

# 15 th ANNUAL WESTERN DAKOTA SHEEP DAY

WEDNESDAY, FEBRUARY 13, 1974  
HETTINGER ARMORY



TIMOTHY C. FALLER  
SUPERINTENDENT



HETTINGER BRANCH EXPERIMENT STATION  
NORTH DAKOTA STATE UNIVERSITY

SHEEPDAY DIGEST  
by  
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SECTION I

Reports of  
Research in Progress

at the  
Hettinger Experiment Station

Presented by  
Timothy C. Faller  
Superintendent

at the  
15th Annual Sheep Day

Hettinger Experiment Station  
Hettinger, North Dakota

February 13, 1974

Finnish Landrace sired ewe lambs, all of which came from rambouillet dams.

The two crossbred ewe types were divided into two groups at weaning time and were lotted according to weight, similar groups were maintained at Fargo under semi-confinement conditions and at Hettinger under range situations. The Fargo based ewe lambs were first exposed to the ram in August and the Hettinger group was exposed in mid-November.

Increased research information is pointing to breeding ewe lambs to lamb at 12-16 months of age. This segment of the cross breeding project deals with the favorability of this idea in the crossed that are under investigation at the Hettinger station.

Complete production information will be collected at both locations and should provide valuable information to producers considering the breeding of ewe lambs.

WOOL PRODUCTION  BREED CROSS	Grease Pounds of Wool			Staple Length (MM)			Fleece Grade
	Feb.	April	Total	Feb.	April	Total	
Rambouillet x (Rambouillet)	11.3	11.0	11.1	75.12	76.77	76.01	63
Border Leicester X (Rambouillet)	11.3	11.2	11.25	112.72	113.04	112.88	54.5
No. Country Cheviot X (Rambouillet)	10.0	9.4	9.7	89.40	89.98	89.70	58
Columbia x (Rambouillet)	11.7	11.3	11.5	82.64	79.79	81.41	60
Columbia x (Columbia)	9.8	10.0	9.9	93.16	100.36	96.26	57
Border Leicester x (Columbia)	10.1	9.7	9.9	135.17	139.79	137.57	51
No. Country Cheviot x (Columbia)	8.4	8.3	8.36	94.09	103.72	98.84	55.5
Rambouillet x (Columbia)	10.1	10.5	10.3	78.28	79.95	79.13	60
Overall Averages	10.4	10.15	10.3	94.11	97.68	95.87	
(Indicates Breed of Dam)							

C A R C A S S      D A T A

EWE BREED TYPE	Sire =		B. Leic.		N.C. Chev.		Col.		B. Leic		N.C. Chev.		Ramb.	
			x	Ramb.	x	Ramb.	x	Col.	x	Col.	x	Col.	x	Col.
DATA														
Average Carcass	1967	0.290	0.304	0.269	0.270	0.254	0.300	0.278	0.278	0.278	0.278	0.278	0.278	0.278
Weight per day	1968	0.324	0.327	0.290	0.322	0.316	0.333	0.306	0.306	0.306	0.306	0.306	0.306	0.306
	1969	0.285	0.311	0.261	0.286	0.299	0.283	0.270	0.270	0.270	0.270	0.270	0.270	0.270
Average Carcass	1967	0.381	0.532	0.437	0.354	0.322	0.318	0.417	0.417	0.417	0.417	0.417	0.417	0.417
Weight per ewe/	1968	0.435	0.591	0.486	0.391	0.413	0.416	0.428	0.428	0.428	0.428	0.428	0.428	0.428
day	1969	0.359	0.560	0.435	0.385	0.408	0.384	0.376	0.376	0.376	0.376	0.376	0.376	0.376
Average Cold Car-	1967	52.81	53.31	51.86	52.18	51.26	53.01	52.56	52.56	52.56	52.56	52.56	52.56	52.56
cass weight	1968	51.89	51.37	49.68	50.96	51.06	51.32	52.00	52.00	52.00	52.00	52.00	52.00	52.00
	1969	51.31	52.39	49.78	51.37	52.27	51.57	48.18	48.18	48.18	48.18	48.18	48.18	48.18
Average fat at	1967	0.16	0.22	0.18	0.18	0.21	0.23	0.19	0.19	0.19	0.19	0.19	0.19	0.19
loin	1968	0.22	0.21	0.19	0.19	0.22	0.24	0.22	0.22	0.22	0.22	0.22	0.22	0.22
	1969	0.19	0.21	0.18	0.21	0.23	0.25	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Average loin eye	1967	2.16	2.07	2.27	2.16	2.10	2.10	2.25	2.25	2.25	2.25	2.25	2.25	2.25
areas	1968	2.15	2.14	2.19	2.15	2.15	2.14	2.13	2.13	2.13	2.13	2.13	2.13	2.13
	1969	2.24	2.15	2.28	2.14	2.22	2.19	2.22	2.22	2.22	2.22	2.22	2.22	2.22
Average USDA	1967	11.10	10.89	10.92	11.95	11.13	11.63	10.91	10.91	10.91	10.91	10.91	10.91	10.91
Grade *	1968	10.94	10.93	11.06	10.99	10.95	10.93	10.88	10.88	10.88	10.88	10.88	10.88	10.88
	1969	11.06	11.15	11.40	11.24	11.61	11.38	11.27	11.27	11.27	11.27	11.27	11.27	11.27

