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South Dakota performance ram testing program final reports: 1991-92 and 1992-93

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SHEEP 93-5

Introduction

The South 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 and secondly to measure postweaning growth rate as indicated by body weight gain.

The 1991-92 South Dakota Performance Ram Test was completed on March 2, 1992. Fifty-three rams from 20 flocks completed the test. Several breeds were represented including 48 Rambouillets, 3 Targhees, 1 Columbia and 1 Merino x Rambouillet ram.

The 1992-93 South Dakota Performance Ram Test was completed on March 3, 1993. Fifty rams consigned by 24 producers were entered on test, three rams did not complete the test due to injury or death. Breeds represented were Rambouillet (45), Columbia (2), and Corriedale (3).

Test Procedures

Ram lambs (4 to 6 months old) were delivered to the test site in mid-September. They were shorn and vaccinated against enterotoxemia and soremouth upon entry. Following a 10-day warm-up feeding period, the rams were weighed. This signaled the start of the official 140-day test period. Rams were weighed every 28 days to monitor growth performance. Side and britch samples were collected from individual fleeces

near the end of the test period. Those samples were used to determine clean fleece yield and fiber diameter. Rams were shorn at the conclusion of the test to determine grease fleece weight.

A pelleted ration composed of 30% shelled corn and 70% alfalfa was offered on a self-fed basis throughout the test. A custom sheep salt mineral and vitamin mixture was offered free-choice. In addition they were offered 1 lb long stemmed alfalfa hay per head per day to reduce the incidence of nutritional disorders.

1991-92

The test period for fleece weight and staple length was 154 and 136 days, respectively. Fleece weight and staple length were adjusted to a 365-day basis. Side and britch samples were sent to the Montana State University Wool Testing Laboratory to determine fiber diameter and variability and scoured clean yield. Average daily gain was calculated based on the total weight gain (including fleece) during a period of 141 days.

1992-93

The test period for fleece weight and staple length was 147 days. Fleece weight and staple length were adjusted to a 365-day basis. Side and britch samples were sent to the Montana State University Wool Testing Laboratory to determine fiber diameter and variability and laboratory scoured clean fleece

yield. Average daily gain was calculated based on the total weight gain (including fleece) during a period of 138 days.

Fiber Diameter: Determined for each sample using the microprojector method. The diameter is estimated by measuring three to four hundred clean fibers to determine an average or mean. In addition, the variation within a sample is determined. The standard deviation (SD) and coefficient of variation (COV) are given to provide numerical indications of the variation. A fleece sample with a small COV should be considered more uniform than one with a large COV (COV = SD/mean fiber diameter).

Staple Length: Determined by measuring with a ruler 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 Fleece Yield: Determined from the laboratory scoured clean yield estimates on side samples.

Face Cover and Body Skin Wrinkle Scores: 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. A lower value indicates more open faced or less body skin wrinkles.

Average Daily Gain: Calculated by dividing the total gain by the number of days in the test period.

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).

$$\text{Index} = 60 (\text{average daily gain in pounds}) + 4.0 (\text{365-day adjusted staple length in inches up to 5.5 inches}) + 4.0 (\text{365-day adjusted clean wool in pounds}) - 3.0 (\text{face cover score}) - 4.0 (\text{body skin wrinkle}$$

score) \pm fiber diameter and variability points according to the following schedule:

<u>Fiber diameter (micron) of side</u>	
19.0 and finer	+9
20.0-20.9	+6
21.0-21.9	+3
22.0-22.9	0
23.0-23.9	-3
24.0-24.9	-6
25.0 and up (disqualified)	

<u>Variability-Britch compared to side</u>	
0-1.0 micron	+5.0
1.1-2.0 micron	+2.5
2.1-3.0 micron	0
3.1-4.0 micron	-2.5
Over 4.0 micron	-5.0

Index Ratios: To compare one ram with another, an index ratio 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 and so on. Index ratios were calculated within breeds.

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

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 inches staple length, 9 lb clean wool, a wool grade of 60s or finer, a maximum of 2.7 face cover score, and must have gained at least .55 lb per day on test.

