

Training Manual for USDA Standards for Grading Slaughter Animals



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Based on Fred L. Williams, Jr.'s
A Notebook of Ramblings about Livestock Evaluation and Grading
by Fred L. Williams, Jr. (1991)

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[Beef Quality & Yield Grading](#)

[Segregating Slaughter Cows](#)

[Feeder Cattle Grades](#)

[Beef Yield Grades](#)

[Slaughter Hog Grading](#)

[Slaughter Goat Grading](#)

[Animal Science Terms](#)

SLAUGHTER LAMB GRADING

The grading of slaughter lambs is different in one respect than the other species of red meat animals that we grade. This is due primarily to the wool on the slaughter lamb. Those of us that are experienced can look over the fence at slaughter cattle and slaughter hogs and do a pretty good job of evaluating the grade determining factors, most of the time. However, the wool on lambs masks a lot of the variables to the degree that you must get your hands on the lambs and feel of them, before you can expect the same degree of accuracy you may enjoy on the other species.

Another thing that is substantially different about evaluating slaughter lambs is their dressing percentage. Although dressing percentage is not a USDA grading variable, it many times becomes a very important marketing variable. Again, we can do a respectable job on cattle and hogs by looking over the livestock from the fence, however, again, you must get your hands on the lambs. Not only does the wool, again, mask what lays underneath it, but, the wool itself can hold a lot of excess weight. This excess weight can be made up of an extra length of wool, foreign matter, moisture in the wool, male primary sex organs, pregnancy, etc. For a rule of thumb, every one pound of excess weight on a 100 pound lamb affects dressing percentage by $\frac{1}{2}$ of a percent. So, you can see, a ewe lamb that is pregnant (additional 6 pounds), dressing percentage can be affected substantially

The actual quality grading of lamb is quite simple—if they are alive, they are Choice, unless they are too fat, then they are Prime.?!?!. Well, it's not quite that simple, but almost. A very, small percentage of slaughter lambs that are up to market weight (95-100 pounds) are less than Choice. If you called every slaughter lamb you ever saw for the rest of your career Choice or Prime your degree of accuracy would be higher on lamb grading than on any other species!

Yield grading of lamb, although available since 1969, never acquired much popularity in the industry until about 1990. As packers moved more and more towards the boxing of lamb, and, as the industry became more and more conscious of the excess fat problem in the lamb industry, yield grading became more popular. Again, as I have mentioned during the discussion of other species, the most important thing you have to learn in grading lamb is the determination of how fat the animal is. I will say it again here; you must get your hands on, and feel, of the lambs to make some of these determinations. Although our ability to evaluate fat is of primary importance in the grading of all species, it is the most important in the Yield Grading of slaughter lamb.

The lamb industry coined a phrase along about the same time it started showing interest in Yield grading called “the window of acceptability”. As it relates to fat, this window is .1- .25 inches measured 1- $\frac{1}{2}$ inches from the middle of the backbone between the 12th and 13th ribs. Lambs with less than .1 fat suffer from dehydration and a reduced shelf life, whereas, lamb .25 fat simply require too much trimming to get them to the acceptable retail fat level.

Yield grading of lamb is the easiest type of livestock grading you can do. That is, of course, assuming your evaluation of fat cover is correct. The logistics is very simple; (1) Take your evaluation of fat and move the decimal point one place to the right, (2) add .4. It is as simple as that.

No longer do you have to evaluate leg score or be concerned about the amount of kidney and pelvic fat (like you used to prior to July 6, 1992).

The removal of kidney and pelvic (KP) fat as a variable in yield grading was a gift to the livestock grader. The “fly in the ointment” when it came to live, slaughter lamb grading was KP fat. KP fat can range from .5% to who knows on the top end. I have personally cut KP fat out of a couple of lamb carcasses, and weighed it, and it was over 18%! And, to confound the issue even more, these kind of lambs do not have to have a lot of external fat like you would expect. In fact, of the two lambs that I know had 18+% KP, neither one of them was outside the fat “window of acceptability. Actually, they were both closer to the middle of the window than they were to the fat end of the spectrum! If it was always the excessively fat ones that had the excessive KP, we do an amazingly good job at predicting fat cover. I will tell you this in hope that it will help. KP is not generally a problem in spring lambs, however, on old crop lambs you best grab hold of yourself (use both hands)! Going farther, each 4% of KP affected yield grade by one full yield grade prior to July 6, 1992. How far do you suspect one could miss the KP on live lambs when it ranges from .5% to 18+%. Your guess is as good as mine. I made the statement in the first printing of this notebook, “I will never be comfortable with our evaluation of slaughter lambs for yield grade until percent kidney and pelvic fat are removed from the yield grade equation (kidney and pelvic fat would no longer be a consideration for yield grade)”. Thank goodness, that day finally came. All lambs graded after July 6, 1992 must have their KP fat removed by the meat packer before offering the lamb carcass for grading. What this means to the live lamb grader is that your grade the lamb without KP fat being in a consideration, i.e., you assume it will be removed from the carcass.

