WDGS. More widely available, largely because of increased ease in transportation and storage, is DDG. Dried distillers grains can prove to be an excellent replacement of both energy and protein in sheep diets. Compared to corn, which has a Total Digestible Nutrient (TDN) concentration of 90%, DDG has a TDN concentration of 77 to 88%. Additionally, DDG have a crude protein (CP) concentration of 25 to 35%. This combination of nutrients make DDG an excellent replacement of small grains (approximately 1.1 lbs. of DDG will replace 1 lb. of corn on an energy basis) as supplements to ewes when small grains are limited in availability or price. Additionally, be-

cause of the approximate 30% CP concentration, DDG are an excellent replacement of small grains, specifically corn, in lamb finishing diets. The additional protein relative to corn allows for less protein supplement or alfalfa to be added to the diet, decreasing total diet cost. However, some limitations need to be realized in the feeding of DDG. Because of the distillation process, phosphorus and sulfur are high relative to sheep nutrient requirements, usually limiting inclusion to less than 20% of the total diet. High sulfur concentrations resulting from including more than 20% of the diet as DDG may result in problems with polioencephalomalacia (PEM or Polio). In order to prevent urinary calculi in wethers and rams, balancing the ration for a 2:1 calcium to phosphorus ratio with limestone is necessary, and possibly including ammonium chloride at 0.5% of the diet as a further preventative measure. The one major drawback for most sheep producers is storage and ease of feeding; DDG do not store well in hopper bottom bins (they will bridge and not flow well) and they usually do not feed well on the ground.

Corn Gluten

Corn gluten meal (usually marketed as dried corn gluten pellets) is a coproduct of the corn sweetener industry. Total digestibility nutrient and CP concentrations average approximately 83% and 22%, respectively. Similar to DDG, corn gluten pellets can be an excellent replacement of small grains as supplements to ewes when small grain price and availability are limited. Although slightly lower in CP than DDG, corn gluten pellets have TDN concentrations that allow for replacement of 1 lb. of corn with approximately 1.1 lbs. of corn gluten pellets while gaining twice the CP of corn (10% vs. 22%). Similar concerns with phosphorus and sulfur dictate that corn gluten be limited to less than 1/3 of the total diet, with similar safeguards in balancing for calcium and phosphorus. However, the major advantage with corn gluten pellets is the relative ease of transportation and storage that a pelleted product will allow. Corn gluten pellets store well in hopper bottom bins, and can be fed in a mixed ration or separately as a supplement to grazing ewes.

Summary

Dried distillers grains and corn gluten are an excellent source of energy and protein. Use in sheep diets is usually dictated by the cost of nutrients in other available feedstuffs. Other information is available in the NDSU Extension Bulletin AS-1182, "Alternative Feeds for Ruminants" and at the Hettinger Research Extension Center website (<http://www.ag.ndsu.nodak.edu/hettinger/>).

A SUMMARY OF THE ADVANCED SHEEP SCHOOL IN BOWMAN, ND

Andrea Bowman
Bowman County Agent

The Advanced Sheep School was held on October 25th at the Bowman Auction Market and Erickson's Meat Market in Bowman. The in-depth training for sheep producers covered a variety of topics and gave producers an opportunity to ask the specialists questions.

The morning began with a welcome from Lane Hall, Slope County Extension Agent; Justin Luther, NDSU Extension Sheep Specialist; and Wyman Scheetz, ND Lamb and Wool Producers Association. Charlie Stoltenow, NDSU Extension Veterinarian, discussed the biology of scrapie transmission and gave an update on scrapie research at NDSU. Rick Schmidt, Oliver County Extension Agent, discussed ways to improve lamb health and survival. Erin Windorski, ARS Graduate Student, talked about fall lambing options. Dr. Chris Schauer, HREC Director, discussed basics of feedlot nutrition and the use of by-products. ARS Carnivore Catering served lamb sandwiches for lunch. The school wrapped up at the meat market where Dr. Kasey Carlin, NDSU Assistant Professor of Meat Science, evaluated four lamb carcasses and discussed lamb quality and grading.



Andrea Bowman

It was a great day of learning! Thank you to our sponsors:

- ◆ Dakota Western Bank
- ◆ Dakota Community Bank
- ◆ Farm Credit Services
- ◆ Bowman Auction Market
- ◆ Producers in Attendance



A MESSAGE FROM OUR NATIONAL VICE PRESIDENT

Burdell Johnson
ASI President Elect

Greetings from the national level of the sheep industry.

I just returned from Denver, where we hosted a meeting of the Tri-Lamb Group. The group consists of representatives from New Zealand, Australia and the US. We meet on a yearly basis to discuss various topics that the nations have in common and how we can improve the sheep industry for all three countries.



