# PORK CARCASS EVALUATION

Circular 614

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As a pork producer you should know the merits of meat from different grades and types of hogs to realize an effective program in marketing the meaty, high-quality pork that consumers demand. The marketing job is not finished when the packer buys hogs, but rather when the consumer goes through the check-out lane at her favorite market.

You don't have to be an expert in all of the details of meat evaluation. However, it is essential to have a working knowledge of a few basic evaluation points.

Some factors to consider in arriving at the relative meatiness and quality of pork carcasses are discussed here. They are not necessarily listed in the order of importance.

## Carcass Yield or Dressing Percent

Carcass yield is an important consideration. Lot yields are more accurately determined than single animal yields. In arriving at a single animal yield, the live weight should be taken to the nearest pound immediately before slaughter. This weight is divided into the chilled carcass weight (packer style). Of course, excessive fill or emptiness of the animal will alter the yield considerably. The normal range is 68 to 72 percent.

## Carcass Length

Adequate length is necessary, but excessive length should not be stressed at the expense of other meatiness factors. Always meet the minimum certification requirement of 29 inches. Carcass length is determined by measuring, to the nearest tenth of an inch, the distance from the front of the first rib at the backbone to the bottom of the aitch bone as the carcass hangs (Fig. 1).

## Backfat Thickness

Backfat thickness is a good indicator of meatiness and is easily obtained. It is determined by averaging three measurements to the nearest tenth of an inch: opposite the first rib, opposite the last rib, and opposite the last lumbar (straight) vertebrae (Fig. 1). The maximum backfat thickness for U. S. No. 1 hogs of normal market weight and for certification is 1.6 inches.

