

# The North Dakota Sheep Industry

No. 50

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

## President's Message

MARK YOU CALENDARS. The 2007 NDLWPA convention will be held in Mandan, ND on November 30 and December 1, 2007 at the Seven Seas Motel. What a great opportunity to meet with fellow producers; visit, renew acquaintances and in general, have a good time.

I think we have a great schedule of events that will appeal to everyone. As you can see by the agenda, on Friday evening we will start the program off with presentations of the sheep industry in the UK and Mexico. We are very fortunate to have industry leaders representing ND and the sheep industry at these events, and even more fortunate to have them come back and share their wealth of information with us. We



Lyle Warner

will follow the presentations with snacks and refreshments and FINISH the evening with the auction. On Saturday we are changing things a bit and offering simultaneous sessions: "Cooking with Lamb" and a hands-on workshop involving sheep reproduction and other topics of interest. Make sure you bring recipes to share during the cooking session.

I always enjoy attending events such as this as I feel it helps me refocus on what I am doing and why I am doing it. We are very fortunate to have such a great group of people in this industry to work with and learn from. Hope to see you there.

Lyle Warner  
NDLWPA President

## Editor's Note

We are currently in the process of selecting the 2007 Master Sheep Producer. This program has been in place for nearly thirty years and is used to identify leading sheep producers in our state. Over sixty applications were submitted, and it will be difficult to award only one producer this year. The applications, and quality operations that they represent, have been very uplifting for me. I am very proud to be serving as your Extension Sheep Specialist, and would like to thank all the applicants for their time and effort.



Justin Luther

To help us meet the future needs of the North Dakota sheep industry, Dr. Christopher Schauer and I have developed a short survey for you to complete. We would like to know what short- and long-term sheep extension programs we can offer you. In addition, we would like to know about your research needs and ideas. Collectively, this information will help to ensure that our Extension and research efforts contribute to the success of your operation. Please take this opportunity to complete the enclosed survey and return it by November 21, 2007. The survey can also be found online ([www.ndlwpa.com](http://www.ndlwpa.com)) and emailed back to me when completed ([Justin.Luther@ndsu.edu](mailto:Justin.Luther@ndsu.edu)).

Justin Luther, Ph.D.  
NDSU Extension Sheep Specialist

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# Secretary Minutes from the North Dakota Lamb and Wool Producers Association Meeting

Seven Seas, Mandan  
October 10<sup>th</sup>, 2007

## Brent Kuss, NDLWPA Secretary

President Lyle Warner called the meeting to order.

Brent Kuss read the minutes from the Aug. 22<sup>nd</sup> meeting. Wyman Scheetz moved to accept the minutes. Nathan Robbins seconded the motion. Motion Carries.

Mark Sheppard read the Treasurer's report; he showed a balance of \$29,515.21. Mark updated the board on Membership numbers; ASI dues are due, the status of CD's and sale averages from the Hettinger Ram Sale. Matt Benz made a motion to accept the Treasurer's report. Wyman Scheetz seconded the motion. Motion Carries.

Curt Stanely made a motion to pay the ASI dues. Don Osborne seconded the motion. Motion carries.

## Old Business:

Hettinger Ram Sale - Matt Benz made a motion to give \$40.00 Gift certificates to the Past Time Grill for the load out help at the ram sale to show our appreciation for the excellent job they do. Curt Stanley seconded the motion. Motion carries.

Bowman Ewe Sale - Brent Kuss, Brent Stroh, Dr. Chris Schuaer and Dave Pearson served the noon meal. Everybody in attendance was very appreciative of the great meal. The sale went very well and everybody had a great afternoon.

International Katahdin Expo, Fargo - Dr. Justin Luther and Dr. Chris Schauer told the board the event was well attended and the people were very interested in the educational sessions, and that they had a good ram sale.

Annual NDLWPA Convention - President Warner informed the board that all the

preparations were done and everything should be on track.

## New Business:

Master Sheep Producer Award: Dr. Luther stated he has gotten a couple applications in already and expressed he would like to have a youth award. Matt Benz made a motion to have the NDLWPA sponsor \$300.00 for the winning youth to use towards the purchase of breeding sheep. Don Osborne seconded the motion. Motion carries.

Curt Stanley made a motion to adjourn. Dr. Luther seconded the motion. Motion carries.

## Board members in attendance:

Nathan Robbins, Curt Stanely, Don Osborne, Dr. Chris Schauer, Wyman Scheetz, Matt Benz, Lyle Warner, Mark Sheppard, Brent Kuss, Stuart Gessner, and Dr. Justin Luther.

