

Pork Quality

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Pork quality is a critical part of most niche pork markets. The quality of pork is the result of a combination of genetic and environmental factors. There are four major criteria used in measuring pork quality: color, marbling, water-holding capacity, and ultimate pH.

Pork Quality Criteria¹

1) Color

Generally darker pink pork is preferable. The minimum is a bright reddish pink (3.0 on the scale shown), although some markets prefer slightly darker (4.0-5.0). A number scale often is used.

Pork Color Scale

- 1.0 Pale pinkish gray to white
- 2.0 Grayish pink
- 3.0 Reddish pink
- 4.0 Dark, reddish pink
- 5.0 Purplish pink
- 6.0 Dark purplish red

2) Intramuscular Fat or Marbling

The streaks of fat within pork are called marbling or intramuscular fat. It is the fat that provides much of the flavor in pork. Target level for nutrition, flavor, and health is 2-4 percent.

3) Water-Holding Capacity or Drip Loss

The amount of moisture in pork that is lost when it is cut is called water-holding capacity or drip loss. Loss often increases when color is pale or pH is low. Lower values indicate less loss which is preferable. Losses should not exceed 2.5 percent.

4) Ultimate pH

The acidity of pork measured 24 hours after slaughter is called Ultimate pH. It is a predictor of drip loss. A higher pH indicates better water-holding capacity and better eating pork. A target range of 5.6-5.9 ultimate pH for pork has been set. Some markets may prefer higher levels.

¹Adapted from Measuring Pork Quality, 1999.

Influences on Pork Quality

Pork quality is influenced by genetic and environmental factors. Some of the environmental factors are on-farm and some are at the packing plant.

Heritability of Pork Quality Traits

Pork quality is moderately heritable, i.e., quality traits may be improved by selective matings. See leaflet number 410 of this handbook for heritability estimates and additional discussion of pig genetics.

There are two known genes that are negative to pork quality: the halothane (or stress) gene and the Rn gene. Swine breeding stock should test negative for these two genes.

Handling and Stress

The stress of sorting, loading, and hauling pigs can have negative effects on pork quality. This stress should be minimized, but cannot entirely be avoided. Short-term stress before slaughter can result in pale soft pork with greater drip loss. Long-term stress can cause dark, firm, and dry pork. Handling and chilling and other activities at the packing plant can also impact quality, so talk with your packer.

Strategies for reducing stress and maintaining pork quality:

- ◆ Spend time with pigs prior to sorting day. This will reduce the pigs' fear of humans.
- ◆ Be patient and quiet. Move slowly. Let the pigs set the pace.
- ◆ Pigs reflect the stockman's disposition. Stay calm.
- ◆ Keep pigs in a group. Isolation stresses pigs.
- ◆ Pigs follow other pigs.
- ◆ Work pigs early in the morning, particularly during hot weather.
- ◆ In hot weather, sprinkle pigs in transit.
- ◆ Take pigs off feed but not water about 12 hours prior to slaughter.

Additional Resources

Iowa State University Extension, 1999.
Measuring Pork Quality. IPIC 7.

U.S. Pork Information Gateway

<http://pork.porkgateway.org/web/guest/home>