\* Number 10's choice-; 11 is choice; 12 is choice+; 13 is prime

## RELATIVE RESPONSE OF SELECTION PRESSURE APPLIED TO THE EWE FLOCK

(A Progress Report)

Important to every sheep operation is the selection of the replacement ewes. Many factors of importance should be considered such as: production, soundness, type, etc.

### Experimental Objectives

In 1966 an experiment was initiated to determine the rate of change in production of wool and the production of lamb at 120 days when these factors are selected as single traits and the pressure is applied to the ewe flock only.

### Experimental Procedure

The Hettinger Station purebred flock of 90 Columbia ewes were lotted on the basis of weight and age into three groups of 30 ewes each. Three registered rams are to be used each year. Each ram to be exposed to ten ewes from each lot in order to distribute the influence of sires equally across groups.

Culling of ewes will be conducted each fall on the following basis:

1. Age
2. Mechanical (ill health, spoiled udder, etc.)
3. Flock A. Low lamb production  
Flock B. General type (visual selection)  
Flock C. Low wool production

Each year, 8 ewes will be selected and replaced into the group on the following basis:

- Flock A - 1. Yearling ewes born as twins with preference to those from ewes with the greatest corrected lamb production at 120 days.
2. Replacement yearlings must be physically sound.
- Flock B - 1. Ewe lambs showing most desirable Columbia breed type as suggested by the Columbia Sheep Breeders

SUMMARY OF "MEANS OF DATA"

	Lot 1. Lamb Prod'n			Lot 2. Visual			Lot 3. Wool Prod'n		
	1969-71			1969-71			1969-71		
	Average	1972	1973	Average	1972	1973	Average	1972	1973
	Prod'n	Prodn	Prodn	Prod'n	Prodn	Prodn	Prod'n	Prodn	Prodn
Ewes Exposed	30	30	30	30	29	29	30	30	30
Age @Breeding	2.77	2.70	2.70	2.72	3.03	2.70	2.76	2.53	2.77
Initial Wt.(lbs.)	162.1	148.3	158.0	160.8	155.3	162.8	157.7	154.4	160.2
Gain During Breed-									
ing	+1.24	+1.6	-1.7	+1.08	+1.3	+1.1	+.824	+3.3	-.4
Gain breeding to									
Lambing	+23.46	+17.1	+21.8	+20.14	+21.2	+16.6	+20.88	+17.5	+19.6
Ewes Lambing	28.2	30	28	26.8	28	28	27.6	28	28
% Lambs Dropped									
Per Ewe Exposed	164.66	173.3	166.7	152.90	182.7	165.5	149.98	163.3	180.0
% Lambs Weaned									
per ewe exposed	145.3	136.7	156.7	132.78	134.5	162.1	130.66	140.0	143.3
Corrected pound									
of lamb/ewe @120d.	123.06	97.9	120.6	112.96	96.8	123.4	110.82	104.1	112.8
Grease Fleece Wt.	12.86	11.57	11.77	12.52	11.69	11.86	12.36	12.55	12.38
Lamb Birth wt.	11.30	10.65	11.5	10.59	10.32	11.2	10.60	10.68	10.6
Uncorrected wean-									
ing wt.	78.54	67.68	55.7	77.44	67.50	57.3	77.98	71.02	60.2
Corrected weaning									
wt.	85.88	71.61	77.0	84.70	72.02	76.1	84.58	74.35	78.7
Age in days @wean-									
ing	120.9	122.4	89.4	120.46	123.3	93.3	121.48	122.9	95.9
Birth type of									
Dams @Lotting									
% Singles	9.4	0	0	25.5	20	23.3	26.0	30	30
% Twins	86.7	80	76.7	71.7	80	76.7	70.7	70	63.3
% Triplets	3.4	20.	23.3	3.3	0	0	3.3	0	6.7