## Causes and Consequences of Abnormal Sexual Behavior in Rams

Justin Luther, Ph.D.  
Extension Sheep Specialist  
Department of Animal Sciences

I recently received a phone call about a male-orientated ram, which is not surprising. It is estimated that nearly 10% of all rams will show sexual preference towards other males as opposed to females. Male-orientated behavior is often not recognized because standard breeding soundness exams do not include ram libido and serving capacity tests. The number of rams culled due to deficiencies in mating behavior is similar to the number culled for physical problems or poor semen quality. This behavior can obviously be very costly to the sheep producer since it is common to pay more



than \$500 per ram (Suffolk average at the 2007 Hettinger Ram Sale).

In 1988, a study by E.O. Price and others from the University of California - Davis found that out of 44 sexually active rams, 68% were female-orientated, 23% showed no gender preference, and 9% were male-orientated. Another collaborative study between UC Davis and the U.S. Sheep Experiment Station in Dubois, ID demonstrated the impact that these rams have on reproductive efficiency in the ewe flock. When rams were placed alone in mating pens with 30 heat synchronized ewes, high sexual performing rams bred 83 to 93% of ewes over a period of 9 days, whereas low performing, male-orientated rams bred only 21 to 48% of ewes during the same time period.

It is reasonable for one to ask the question "Why are some rams male-orientated?" Although research results collected from sheep are not necessarily applicable to other mammalian species, it has been demonstrated that this behavior is associated with neurological and hormonal alterations. According to research from Dr. Fred Stormshak of Oregon State University, brain aromatase activities and testosterone levels are lower in male- versus female-orientated rams. Aromatase is the enzyme responsible for converting testosterone to estrogen, and estrogen is the hormone that urges rams to seek out ewes for mating. Future research may demonstrate that male-orientated rams can be treated with estrogen to enhance their sexual behavior towards ewes in heat; however this remains to be proven.

In summary, a relatively high percentage of rams are actually male-orientated and they cannot be identified with a standard breeding soundness exam. Male-orientated behavior decreases reproductive efficiency in the ewe flock, and impedes profitability of the sheep enterprise. When possible, rams should perform a serving capacity test so that the producer can identify their level of sexual activity (or libido) and sexual preference. Rams identified as being male-orientated should be culled.

## Techniques for Developing a Fall Lambing Flock

Justin Luther, Ph.D.  
Extension Sheep Specialist  
Department of Animal Sciences

Although seasonal reproductive activity in sheep prevents many producers from lambing in the fall, overcoming seasonality in the ewe can offer some very appealing benefits. For example, lambing in the fall (September to November) will allow producers to: 1) make better use of fall forages during late gestation and early lactation; 2) better utilize the limited space available in lambing facilities; 3) lamb ewes when weather conditions are more ideal; 4) reduce animal losses due to coyote predation; 5) market heavier lambs in the spring when prices are generally higher. Enhancing fertility in ewes outside the normal breeding season has relied on either *natural* or *hormonal treatment* methods. This article will describe some of the techniques that are used in these methods, allowing the sheep producer to implement a fall lambing flock into their existing operation.

### ***Natural Methods***

1) Ram Effect. When ewes are spontaneously introduced to a ram outside the normal breeding season an immediate hormonal response will occur in a high percentage of ewes. This results in ovulation or the release of an egg into the reproductive tract within 50 hours. Since this will be the first ovulation outside the normal breeding season it will not be accompanied by estrus or heat. After the egg is ovulated, a structure called the corpus luteum will develop on the ewe's ovary. This structure produces progesterone, which is the primary hormone supporting gestation in the ewe. In half of the ewes the corpus luteum will regress prematurely within six days of ram introduction. In the remaining half of the ewes the corpus luteum will regress as normal at approximately 15 days after ram

introduction. Following corpus luteum regression the ewe will display estrus and ovulate once again, allowing the ewe to be bred and conceive outside the normal breeding season.

When using this technique it is important to: a) use rams that exhibit fertility outside the normal breeding season; b) completely separate

rams from the ewes for at least one month prior to introduction. The



ram effect is also more successful when using certain breeds of sheep. For example, pregnancy rates will generally be greater outside the normal breeding season if the producer is using Dorset and Rambouillet versus Suffolk, Hampshire and Columbia ewes. All of these factors will contribute to a range in pregnancy rate of 25 to 75% when using the ram effect alone.

2) Selection. Fertility in ewes outside the normal breeding season is partially genetic. Therefore, replacement ewes selected from the fall lambing flock should exhibit greater fertility outside the normal breeding season. This will allow the sheep producer to gradually build-up numbers in a fall lambing flock.

