

THE NORTH DAKOTA SHEEP PRODUCTION TESTING PROGRAM



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The North Dakota Sheep Production Testing Program is designed to provide sheep producers information useful for making genetic selections and management decisions.

PURPOSE OF PRODUCTION TESTING

A production testing program is **not a contest**. Its sole purpose is to help both purebred and commercial sheep producers evaluate their individual flocks and locate the best producing ewes and rams to genetically improve their herds. Identification by purebred producers of rams that sire fast gaining lambs which finish as desirable market lambs should help satisfy the commercial producer's needs.

Purebred sheep producers cannot base their selection on production records alone but must also examine desirable, practical traits that are particular to the breed they are producing. Commercial sheep producers, on the other hand, should use production records very strongly for evaluating their ewes, selecting ewe lamb replacements and evaluating sires when possible.

BENEFITS OF THE PROGRAM

- Provides the opportunity to more accurately select those ewes that will produce more pounds of lamb and wool.
- Provides a producer the opportunity to evaluate his lamb crop for profit and herd improvement.
- Provides information for culling ewes and selecting replacement ewe lambs.
- Provides individual sire summaries to enable a producer to evaluate the performance of individual sires.
- Provides an annual individual ewe production record which includes lifetime records plus a "Predicted Producing Value."
- Provides an annual lifetime flock summary with which a producer can evaluate his flock improvement over the years.
- Provides a yearly lambing worksheet for easy recordings of lambing information.

INFORMATION PROVIDED TO PRODUCER BY PROGRAM

Many different values are generated by the production testing program. The following is an explanation on how some of the key values are obtained.

- **ADJ 90-day wt** — All lambs are adjusted to a 90-day weight basis. Adjustments are also made for sex, type of birth and rearing, and age of dam using adjustment factors from the Sheepman's Production Handbook (SID book). The **ADJ 90-day wt ratio** compares the growth rate of lambs on a within-flock basis with 100 being an average lamb.
- **Lamb Index** — The lamb index is a composite value using the lamb's ADJ 90-day wt and the fleece wt of its dam when available. Credit is also given in the index for multiple birth lambs. The Lamb Index formulas are:
 (Singles) $ADJ\ 90\text{-day}\ wt + 0.6 \times \text{dam's fleece wt}$
 (Multiples) $ADJ\ 90\text{-day}\ wt \times 1.1 + 0.6 \times \text{dam's fleece wt}$
 The **Lamb Index Ratio** compares lambs on a within-flock basis with 100 being average.
- **Ewe Index** — The ewe index is a composite value using her lamb or lambs average ADJ 90-day wt and her fleece wt when available. Ewes having multiple birth are given additional credit. The Ewe Index formulas are:
 (Single Birth) $AVG\ ADJ\ 90\text{-day}\ wt + 3 \times \text{her fleece wt}$
 (Multiple Births) $AVG\ ADJ\ 90\text{-day}\ wt \times 1.17 + 3 \times \text{her fleece wt}$
 The **Ewe Index Ratio** compares ewes on a within flock basis with 100 being average.
- **EWE PPV (Predicted Producing Value)** — The Predicted Producing Value of a ewe is an estimated figure for the future level of her performance in comparison to other ewes in the flock. It is calculated from one or more ewe index ratio records on the same ewe and is based

on heredity and permanent environmental factors affecting individual performance. It is especially valuable for comparing ewes of different ages and numbers of performance records. The average ewe in your flock would have a PPV of 100. Anything above 100 is above average for the flock. The lamb index and ewe index values are based on each year's production whereas the ewe PPV value is calculated using past year's records in addition to the present year. The greater the number of records on a ewe, the more reliable her PPV value.

PRODUCER RESPONSIBILITY

- **Identification** — In order to begin a production testing program, you must identify each ewe and her lamb or lambs. Many companies are producing plastic and metal ear tags that work well. Ear tattoos are also a possibility. A good method is to place identical tags in each ear in case one tag is lost. **Remember**, no two animals in your flock can carry the same identification number. Use of birth year in the identification number is recommended.
- **Record Keeping** — A producer needs to keep the following information to make the production testing program work.
 - *Individual identification of sires, ewes and lambs.
 - *Breed of sire and dam. Breed codes and numbers are listed below.