PRODUCTION OF YEARLING EWE REPLACEMENTS

	1969	1970	1971	1972	1973
Percent Lambs Dropped					
Lot 1	146.7	75.0	112.5	150.	150.0
Lot 2	140.0	100.0	125.0	162.5	162.5
Lot 3	125.0	112.5	87.5	150.0	150.0
Percent Lambs Weaned					
Lot 1	126.7	75.0	75.0	112.5	112.5
Lot 2	140.0	100.0	75.0	150.0	150.0
Lot 3	125.0	87.5	75.0	137.5	150.0
Percent of Lamb @120 days					
Lot 1	114.5	60.7	56.1	82.5	105.1
Lot 2	124.6	83.9	62.9	110.8	119.1
Lot 3	113.9	64.5	60.5	105.8	120.1
Grease Fleece Wt.					
Lot 1	13.4	12.6	12.8	10.8	12.3
Lot 2	12.7	11.7	13.0	11.2	11.5
Lot 3	13.8	13.3	13.0	11.6	12.8

	Sire No. 1	Sire No. 2	Sire No. 3
Sire Records - 1967	Marshall	NDSU #1	Archibald
Ewes Exposed	29	30	30
% Lambs Dropped	151.7	166.7	166.7
% Lambs Weaned	134.5	143.3	140.0
Sire Records - 1968	Marshall	NDSU #1	E. Ehlers
Ewes Exposed	30	30	30
% Lambs Dropped	163.3	150.0	140.0
% Lambs Weaned	150.0	143.0	136.7
Sires Records - 1969	J. Ehlers	NDSU #2	E. Ehlers
Ewes Exposed	30	30	30
% Lambs Dropped	143.3	150.0	150.0
% Lambs Weaned	130.0	143.0	140.0
Sire Records - 1970	Osborne	NDSU #2	E. Ehlers
Ewes Exposed	30	30	30
% Lambs Dropped	163.3	76.7	166.7
% Lambs Weaned	140.0	66.7	153.3
Sire Records - 1971	Osborne	Shown #1	Shown #2
Ewes Exposed	30	30	30
% Lambs Dropped	160.0	153.3	173.3
% Lambs Weaned	140.0	123.3	150.0
Sire Records - 1972	Hall	Shown #1	Shown #2
Ewes Exposed	29	30	30
% Lambs Dropped	162.1	190.0	166.7
% Lambs Weaned	144.8	140.0	130.0
Sire Records - 1973	Hall	Shown #3	H E S #1
Ewes Exposed	30	30	30
% Lambs Dropped	166.7	163.3	182.8
% Lambs Weaned	140.0	156.7	165.5

SECTION II

Reports of  
Sheep Research in Progress

At the  
Main Station, Fargo, N. D.

Presented by  
Merle R. Light

at the  
15th Annual Sheep Day

Hettinger Experiment Station  
Hettinger, North Dakota

February 13, 1974

PROJECT: H-7-36

TITLE: Nutrient Requirements for Confined Sheep Production

Objectives:

1. To determine the effect of Vitamin E, selenium and pasture flushing on ewes maintained in dry lot.

Methods:

In 1971 forty eight Suffolk, forty Eight Hampshires and twenty four Columbias ewes were assigned to this experiment. The experiment was designed to study the effects of pasture, type of mineral mixture, Vitamin E and Vitamin E plus selenium on reproductive performance. One half of all ewes were assigned to a pasture or dry lot group in June. One half of each group was further divided so that they could be fed Mortons 8.4 Mineral Mixture or 1 part of iodized salt plus 2 parts of dicalcium phosphate. In addition each group was allotted into a vitamin treatment group. These ewes were mated so that they would begin lambing January 1, 1972. In 1972 ninety six crossbred ewes were assigned to the same type treatments but were mated to begin lambing March 15, 1973.

