

Columbia 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. Columbia rams that meet the criteria outlined by the Columbia Sheep Breeders Association (CSBA) are eligible for designation as Certified Columbia Rams.

Summary

Twelve registered Columbia ram lambs from six 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 also evaluated for breed-specific wool characteristics and structural traits to determine eligibility for Certified Columbia Ram designation through the Columbia Sheep Breeders Association (CSBA). Across the 140-day test, Columbia rams averaged 126 pounds at the start of the evaluation, gained 0.96 pounds per day and finished the test at an average body weight of 260 pounds.

Carcass ultrasound measurements averaged 3.56 inches² of ribeye area and 0.28 inch of backfat, while adjusted ribeye area ranged from 1.09 to 1.69 inches² per 100 pounds of body weight. These measurements provide producers with additional information on muscling, maturity pattern and carcass value beyond traditional growth performance. Nine of the 12 rams successfully completed the feed efficiency evaluation. Average daily feed intake ranged from 4.61 to 7.98 pounds per day, averaging 6.23 pounds per day, while residual feed intake values ranged from -1.80 to 1.37, with lower values indicating greater feed efficiency. Wool evaluation showed an average 365-day adjusted clean fleece weight of 12.5 pounds, side fiber diameter of 26.39 microns, britch fiber diameter of 27.22 microns and 365-day adjusted staple length of 4.6 inches. Three rams met all requirements for CSBA Certified Columbia Ram designation, providing producers with valuable information for selection and future breeding decisions.

Introduction

Columbia sheep producers throughout the northern Great Plains utilize the Dakota Ram Test to generate important performance data for ram selection. Centralized performance tests measure several economically important and/or heritable traits that producers can evaluate when selecting rams or genetic lineages to retain within their flocks. The Dakota Ram Test is a 140-day ram performance test primarily established to evaluate differences in ram wool and postweaning growth performance under the same management conditions, nutritional plane and climate. The CSBA recognizes rams that excel in growth performance, carcass quality and wool quality with the merit of certification, a program initiated in 2017 to promote overall breed improvement.

Procedures

Twelve spring-born registered Columbia rams were consigned by six 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

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Inc., Rapid City, South Dakota) to track individual ram feed intake. 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. Ribeye area was adjusted to account for differences in ram body weight; thus, it is reported as inches per 100 pounds. The Dakota Ram Test Committee also evaluated rams at the end of the testing period, and scores for face wool covering and belly wool expansion were collected before shearing. Scores were assigned on a four-unit basis (1-4), with higher scores representing a greater degree of wool covering/expansion. 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. The criteria and requirements for CSBA certification as Certified Columbia Rams can be found in Table 1.

Results and Discussion

Columbia rams averaged 126 pounds at the start of the performance test, gained, on average, 0.96 pounds per day over 140 days and averaged 260 pounds at the end of the testing period (Table 2).

Table 1. CSBA criteria for certified ram designation

Criteria	Requirement
Fiber Diameter	Within 22.05 & 27.84 microns
Adj. Staple Length	≥ 4.3 inches if fiber diameter is within 22.05 & 24.94 microns ≥ 4.8 inches if fiber diameter is within 24.95 & 27.84 microns
Average Daily Gain	≥ 0.80 pounds per day
Adj. Ribeye Area	≥ 1.3 inches per 100 pounds of bodyweight
Face Wool Score	≤ 3
Belly Wool Score	1
Scrapie Resistance Genotype	RR or QR at Codon 171

