

Rambouillet ram performance testing and certification: 2025-2026 Dakota Ram Test

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The Dakota Ram Test is a multistate ram performance testing program that evaluates ram wool and growth performance under centralized management. Data generated from this test can be used to help producers identify rams with superior wool and/or growth performance. Rams are ranked by a productive index, and the top 30% are eligible for designation as Certified Rams as part of the American Rambouillet Sheep Breeders Association (ARBA) Register of Merit (ROM) program.

Summary

Fifty registered Rambouillet ram lambs from 11 consignors participated in the 2025-2026 Dakota Ram Test, where they were evaluated over a 140-day centralized performance test for growth, feed efficiency, carcass merit and wool production. Growth performance was measured using average daily gain (ADG). Feed efficiency was assessed over a 28-day SmartFeed Pro intake monitoring period using residual feed intake (RFI). Carcass traits were evaluated by ultrasound, and wool characteristics were measured following shearing. Rams were ranked using the American Rambouillet Sheep Breeders Association (ARSBA) Registry of Merit (ROM) performance index, which incorporates growth, adjusted staple length, adjusted clean fleece weight and fiber quality. The top 30% of rams were eligible for ARSBA Certified Ram status, provided they also met additional performance,

wool, structural and scrapie-resistance requirements. Forty-seven rams completed the performance test, with index scores ranging from 84.88 to 153.58 and averaging 122.83. Fourteen of the top 15 index-eligible rams met all additional ARSBA certification requirements, while one ram was excluded due to exceeding the fiber diameter requirement. Across all rams, average daily gain was 0.93 pounds per day, increasing body weight from 144 pounds at the start of the test to 241 pounds at the conclusion of the 140-day evaluation. Thirty-two rams successfully completed the feed efficiency evaluation, with residual feed intake values ranging from -1.69 to 1.38 and averaging -0.09, where more negative values indicate greater feed efficiency. Ultrasound evaluation showed an average ribeye area of 3.45 inches² and backfat thickness of 0.25 inch, providing producers with additional information on muscling, maturity pattern and biological efficiency to complement the ARSBA performance index.

Introduction

Sheep producers throughout the northern Great Plains utilize the Dakota Ram Test to generate performance data on Rambouillet rams. This centralized performance test measures several economically important and/or heritable traits that producers can evaluate when selecting rams or genetic lineages to retain within their flocks. The 140-day ram performance test was established to evaluate differences in ram wool and post-weaning growth performance under the same management conditions, nutritional plane and climate. The ARSBA recognizes high-performing Rambouillet rams participating in the Dakota Ram Test with the merit of certification, which can serve as a value-added marketing strategy.

Procedures

Fifty spring-born registered Rambouillet rams were consigned by 11 producers and received by the NDSU Hettinger Research Extension Center on or before Sept. 21, 2025. To determine average daily gain (ADG), initial body weight was recorded when the testing period began on Sept. 3, 2025, every 28 days and at the end of the growth testing period on Feb. 12, 2026. To estimate feed efficiency, rams were equipped with radio frequency identification (RFID) tags and adapted to a smart-feed intake monitoring system (SmartFeedPro, C-Lock Inc., Rapid City, South Dakota) to track individual ram feed intake.

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Rams were adapted to the smart-feed intake monitoring system for seven days and removed from the feed efficiency trial if they failed to acclimate and/or utilize the smart-system feed bunk consistently. Feed efficiency was determined over 28 days as residual feed intake (RFI), which was calculated as the residual from a multiple linear regression model predicting individual dry matter intake (DMI) from average daily gain (ADG) and midtest metabolic body weight ($BW^{0.75}$), with negative RFI values indicating greater feed efficiency. At the end of the growth testing period, a real-time carcass ultrasound was performed to estimate ribeye area and fat cover between the 12th and 13th rib. Rams were also evaluated for adherence to breed standards by the Dakota Ram Test Committee, and scores for face wool, belly wool and wrinkle/skin fold (postshearing) were collected. Scores were assigned on a four-unit basis (1-4), with higher scores representing a greater degree of wool covering or skin folding. Rams were then shorn, staple length was measured and wool samples were collected on Feb. 13, 2026. Staple length was determined by averaging the length of wool at the shoulder, side and britch, then adjusted to estimate 365-day staple length (Adj. STL). Wool samples were sent to Texas A&M University for clean fleece weight and fiber diameter (micron) analysis. Clean fleece weight was determined from laboratory-scoured clean yield estimates and adjusted to estimate 365-day clean fleece weight (Adj. CL FL) production. Ram performance was estimated utilizing the approved index formula for the ARSBA's ROM program.