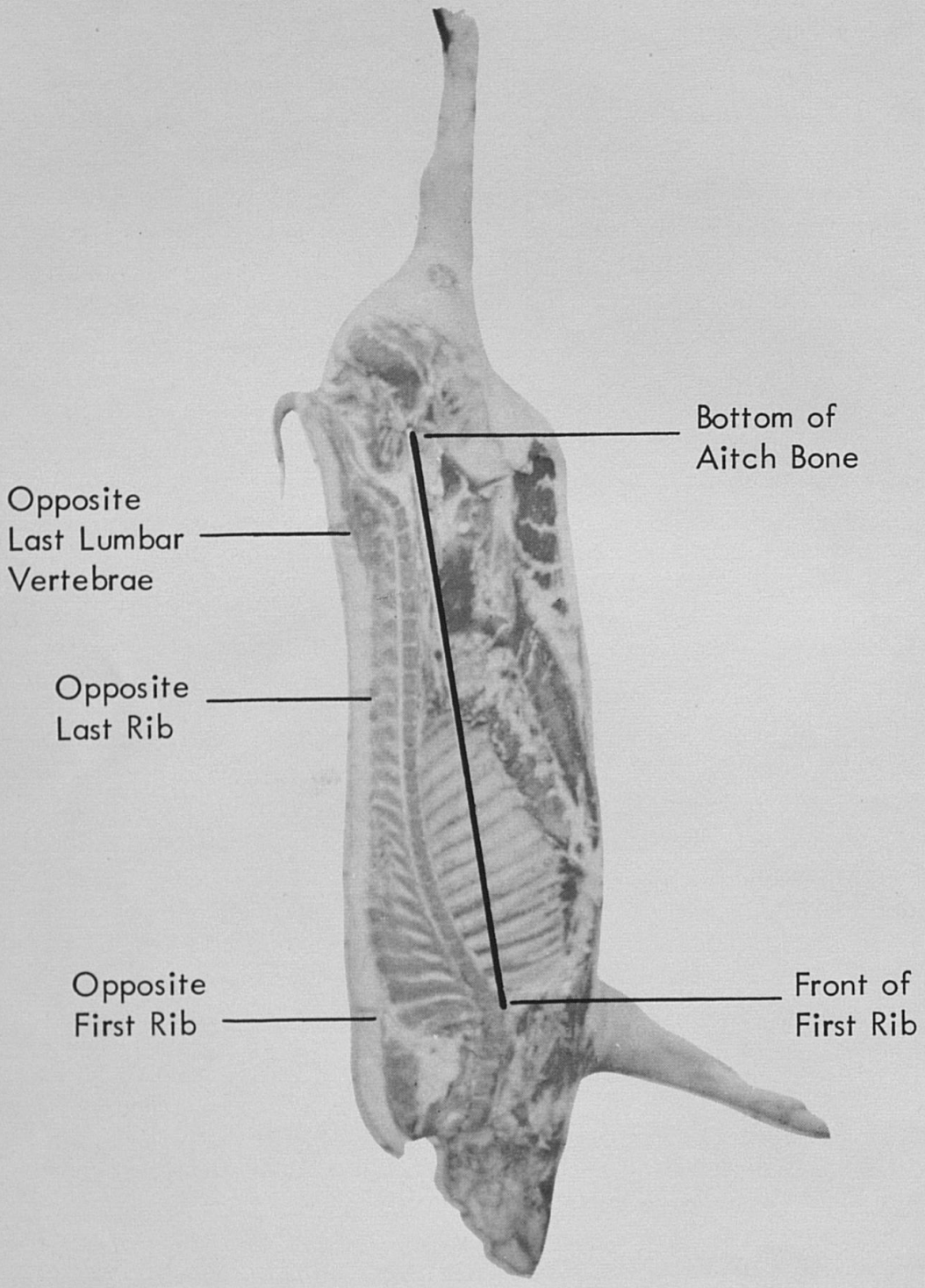


**Fig. 1.—Pork side showing length and backfat measurements.**

## Ham Fat Thickness

Ham fat thickness is probably a better indicator of relative carcass meatiness than backfat thickness; however, it is often more difficult or inconvenient to obtain. No definite maximum thickness for a given weight of carcass has been established; however, a maximum of 1 inch for a 140-pound carcass (200 pounds live weight) seems reasonable. This measurement is taken at the butt-end of the ham, in line with the aitch bone, from the lean meat to the outside of the skin (Fig. 2).

