2013 DAKOTA RAM TEST FINAL PERFORMANCE RESULTS[1]

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The Dakota Performance Ram Testing program was established primarily to identify differences in wool traits for rams managed under the same environmental conditions and plane of nutrition. Secondly, it was established to measure post-weaning growth rate as indicated by weight gain. An added feature is the evaluation of animal carcass merit using real-time ultrasound technology.

INTRODUCTION

The 2013 Dakota Performance Ram Test included 49 rams from 3 breeds. The ram test calendar listed below summarizes the dates on which specific activities were conducted during the test. Results are listed below, ranking indexed rams from high to low, and separates rams eligible for Certificate of Merit. Carcass data results are also included. Financially, it appears expenses exceeded our registration fee by approximately $23/head. Some of the values are estimates, as we do not account for any feed left in the bin. The % of blown legs was 8% (15% last year, 21% in 2011, 10% the 3 years before that). The last couple of years we have increased supplemental Vit D to 360 IU/lb diet, and this year we provided injectable Vitamin D every 28 d in an attempt to further alleviate these "rickets-like" symptoms. Obviously, Vitamin D is not the only problem. Overall, ADG was similar to the past couple of years (0.85 vs. 0.88 and 0.83), but we had no rams with ADG below 0.55 lbs/d, the minimum required for certification.

SCHEDULE 2013 DAKOTA FALL RAM TEST

September 7 - September 25, 2013	Rams to be delivered to the HREC
October 1, 2013	Rams weighed and started on test
October 2, 2013	Rams shorn
October 29, 2013	28 day weighing
November 26, 2013	56 day weighing
December 23, 2013	85 day weighing; trim hooves and re-vaccinate
January 21, 2014	112 day weighing
February 18, 2014	140 day weighing - End of growth test period Bleed B-ovis and DNA, staple length, wrinkle score, scrotal circumference
February 19, 2014	Rams shorn - core sampling, wool weights
March 14, 2014	Ultrasound

March 15, 2014	Field Day and Sale; rams pick up

PROCEDURES

Fleece weight and staple length were calculated on a 365-day basis. Core samples were sent to Texas A&M University to determine fiber diameter, variability, and clean wool yield. Wool measurements for fiber were determined by the OFDA 2000. Average daily gain was calculated based on the total weight gain (including fleece) during the 140 d performance trial.

Fiber Diameter: Core fiber diameter was determined for each sample using the laserscan technology method. The diameter is estimated by measuring four hundred clean fibers to determine an average (mean). In addition, the variation within a sample is determined. For each individual ram and type of sample, a histogram illustrates the variation. The horizontal axis indicates microns and the vertical axis shows the number of fibers from the total fibers measured which were a specific diameter. A narrow distribution pattern indicates relative fleece uniformity. The standard deviation (std. dev.) and coefficient of variation (CV) are given to provide numerical indications of the variation. A fleece sample with a small CV should be considered more uniform than one with a large CV (CV = std.dev./mean fiber dia.).

Staple Length: Staple length was determined by measuring length at the shoulder, side, and britch. Values were adjusted (less 1/8") for the stubble remaining after the initial shearing and an average calculated from these three sites.

Clean Wool: Clean wool was determined from the laboratory scoured clean yield estimates on side samples. Analytical procedures meet ASTM standards.

Face and Body Skin Fold Scores: Scores were determined by averaging subjective scores from a three person committee selected by the Ram Test committee. Scores were assigned from 1 to 4 for each trait. The lower the value the more open faced or freedom from skin folds.

Average Daily Gain: Average daily gain was calculated by dividing the total gain by the number of days in the test period (140 d).

Index: The index utilized the following formula established by the Texas and Wyoming Ram tests and the approved index for the American Rambouillet Sheep Association's register of merit program (ROM). (Revised July 8, 1993)

Index = 60(Average daily gain in pounds) + 4.0(365-day adjusted staple length in inches up to 5.5 inches) + 4(365-day adjusted clean wool in pounds) ± fiber diameter and variability points according to the following schedule:

Fiber Diameter (micron) of side:

3(22-actual microns) = + points up to 9
3(actual microns-22) = - points up to -6

Variability:

22.0 +/- actual Coefficient Variation x 1.25 up to a maximum of +/- 5 points

Index Ratios: To compare one ram with another an index ration was calculated by the following formula. The average index ratio for all rams is 100; an individual with an index ratio of 130 would be 30% higher than the average.

$$\text{Ram Index Ratio} = 100 \times \frac{\text{Actual Ram Index}}{\text{Average Ram Index Value}}$$

The top 30% of the registered Rambouillet rams as indicated by index are eligible for the Certified Ram Classification. In addition to the above requirement, a ram must meet acceptable standards from the standpoint of body type, amount of body skin folds, freedom from anatomical weaknesses and wool defects, including extremely hairy britch or excessive amount of belly type wool. All certified rams must have a minimum of 4.0 in staple length, 9 lbs clean wool, a core wool grade of 23.77 microns or less, a maximum of 2.7 face cover score, and must have gained at least 0.55 lbs/d on test.

Carcass Merit: At the end of the test, fat cover and ribeye area were measured at the 12-13th rib by real-time ultrasound. This information is not included in the index. However, these measures may help producers identify rams with superior carcass merit. Ribeye area is a good indicator of overall muscling; rams with larger ribeyes would be expected to be more muscular compared to those with smaller ribeyes. More muscular individuals would be expected to exhibit high growth rate relative to those with less muscularity. Fat cover is an indicator of maturity (i.e. frame size). Those rams carrying less fat (finish) would likely be later maturing, or perhaps younger than those with greater amounts of fat cover.