This index includes adjustments for fiber diameter and fiber diameter variability, with positive scores indicating fleeces with a finer fiber diameter and reduced fiber diameter variability. Rams were ranked by index score, and the top 30% were eligible for certification. Additional requirements for certification include $ADG \geq 0.55\text{lb/d}$, $\text{Adj. CL FL} \geq 9\text{lb}$, $\text{Adj. STL} \geq 4''$, side fiber diameter ≤ 24.9 microns, britch fiber diameter ≤ 27.84 microns, face wool score $\leq 2.7\text{pt}$, wrinkle/skin fold score $\leq 2.5\text{pt}$, and QR or RR Codon 171 genotype for scrapie resistance.

Index Score: $60*(ADG) + 4*(\text{Adj. STL up to } 5.5'') + 4*(\text{Adj. CL FL}) +/- \text{Fiber Diameter}$

Results and Discussion

Forty-seven rams completed the 2025-2026 Dakota Ram Test. Ram index scores ranged from 84.88 to 153.58 points, averaging 122.83 points (Table 1). Index scores of rams within the top 30% ranged from 125.86 to 153.58 points. Of the rams scoring in the top 30%, 14 of 15 met the additional requirements for certification as a Certified Ram with the ARSBA (Table 2). One out of 15 index-eligible rams were deemed ineligible for certification due to not meeting the core micron requirement. Growth performance was consistent with rams consigned to previous performance tests at the Hettinger Research Extension Center. Rams averaged 144 pounds at the start of the performance test period, gained, on average, 0.93 pounds per day over 140 days and averaged 241 pounds at the end of the test period. Carcass and feed efficiency data presented in Table 3 are not included as part of the productive index but

provide producers with insight into ram efficiency, growth, and maturity patterns. Rams with lower residual feed intake indicate greater feed efficiency and more productive use of available feed resources. Rams with larger ribeye areas indicate greater muscling and increased growth patterns, while rams with greater fat cover may indicate a faster maturity pattern. Thirty-two rams adapted to the smart-feed intake monitoring system and completed the 28-day feed efficiency trial. Residual feed intake during the 28-day feed efficiency trial ranged from -1.69 to 1.38, with an average of -0.09. The average ribeye area was 3.45 square inches, and the average backfat thickness was 0.25 inches. The 2025-2026 Dakota Ram Test provides producers with an objective means of comparing Rambouillet rams across economically relevant production traits. Incorporating measures of growth, feed efficiency, carcass merit, and breed certification can help producers make more informed ram selection decisions and support continued genetic improvement within the breed.

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Table 1. Ram performance index score summary

