

2024-2025 Dakota Performance Ram Test Final Report

Rachel L. Gibbs, Livestock Extension Specialist, NDSU Hettinger Research Extension Center
Christopher S. Schauer, Director & Animal Scientist, NDSU Hettinger Research Extension Center

The Dakota Ram Test committee would like to THANK Dave Pearson, Ram Test Manager, for the excellent care and assistance provided to the program as well as Jaelyn Whaley, visiting interns (Carlos, Paulina, & Alanys), and participating consignors for their assistance on work days.

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.

The 2024-2025 Dakota Performance Ram Test included 76 rams from 3 breeds and 19 producers. The ram test calendar listed below summarizes the dates on which specific activities were conducted during the test. I have also enclosed the results, ranked from high to low indexing ram, and separating out the rams eligible for Certificate of Merit. I have enclosed the carcass data and feed intake/efficiency as a separate spreadsheet. Financially, our registration fee was \$47.03/head high. Some of the values are estimates, as all of the final bills are not in. The % of blown legs was 11% (13% last year, 15% in 2023, 13% in 2022, 11% in 2021, 20 % in 2020, 11% in 2019, 10% in 2018, 12% in 2017, 14% in 2016, and 14% in 2015). Overall, ADG was 0.91 #/day (0.84, 0.83, 0.85, 0.76, 0.85, 0.83, 0.88, 1.0 for the past 8 years), with no rams below 0.55 #/d, the minimum required for certification. Please provide Dave and Rachel with feedback if you would like further changes for next year's ration.

We look forward to seeing everyone next year, and please call if you have questions (701-567-4323).

SCHEDULE 2024 - 2025 DAKOTA FALL RAM TEST

By September 22, 2024	Rams to be delivered to the HREC
September 23, 2024	Rams shorn
September 26, 2024	Rams weighed, started on test
October 24, 2024	28 day weighing
November 21, 2024	56 day weighing
December 19, 2024	84 day weighing
	trim hooves and re-vaccinate
January 16, 2025	112 day weighing
February 13, 2025	140 day weighing - End of growth test period Bleed B-ovis and DNA, staple length, wrinkle score, scrotal circumference Rams shorn - side & britch sampling, wool weights
March 12, 2025	Ultrasound
March 15, 2025	Field Day and Sale; rams picked up by owner 9 AM (MST)

TEST 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 day performance trial.

Fiber Diameter: Side and bitch 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 (C.V.) are given to provide numerical indications of the variation. A fleece sample with a small C.V. should be considered more uniform than one with a large C.V. (C.V. = 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 days).

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 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.

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

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 inches staple length, 9 pounds clean wool, a side wool grade of 24.9 or less, a britch wool grade of 27.84 or less, a maximum of 2.7 face cover score, and must have gained at least 0.55 pounds per day on test.

Carcass Merit: At the end of the test fat cover and ribeye area was 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 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 patter (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.

Feed Efficiency: During the growth period, participating rams were adapted to smart feed intake monitors to track individual feed intake to calculate feed efficiency (lbs of feed per lb of gain). Rams were weighed at the start of the smart trial and 21 days later to measure bodyweight gain. Total feed intake and average daily feed intake over the 21 day smart trial were calculated from individual feed intake reports. Feed efficiency was calculated by dividing total feed intake by bodyweight gain and reported as lbs of feed needed to gain 1lb of bodyweight. This information is not included in the index, but provides information on how efficient rams are at converting feed resources into bodyweight gain.

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