The combined data for the 1972 and 1973 lambing seasons are presented in Tables 1 and 2.

TABLE I  
COMBINED DATA PASTURE VS DRY LOT

	PASTURE	DRY LOT
No. Ewes Lotted	106	108
No. Ewes Lambed	91	102
No. Lambs Born	147	175
% Lambs Born/Ewe Lotted	138.7	162.0
% Lambs Born/Ewe/Lambing	161.5	171.6
No. Lambs Died	29	38
% Alive @ 90 Days	115.1	126.9

Pasture groups were grazed on pasture from June until two weeks before breeding. Dry lot ewes were maintained in dry lot all year.

MANAGEMENT SECTION  
Taken From  
Previous Sheep Day Reports

6. 6. Iodine for disinfecting navels.
7. Soap and mineral oil.
8. Tri-sulfa pills for treatment of early pneumonia symptoms.
9. Mastitis ointment.
10. Branding paint and irons.
11. Heat lamps for severe weather.
12. Docking and castrating tools.
13. Surgical scissors
14. Needle and thread in case a suture is needed.
15. Crate for mothering-up lambs and adopting.

#### END OF LAMBING TO WEANING

1. Feeding practices will vary depending on the time that lambs were born.
  - A. Dec. 15 - March 1 - Lambs are usually creep fed and not allowed to go on pasture before market.
  - B. Lambs born after March 1 are usually not creep fed and allowed to go on pasture during summer.
2. Drench ewes before turning them on pasture. (Phenathiazine.)  
  
\* try and drench according to a program that work for you, (don't wait until signs of worminess appear, it is too late then.)
3. Rotate pastures if possible, this also is helpful in internal parasite control.

#### WEANING TO PRE-BREEDING

1. Time of rest for ewes.
2. Time for shepherd to adjust ewes conditions so they can be effectively flushed, for next breeding season.

## METHODS OF CASTRATING AND DOCKING LAMBS

LaDon J. Johnson and Merle R. Light

### SURGICAL CASTRATION

A sharp knife is the simplest and quickest method of castrating lambs. Leave the knife in a disinfectant solution between lambs. Force the testicles well upward in the scrotum. Cut the lower 1/3 of the scrotum completely off. Pull the testicles out individually, through the split bottom of the membrane (tunica vaginalis) surrounding the testicles. Do not deliberately remove the surrounding membrane itself, only the testicles and their cords. Do not splash disinfectant into the castration wound, as this only causes irritation. The open castration wound will heal more quickly without adding foreign material such as disinfectant.

Fluid drainage from the wound is by gravity so is dependable. Be certain to keep lambs especially well-bedded, clean and dry for 10 days following surgical castration.

The 3-in-1 tool is a handy tool for castrating. It has a sharp cutting edge for castrating (removing the bottom of scrotum), serrated jaws for pulling the testicles, and also an ear notcher.

The emasculator can also be used for castrating, using the sharp cutting edge to remove the bottom third of the scrotum

The Burdizzo or pincer, can be used to crush both testicular cords separately. This method produces no open wounds, and no blood loss. Pinch each cord separately. First work the testicle low and completely to one side of the scrotum, as to avoid pinching more of the scrotum than necessary. With the cord as far to the edge of the scrotum as possible, use only the edge of the Burdizzo to crush the cord. Do not crush the testicle itself or the epididymis atop the testicle. Be sure to close the Burdizzo clamp completely!!

The EMASCULATOR can be used. Use the opposite side from the sharp cutting edge used for castration. This edge is serrated and promotes more rapid healing cut. Slide the skin around the tail as far toward the body as possible, leaving two vertebrae or tail bone sections. Sever the tail between sections if possible.