Burdell Johnson

This year the US contingent stressed that New Zealand and Australia should spread out their imports and not dump huge amounts of lamb on the market at one time. We feel this could create a more stable market. We are limited to what we can ask for because of trade agreements.

There are a number of things happening at the national level. Probably the biggest event was getting a risk protection program for lamb approved by the FCIC. This will provide price insurance protection for lamb producers. LRP Lamb is similar in concept to LRP for swine and cattle. This will offer protection against declines in slaughter lamb prices. We hope to have it available to producers by June 1, 2007.

One other achievement has been the passing of a bill for re-authorization of Mandatory Price Reporting of lamb sales. Packers will have to again report the actual prices paid for lamb, including imports. This will provide more competition in the market. Some packers have done it voluntarily but importers choose not to.

I would like to take this opportunity to invite and encourage you to attend the annual convention and business meeting of the American Sheep Industry Association, which will be held Jan. 25-27 in San Antonio, Texas. For more information give me a call or go online at www.sheepusa.org.



BODY CONDITION SCORING: A NECESSARY MANAGEMENT TOOL IN THE SHEEP ENTERPRISE

Justin S. Luther, Ph.D.
Extension Sheep Specialist
Department of Animal and Range Sciences
North Dakota State University

Although shepherds have probably been concerned with the relative amount of nutrient reserves (fat and muscle tissue) on their sheep since biblical times, the first body condition scoring technique was described by two Australians, Jeffries and Reid in 1961.



Justin S. Luther

These authors developed a six-point scale (0 to 5) to explain differences in the amount of fat and muscle tissue in Merino ewes managed under Australian pasture conditions. Just a few years later, Russel and co-workers (1969) from Scotland actually validated this technique.

They demonstrated that subjectively assessed condition score was closely related to the amount of chemically determined fat and muscle in the ewe's body.

Today, body condition scoring is a widely accepted management tool in the sheep industry. Producers are able to optimize production, evaluate health, and assess nutritional status of the flock. The underlying purpose of body condition scoring is to increase economic returns through enhanced reproductive performance and realization of more efficient feed costs.

How is the technique performed?

The most common body condition scoring technique in the United States is based on a five-point scale (1 to 5). The relative degree of body condition (fat and muscle tissue) in the sheep will increase with a higher score. In the U.S. we use a five-point scale versus the six-point Australian scale because a body condition score of 0 probably represents



Figure 1. The loin is the part of the sheep between the last rib and the hip bone that is used to determine body condition score.

a dead ewe. Each score is based on the amount of fat and muscle deposited over and around the vertebrae in the loin, which is located between the last rib and beginning of the hip bone (as indicated in Figure 1). A cross section of the loin is illustrated in

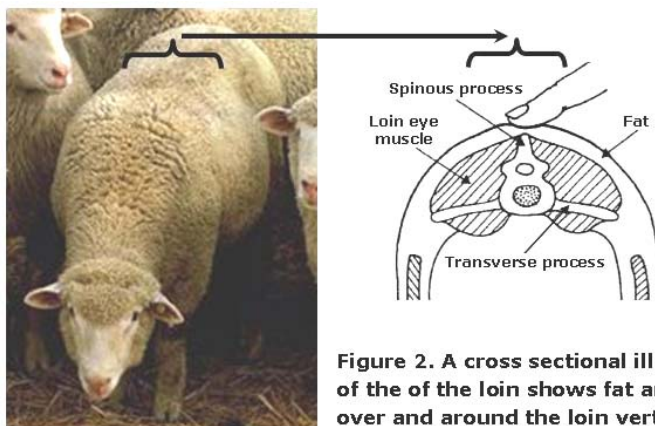


Figure 2. A cross sectional illustration of the of the loin shows fat and muscle over and around the loin vertebrae.

Figure 2. The relative amount of fat and muscle around the loin vertebrae is used to determine body condition score. In addition, the loin vertebrae have a vertical bone protrusion called the spinous process, and a horizontal bone protrusion called the transverse process. The degree of protrusion from both, the vertical and transverse processes, are also used to determine body condition score.

Using this information five distinct body condition scores can be determined when the producer handles the loin:

Condition Score 1 or Emaciated (Figure 3) – Fingers can easily pass beneath the loin. The loin is extremely shallow. The transverse process is sharp. No fat cover is detectable over the loin eye muscle. The spinous process is prominent.