Although it is not an actual part of grading, length of wool is such an important factor that the classifications of wool deserves mentioning here. They are:

<u>Comparison</u>	<u>Length of Wool</u>
Wooled	Over 2 inches
Fall Shorn	1-2 inches
No. 1 pelt	5/8 to 1 inch
No. 2 pelt	3/8 – 5/8 inch
No. 3 pelt	1/8 – 3/8 inch
No. 4 pelt	Less than 1/8 inch

A) Application of Standards

Grades of slaughter ovines are intended to be directly related to the grades of the carcasses they produce. To accomplish this, these slaughter ovine grade standards are based on factors, which are directly related to the quality grades and yield grades of ovine carcasses. The quality grade of a slaughter ovine is determined by a composite evaluation of two general considerations, which influence carcass excellence: conformation and quality.

B) Specifications for Official U.S. Standards for Grades of Slaughter Lambs (Quality).

i) Prime

a. Slaughter lambs having minimum conformation requirements for the prime grade tend to be thickly muscled throughout, and they are moderately wide and thick in relation to their length and height. In handling, the backbone and ribs are slightly discernible. Prime grade lambs exhibit evidences of rather high quality. The bones tend to be proportionately small, the joints tend to be smooth, and the body tends to be smooth and symmetrical.

b. To qualify for the Prime grade, a lamb must possess the minimum qualifications for finish regardless of the extent that its conformation may exceed the minimum requirements for Prime. However, a development of finish which is superior to that specified as minimum for the Prime grade may compensate, on an equal basis, for a development of conformation which is inferior to that specified for Prime as indicated in the following example: A lamb which has evidences of finish equivalent to the midpoint of the Prime grade may have conformation equivalent to the midpoint of the Choice grade and remain eligible for Prime. However, in no instance may a lamb be graded Prime which has a development of conformation inferior to that specified as minimum for the Choice grade.

ii) Choice

a) Slaughter lambs having minimum conformation requirements for the Choice grade are slightly thick muscled throughout, and they tend to be slightly wide and thick in relation to their length and height. In handling, the backbone and ribs are moderately prominent. Older, mature lambs have a moderately thin fat covering over the back, ribs, loin, and rump. In handling the backbone and ribs are slightly prominent. Choice grade lambs usually present moderately refined appearance.

b) A development of quality which is superior to that specified as minimum for the Choice grade may compensate, on an equal basis, for a development of conformation which is inferior to that specified as minimum for Choice as indicated in the following example: A lamb which has evidences of quality equivalent to the midpoint of the Choice grade may have conformation equivalent to the midpoint of the Good grade. Also, a lamb which has conformation at least one-third grade superior to that specified as minimum for the Choice grade may qualify for Choice

with a development of quality equivalent to the lower limit of the upper one-third of the Good grade. Compensation of superior conformation for inferior quality is limited to one-third grade of deficient quality.

iii) Good

a) Slaughter lambs having minimum conformation requirements for the Good grade are slightly thin muscled throughout, and are moderately narrow in relation to their length and height and are slightly narrow over the back, loin, rump. In handling, the shoulders, backbone, hips, and ribs are prominent. Older, more mature lambs have slightly more than a thin fat covering over the back, ribs, and loin. In handling, the bones of the shoulders, backbone, hips, and ribs are rather prominent. Good grade lambs may present evidences of slightly low quality. The bones and joints are usually moderately large, and the body is somewhat lacking in symmetry and smoothness.

b) A development of quality which is superior to that specified as minimum for the Good grade may compensate, on an equal basis, for a development of conformation which is inferior to that specified as minimum for Good as indicated in the following example: A lamb which has evidences of quality at least one-third grade superior to that specified as minimum for the Good grade may have conformation equivalent to the minimum for the upper one-third of the Utility grade and remain eligible for Good. However, in no instance may a lamb be graded Good which has a development of conformation inferior to the minimum for the Utility grade. Also, a lamb which has conformation at least one-third grade superior to that specified as minimum for the Good grade may qualify for Good with a development of quality equivalent to the lower limit of the upper-third of the Utility grade. Compensation of superior conformation for inferior quality is also limited to one-third grade of deficient quality.

iv) Utility

a) The Utility grade consists of those lambs whose characteristics are inferior to those specified as minimum for the Good grade.