#### HOT CHISEL

This method is sanitary and simple. A board of proper thickness according to length of stub desired that has a one inch diameter hole can be fitted over the tail to prevent injury to the anal area. One good blow with a hammer on a sharp chisel will do the job. The chisel should be sharp and cherry-red hot before use. This method will be slower than some other methods.

#### ELECTRIC DOCKER

This tool sears and sterilizes the docking wound as it severs the tail. This aids in rapid clotting of blood and kills organisms present on the tail. This does cause a burn injury, which heals more slowly than simple surgical removal.

#### ELASTRATOR

This tool can also be used for docking, but again poses a potential danger of tetanus.

#### The EMASCULATOR or BURDIZZO

This can also be used for docking. Apply the Burdizzo at the proper distance from base of tail. Leave it in place while severing the tail with a knife just outside of the Burdizzo. The pressure of the Burdizzo squeezes the main artery and helps lessen bleeding.



# The Effects of Shearing on Suffolk Ewes

Merle R. Light, Timothy C. Faller, and C. LeRoy Johnson

Information has been presented on shearing ewes prior to breeding. Shearing ewes prior to breeding in North Dakota may or may not be advantageous, depending upon the climatic conditions that prevail during the breeding season and the management employed.

Shearing ewes and rams has been advocated as a management practice to increase the number of lambs dropped per ewe and the fertility of rams. Rams commonly are shorn several weeks prior to the breeding season, particularly if ewes are mated in August or September. Ewes are not commonly shorn in North Dakota prior to the breeding season.

This study was initiated in the fall of 1963 at the Hettinger Branch Experiment Station to determine the effect of fall shearing on Suffolk ewe productivity.

## Procedure

A flock of 42 purebred Suffolk ewes was divided into two lots according to weight and age. They were reallocated annually for the duration of the experiment. One lot was shorn in late August, approximately two weeks prior to breeding, and the other was left unshorn. Both lots were managed together as a single unit except for the

*Light is professor, Department of Animal Science; Faller is superintendent, Hettinger Branch Station; and Johnson is former superintendent, Hettinger Branch Station.*

shearing process. One ram was turned with the flock nightly from September 6 through October 17, and rested during the hot part of the day.

Data were collected on ewe weight changes during the breeding season, gestation and lactation, number of lambs born, weaned and their 30-day and weaning weights. Annual wool production was also recorded.

## Results and Discussion

Average ewe weights are shown in Table 1. Pre-breeding weights were remarkably uniform throughout the duration of the experiment. On the other hand, weight gains during mating were variable. They appeared to be influenced by climatic conditions during individual seasons. There were like differences in weight changes between groups during seasons when temperatures were mild. However, during cooler seasons the unshorn ewes gained from 32 to 46 per cent more (Table 3). Pooled data for the entire experiment reveals no significant differences for average weight gains during breeding.

It was not determined whether the lower rate of lamb drop was due to lower rate of ovulation or because of embryonic mortality.

Table 1. Ewe Weight Information by Year and Four-Year Average

	1963		1964		1965		1966		4 Yr. Ave.	
	S <sup>1</sup>	NS <sup>2</sup>	S <sup>1</sup>	NS <sup>2</sup>	S <sup>1</sup>	NS <sup>2</sup>	S <sup>1</sup>	NS <sup>2</sup>	S <sup>1</sup>	NS <sup>2</sup>
Pre-breeding wt. (lbs.)	150.5	146.3	152.2	149.7	146.5	145.9	155.5	155.3	151.2	149.3
Post-breeding wt. (lbs.)	165.1	161.6	157.8	158.0	154.0	159.9	161.9	162.6	159.7	160.5
Ewe wt. change during breeding	14.6	15.3	5.6	8.3	7.5	14.0	6.4	7.3	8.5	11.2
Fleece wt. (lbs.)	.....	.....	6.0	5.3	6.2	5.7	5.7	5.9	6.0	5.6

<sup>1</sup> S - designates fall shorn

<sup>2</sup> NS - designates not fall shorn

It has been a long said addage that the farmers and ranchers spend 364 days per year producing their various commodities and approximately 1 day is consumed in making arrangements for sale of product. To aid sheep producers in sale of lambs and ewes a TOLL FREE number has been established for their convenience of checking the sheep market on that day.

The number is

**1-800-525-3566**