BREED CODES

0010—Cheviot (CHEV)	0021—Panama (PANA)
0011—Columbia (COLM)	0022—Polypay (POLY)
0012—Corriedale (CORR)	0023—Rambouillet (RAMB)
0013—Dorset (DORS)	0024—Shropshire (SHRP)
0014—Finnsheep (FINN)	0025—Southdown (SDWN)
0015—Hampshire (HAMP)	0026—Suffolk (SUFF)
0016—Border Leicester (BDLE)	0027—Targhee (TARG)
0017—Lincoln (LINC)	0028—Commercial or
0018—Montadale (MONT)	Crossbreed (XBRD)
0019—North Country	0029—Other Breed #1 (OB#1)
Cheviot (NCCH)	0030—Other Breed #2 (OB#2)
0020—Oxford (OXFD)	0000—Unknown (UNKN)

Examples: 1423 is a FINN-RAMB Crossbred
 2615 is a SUFF-HAMP Crossbred
 0013 is a UNKN-DORS Crossbred
 1228 is a CORR-XBRD Crossbred
 1111 is a COLM-COLM Purebred

The FIRST TWO DIGITS indicates the SIRE BREED and the LAST TWO DIGITS indicates the Dam Breed.

- *Age of ewe.
- *Individual ewe fleece weight. (Optional but should be considered for wool breeds.)
- *Date of birth, sex and type of birth of each lamb. Sex and type of birth codes are listed below.

SEX CODES

R = Ram
 E = Ewe
 W = Wether

TYPES OF BIRTH CODES

1 = Single birth
 2 = Twin birth
 3 = Triplet birth
 4 = Quadruplet birth
 5 = Quintuplet birth
 etc.

*A note concerning type of rearing of a lamb. The computer calculates it for the producer. Two exceptions are bottle lambs and lambs fostered on other ewes. A producer should keep rearing information on these. More detailed instructions will be given later. The following are the type of rearing codes used in the program.

TYPE OF REARING CODES

1 = Reared as a single
 2 = Reared as a twin
 3 = Reared as a triplet
 4 = Reared as a quadruplet
 5 = Reared as a quintuplet
 9 = Artificially reared (Bottle, etc.)
 0 = Dead at birth, 1 day, or 2 days of age

Type of rearing code is the type of rearing of a lamb for the majority of its first 28 days of life or the majority of the lamb's life if it dies before it reaches 28 days of age.

*Birth weight of lamb. (Optional but strongly recommended.) Birth weights lend more accuracy to calculating growth rates.

*Birth difficulties, causes of death and defects of lambs (optional). This is strictly for a producer's own information. It does not affect any of the production output. Detailed information and codes will be given later.

*Weaning or 90-day weight of lamb. Lambs should be weighed between 80 and 100 days of age. However, a producer could weigh his lambs at 60, 70 or even 120 days of age as long as all lambs are weighed at approximately the same age. Even though the computer adjusts all lambs to a 90-day weight, lambs are still compared on a within flock basis. The ranking of the lambs within the flock is still valid even though they weren't weighed at 90 days of age.

REPORTING INSTRUCTIONS

Each producer must fill out one form at lambing time and another at weighing time (a lambing worksheet and farm weigh sheet). They should be filled out completely and legibly and preferably in pencil.

FILLING OUT THE LAMBING WORKSHEET

For the first year a producer is on the program, he will be required to record each ewe's breed and age by hand. After the first year on the program, this information will be provided on all the ewes that were in the flock the previous year and sent to the producer. However, breed and age information on ewe lambs or other ewes that are added to the flock each year will have to be recorded by hand. A helpful suggestion is that THE LAMBING WORKSHEET SHOULD BE FILLED OUT AS SOON AS POSSIBLE AFTER THE LAMBS ARE BORN, WHEN LAMBING INFORMATION IS STILL FRESH IN YOUR MIND.

1. **EWE ID** — Ear ewe tag number. The same ear tag number must be reported throughout the lifetime of the animal. No two animals in your flock can carry the same tag number. Should a ewe lose her tag and you choose to replace it with another number, you must continue to report the ewe's original number and keep your own personal records of the two numbers for flock identification. **A LIMIT OF SIX DIGITS IS ALLOWED FOR EWE IDENTIFICATION.** Numbers, letters or a combination of both can be used, but numbers are preferred.