Wool Grading Systems

American grade	Spinning	
	count grade	Micron diameter
Fine	Finer than 80s	Under 17.70
Fine	80s	17.71 - 19.14
Fine	70s	19.15 - 20.59
Fine	64s	20.60 - 22.04
1/2	62s	22.05 - 23.49
1/2	60s	23.50 - 24.94
3/8	58s	24.95 - 26.39
3/8	56s	26.40 - 27.84
1/4	54s	27.85 - 29.29
1/4	50s	29.30 - 30.99
Low 1/4	48s	31.00 - 32.69
Low 1/4	46s	32.70 - 34.39

Discussion

Ram performance as indicated by growth rate was satisfactory with the average daily gain at .66 lb per day for both the 1991-92 (Table 1) and 1992-93 (Table 2) test, with the range from .93 to .27. The ration used for this ram test (similar in composition to those used in ram tests with the same test format) was formulated as a "grower." It is not designed to promote maximum weight gain. In this context the average growth rate achieved is reasonable. The pelleted ration used for our test is basically high-forage, 70% forage and 30% grain (corn). A growing ration is quite appropriate for this type of ram test, since it provides a level of dietary energy to support moderate growth rate yet still provides an opportunity to sort out genetic growth differences among individuals. Again, the primary objective of this evaluation program is to identify differences in wool traits. In general, rams entering the test at a lighter weight performed better than the heavier rams. I would expect the heavier rams to be at a disadvantage regarding growth performance since they are likely further along in their physiological maturity when put on test. As animals become heavier, the amount of energy derived from the diet which can be used for productive purposes decreases due to the higher demand for maintenance energy requirements (i.e., feed efficiency decreases as they mature).

During the 1992-93 test, the growth performance for the 84- to 112-day period was less than satisfactory. The aforementioned period covered the bitter cold and snowy period including the last week in December and most of January. Many rams simply maintained body weight during this weigh period, and several lost weight compared to the previous weigh period. Once the weather turned more favorable, the rams experienced considerable compensatory gain during the final weigh period. With the extremely cold temperatures these rams likely used most of the energy derived from their ration for maintenance needs. The production of heat to regulate body temperature is a maintenance need which can be quite costly in terms of energy.

The average values for the wool traits measured were similar across both tests (Tables 1 and 2). A comparison between side and britch fiber diameter shows that for most rams these measures differ by less than 2 microns, indicating good fleece uniformity. Perhaps as important, fiber uniformity within a location was excellent as indicated by a relatively small coefficient of variation (COV) [Table 3]. However, for the traits measured, there are considerable differences among rams within and across breeds.

The index system used to rank the rams within a breed takes into account growth rate, wool, and anatomical traits. In most cases the higher indexing rams are those which produced the most pounds of clean wool (CFW). The data would indicate that the pounds of clean wool was a function of grease fleece weight, yield, and staple length. Growth rate and anatomical measures have less impact on the index value in most instances since there was less variation between rams for these parameters. The index system fits the objectives of our testing program quite well since it ranks rams on the most economically important traits.