Ear Tag	Reg. #	140-d ADG (lb/d)	Adj-STL (in)	CL FL (lb)	Adjustments		Index Score (pt)	Index Ratio
					Dia. (pt)	Var. (pt)		
Y-29	1001605	0.95	5.5	18.57	0.30	0.00	153.58	126%
Y-25	1001618	1.05	5.5	13.71	4.50	-1.00	143.54	118%
Y-18	1001532	1.08	5.1	14.42	2.70	-3.00	142.10	117%
Y-20	1001530	1.14	5.5	11.54	-0.30	-0.75	135.69	111%
Y-35	1001446	0.98	4.9	16.08	-6.00	-1.25	135.31	111%
Y-14	1001552	1.09	4.7	11.23	5.10	0.00	134.44	110%
Y-45	1001424	0.95	5.3	13.37	2.40	-2.50	131.84	108%
Y-33	1001588	1.12	4.5	10.84	5.40	-2.75	131.48	108%
Y-24	1001617	1.01	5.1	12.16	4.80	-5.25	129.60	106%
Y-30	1001602	0.81	5.5	13.40	7.20	-3.00	128.44	105%
Y-31	1001606	1.05	4.7	13.15	-6.00	0.00	128.24	105%
Y-13	1001563	1.03	4.8	12.26	1.50	-4.00	127.65	105%
Y-11	1001561	1.02	5.1	10.34	5.10	-0.50	127.48	105%
Y-5	1001560	0.85	5.5	12.84	3.00	-1.25	126.34	104%
Y-21	1001614	0.94	4.9	12.70	-0.30	-0.75	125.86	103%
Y-49	1001611	1.04	5.5	13.07	0.00	-3.00	133.86	110%
Y-23	1001616	0.88	5.5	12.87	7.80	-3.25	130.97	107%
Y-8	1001554	0.78	5.5	12.92	9.00	0.00	129.18	106%
Y-15	1001562	0.98	4.9	12.53	0.30	0.00	128.46	105%
Y-17	1001529	1.00	5.0	12.25	-3.30	0.00	125.81	103%
Y-12	1001559	1.00	5.1	10.36	4.80	-1.00	125.48	103%
Y-44	1001540	0.93	5.1	14.88	-6.00	-4.75	125.05	103%
Y-41	1001575	0.99	4.7	13.83	-0.60	-8.00	124.53	102%
Y-4	1001557	0.94	5.1	11.40	3.30	-2.00	124.04	102%
Y-3	1001553	0.98	4.7	10.99	2.10	0.00	123.84	102%
Y-16	1001565	0.87	4.8	12.29	3.00	-1.25	122.22	100%
Y-10	1001555	1.03	5.2	10.96	0.00	-5.25	121.21	99%
Y-46	1001534	0.89	5.5	10.28	6.00	-1.50	120.97	99%
Y-19	1001531	0.89	5.1	14.21	-6.00	-4.50	120.29	99%
Y-43	1001496	0.99	5.2	12.69	-6.00	-5.50	119.36	98%
Y-32	1001589	1.09	4.3	10.69	-6.00	0.00	119.25	98%
Y-27	1001603	0.80	5.4	11.67	3.60	-1.00	118.64	97%
Y-38	1001573	0.76	4.5	15.11	-5.70	0.00	118.53	97%
Y-22	1001615	0.83	5.4	10.47	8.10	-2.50	118.42	97%
Y-9	1001558	0.80	5.1	12.89	0.00	-1.75	118.26	97%
Y-28	1001604	0.79	5.4	11.01	4.50	0.00	117.67	97%
Y-42	1001577	0.94	5.5	10.19	-1.50	-1.00	116.40	95%
Y-39	1001574	0.75	5.0	14.57	-6.00	-1.25	115.91	95%
Y-40	1001576	0.85	5.3	11.52	-3.90	-2.25	112.40	92%
Y-7	1001564	0.90	4.3	10.94	-0.60	-2.00	112.26	92%
Y-1	1001549	0.86	5.1	10.25	1.80	-3.00	112.23	92%
Y-34	1001590	1.01	3.9	9.52	2.70	-5.25	111.37	91%
Y-2	1001550	0.50	4.9	10.66	-6.00	-1.50	84.88	70%

Double Line = Top 30% Cut Off

ADG, average daily gain; Adj. STL, adjusted staple length, Adj. CL FL, adjusted clean fleece

Table 2. Eligibility for Certified Ram designation

Ear Tag	Reg. #	Codon 171 Genotype	Index Score (pt)	140-d ADG (lb/d)	Adj. STL (in)	Adj. CL-FL (lb)	Belly Score (pt)	Face Score (pt)	Skin Score (pt)	Side Micron	Certified?
Y-29	1001605	RR	153.58	0.95	5.50	18.57	1.00	1.00	1.00	21.90	Y
Y-25	1001618	RR	143.54	1.05	5.50	13.71	1.00	1.00	1.00	20.50	Y
Y-18	1001532	QR	142.10	1.08	5.10	14.42	1.00	2.00	1.00	21.10	Y
Y-20	1001530	RR	135.69	1.14	5.50	11.54	1.00	1.25	1.00	22.10	Y
Y-35	1001446	RR	135.31	0.98	4.90	16.08	1.00	1.00	1.00	24.20	Y
Y-14	1001552	RR	134.44	1.09	4.70	11.23	1.00	1.25	1.00	20.30	Y
Y-45	1001424	RR	131.84	0.95	5.30	13.37	1.00	1.00	1.25	21.20	Y
Y-33	1001588	RR	131.48	1.12	4.50	10.84	1.00	1.00	1.00	20.20	Y
Y-24	1001617	RR	129.60	1.01	5.10	12.16	1.00	1.00	1.25	20.40	Y
Y-30	1001602	RR	128.44	0.81	5.50	13.40	1.00	1.25	1.00	19.60	Y
Y-31	1001606	RR	128.24	1.05	4.70	13.15	1.00	2.25	1.50	25.00*	N
Y-13	1001563	RR	127.65	1.03	4.80	12.26	1.00	1.00	1.00	21.50	Y
Y-11	1001561	RR	127.48	1.02	5.10	10.34	1.00	1.00	1.00	20.30	Y
Y-5	1001560	RR	126.34	0.85	5.50	12.84	1.50	1.00	1.00	21.00	Y
Y-21	1001614	RR	125.86	0.94	4.90	12.70	1.00	1.00	1.00	22.10	Y

