Appropriate measurements are valuable aids in pork carcass evaluation, for they add information which is useful in making the final analysis of a carcass. The objective approach that is possible through the use of measurements contributes to the accuracy of comparisons, not only at the time the carcasses are available but also in the data compiled for further study. The advantages of uniformity and accuracy in making and recording measurements are obvious - without accuracy and uniformity from one time or place to another the measurements are meaningless. It seems that the very purpose of taking measurements, to gain useful information, suggests the use of only those which are pertinent to carcass evaluation. Considerable research over a number of years has been directed toward determining which measurements are most important, and those suggested have been generally found most useful to accurate carcass appraisal. Certain measurements are recommended as the minimum information of this kind required; others are listed as optional steps, recognizing that varying conditions in regard to scope of the work, particular need for and usefulness of the information, as well as availability of facilities for obtaining the measurements often dictate which measurements will be used.

Recommended measurements -

1. Length of carcass - measured from the anterior edge of the aitch bone to the anterior edge of the first rib near the vertebrae. On carcasses unevenly split, the measurement should be taken on the side with the most bone.

2. Thickness of back fat - three measurements, including skin, made opposite the last lumbar, the last thoracic, and the first thoracic vertebrae are used both singly and for average thickness.

Optional measurements -

1. Area of eye muscle - obtained from planimeter readings of a tracing of the eye muscle taken immediately posterior to the last rib.

2. Length of hind leg - measured from the anterior edge of the aitch bone to the hoof head.

3. Length of ham - measured from the anterior edge of the aitch bone to the center of the bony projection on the inside of the leg at the hock joint.

4. Circumference of ham - measured midway between the two points used in the length of ham measurement. The line to follow around the ham is established by inserting
skewers at points on the inside, flank side, and tail side of
the ham one-half the distance of length of ham from the center
of the bony projection on the inside of the leg at the hock
joint.

5. Width of carcass - a total of two measurements, one of each side,
of the distance from the split surface of the main body of the
seventh thoracic vertebra to the outside surface of the carcass.
The measurement is made along a line perpendicular to the median
plane of the carcass.

6. Depth of carcass - the total depth of carcass, including skin,
over the seventh thoracic vertebra.

7. Thickness of belly pocket - measured at the thinnest point in
the rear flank region by penetration with a skewer or other
suitable device.

8. Thickness of fat on the regular ham - measured on the cut surface
of the butt end of the ham on a line between the exposed cross
section of the hip bone and the outside of the ham.

Grading is another method of identifying differences between carcasses
and an aid to accurate pork carcass evaluation. It is perhaps a less spe-
cific method of describing and comparing carcasses than may be accomplished
by more complicated procedures. However, grading is a practical method of
pointing out differences, and in many cases grades provide sufficiently re-
strictive categories for the purpose. Another feature of grades is the i-
dentification of associated live and carcass characteristics.

In pork carcass evaluation, grading has probably not been used as a
factor to the same extent as in other species. One underlying reason, no
doubt, is in the methods employed in handling pork, with breakdown into cuts
and rather extensive processing of cuts in the plant of slaughter. This con-
trasts to the more common practice of carcass trading in beef, calf, veal, lamb,
and mutton. Another reason may well be that standards for grades were not con-
sidered suitable for pointing out the important differences in pork carcasses.
The proposed standards for grades of live barrows and gilts and their carcasses
are designed to do a better job in that respect. They are well on the way
toward replacing existing tentative standards for grades of those classes.
The proposed grades are recommended for use in a standard evaluation procedure.

The proposed grades have already been applied in recent research and
are familiar tools to many workers, but a brief explanation may aid in uniform
application. In the demonstrations and discussions that have been held in
many parts of the country, particular emphasis has been placed on the use of
the grades for barrows and gilts as a key to differences in carcass character-
istics. The grades were developed primarily for use with our regular, estab-
lished practices in marketing live hogs. However, the first step was the es-
establishment of carcass grades in order to provide a sound basis for grades for
live hogs. The second step was the translation of the differences between
barrow and gilt carcass grades in terms of live animals by providing a grade
for live barrows and gilts corresponding to each grade for carcasses. The
grades for live animals seem most useful in marketing, while research might
make better use of the carcass grades.

The two factors given major consideration in the development of the
grades were the reflection of (1) differences in yield of lean cuts and of fat
cuts, and (2) differences in quality of cuts. Both are important factors in carcass evaluation. There are five proposed grades for barrows and gilts and corresponding carcass grades -- Choice No. 1, Choice No. 2, Choice No. 3, Medium, and Cull. Each has a rather definite, narrow range in yield of the four major lean cuts (hams, loins, picnics, and Boston Butts) as a percentage of carcass weight. Yield of lean cuts is lowest in the fattest grade, Choice No. 3, and increases in each grade to Cull, the thinnest grade. There are also differences between grades in quality of cuts with the recognition of Choice, Medium, and Cull quality pork.

The Choice Nos. 1, 2, and 3 grades represent similar quality and include hogs with sufficient finish to produce cuts normally acceptable in quality. Hogs and carcasses in the medium grade are somewhat underfinished with a resulting lower quality of cuts than the Choice grades. The Cull grade represents decided underfinish with cuts of such low quality that they are normally used as processing pork.

Measurements of average back fat thickness in relation to weight or length of carcass are used as objective bases for the grades of carcasses and live hogs. The standards describe the characteristics of animals or carcasses with the measurements, lean cut yields, and quality of cuts appropriate to each grade. Use of the measurement guides aids in the uniform and accurate application of the standards. Carcass grading involves consideration of either visual or actual measurements as well as other factors described in the standards. Live hog grading is accomplished by an appraisal relative to expected carcass characteristics, and experienced hog men can quickly become rather proficient in grading through practice and following through to observe the kind of carcass produced.

Use of carcass grading in evaluation will serve the purpose of identifying some of the major differences common among pork carcasses. At the same time, live grading may be used to link the carcass characteristics to differences in the live hogs. Any further refinement of the analysis desired may be accomplished through the use of measurement, cutting, and other more detailed procedures.

CHAIRMAN COLE: Thank you, Mr. Strong.

I am sure that you all realize the importance of these standards, and I for one am glad that we have these standards.

I know that maybe they are not the answer to all of our prayers, but they are something objective that we can sink our teeth into, something that we can compare our work to, and when we say our hogs are such and such a grade according to the USDA Proposed Standards, graded as such, people know what you are talking about, and that is exactly what we are trying to do in the Pork Carcass Evaluation Committee, to make things a little more standard.

While they are taking the carcass down, I would like to say that Mr. Hiner is unable to be with us, and I will take his part of the program which is, "Slaughtering, Chilling and Cutting Methods for Pork Carcass Evaluation."

We hope to incorporate in our report a similar slaughter sheet to that presented in the beef work this morning, including the various points that they did list.

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