Table 1. 1991-92 Ram Performance Summary

Listed by Index

Producer	Breed	H or P	Ram ID	Flock eartag #	Initial wt (lb)	Final wt (lb)	Avg daily gain (lb)	365-day grease fleece wt (lb)	365-day staple length (inches)	365-day	Clean fleece wt (lb)	Side fiber dia. (microns)	Britch fiber dia. (microns)	Avg face score	Avg skin fold score	Ram index	Ram index ratio
										clean fleece yield (%)							
L/E Cook	Ramb.	H	2	3352	141	246	.74	24.8	4.4	59.9	14.9	26.48	27.45	1.92	1.38	109.3	131.9
G. Erk	Ramb.	H	32	A2445	140	235	.67	22.4	4.4	63.4	14.2	22.81	24.76	1.5	1.38	107.1	129.2
B. Anderson	Ramb.	H	7	444	115	230	.82	21.0	4.6	55.6	11.7	23.48	24.82	1.33	1.25	104.9	126.6
B. Anderson	Ramb.	H	8	437	126	235	.77	21.0	4.9	63.3	13.3	25.65	28.63	1.33	1.75	102.0	123.1
G. Erk	Ramb.	P	34	A2461	130	218	.62	22.1	5.0	54.5	12.0	21.81	23.20	1.58	1.25	100.9	121.8
D. Patrick	Ramb.	P	15	766	135	234	.70	19.5	4.9	68.1	13.3	26.16	28.48	1.58	1.00	100.1	120.7
L/E Cook	Ramb.	H	4	3357	130	233	.73	20.2	4.1	59.8	12.1	23.18	23.35	1.92	1.75	97.8	118.0
D. Funnell	Ramb.	H	46	1110	130	238	.77	19.0	4.7	56.2	10.7	24.13	25.67	1.67	1.50	93.3	112.5
L/E Cook	Ramb.	H	3	3362	129	239	.78	17.9	4.1	55.2	9.9	26.73	27.48	1.58	1.00	93.1	112.3
P. Balhoun	Ramb.	H	16	1830	167	268	.72	21.0	4.1	58.7	12.3	24.02	26.55	1.42	1.75	91.5	110.0
Erk Bros.	Ramb.	H	21	A6404	145	248	.73	21.4	4.5	53.7	11.5	23.89	24.97	3.42	2.00	89.0	107.4
Joe Erk	Ramb.	P	27	3005	101	207	.75	15.0	3.6	57.8	8.7	21.73	24.56	1.42	1.00	88.9	107.3
G. Erk	Ramb.	H	29	A2504	127	210	.59	22.4	5.0	58.9	13.2	24.76	25.19	2.92	2.38	88.9	107.3
D. Patrick	Ramb.	P	13	781	130	233	.73	16.4	4.0	64.0	10.5	26.85	28.34	1.83	1.00	88.8	107.1
Joe Erk	Ramb.	H	25	2920	111	212	.72	19.0	4.5	51.4	9.8	25.78	26.74	2.58	1.00	87.7	105.7
L. Collins	Ramb.	P	9	LC29	109	202	.66	21.7	4.4	50.5	11.0	22.34	24.50	2.75	1.38	87.4	105.5
C. Riesland	Ramb.	P	35	283	113	224	.79	16.0	4.6	59.4	9.5	24.31	27.05	2.25	1.00	87.1	105.0
Wetz Ramb.	Ramb.	P	49	1133	125	238	.80	16.7	3.8	44.6	7.5	21.36	20.93	2.58	1.63	86.9	104.9
Erk Bros.	Ramb.	H	19	A6440	135	241	.75	19.5	4.3	49.3	9.6	23.29	23.50	3.08	1.63	86.8	104.8
D. Kitzen	Ramb.	P	24	91-8	145	216	.50	22.4	4.5	57.6	12.9	23.63	24.43	3.25	1.25	86.8	104.8
L. Chapman	Ramb.	P	38	B036	114	201	.62	16.2	4.5	69.6	11.3	23.32	25.91	2.67	1.00	85.4	103.0
D. Funnell	Ramb.	H	42	Y1136	109	203	.67	17.4	3.7	55.5	9.7	23.35	23.82	2.00	1.13	85.3	102.9
L/E Cook	Ramb.	H	5	3345	121	212	.65	21.0	4.0	51.7	10.9	26.19	25.97	2.17	1.63	84.6	102.0
G. Erk	Ramb.	H	30	A2557	97	186	.63	20.2	4.5	54.8	11.1	22.73	24.29	2.67	2.63	84.2	101.5
Erk Bros.	Ramb.	P	17	A6624	107	193	.61	21.0	4.3	46.6	9.8	21.25	22.74	2.67	2.13	82.0	98.9
Erk Bros.	Ramb.	H	18	A6605	110	209	.70	21.4	3.8	45.4	9.7	21.20	24.91	1.25	3.00	80.8	97.4
D/L Anderson	Ramb.	P	12	079	97	223	.89	17.6	3.1	47.5	8.4	24.49	26.59	1.75	1.88	80.6	97.3
L. Chapman	Ramb.	P	39	0029	105	203	.70	18.6	4.2	54.7	10.2	24.61	25.87	3.33	1.63	79.6	96.0
D. Funnell	Ramb.	H	44	1111	110	211	.72	15.2	4.0	47.9	7.3	24.33	24.24	1.33	1.13	78.9	95.2
M. Patrick	Ramb.	H	14	3383	139	233	.67	15.2	3.4	57.0	8.7	25.50	26.48	1.67	1.25	78.8	95.0
Erk Bros.	Ramb.	P	20	A6551	120	207	.62	17.1	3.9	51.2	8.8	23.88	24.43	2.58	1.00	78.3	94.4
C. Reid	Ramb.	P	22	388	110	200	.64	18.3	3.8	57.9	10.6	25.07	28.53	1.50	1.25	78.0	94.1
Wetz Ramb.	Ramb.	P	48	2020	111	212	.72	16.4	4.2	46.3	7.6	23.47	22.68	3.00	1.00	76.9	92.8
D/L Anderson	Ramb.	H	11	0823	100	188	.62	13.8	3.7	56.8	7.8	22.72	23.06	2.25	1.25	76.5	92.2
L/E Cook	Ramb.	H	1	3331	132	217	.60	20.5	3.9	50.7	10.4	25.46	26.57	2.17	1.75	76.2	91.9
R. Funnell	Ramb.	H	41	GR568	127	234	.76	16.4	4.2	45.4	7.4	24.16	25.12	3.83	1.00	75.5	91.1
L. Chapman	Ramb.	H	36	4060	99	200	.72	14.3	3.8	53.5	7.7	24.16	26.75	1.33	1.25	74.2	89.5
B. Anderson	Ramb.	P	6	B731	133	234	.72	18.6	3.9	42.9	8.0	25.68	27.12	2.75	1.25	74.1	89.3
G. Erk	Ramb.	H	31	A2460	142	232	.64	18.8	4.0	47.4	8.9	24.47	25.05	3.33	1.50	73.0	88.1
D. Funnell	Ramb.	H	43	1107	132	206	.52	12.9	3.8	50.5	6.5	20.89	22.07	1.42	1.00	72.6	87.6
D. Turbiville	Ramb.	P	40	0059	125	222	.69	18.8	3.6	50.7	9.5	27.65	31.38	2.17	1.75	71.8	86.6
L. Chapman	Ramb.	H	37	B043	105	195	.64	13.8	3.8	53.3	7.4	23.34	25.56	1.83	1.38	69.2	83.5
Wetz Ramb.	Ramb.	P	47	2005	104	170	.47	17.9	3.6	52.7	9.4	22.83	23.98	2.83	1.38	68.7	82.9