### ***Hormonal Treatment Methods***

1) Progestins. Treatment with commercially available progestins will mimic actions of the naturally produced hormone progesterone. Therefore ewes will exhibit estrus and ovulate following treatment. In the U.S., sheep producers have access to melengestrol acetate (MGA). Ewes are fed 0.15 mg of MGA twice per day (morning and evening) for a period of 10 to 14 days. At least 10 inches of trough space should be provided for each ewe to ensure that a similar amount of MGA is consumed by all

ewes in the flock. Rams are introduced to the ewes at a ratio of 1 ram per 15 ewes after the last MGA feeding. The primary advantage of MGA is the low cost. A twelve day treatment will cost \$1.50 per ewe. The sheep producer can typically expect to achieve a 50 to 75% pregnancy rate when using MGA outside the normal breeding season.

It is anticipated that controlled internal drug release (CIDR) devices containing natural progesterone will soon be commercially available to sheep producers in the U.S. CIDR devices are inserted into the vagina of the ewe and left in place for 6 to 12 days. After removing CIDR devices ewes will exhibit estrus within 24 to 48 hours. When using fertile rams the producer can expect pregnancy rates of 75 to 90% outside the normal breeding season.

2) Gonadotropins. A 5 ml dose of commercially available PG-600 has commonly been used on the last day of progestin treatments. This dose of PG-600 contains 400 IU of pregnant mare serum gonadotropin and 200 IU of human chorionic gonadotropin. PG-600 will stimulate follicular development and increase the number of eggs available for fertilization. The current cost of PG-600 is \$5.00 per ewe and the producer can anticipate an increase in pregnancy rates of 5 to 10% and an increase in lambing percentage of 10 to 25%.

### ***Conclusions***

The natural techniques described above are very cost effective; however successful use of these techniques is heavily influenced by breed of the ram and ewes. Although progestins offer higher pregnancy rates when compared to the natural techniques, they are more expensive and require strict and precise management. It is required for the producer to analyze his or her current flock, facilities and financial resources before choosing a technique to develop a fall lambing flock.



5) Please rank these educational topics in degree of importance to the North Dakota Sheep Industry (1 through 10).

\_\_\_\_\_ Economics

\_\_\_\_\_ Animal Health

\_\_\_\_\_ Genetics / Animal Breeding

\_\_\_\_\_ Lamb Feedlot Management

\_\_\_\_\_ Lambing Management

\_\_\_\_\_ General Nutrition

\_\_\_\_\_ Reproductive Management

\_\_\_\_\_ Housing / Fencing Facilities

\_\_\_\_\_ Range Management

\_\_\_\_\_ Youth Sheep

6) Please provide additional details and expand upon the top 4 or 5 topics that you have ranked in questions 4 and/or 5 (examples: Rank #1 Economics - "I want to learn more about the new livestock risk protection - lamb program." or Rank #2 Nutrition - "I want to learn more about feeding dried distiller's grains to my ewe flock.")

7) What are the research needs of the North Dakota sheep industry?

8) Please provide any additional comments / concerns.

# **Crossbreeding Sheep & Goats for Profit**

**Susan Schoenian  
Sheep & Goat Specialist  
University of Maryland Extension**

Crossbreeding is probably the most misunderstood and underappreciated practice in commercial livestock production. Crossbreeding is the mating of males and females of different breeds or breed types. Purebreeding is the mating of individuals of the same breed or type. Crossbreeding is the recommended breeding strategy for commercial meat sheep and meat goat production.

As a breeding practice, crossbreeding does not denote the indiscriminate mixing of breeds. Rather, it is the systematic use of breed resources to produce offspring of a specific type. For example, a "terminal" crossbreeding program uses a male of superior growth and carcass merit (e.g. Suffolk or Boer) to produce lambs or kids for the slaughter market, while maintaining moderate sized females that excel in fitness and reproductive performance. All offspring from a terminal cross are sent to the slaughter market (i.e. "terminated"). Another crossbreeding scheme could be aimed at producing crossbred females of a specific type (e.g. Spanish x Kiko or Dorset x Finn) for breeding.

Crossbreeding offers two distinct advantages over purebreeding: heterosis and breed complementarity. Heterosis or "hybrid vigor" is the superiority of crossbred offspring to their purebred parents. Mathematically, heterosis is the percentage increase in a specific trait (e.g. weaning weight) that progeny have over the average performance of their parents. Heterosis is highest for traits that do not respond well to selection, e.g. fitness and reproductive traits, and lowest for traits that respond well to selection, e.g. carcass and fleece characteristics.