* = Does not meet certification requirement

ADG, average daily gain; Adj. STL, adjusted staple length, Adj. CL FL, adjusted clean fleece

Table 3. Ram carcass and feed efficiency summary

Ear Tag	Reg. #	REA (sq. in.)	Fat Depth (in.)	28-Day Avg. DMI (lb/day)	28-Day Total DMI (lb)	28-Day BW Gain (lb)	RFI
Y1	1001549	2.96	0.21	5.09	137.38	121	0.22
Y2	1001550	3.21	0.12	.	.	.	.
Y3	1001553	3.60	0.21	5.36	144.6	138	0.58
Y4	1001557	3.18	0.31	.	.	.	.
Y5	1001560	3.32	0.19	.	.	.	.
Y6	1001556	3.41	0.21	5.91	159.7	124	0.37
Y7	1001564	3.80	0.21	5.71	154.13	126	-0.07
Y8	1001554	2.62	0.23	5.43	146.48	109	0.36
Y9	1001558	3.19	0.31	.	.	.	.
Y10	1001555	3.47	0.25	6.9	186.42	144	1.38
Y11	1001561	2.90	0.29	6.34	171.12	143	0.17
Y12	1001559	4.06	0.27	6.9	186.34	140	0.19
Y13	1001563	3.83	0.33	6.49	175.19	145	0.99
Y14	1001552	3.39	0.29	.	.	.	.
Y15	1001562	3.08	0.21	.	.	.	.
Y16	1001565	3.49	0.29	.	.	.	.
Y17	1001529	3.16	0.23	4.13	111.44	141	-1.34
Y18	1001532	3.77	0.21	.	.	.	.
Y19	1001531	3.13	0.16	4.59	123.81	125	-1.06
Y20	1001530	4.05	0.25	5.47	147.63	160	-1.07
Y21	1001614	3.24	0.23	.	.	.	.
Y22	1001615	3.57	0.19	.	.	.	.
Y23	1001616	3.81	0.27	5.37	145.12	124	-0.32
Y24	1001617	3.88	0.27	4.47	169.8	142	-1.26
Y25	1001618	2.98	0.37	6.4	172.74	148	0.35
Y26	1001607	3.18	0.23	4.47	116.14	100	-1.33
Y27	1001603	2.70	0.25	2.86	77.29	112	-1.56
Y28	1001604	2.87	0.21	5.11	132.73	111	0.17
Y29	1001605	2.91	0.29	5.97	161.13	133	0.18
Y30	1001602	2.91	0.29	5.09	137.33	114	-0.82
Y31	1001606	3.91	0.25	6.13	165.56	147	0.12
Y32	1001589	3.80	0.23	6.45	174.16	153	0.49
Y33	1001588	3.78	0.19	6.29	169.96	157	0.18
Y34	1001590	4.26	0.19	7.01	189.24	141	1.28
Y35	1001446	3.60	0.25	.	.	.	.
Y38	1001573	3.19	0.31	.	.	.	.
Y1	1001549	2.96	0.21	5.09	137.38	121	0.22
Y2	1001550	3.21	0.12	.	.	.	.
Y3	1001553	3.60	0.21	5.36	144.6	138	0.58
Y4	1001557	3.18	0.31	.	.	.	.
Y5	1001560	3.32	0.19	.	.	.	.
Y6	1001556	3.41	0.21	5.91	159.7	124	0.37
Y7	1001564	3.80	0.21	5.71	154.13	126	-0.07

REA, ribeye area; BW, bodyweight; F:G, feed-to-gain; DMI, dry matter intake; RFI, residual feed intake