Table 1 Continued

Producer	Breed	H or P	Ram ID	Flock eartag #	Initial wt (lb)	Final wt (lb)	Avg daily gain (lb)	365-day grease fleece wt (lb)	365-day staple length (inches)	365-day		Side fiber dia. (microns)	Britch fiber dia. (microns)	Avg face score	Avg skin fold score	Ram index	Ram index ratio
										clean fleece yield (%)	Clean fleece wt (lb)						
D. Funnell	Ramb.	H	45	1124	114	207	.66	16.0	3.5	50.6	8.1	25.23	26.51	2.83	1.63	67.5	81.4
G. Erk	Ramb.	P	33	A2582	125	203	.55	19.5	4.4	47.0	9.2	25.35	27.52	2.58	1.75	66.7	80.4
Joe Erk	Ramb.	H	28	2810	91	167	.54	15.2	3.7	51.4	7.8	24.25	24.14	2.92	1.63	62.1	74.9
C. Reid	Ramb.	P	23	392	101	163	.44	14.8	4.0	57.2	8.5	24.25	26.23	2.58	1.13	60.6	73.1
D. Gano	Ramb.	P	10	R400	94	155	.43	12.1	3.3	51.2	6.2	22.31	23.78	1.67	1.00	57.3	69.1
Joe Erk	Ramb.	P	26	3015	100	161	.43	---	4.1	59.6	---	21.45	22.83	1.92	---	41.9	---
<u>Average</u>					120	213	.67	18.3	4.1	54.1	9.9	24.00	25.40	2.22	1.45	82.0	100
N. Isaacs	Targ	P	90	1035	85	191	.75	20.0	4.8	52.2	10.4	21.10	22.63	1.50	1.13	102.3	112.5
N. Isaacs	Targ	P	91	1001	76	175	.70	14.0	4.4	55.2	7.7	19.99	21.10	1.17	1.13	90.9	100.0
N. Isaacs	Targ	P	93	1095	87	175	.62	16.2	3.9	49.3	8.0	20.89	22.43	1.92	2.00	79.5	87.5
N. Isaacs	Targ	P	92	1019	85	---	---	---	---	---	---	---	---	---	---	---	---
<u>Average</u>					83	180	.69	16.7	4.4	52.2	8.7	20.66	22.05	1.53	1.42	90.9	100.0
C. Reiland	C/Ram	P	70	27	97	187	.64	17.9	4.2	54.2	9.7	26.41	28.68	1.92	3.50	70.7	100.0
D. Peterson	Colum	P	80	1157	149	241	.65	21.9	4.1	54.5	11.9	29.34	33.38	1.17	1.13	83.9	100.0