NOTE: ALL EWES IN THE FLOCK MUST BE LISTED ON THE LAMBING WORKSHEET WHETHER THEY HAVE LAMBED OR NOT. THIS INCLUDES REPLACEMENT EWE LAMBS. EWES THAT HAVE BEEN REMOVED FROM THE FLOCK SHOULD BE CROSSED OFF THE WORKSHEET.

2. **EWE BREED** — Refer to the breed codes listed earlier. **USE THE NUMBER CODES.** Example is 2626 for a purebred Suffolk ewe. If the ewe is a crossbred and you wish to maintain permanent identity of the breeds involved in the cross, indicate the breeds represented by the number codes. Example is 1126 for a Columbia-Suffolk cross ewe. If you do not know the breeds involved or have no need to maintain that identity, indicate the ewe is a crossbred by the number code 2828.

3. **EWE AGE** — The age in years of the ewe at lambing time.

4. **EWE PPV** — The Predicted Producing Value will be listed after production is reported for the first time on a ewe. **EWES ENTERED BY HAND WILL NOT HAVE THIS INFORMATION. YOU DO NOT HAVE TO FILL ANY INFORMATION IN THIS SPACE.**

5. **EWE FLEECE WT** — Fleece weight should be recorded to the nearest 10th of a pound. Example is 8.5. If you are not recording fleece weights, leave it blank.

6. **SIRE ID** — Identify the sire by numbers or letters. **IN CONTRAST TO THE EWE ID, A LIMIT OF FIVE DIGITS IS ALLOWED FOR SIRE IDENTIFICATION.**

7. **SIRE BREED** — Refer to the breed codes listed earlier. **USE NUMBER CODES.**

8. **LAMBING DATE** — Record the month, day, and the last two digits of the year that the ewe lamb-ed.

9. **NUMBER BORN** — Record the number of lambs born to the ewe. Include lambs born dead or those that died shortly after birth. You will notice that there are three sets of identical groups of columns for lambs 1, 2 and 3 on each line. This will accomodate triplets from any one ewe. If a ewe produces multiple births beyond triplets, it will be necessary for you to add her number and information again at the bottom of the page and record the necessary information on her additional lambs beyond three.

10. **LAMB ID** — For each lamb, record an identification number (Ear tag or tattoo). This should be its lifetime number. **A LIMIT OF SIX DIGITS (numbers or letters) IS ALLOWED FOR LAMB IDENTIFICATION. USE OF BIRTH YEAR IN ID IS RECOMMENDED.**

11. **LAMB SEX** — Record sex of lamb by letter codes: R for ram, E for ewe and W for wether.

12. **LAMB BIRTH WT** — Record lamb birth weight to the nearest 10th of a pound. If you are not recording birth weights, leave it blank.

13. **REMARKS** — The remarks column assists the production program in determining type of rearing of a lamb. A producer should record the following information:

—If a lamb dies, record the date of death (month/day). Example: DIED 3/15.

—If a lamb is put on a bottle, record the date it was removed from its mother. Example: BOTTLED 2/8.

—If a lamb is fostered on another ewe, **record lamb with its natural mother** and include the following in its remarks column: date it was removed from its natural mother, foster mother's ID and her age. Example: FOSTERED 3/26, 80120 (3) where 3/26 was the date removed, 80120 is the foster mother ID and 3 is the foster mother's age.

These dates and information are utilized by the computer to determine accurate type of rearing codes. In addition, ewes that foster lambs are given credit for rearing additional lambs.

The remarks column is also designed to enable a producer to record additional information on lambing difficulties, death causes and lamb defects that may be helpful to him in future management decisions.

This part is strictly optional and does not affect any of the production results. If a producer wishes to keep these records, the following codes have been set up for lambing difficulties, causes of death and defects. A producer should use the abbreviated codes when recording. Example: 2WM indicates a lamb died of white muscle disease. Only one code can be used in each category, but more than one category can be coded per lamb. For example, a lamb can have a code for lambing difficulty, a code for cause of death, and a code for a defect. However, it cannot have two codes for causes of death.