Heterosis occurs in both the crossbred offspring and the crossbred female. Crossbred lambs and kids grow faster and have higher survivability than their purebred counterparts. Crossbred ewes are more fertile and wean 15 percent more pounds of lamb than purebred

ewes. Less is known about heterosis in crossbred males, but it is believed that crossbred males are more fertile and aggressive breeders.

Breed complementarity is the other major advantage of crossbreeding. It relates to the fact that there are no perfect breeds, and that each breed possesses certain strengths and weaknesses. In a systematic crossbreeding program, breed resources are combined to balance the positive and negative aspects of each breed in the cross.

Mating Polypay ewes to Suffolk rams is such an example. This cross takes advantage of the reproductive efficiency and moderate maintenance costs of Polypay ewes while producing Suffolk-sired lambs to meet market requirements for fast-growing, heavy muscled lambs. Crossing a Boer buck onto a Spanish or dairy doe would be another example of breed complementarity. Boer goats are known their outstanding body conformation and carcass quality, while Spanish does are hardier than Boers and dairy does produce more milk.

For crossbreeding to be most effective, it is important to identify the strengths and weaknesses of different breeds and to determine the appropriate role of a breed in a crossbreeding program. For example, you can produce Suffolk x Polypay lambs by either crossing a Suffolk ram onto Polypay ewes or by crossing a Polypay ram onto Suffolk ewes. If the goal is to produce superior crossbred market lambs, it makes no sense to do the later cross because the breeds are not being utilized to take best advantage of their strengths and weaknesses. On the other hand, Polypay rams could be used to produce crossbred female progeny that would be superior in maternal characteristics to the purebred Suffolk female.

# 2007 NDLWPA Convention Schedule

## Best Western Seven Seas, Mandan, ND

### *Friday, November 30th*

4:30 to 6:00 p.m. Registration  
 6:00 to 6:15 p.m. Welcome - Lyle Warner, NDLWPA President  
 6:15 to 6:45 p.m. The Premiere United Kingdom Sheep Industry  
 Tour - Burdell Johnson, ASI President and  
 Burton Pfliger, ASI Regional Director  
 6:45 to 7:15 p.m. The 2007 World Sheep Congress - Wes  
 Limesand, NDSU Shepherd  
 7:15 to 8:00 p.m. Snacks and Refreshments  
 8:00 to 10:00 p.m. Fund Raising Auction

### *Saturday, December 1st*

7:30 to 8:30 a.m. Coffee and rolls.  
 9:00 to 11:00 a.m. Please attend the program of your choice:

#### "Cooking with Lamb" at The Seven Seas

- ✓ Proper Handling and Cooking of Lamb Products - Dr. Kasey Carlin, Department of Animal Sciences, NDSU
- ✓ Sharing of Great Lamb Recipes - Anne Osborne, ND Sheep Producer
- ✓ How to Cook a Great Lamb Chop - Dr. Rob Maddock, Department of Animal Sciences, NDSU

#### "Reproductive and Ultrasonography Techniques for Enhancing Your Sheep Operation" at The Burleigh County Extension Building

- ✓ Dr. Justin Luther and Dr. Chris Schauer will demonstrate carcass ultrasonography, ram breeding soundness exams, and laparoscopic AI techniques.
- 11:30 to 1:00 p.m. Grilled Lamb Sirloin Dinner  
 Special Welcome from Burdell Johnson, ASI President (11:30 to 11:45 a.m.)  
 Make it With Wool (12:00 to 12:45 p.m.)
- 1:00 to 1:30 p.m. Presentation of the Master Sheep Producer
- 1:30 to 1:45 p.m. State Wildlife Services - Phil Mastrangelo
- 1:45 to 2:00 p.m. State Vet. Update - Dr. Susan Keller
- 2:00 to 2:30 p.m. Livestock Risk Protection - Lamb - Tim Petry, Livestock Marketing Economist
- 2:30 to 2:45 p.m. Break
- 2:45 to 3:15 p.m. Inclusion of Dried Distiller's in Lamb Feeding Rations - Dr. Chris Schauer, HREC
- 3:15 to 4:45 p.m. Annual NDLWPA Meeting

**Registration fee is \$50 for couples and \$35 for singles. If you would only like to attend the noon meal the cost is \$15. Room rates are \$58 plus tax. Rooms usually sell out quickly, so make your reservation today! For more information contact Lyle Warner, NDLWPA President at 701-255-1183.**

### **The North Dakota Sheep Industry**

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