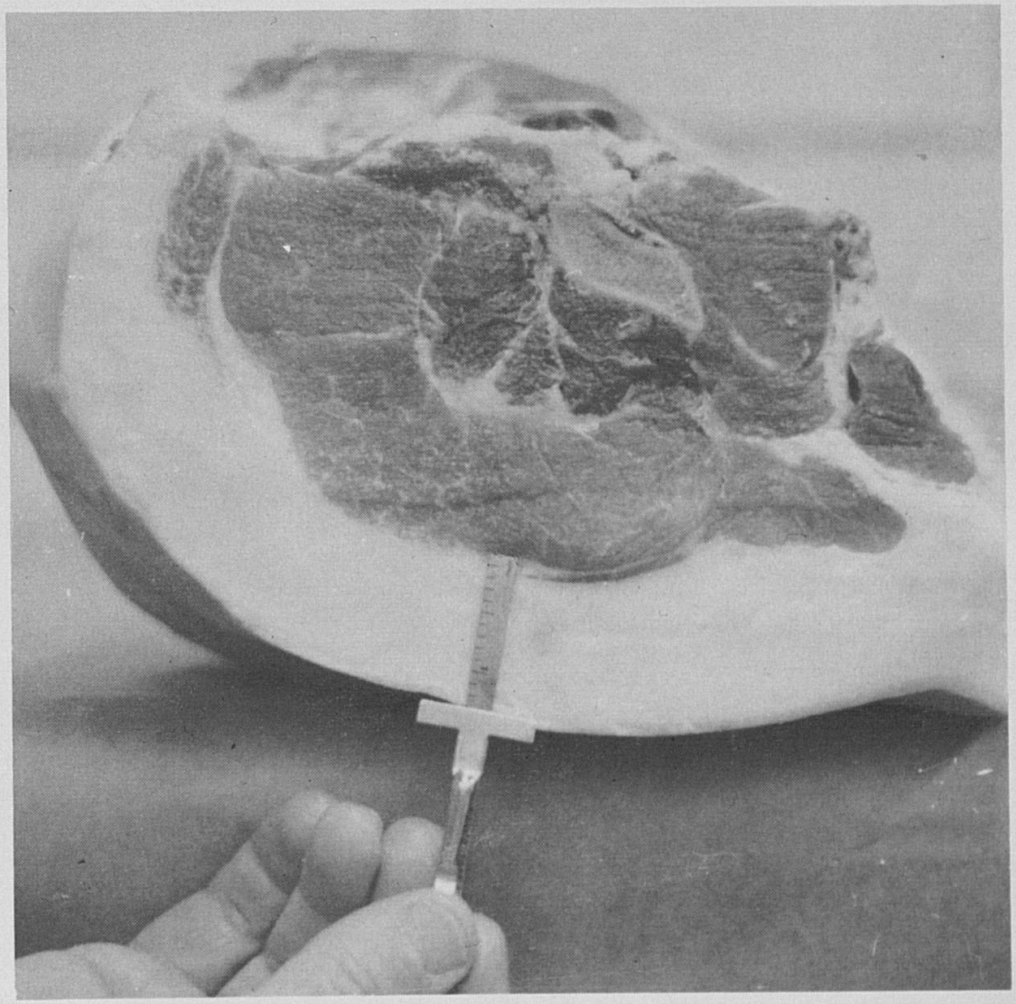

**Fig. 2.—Ham fat thickness measurement.**

## Loin Eye Area

Loin eye area has long been considered one of the most important meatiness factors. It is apparently not so highly correlated with total carcass meatiness as once thought, but the loin remains one of the most valuable cuts. In arriving at the loin eye area, cut at a right angle to the run of the loin at the tenth rib before the backfat is removed. (Fig. 3). A sheet of transparent tracing paper