Eligible Certified Ram Candidates

Producer	Breed	H or P	Ram ID	Flock eartag #	Initial wt (lb)	Final wt (lb)	Avg daily gain (lb)	365-day grease fleece wt (lb)	365-day staple length (inches)	365-day		Side fiber dia. (microns)	Britch fiber dia. (microns)	Avg face score	Avg skin fold score	Ram index	Ram index ratio
										clean fleece yield (%)	Clean fleece wt (lb)						
G. Erk	Ramb.	H	32	A2445	140	235	.67	22.4	4.4	63.4	14.2	22.81	24.76	1.5	1.38	107.1	129.2
B. Anderson	Ramb.	H	7	444	115	230	.82	21.0	4.6	55.6	11.7	23.48	24.82	1.33	1.25	104.9	126.6
G. Erk	Ramb.	P	34	A2461	130	218	.62	22.1	5.0	54.5	12.0	21.81	23.2	1.58	1.25	100.9	121.8
L/E Cook	Ramb.	H	4	3357	130	233	.73	20.2	4.1	59.8	12.1	23.18	23.35	1.92	1.75	97.8	118.0
D. Funnell	Ramb.	H	46	1110	130	238	.77	19.0	4.7	56.2	10.7	24.13	25.67	1.67	1.50	93.3	112.5
P. Balhoun	Ramb.	H	16	1830	167	268	.72	21.0	4.1	58.7	12.3	24.02	26.55	1.42	1.75	91.5	110.0

Animals which failed to meet the American Rambouillet Sheep Association ROM program requirements are not listed.