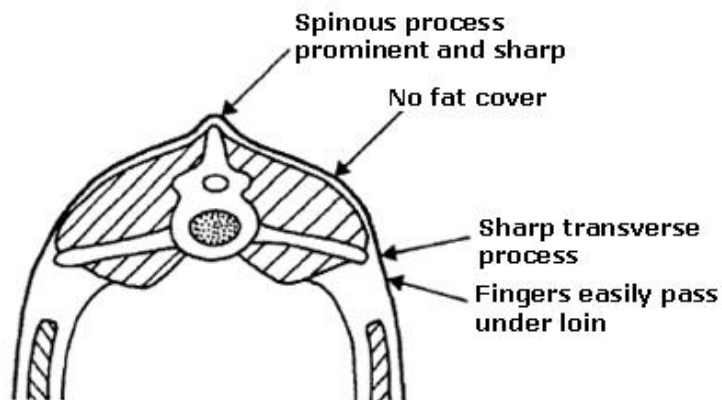


Figure 3. Condition Score 1.

Condition Score 2 or Thin (Figure 4, next page) – Fingers will pass beneath the loin with slight pressure. The transverse process is rounded. The loin eye muscles have medium depth. A limited amount of fat is detectable over the loin. The spinous process is prominent, yet smooth.

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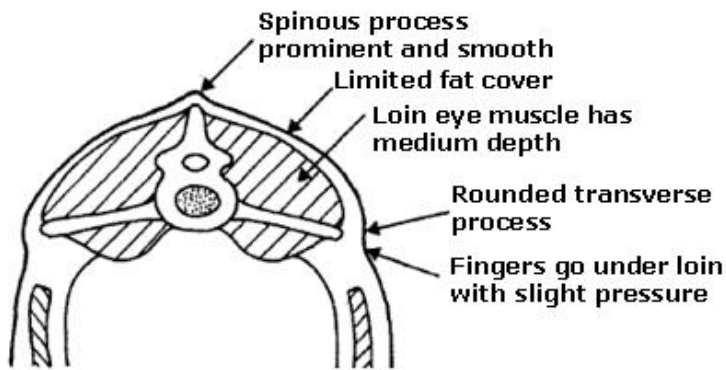


Figure 4. Condition Score 2.

Condition Score 3 or Average (Figure 5) – Hard pressure is required to locate the transverse process, which is smooth and rounded. The loin eye muscles are full and rounded. Moderate fat cover is detectable over the loin. The spinous process is smooth and rounded.

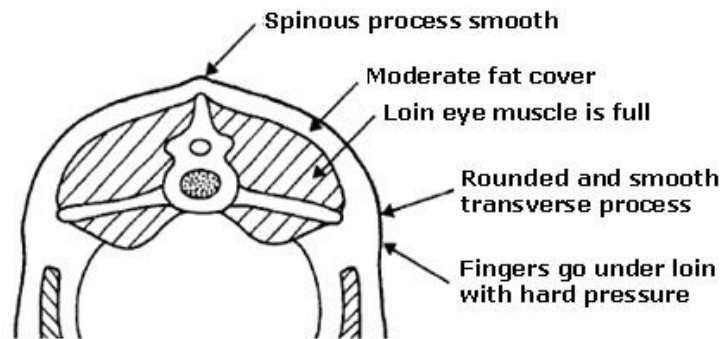


Figure 5. Condition Score 3.

Condition Score 4 or Fat (Figure 6) – The transverse process cannot be detected by palpation. The loin eye muscles are full and deep. A thick layer of fat covers the loin. The spinous process is undetectable.

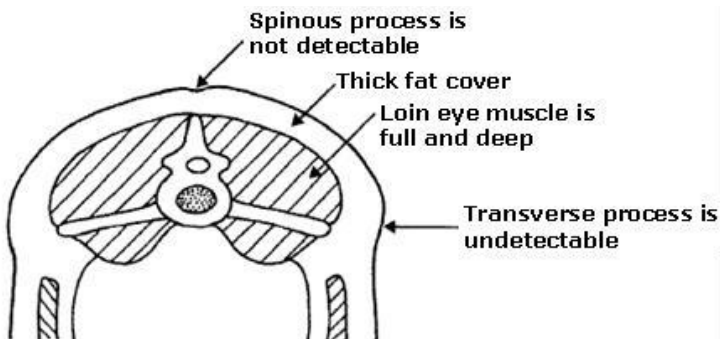


Figure 6. Condition Score 4.

Condition Score 5 or Obese (Figure 7) – The transverse process cannot be detected when hard pressure is applied. The loin eye muscles are very full and the entire loin is covered with a thick, soft

layer of fat. The spinous process appears as an indentation or dimple.