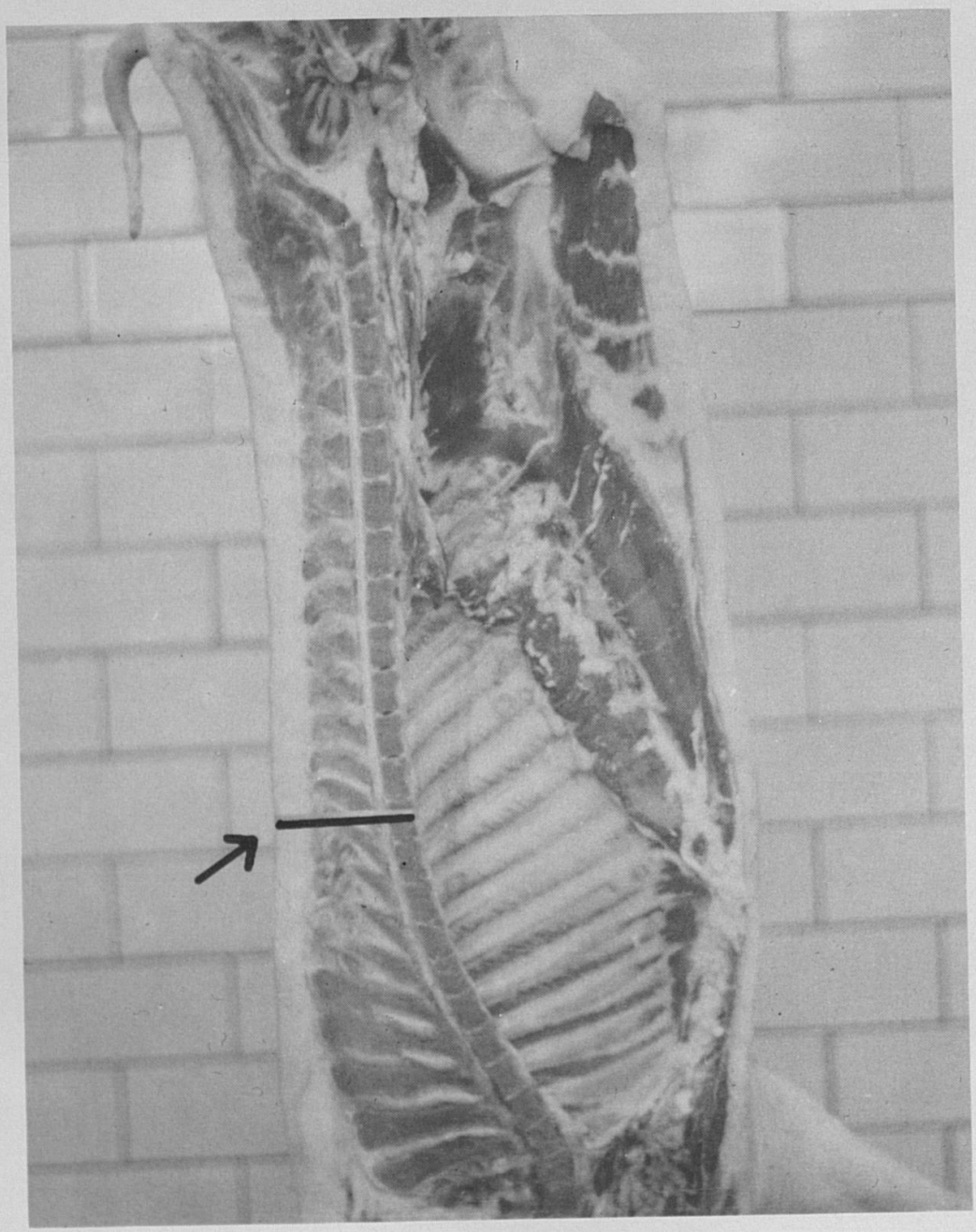

**Fig. 3.—Position of cut of loin for tracing.**

is then placed over the cut surface and the outline of the large single muscle traced (Fig. 4). The area in square inches is determined by use of a compensating polar planimeter (Fig. 5). The area in square inches may also be determined by placing a grid directly over the cut surface of the loin and counting the squares (Fig. 6) or by the "Dot" method (Fig. 7). Each square on the grid represents 0.1 square inch. Each dot represents 0.05 square inch. This is probably not so accurate as the planimeter but may be useful in some cases.

