

Selecting Rams for Wool Production By Virginia Nollmeyer

Average Fiber Diameter (AFD) of wool fibers, plays an integral part in buying and selling of rams at the State Ram Sale in Miles City. Micron results are available for buyers to view in order to choose a ram that would fit into the wool goals of the prospective flock.

Target Microning results when a producer evaluates the wool already in his flock and sets goals for how he/she would like to improve or maintain the wool quality. Selecting a ram when including wool production, buyers need to look at AFD carefully. In order to maintain a flocks AFD a ram with the same micron or slightly coarser can be used. For example, a ewe flock of 24 micron (60's USDA Grade) can use a 25 micron ram (58's grade) and should be able to maintain a 24 micron wool clip. If it is the desire to produce lambs with finer wool than the breeding ewes, choose a ram with AFD slightly finer than the established flock. Again, a ewe flock of 24 micron (60's grade) can use a slightly finer, 22 micron (64's grade) ram to produce a goal of 23 micron (62's grade) lambs. Purchasing a ram too fine, such as 19 micron, when the flock is 24 micron, can lead to a high percent of variability in the wool produced by the lambs. Typically you should buy at your goal micron or slightly finer.

Nutrition can play a key role in the diameter of a wool fiber. Rams which have been placed on a high plane of nutrition tend to have coarser diameter results than their yearling lamb micron. Rams at sale time are, on average, as coarse as they will get. This is due to the feed intake many of these animals are placed on in order to meet desirable weight requirements before sale time. It should be noted that some rams are more susceptible to feed changes and variations in diameter than others.

Average Fiber Diameter, is a measurement of the thickness of a wool fiber. It is reported in microns. A micron is 1 millionth of a meter or 1/25,400 inches. AFD can range from under 17.70 to over 40 microns. The smaller the micron numbers the smaller, finer the wool fibers. Micron is a relative factor and does not define "Good" wool. The management practices of a wool flock is a big factor in what can define "Good" or "Bad" wool.

Information on AFD and the corresponding USDA wool grade is presented in Table 1. The U.S. is the only country in the world that has an actual fiber diameter measurement in microns associated with its USDA Wool Grades. The USDA wool grade also takes variability of fiber diameter into consideration. Countries such as Australia and New Zealand have only started reporting variability of fiber diameter, something that the U.S. has done for the past 50 years.

Table 1. Official USDA Wool Grades for Greasy Wool

USDA Grade	Range for Average Fiber Diameter in Microns	Maximum Standard Deviation
Finer than 80's	under 17.70	3.59
80's	17.70 - 19.14	4.09
70's	19.15 - 20.59	4.59
64's	20.60 - 22.04	5.19
62's	22.05 - 23.49	5.89
60's	23.50 - 24.94	6.49
58's	24.95 - 26.39	7.09
56's	26.40 - 27.84	7.59
54's	27.85 - 29.29	8.19
50's	29.30 - 30.99	8.69
48's	31.00 - 32.69	9.09
46's	32.70 - 34.39	9.59
44's	34.40 - 36.16	10.09
40's	36.20 - 38.09	10.69
36's	38.10 - 40.20	11.19
Coarser than 36's	over 40.20	-

Note: Wool which qualifies for any of the grades on the basis of its average fiber diameter shall be reduced in grade to the next coarser grade if its standard deviation in fiber diameter exceeds the maximum specified for the grade to which the average fiber diameter corresponds.