RESULTS and DISCUSSION

The 2013 Dakota Ram Test proved successful with 49 rams, including 3 breeds, enrolled in the test from 14 producers across the Midwest including: North Dakota, South Dakota, Wyoming, and Minnesota. Below are tables presenting the data from Rambouillet breeders. Other breeds were not included in the index. The final index results table includes rams that are eligible for certificates of merit from the Dakota Ram test. Three rams were in the top 30%, but were not eligible for the certificate of merit. Two of these three rams were too coarse to be eligible and the third had an injured ankle.

IMPLICATIONS

As the 2014 Dakota Ram Test begins, it is showing to be increasingly promising. More producers from outside the region are enrolling in the test and more rams from other breeds are also showing interest. With these new interests in mind, an index for Columbia rams needs to be adapted for their use in the test for adequate comparison among the breed. The National Sheep Improvement Plan along with Ram Tests like this one can have a significant genetic impact on programs throughout the region.

Table 1. Growth and Performance Results

TID	Owner	Breed	FID	Premise ID	Scrapie ID	Reg. #	B Date	BT	H/P	Gene	B Wt	F Wt	Gain	ADG
8	Veit Rambouillet	Ramb	1339	SD2115	0336	996509	4/1/13	S	P	RR	123	271	148	1.06
47	Erk, Paul	Ramb	B0910	SD1257	06274	996488	5/2/13	S	P	RR	123	248	125	0.89
25	McGivney, Ian	Ramb	83	00EDZKF	0083	996322	3/24/13	TW	H	RR	156	275	119	0.85
48	Erk, Paul	Ramb	B0818	SD1257	06272	996483	4/15/13	S	P	RR	138	272	134	0.96
1	Cook Sisters	Ramb	5315	SD1359	0410	996424	4/15/13	S	H	RR	122	263	141	1.01
26	Forbes, Jim	Ramb	2500	WYBT	9621	996408	4/18/13	TW	H	RR	119	244	125	0.89
2	Cook Sisters	Ramb	5304	SD1359	0412	996421	4/12/13	S	H	QR	132	256	124	0.89
28	Forbes, Jim	Ramb	2498	WYBT	9619	996409	4/12/13	TW	H	RR	116	242	126	0.90
9	Veit Rambouillet	Ramb	1280	SD2115	0337	996512	3/22/13	TW	P	QR	121	276	155	1.11
49	Erk, Paul	Ramb	B0759	SD1257	06202	996481	2/14/13	S	P	RR	152	273	121	0.86
29	Forbes, Jim	Ramb	2499	WYBT	9620	996403	4/9/13	TW	H	RR	108	240	132	0.94

Table 2. Wool Performance Results

TID	Owner	GR FL (#)	GR 365-d (#)	Yield CWFP (%)	CL FL 365-d (#)	STL (365-d)	Belly (1,2,3)	Face (1,2,3,4)	Skin (1,2,3,4)	Core micron	Core Spin	Fleece Adj Dia	Fleece Adj Var
8	Veit Rambouillet	10.0	26.1	46.77	12.19	4.52	1.0	2.5	1.0	21.23	64	2.31	1.13
47	Erk, Paul	12.2	31.7	45.20	14.32	5.21	1.0	2.0	1.0	22.25	62	-0.75	0.87
25	McGivney, Ian	12.4	32.3	47.85	15.47	5.48	1.0	1.0	1.0	23.71	60	-5.13	0.38
48	Erk, Paul	10.8	28.2	44.72	12.59	4.43	1.0	2.0	1.0	22.57	62	-1.71	4.75
1	Cook Sisters	9.3	24.2	49.36	11.97	5.21	2.0	1.0	1.0	22.39	62	-1.17	-0.50
26	Forbes, Jim	11.4	29.7	47.59	14.14	4.78	1.0	1.0	1.0	22.69	62	-2.07	0.00
2	Cook Sisters	10.5	27.2	48.70	13.27	4.08	1.0	1.0	1.0	21.17	64	2.49	-0.25
28	Forbes, Jim	9.5	24.6	52.98	13.05	4.69	1.0	1.0	1.0	22.46	62	-1.38	1.13
9	Veit Rambouillet	9.1	23.6	44.16	10.42	4.52	1.0	1.0	1.0	22.45	62	-1.35	-0.13
49	Erk, Paul	11.8	30.8	42.25	13.00	4.95	1.0	1.0	1.0	22.71	62	-2.13	3.13
29	Forbes, Jim	9.2	23.9	49.92	11.91	4.43	1.0	1.0	1.0	21.70	64	0.90	0.38

Table 3. Final Index Results – Certified Rams

TID	Owner	SC (cm)	Index	Ratio
8	Veit Rambouillet	36.0	133.71	116%
47	Erk, Paul	37.0	131.83	115%
25	McGivney, Ian	31.0	130.02	113%
48	Erk, Paul	37.0	128.56	112%
1	Cook Sisters	37.0	127.49	111%
26	Forbes, Jim	31.0	127.20	111%
2	Cook Sisters	33.0	124.79	109%
28	Forbes, Jim	35.0	124.73	109%
9	Veit Rambouillet	38.0	124.71	109%
49	Erk, Paul	40.0	124.66	109%
29	Forbes, Jim	28.0	123.21	107%