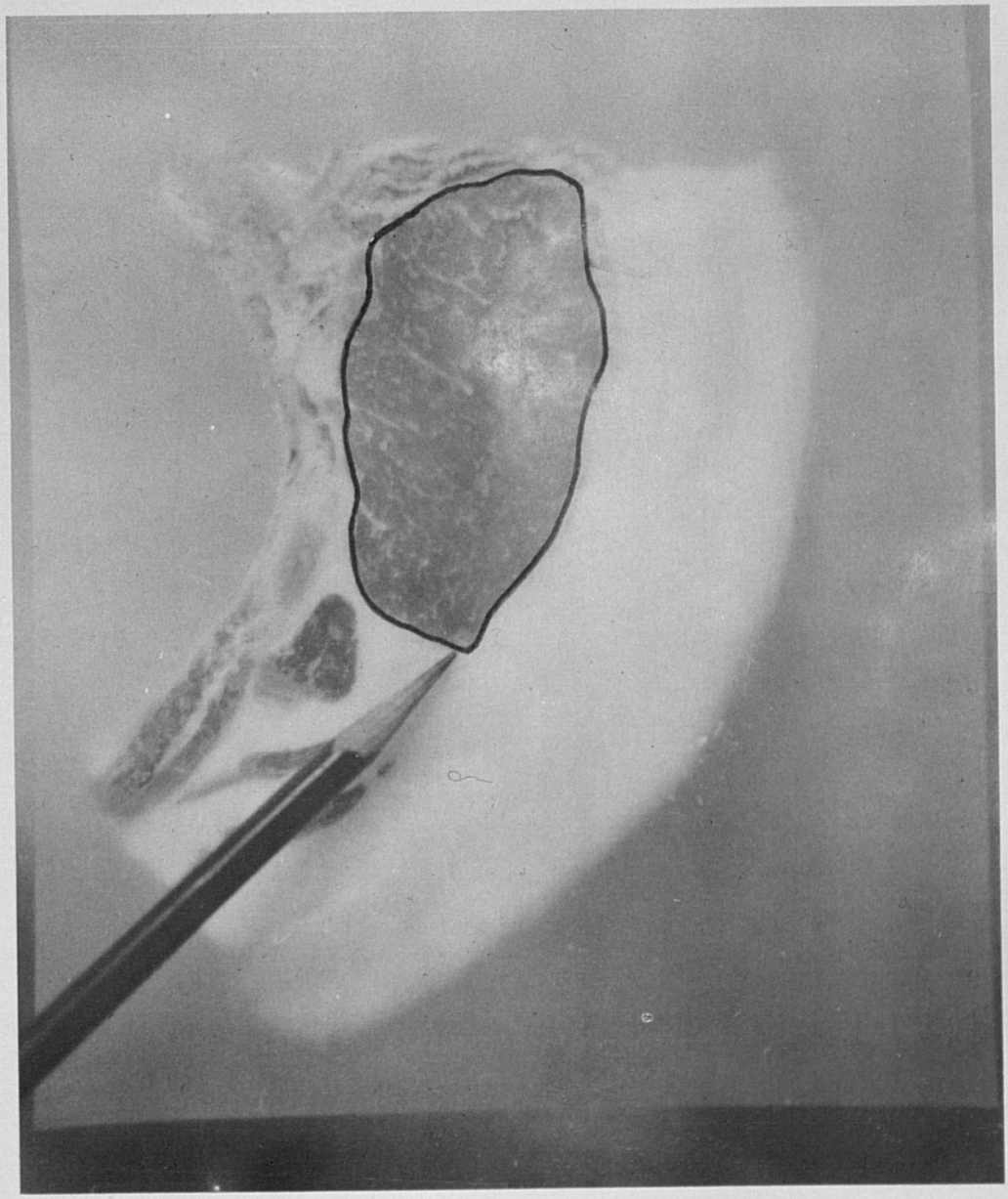

**Fig. 4.—Loin eye tracing.**

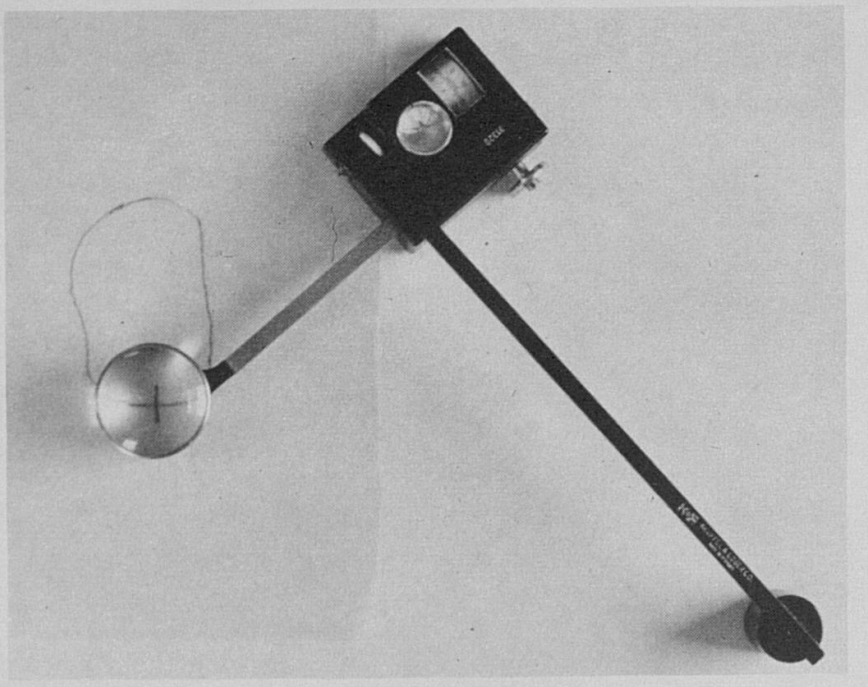

Fig. 5.—Compensating polar planimeter.

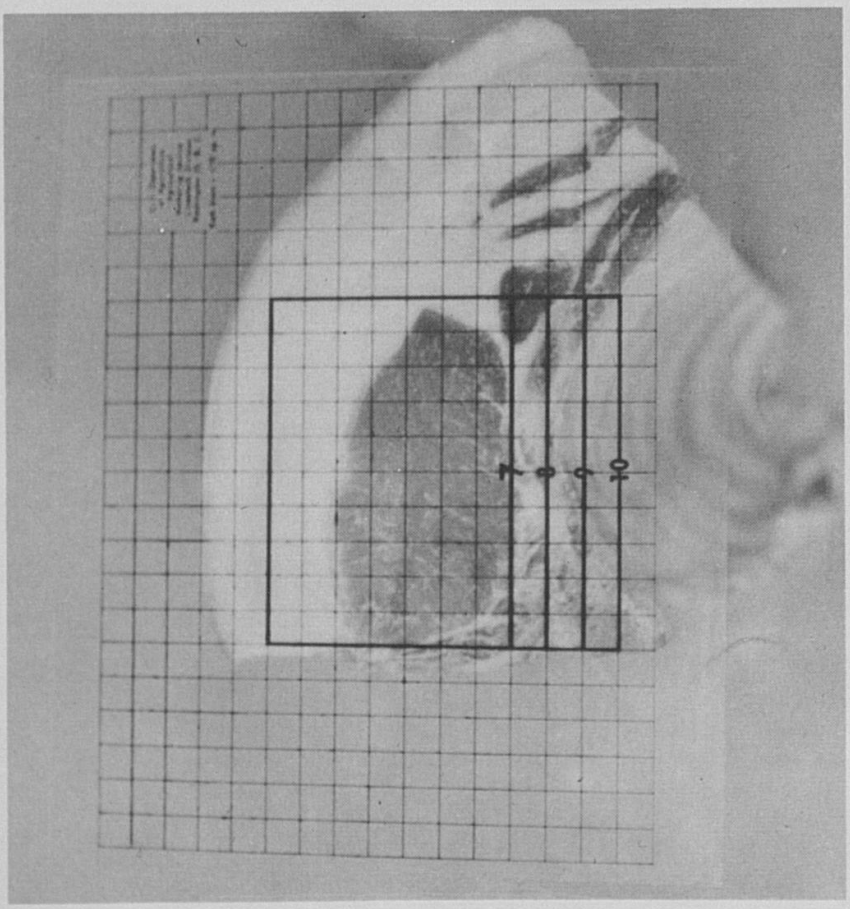

Fig. 6.—Loin eye being measured with grid.