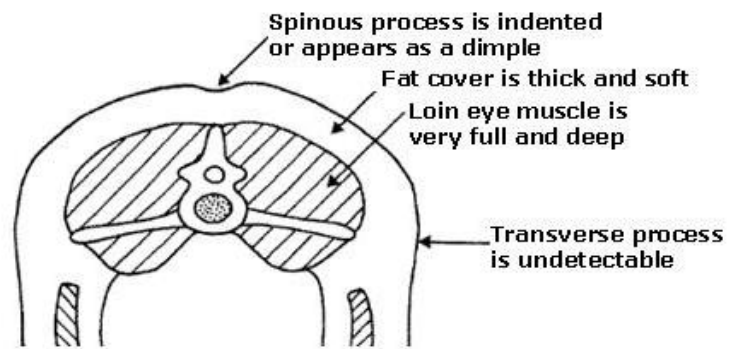


Figure 7. Condition Score 5.

When should the technique be applied?

Body condition scoring can be applied at the beginning of the flushing, late pregnancy and lactation stages. Nutrient requirements of the ewe are greatest during these stages and producers must know if their ewes are entering with inadequate, adequate, or overly abundant body condition. Having this information at hand, will allow producers to sort and feed ewes accordingly, and ultimately maximize the flock's production potential.

In many cases it is not feasible for a producer to handle every ewe in the flock. This may be due to inadequate handling facilities, too many ewes, or time constraints. Under these situations, ten percent of the ewes can be randomly selected and given a condition score. These ewes should be representative of the entire flock and can be used when making management decisions. This technique can also be used in combination with a visual assessment. Although a visual assessment of body condition scoring is not as accurate as handling, it is useful when trying to identify extreme scores (1 and 5).

Summary

Body condition scoring is a technique that can increase economic returns through enhanced reproductive performance and realization of more efficient feed costs. It should be performed at the flushing, late pregnancy and lactation stages of production.

A special thank you to the North Dakota Lamb and Wool Producers for the beautiful framed print honoring the memory of my son, Paul (P.J.) Moore. His family and friends are all deeply grateful. It currently hangs in Hultz Hall as a constant reminder of his presence in our lives.

*Most Sincerely,
Bert Moore*

NDLWPA Annual Convention

Friday, December 1st

4:30 – 6:00 p.m.	Registration
6:00 – 6:15 p.m.	USDA Biosecurity, Disease Surveillance and Food Safety Grant; Dr. Sheri Veil, OSU
6:15 – 6:45 p.m.	Controlling Coyote Predation; Mr. Phil Mastrangelo and Mr. John Paulson, ND Wildlife Services
6:45 – 7:15 p.m.	Scotland's Sheep Industry; Dr. Justin Luther, NDSU
7:15 – 7:45 p.m.	Future of the Hettinger Research Extension Center; Dr. Christopher Schauer, HREC Director
8:00 – 8:45 p.m.	Lamb Bratwursts, Snacks, and Refreshments; Sponsor: John Gupman and Equity Livestock
8:45 – 10:00 p.m.	NDLWPA Fundraising Auction

Saturday, December 2nd

8:00 – 9:00 a.m.	Registration Continued
9:00 – 9:30 a.m.	By-Production Utilization in the Sheep Operation; Dr. Christopher Schauer, HREC Director
9:30 – 10:00 a.m.	Integrating Sheep Grazing into Farming Systems; Mr. Hayes Goosey, MSU
10:00 – 10:15 a.m.	Break; Sponsored by: CO-Feed Sales, Nathan Robbins
10:15 – 10:45 a.m.	Methods for Integrating Fall Lambing; Dr. Justin Luther, NDSU
10:45 – 11:15 a.m.	Top Ten Sheep Health Issues at the Steele Veterinary Clinic; Dr. Cory Tebay, Steele Vet Clinic
11:30 – 1:00 p.m.	Grilled Lamb Sirloin Dinner; Sponsored by:
1:00 – 1:30 p.m.	American Lamb Board – Update; Mr. David Trotter, ALB Board Member
1:30 – 2:00 p.m.	Equity Cooperative Livestock; Mr. David Johnson, Marketing VP
2:00 – 2:30 p.m.	USDA Biosecurity, Disease Surveillance and Food Safety Grant; Dr. Sheri Veil, OSU
2:30 – 3:00 p.m.	American Sheep Industry Association; Mr. Burdell Johnson, ASI President Elect
3:00 – 3:15 p.m.	Break; Sponsor: Hub City Livestock
3:15 – 4:00 p.m.	NDLWPA Annual Meeting; Mr. Brent Stroh, President

Location: Seven Seas in Mandan, ND. Convention cost are \$50 for couples and \$35 for singles. If you would only like to attend the noon meal the cost is \$15. Room rates are \$55 plus tax. Rooms usually sell out quickly, so make your reservation today! For more information contact Brent Stroh, NDLWPA President at 701-327-4526.

THE NORTH DAKOTA SHEEP INDUSTRY

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