Table 2. 1992-1993 Ram Performance Summary^a

Ram ID #	H/P	INT WT	END WT	Test Gain	ADG	GFW 365-d	SL 365-d	LSY	CFW 365-d	SIDE FIBER		BRITCH FIBER		FS AVG	BWS AVG	INDEX	INDEX RATIO	PRODUCER
										Micron	Grade	Micron	Grade					
Rambouillet																		
32	H	109	215	106	0.77	23.76	5.20	58.20	13.83	23.86	60s	25.58	58s	1.00	1.08	114.37	134.58	Chapman, Lenard
27	H	85	213	128	0.93	16.78	4.20	55.90	9.38	20.23	70s	22.04	64s	1.83	1.17	108.29	127.44	Wetz Family
38	H	100	210	110	0.80	20.79	5.20	54.60	11.35	22.99	62s	26.90	56s	1.25	1.08	103.45	121.73	Anderson, Burt
37	P	119	209	90	0.65	21.67	5.20	64.60	14.00	24.24	60s	25.36	58s	2.58	1.00	100.68	118.47	Anderson, Burt
42	H	130	221	91	0.66	24.37	5.20	60.20	14.67	27.80	56s	29.79	50s	3.50	1.25	97.04	114.19	Erk, George
24	H	102	194	92	0.67	16.23	4.45	57.40	9.31	19.86	70s	20.91	64s	1.08	1.75	96.30	113.32	Funell, Dean
16	H	107	197	90	0.65	20.35	4.95	53.80	10.95	20.09	70s	22.51	62s	3.42	1.33	93.14	109.60	Erk Brothers
41	H	112	226	114	0.83	22.39	4.45	53.70	12.02	25.69	58s	27.33	56s	2.63	2.08	92.71	109.10	Erk, George
44	P	139	253	114	0.83	22.11	4.45	55.40	12.25	25.27	58s	28.30	54s	2.58	2.17	90.94	107.02	Mertz, R & M
33	H	92	186	94	0.68	15.90	4.95	58.40	9.28	20.48	70s	23.08	62s	3.25	1.00	90.05	105.97	Chapman, Lenard
31	H	107	209	102	0.74	17.05	4.45	62.00	10.57	24.05	60s	25.95	58s	2.42	1.00	89.68	105.53	Cook Sisters
12	P	117	238	121	0.88	20.35	3.70	54.80	11.15	28.44	54s	30.17	50s	2.70	2.08	89.08	104.83	Mertz, E.J.
14	P	115	211	96	0.70	19.91	4.70	57.40	11.43	24.09	60s	27.64	56s	1.33	1.25	88.75	104.44	Benz, Darold
21	P	96	200	104	0.75	16.94	4.70	57.60	9.76	22.87	62s	26.20	58s	2.33	1.25	88.55	104.20	Erk, Joe
20	P	94	210	116	0.84	19.20	3.95	52.80	10.13	23.98	60s	25.13	58s	2.70	2.50	88.17	103.76	Erk, Joe
25	P	123	202	79	0.57	23.38	4.45	53.80	12.58	26.51	56s	27.32	56s	1.67	1.50	87.45	102.91	Reid, Clarence
23	P	94	194	100	0.72	21.07	4.70	58.50	12.32	25.39	58s	27.09	56s	2.63	2.50	87.17	102.58	Kitzan, D
34	H	126	216	90	0.65	21.78	4.45	51.70	11.26	23.79	60s	26.10	58s	2.25	1.58	85.89	101.07	Chapman, Lenard
39	P	111	218	107	0.78	17.77	4.20	56.30	10.00	23.32	62s	26.63	56s	2.00	1.67	85.16	100.21	Erk, George
15	P	89	194	105	0.76	14.25	3.95	50.30	7.17	21.40	64s	22.85	62s	2.33	1.08	84.28	99.18	Riesland, Curt
45	P	121	197	76	0.55	16.94	4.45	57.90	9.81	22.64	62s	23.51	60s	1.17	1.83	84.24	99.13	Mertz, R & M
9	P	89	191	102	0.74	16.12	3.70	55.10	8.88	23.08	62s	23.57	60s	1.33	2.17	84.00	98.85	Gano, Tamera
1	H	140	241	101	0.73	17.27	4.20	59.70	10.31	24.64	60s	28.06	54s	2.25	1.00	82.70	97.32	Patrick, Dale
40	P	124	209	85	0.62	19.75	4.45	57.00	11.25	23.19	62s	25.12	58s	2.58	2.25	82.53	97.11	Erk, George
18	P	121	214	93	0.67	19.20	4.20	54.30	10.42	24.20	60s	26.88	56s	1.00	1.92	82.26	96.80	Erk Brothers
35	H	113	192	79	0.57	16.83	4.70	53.00	8.92	22.02	64s	23.95	60s	1.42	1.25	82.08	96.58	Chapman, Lenard
22	P	88	176	88	0.64	18.81	4.70	47.40	8.92	21.40	64s	23.76	60s	2.63	1.67	81.16	95.50	Erk, Joe
11	H	162	222	60	0.43	16.28	4.70	57.20	9.31	20.30	70s	22.88	62s	1.17	1.00	80.64	94.89	Baloun, Perry
3	P	134	224	90	0.65	17.71	3.70	47.00	8.32	22.89	62s	24.02	60s	1.67	1.25	79.73	93.82	Patrick, Murl
13	P	157	233	76	0.55	20.19	4.20	52.20	10.54	26.68	56s	27.61	56s	1.33	1.08	79.66	93.74	Benz, Matthew
30	H	110	213	103	0.75	17.33	3.70	51.60	8.94	23.53	60s	25.45	58s	3.25	1.58	78.76	92.68	Cook Sisters
26	P	88	187	99	0.72	15.35	3.95	46.70	7.17	22.54	62s	24.51	60s	2.50	1.00	78.51	92.38	Wetz Family
17	H	130	198	68	0.49	17.22	5.70	51.50	8.87	21.78	64s	23.80	60s	3.50	1.08	78.49	92.37	Erk Brothers
36	H	86	160	74	0.54	12.65	3.95	52.80	6.68	18.89	80s	20.84	64s	1.42	1.17	77.27	90.93	Chapman, Lenard
8	H	80	174	94	0.68	13.42	3.95	54.70	7.34	22.92	62s	24.29	60s	2.70	1.17	75.77	89.16	Gano, Tamera
43	H	127	210	83	0.60	19.42	4.95	61.90	12.02	23.43	62s	27.56	56s	3.17	2.75	75.46	88.80	Erk, George
4	P	126	214	88	0.64	18.54	3.70	53.40	9.90	24.15	60s	26.68	58s	2.17	1.25	75.15	88.43	Turbville, Dick
6	H	107	180	73	0.53	16.39	4.20	51.20	8.39	22.97	62s	25.56	58s	1.08	1.50	72.86	85.73	Anderson, Dan
28	P	78	152	74	0.54	14.14	4.20	55.80	7.89	22.36	62s	24.42	60s	2.00	1.08	70.19	82.60	Wetz Family
10	H	155	231	76	0.55	18.59	3.95	59.40	11.04	24.03	60s	27.55	56s	2.70	1.67	69.75	82.07	Baloun, Perry
29	H	107	192	85	0.62	15.90	3.95	49.50	7.87	23.72	60s	25.28	58s	3.50	1.17	68.56	80.68	Cook Sisters
2	H	144	212	68	0.49	15.07	3.95	53.40	8.05	22.26	62s	25.23	58s	1.00	1.00	68.05	80.08	Patrick, Dale
5	P	OUT	OUT															Anderson, Dan
7	P	86	OUT															Anderson, Dan
19	H	90	OUT															Erk, Joe
Average		113	206	92	0.67	18.31	4.40	55.00	10.10	23.29	62s	25.41	58s	2.17	1.48	84.98	100	