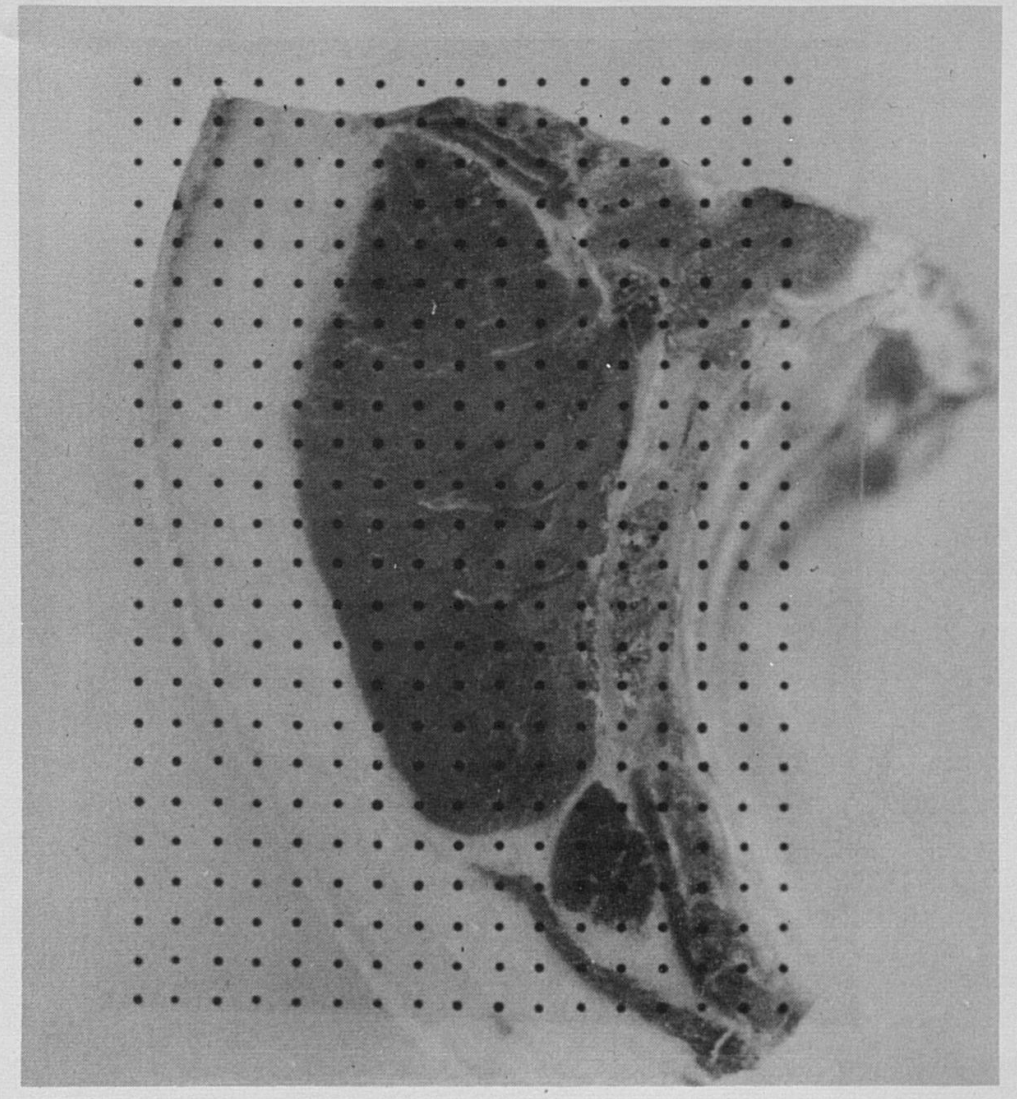

**Fig. 7.—Dot method of measuring loin eye.**

## Percent Lean and Primal Cuts

The four lean cuts (ham, loin, Boston-butt, and picnic—Fig. 8) make up two-thirds to three-fourths of the total value of a pork carcass; hence, the importance of their percentage of live or carcass weight is emphasized. Extremes for very poor (over-fat) hogs and very meaty hogs are shown below along with those for the primal cuts (the four previously mentioned plus the belly—Fig. 9):

| | Lean Cuts | | Primal Cuts | |
|---|---|---|---|---|
| | Percent of live wt. | Percent of carcass wt. | Percent of live wt. | Percent of carcass wt. |
| Poor (over-fat) hog | 31 | 44 | 41 | 59 |
| Very meaty hog | 43 | 60 | 51 | 71 |