Table 2. Ram carcass and feed efficiency summary

Ear tag	Reg. #	REA (sq. In)	Fat Depth (in.)	28-Day Avg. DMI (lb/day)	28-Day DMI Total (lb)	28-Day BW Gain (lb)	RFI (lb)
G1	Y22333	3.63	0.23	5.01	130.30	28.5	-0.15
G2	Y22422	3.33	0.27	6.61	178.58	30	1.37
G3	Y22465	3.02	0.25	.	.	.	.
G4	Y22466	2.99	0.29	.	.	.	.
G5	Y22502	2.98	0.21	.	.	.	.
G6	Y22503	3.04	0.39	5.61	151.55	30	0.23
G7	Y22487	3.32	0.37	4.69	126.59	32	-1.80
G8	Y22485	3.92	0.14	7.2	194.34	35	0.21
G9	Y22364	4.54	0.43	6.88	185.63	33	0.67
G10	Y22261	3.10	0.16	6.42	173.43	36	-0.44
G11	Y22260	4.94	0.33	7.98	215.45	25	1.02
G12	Y22259	3.92	0.33	7.26	195.99	16	0.68

REA, ribeye area; BW, body weight; DMI, dry matter intake; RFI, residual feed intake

Average ribeye area at the end of the testing period was 3.56 square inches, and the average back fat thickness over the 12th and 13th rib was 0.28 inches. Adjusted ribeye area ranged from 1.09 to 1.69 square inches per 100 pounds of body weight. Rams with larger ribeye areas and increased adjusted ribeye area ratio indicate greater muscling and increased growth patterns, while rams with greater fat cover may indicate a faster maturity pattern. Nine rams adapted to the smart-feed intake monitoring system and completed the 28-day feed efficiency trial. Average daily feed intake ranged from 4.61 to 7.98 pounds, with an average of 6.23 pounds. Ram residual feed intake ranged from -1.80 to 1.37. Rams with

lower residual feed intakes indicate greater feed efficiency and a more productive use of available feed resources. Columbia ram fleeces averaged 12.5 pounds of 365-day adjusted clean wool, a 26.39-micron side fiber diameter, a 27.22-micron britch fiber diameter and a 4.6-inch 365-day staple length. Three rams met all the requirements to qualify for CSBA Certified Columbia Ram designation (Table 3). Of the twelve rams, three rams did not meet the adjusted ribeye area requirement, five rams did not meet the staple length requirement, two rams did not meet the micron requirement, and one ram did not meet the face score requirement to qualify for certification. Overall, the performance

test demonstrated substantial variation among Columbia rams in growth, feed efficiency, carcass traits, and wool characteristics, providing producers with additional information to support selection decisions. Continued evaluation of these traits can help advance genetic progress while maintaining the production characteristics valued within the Columbia breed.

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Table 3. Ram performance and certification summary

Ear Tag	Reg. #	Fiber Diameter (side micron)	Adj. STL (in)	140-d ADG (lb/d)	Adj. REA (in/100lb)	Belly Score (pt)	Face Score (pt)	Codon 171 Genotype	Certified?
G1	Y22333	27.1	4.9	0.92	1.43	1.00	1.00	QR	Y
G2	Y22422	26.8	3.9*	0.93	1.37	1.00	1.00	QR	N
G3	Y22465	25.7	4.8	0.91	1.33	1.00	1.00	QR	Y
G4	Y22466	23.2	4.6	1.11	1.23*	1.00	2.00	RR	N
G5	Y22502	27.4	5.1	0.90	1.44	1.00	1.25	RR	Y
G6	Y22503	25.3	5.2	0.95	1.17*	1.00	1.00	QR	N
G7	Y22487	23.2	4.2*	1.00	1.37	1.00	1.25	RR	N
G8	Y22485	26	4.7*	0.92	1.35	1.00	2.75	RR	N
G9	Y22364	25.2	4.4*	0.98	1.69	1.00	1.00	QR	N
G10	Y22261	30.4*	4.5	0.87	1.09*	1.00	4.00*	RR	N
G11	Y22260	29.1*	4.5	1.05	1.64	1.00	3.00	RR	N
G12	Y22259	27.3	4.7*	0.96	1.34	1.00	2.00	RR	N

* = Does not meet the certification requirement

ADG, average daily gain; Adj. STL, adjusted staple length; Adj. REA, adjusted ribeye area; F:G, feed-to-gain