Table 2. Continued

Ram ID #	H/P	INT WT	END WT	Test Gain	ADG	GFW 365-d	SL 365-d	LSY	CFW 365-d	SIDE FIBER Micron Grade	BRITCH FIBER Micron Grade	FS AVG	BWS AVG	INDEX	INDEX RATIO	PRODUCER	
Columbia																	
100	P	190	227	37	0.27	19.25	3.95	51.50	9.91	25.97	58s	27.01	56s	1.00	1.08	60.21	105.35 Peterson, D & L
101	P	187	239	52	0.38	17.16	3.70	48.70	8.36	32.35	48s	35.15	44s	1.25	1.00	54.09	94.64 Peterson, D & L
Average		189	233	45	0.32	18.21	3.83	50.10	9.14	29.16	54s	31.08	48s	1.13	1.04	57.15	100
Corriedale																	
301	P	112	214	102	0.74	19.31	4.95	62.00	11.97	30.37	50s	33.54	46s	2.92	1.00	87.77	102.05 Phillippi, M
302	P	131	219	88	0.64	23.60	4.95	61.50	14.51	36.59	40s	42.37	36s	3.50	1.25	86.60	100.69 Phillippi, R
300	P	105	185	80	0.58	16.67	5.20	63.60	10.60	27.50	56s	28.21	54s	2.00	1.08	83.65	97.25 Hoffman, B&C
Average		116	206	90	0.65	19.86	5.03	62.37	12.36	31.49	48s	34.71	44s	2.81	1.11	86.01	100

^aRams above bold type line indicate top 30% of rams on test.

H/P = Horned or Polled

ADG = Average Daily Gain (lb/day)

GFW = Grease Fleece Weight (adj. to 365 day)

LSY = Laboratory Scoured Yield

CFW = Clean Fleece Weight (adj. to 365 day)

SL = Staple Length (adj. to 365 day)