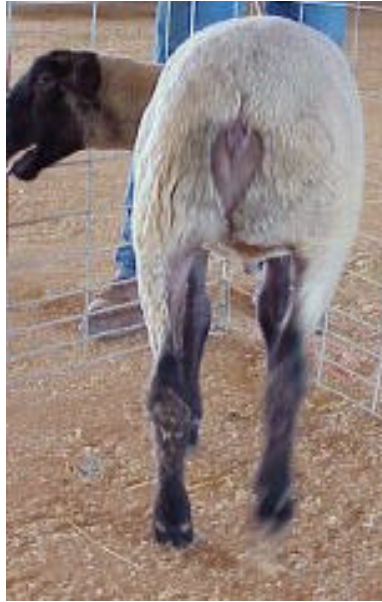
C) Specifications for official U.S. Standards for Grades of Slaughter Lambs, Yearlings, and sheep (yield)

i) Yield Grade 1: Yield Grade 1 slaughter lambs, yearlings, and sheep produce carcasses, which have very high yields of boneless retail cuts. Ovines with characteristics qualify them for the lower limits of Yield Grade 1 (near the borderline between Yield Grade 1 and Yield Grade 2) will have only a slightly thin covering of external fat over the back, loin, and ribs, and a slightly thick covering of fat over the rump. They are slightly shallow through the flanks and the brisket and cod or udder have some evidence of fullness. In handling, the backbone, ribs, and ends of bones at the loin edge are slightly prominent. A carcass produced from slaughter ovines of this description might have 0.15 inch of fat over the ribeye. (ii) A carcass in Yield Grade 1 with the maximum amount of fat allowed would have an adjusted fat thickness of 0.15 inch. Such a carcass with normal fat distribution and weighting 55 pounds would also have a body wall thickness of about 0.75 inch, and one weighing 75 pounds would have a body wall thickness of about 0.85 inch.



ii) Yield Grade 2: Yield Grade 2 slaughter lambs, yearlings, and sheep produce carcasses with high yields of boneless retail cuts. Ovines with characteristics qualifying them for the lower limits of Yield Grade 2 (near the borderline between Yield Grade 2 and Yield Grade 3) will have a slightly thick layer of external fat over the back, loin and ribs, and a thick covering of fat over the rump. They tend to be slightly deep and full through the flanks and the brisket and cod or udder are moderately full. In handling, the backbone, ribs, and ends of bones at the loin edge are readily discernible. A carcass produced from slaughter ovines of

this description might have 0.25 inch of fat over the ribeye. (ii) A carcass in Yield Grade 2 with the maximum amount of fat allowed would have an adjusted fat thickness of 0.25 inch. Such a carcass with normal fat distribution and weighing 55 pounds would also have a body wall thickness of about 0.90 inch, and one weighing 75 pounds would have a body wall thickness of about 1.00 inch.



iii) Yield Grade 3: Yield Grade 3 slaughter lambs, yearlings, and sheep produce carcasses with intermediate yields of boneless retail cuts. Ovines with characteristics qualify them for the lower limits of Yield Grade 3 (near the borderline between Yield Grade 3 and Yield Grade 4) will have a thick covering of fat over the back and loin and a very thick covering of fat over the rump and down over the ribs. The flanks are deep and full and the brisket and cod or udders are full. In handling, the backbone, ribs, and ends of bones at the loin edge are difficult to distinguish. A carcass produced from slaughter ovines of this description might have 0.35 inch of fat over the ribeye. (ii) A carcass in Yield Grade 3 with the maximum amount of fat allowed would have an adjusted fat thickness of 0.35 inch. Such a carcass with normal fat distribution and weighing 55 pounds would also have a body wall thickness of about 1.05 inches, and one weighing 75 pounds would have body wall thickness of about 1.15 inches.



iv) Yield Grade 4: Yield Grade 4 slaughter lambs, yearlings, and sheep produce carcasses with moderately low yield of boneless retail cuts. Ovines with characteristics qualify them for the lower limits of Yield Grade 4 (near the borderline between Yield Grade 4 and Yield Grade 5) will have a very thick covering of fat over the back and loin, and an extremely thick covering of fat over the rump and down over the ribs. The flanks are moderately deep and full and the brisket and cod or udders are full. In handling, the backbone, ribs, and ends of bones at the loin edge are not discernible. A carcass produced from slaughter ovines of this description might have 0.45 inch of fat over the ribeye. (ii) A carcass in Yield Grade 4 with the maximum amount of fat allowed would have an adjusted fat thickness of 0.45 inch. Such a carcass with normal fat distribution and weighing 55 pounds would have a body wall thickness of about 1.20 inches, and one weighing 75 pounds would have a body wall thickness of about 1.30 inches.

v) Yield Grade 5: Yield Grade 5 slaughter lambs, yearlings, and sheep produce carcasses with low yield of boneless retail cuts. Ovines of this grade consist of those not meeting the minimum requirements of Yield Grade 4 of more fat. (ii) A carcass in Yield Grade 5 has an adjusted fat thickness of more than 0.45 inch. The external fat covering on most parts of the carcass is usually greater than that described for Yield Grade 4.