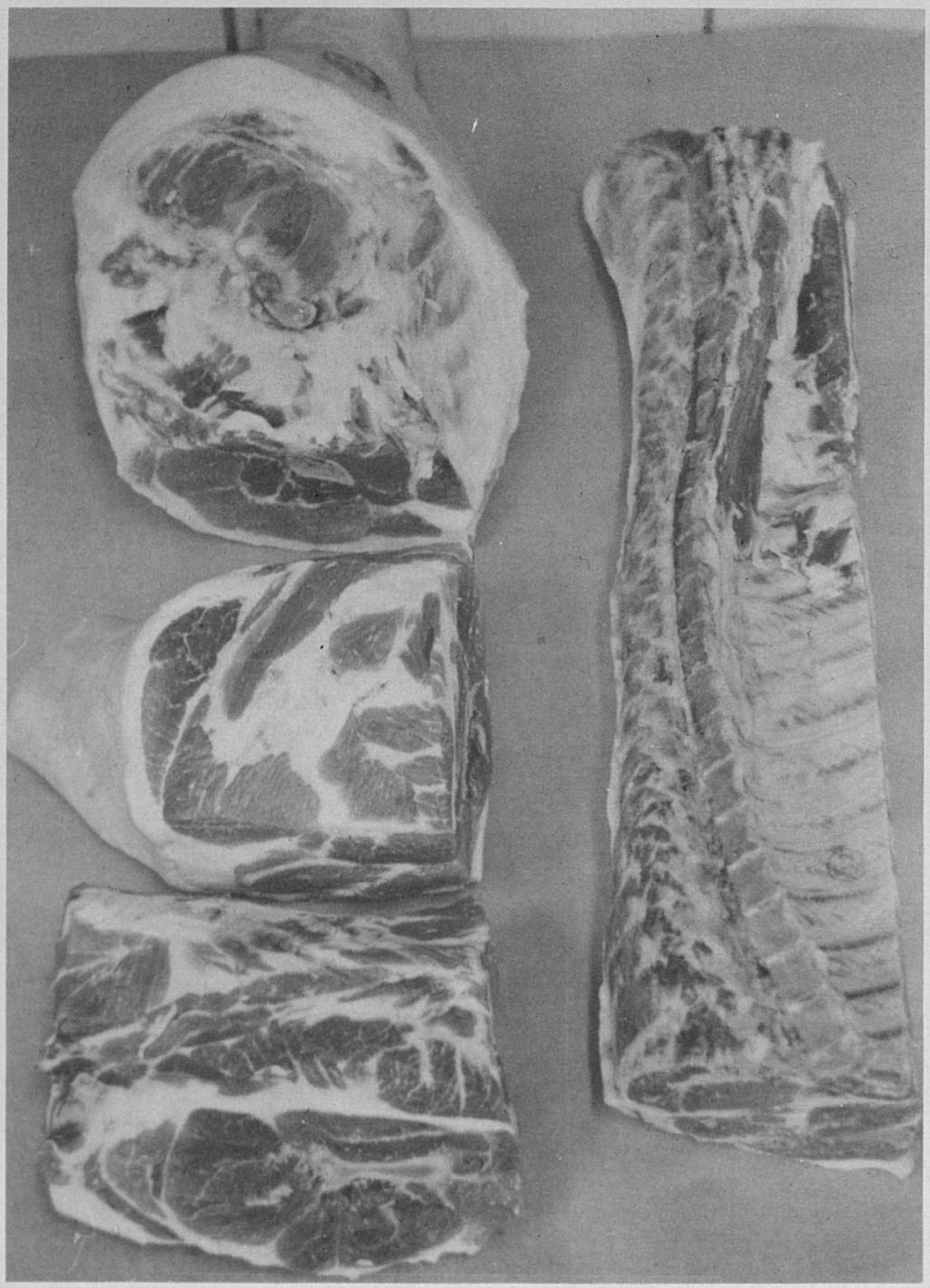

**Fig. 8.—Four lean cuts.**

## Percent Ham and Loin

The hams and loins constitute more than one-half of the total value of a pork carcass and are currently being widely used as the sole meatiness factor in carcass contests. For this purpose, they