FS = Face Score

BWS = Body Wrinkle Score

Table 3. Statistical Information on Wool Measurements from 1992-93 Ram Test

Ram ID #	Flock Eartag #	P or H	SIDE				BRITCH			
			Micron	Grade	SD	Cov	Micron	Grade	SD	Cov
1	859	H	24.64	60s	3.56	14.40	28.06	54s	5.12	18.20
2	852	H	22.26	62s	3.45	15.50	25.23	58s	4.53	18.00
3	3920	P	22.89	62s	3.06	13.40	24.02	60s	4.17	17.40
4	143	P	24.15	60s	3.58	14.80	26.68	58s	4.75	17.80
5	0892	P								
6	0889	H	22.97	62s	3.72	16.20	25.56	58s	5.33	20.90
7	0907	P								
8	510	H	22.92	62s	4.11	17.90	24.29	60s	5.10	21.00
9	434	P	23.08	62s	4.37	18.90	23.57	60s	5.13	21.80
10	1886	H	24.03	60s	3.59	15.40	27.55	56s	5.38	19.50
11	1885	H	20.30	70s	3.18	15.70	22.88	62s	4.10	17.90
12	210EJM	P	28.44	54s	4.88	17.20	30.17	50s	5.86	19.40
13	1243	P	26.68	56s	4.21	15.80	27.61	56s	4.58	16.60
14	240	P	24.09	60s	3.78	15.70	27.64	56s	5.59	20.20
15	354	P	21.40	64s	4.42	20.70	22.85	62s	4.78	20.90
16	A6695	H	20.09	70s	3.41	17.00	22.51	62s	3.90	17.30
17	A6652	H	21.78	64s	3.31	15.20	23.80	60s	4.81	20.20
18	A6691	P	24.20	60s	3.70	15.30	26.88	56s	4.89	18.20
19	3069	H								
20	3122	P	23.98	60s	4.37	18.20	25.13	58s	4.97	19.80
21	3124	P	22.87	62s	3.18	13.90	26.20	58s	4.54	17.30
22	3049	P	21.40	64s	4.57	21.30	23.76	60s	5.52	23.20
23	DWK92-52	P	25.39	58s	4.10	16.10	27.09	56s	5.09	18.80
24	1140	H	19.86	70s	3.54	17.80	20.91	64s	4.31	20.60
25	Reid454	P	26.51	56s	4.74	17.90	27.32	56s	4.47	16.40
26	W1194	P	22.54	62s	4.21	18.70	24.51	60s	5.50	22.40
27	P2041	H	20.23	70s	3.93	19.40	22.04	64s	4.45	20.20
28	B0189	P	22.36	62s	4.40	19.70	24.42	60s	5.54	22.70
29	3414	H	23.72	60s	4.29	18.10	25.28	58s	5.04	19.90
30	3422	H	23.53	60s	4.17	17.70	25.45	58s	4.44	17.40
31	3497	H	24.05	60s	4.23	17.60	25.95	58s	4.33	16.70
32	0106	H	23.86	60s	3.94	16.50	25.58	58s	4.93	19.30
33	4191	H	20.48	70s	4.00	19.20	23.08	62s	5.32	23.00
34	4154	H	23.79	60s	3.79	15.90	26.10	58s	4.66	17.80
35	4186	H	22.02	64s	3.60	16.30	23.95	60s	4.84	20.20
36	4176	H	18.89	80s	3.79	20.10	20.84	64s	4.78	22.90
37	657	P	24.24	60s	3.77	15.60	25.36	58s	4.33	17.10
38	494	H	22.99	62s	4.26	18.50	26.90	56s	5.86	21.80
39	2731	P	23.32	62s	3.29	14.10	26.63	56s	4.31	16.20
40	2885	P	23.19	62s	3.31	14.30	25.12	58s	3.68	14.60
41	2776	H	25.69	58s	3.97	15.50	27.33	56s	4.77	17.40
42	2919	H	27.80	56s	4.35	15.60	29.79	50s	4.90	16.40
43	2753	H	23.43	62s	3.94	16.80	27.56	56s	5.05	18.30
44	054	P	25.27	58s	4.18	16.50	28.30	54s	6.24	22.00
45	0060	P	22.64	62s	4.05	17.90	23.51	60s	4.63	19.70
100	2037	P	25.97	58s	4.35	16.70	27.01	56s	4.74	17.50
101	2148	P	32.35	48s	5.10	15.80	35.15	44s	6.57	18.70
300	93	P	27.50	56s	5.09	18.50	28.21	54s	5.59	19.80
301	CAMP2-13	P	30.37	50s	4.49	14.80	33.54	46s	5.79	17.30
302	1205	P	36.59	40s	6.21	17.00	42.37	36s	9.35	22.10

SD = Standard deviation from the average (microns).

COV = Coefficient of variation (%); (SD/Avg fiber diameter) x 100.