"REMARKS CODES"

1 = Lambing Difficulties

1HB = Head back

1LB = Leg or legs back

1BR = Breech

1LL = Large lamb

1TL = Two lambs presented together

1CA = Caesarean

1EP = Ewe prolapsed

1ED = Ewe didn't dilate

2 = Causes of Death

2PM = Premature

2BD = Born dead

- 2WD = Born weak — died
- 2LD = Laid on
- 2ST = Starvation
- 2PN = Pneumonia
- 2WM = White muscle disease
- 2EN = Enterotoxemia (Over-eating)
- 2UC = Urinary calculi
- 2TE = Tetanus
- 2CO = Coccidiosis
- 2BL = Bloat
- 2PO = Poisoned
- 2AC = Accidental (hanging, drowning, etc.)
- 2PA = Parasites
- 2PR = Prolapse
- 2FR = Frozen
- 2VI = Vibriosis

3 = Defects

- 3IV = Inverted eyelids
- 3JA = Jaw (over-shot or under-shot)
- 3OT = One testicle
- 3BF = Black fibers
- 3HA = Hairy
- 3WR = Wrinkled Skin

A sample lambing worksheet is shown below. If there is not enough space in the remarks column, record the information as close to the space as possible and draw a line indicating where it goes.

FILLING OUT THE FARM WEIGH SHEET

The farm weigh sheet is the only other form that a producer needs to fill out. This should be filled out when the lambs are weighed at 80 to 100 days of age.

A producer should complete the top of the form with his name, address, county and phone number. A **flock number** will be assigned to him once he's on the program. **Season** of lambing should be filled in with a 1 for spring lambing or 2 for fall lambing. The

last two digits of the present year should be filled in the **year** space.

A fee is assessed on each flock that uses the production program. It includes an annual fee plus a charge per ewe to cover the cost of card punching and computer time. A producer should record the number of ewes in his flock on the farm weigh sheet.

Regarding information on lambs weighed, a producer needs to record the date weighed (month/day/year), lamb identification and weight to the nearest pound.

FORMS AND ENROLLMENT

A producer can obtain initial lambing worksheets and farm weigh sheets from his county agent or by writing to the North Dakota Sheep Production Testing Program, Roger G. Haugen, Hultz Hall, NDSU, Fargo, ND 58105. (701) 237-7645. Once he is on the program, these forms will be sent directly to him each year. All completed forms should be sent directly to the address above.

COMMENT

Making permanent improvements or changes in a sheep flock in a positive way is a slow process. Improvements that are made and remain intact are accomplished through selection of genetically superior stock. Utilization of a production testing program can help a producer locate the superior producing animals in his flock and thus make a genetic improvement.

1989 LAMBING WORKSHEET

EWE		FLE -ECE	SIRE		LAMBING	LAMB 1				LAMB 2				LAMB 3										
ID	RFRED	AGE	NOV	#T	ID	RFRED	DATE	NO. BRN	ID	S*	E*	WT	REMARKS	ID	S*	E*	WT	REMARKS	ID	S*	E*	WT	REMARKS	
75152	CCLM	7	95	11.5	81356	1111	2/5/89	1	82101	R		11.0												
76410	CCLM	6	94	13.0	81356	1111	2/6/89	4	82110	E		7.0		82111	E	6.5		3IV	82112	R		6.0	FOOTBRED 2/7/85 (5)	
80732	CCLM	2	93						EWE CULLED															
80600	RDLE-SUFF	2	102	9.0	81356	1111	2/7/89	2	82114	R		10.5		82115	E	11.0		1LB						
80879	MCNT-CFEV	2	111	8.5	81356	1111	2/8/89	3	82116	E		7.5		82117	R	7.0		BOTTLED 2/8	82118	R		9.0		
76410	1111	6	94	13.0	81356	1111	2/6/89	4	82113	E		5.5	DIED 2/6 2WD											
81240	1626	1	-	9.5	81356	1111	2/10/89	1	82119	R		12.0												
81300	1911	1	-	9.0	81356	1111	2/11/89	1	82120	E		6.0	DIED 2/11 2PN											