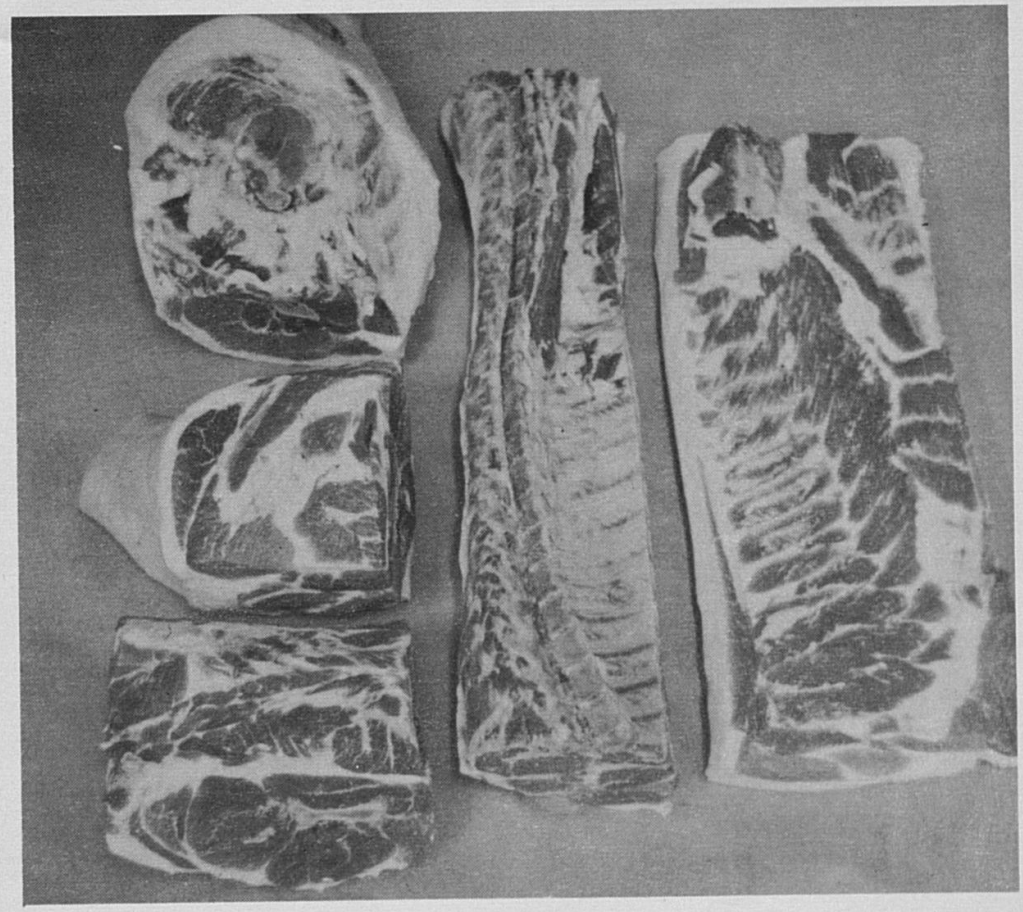

**Fig. 9.—Five primal cuts.**

are trimmed into conventional wholesale cuts, weighed together, and expressed as a percentage of live or carcass weight. Extremes of very poor and very good in this respect are shown here.

| | Ham and Loin | |
|---|---|---|
| | Percent of live wt. | Percent of carcass wt. |
| Poor (over-fat) hog | 22 | 32 |
| Very meaty hog | 32 | 44 |

## Complete Cut-Out

If all possible error is eliminated, complete cut-out is probably the most accurate way of evaluating a pork carcass. However, great chance for error exists because of the many manipulations and weights necessary in a complete cut-out. Precision in cutting and trimming is essential, and all cuts must be weighed on a very accurate scale to the nearest one-hundredth of a pound. Total value and value per hundred weight of carcass and/or live weight

is based on current wholesale prices. This method of evaluation is time consuming and, therefore, not practical if you must evaluate large numbers of carcasses.

## Certification Requirements

The following are the carcass requirements for certification by a breed registry association:

Minimum length—29.0 inches.
Maximum backfat thickness—1.6 inches.
Minimum loineye area—4.0 square inches.

## Quality of the Meat

Pork considered "normal' in quality is grayish pink, at least moderately firm, and exhibits at least a slight amount of marbling. In recent years, a high incidence of "pale, soft, and watery pork," has been noticed. This kind of meat also has a "two-toning' in color (light and dark muscles). This is much more prevalent in very meaty carcasses. The exact cause of this inferiority in quality has not been clearly defined; however, there is evidence that it is heritable to some degree.

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