

Pork Chain Quality Audit

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An audit of the U.S. pork production and distribution chain was conducted in 1992 to examine quality problems associated with the movement of pork from producers to consumers, and to establish baseline information about the current industry (NPPC, 1994). Quality in this evaluation was defined in two ways: "functional quality" (the properties that the final consumer values in a product), and "conformance quality" (how well a product conforms to a set of requirements). The audit estimated the frequency and cost of quality deficiencies throughout the pork chain, and established goals for desired quality levels. With such standards defined, it is the industry's intention to try to consistently achieve them through an emphasis on problem prevention (rather than correction) and reinforcement of an attitude which strives for continual improvement of production, processing and distribution processes.

The entire audit examined quality in terms of swine production and marketing; swine slaughter; pork distribution to retailers, purveyors and processors; and consumer satisfaction. This reciprocation session focused primarily on the pork chain from packer procurement through distribution to processors and purveyors. Information on quality problems and industry status was collected through questionnaires and direct interviews with key members of the pork distribution chain.

Eight major U.S. packers, slaughtering 69% of federally-inspected barrows and gilts (1992), were surveyed in the audit. Important baseline data obtained from the responses and records of the cooperating companies included:

75% of hogs were purchased on a grade and yield basis and 24% on live weight basis; 2.3% of the hogs were purchased on forward contracts.

77% of hogs were purchased directly from producers, 14% from buying stations and 3% from terminal markets (remainder were "direct buys" or "delivery" hogs).

247 pounds was the average live weight of barrows and gilts, but weights varied widely. Nine percent of pigs marketed weighed 220 pounds or less, 33% weighed 221 to 240 pounds, 33% weighed 241 to 260 pounds, 18% weighed 261 to 280 pounds, and 8% weighed more than 280 pounds.

About two-thirds of the market hogs had dressing percentages between 72% and 74%, and another 21% dressed from 74% to 76%.

0.2% of the slaughter hog population (175,631 pigs) were condemned at slaughter. Major causes of condemnations were "deaths" (38%), abscesses (11%), pneumonia (8%), septicemia (8%) and arthritis (7%).

15% of the slaughter hog carcasses had skin problems, and about half of those problems were associated with difficulty of hair removal.

13% of the carcasses required trimming for abscesses (57% of trimming), bruises (22% of trimming) or other carcass defects.

8% of carcasses had abscesses (55% of abscesses were in head/jowl; 21% in shoulder).

3% of carcasses had bruises (58% of bruises were in hams; 29% in shoulder; 13% in loin.)

Backfat thickness at the last rib also showed great variation. Three percent of the carcasses had less than .6 in., 12% had .6 to .79 in., 21% had .80 to .99 in., 28% had 1.00 to 1.19 in., 17% had 1.20 to 1.39 in., 11% had 1.40 to 1.59 in., 7% had 1.60 to 1.80 in., and 2% had backfat thickness greater than 1.8 in.

12% of the carcasses had less than 45% muscle, 22% had 45 to 47.9%, 34% had 48 to 50.9%, 20% had 51% to 53.9%, 11% had 54% to 56.9%, and 2% had 57% or higher percent muscle.

79% of the carcasses were judged to have "adequate" loin eye size, while 18% had under-sized eyes and 3% had excessively large eyes.

About 30% of hams and shoulders were judged to have excess seam fat by carcass fabricators. Processors reported excess surface fat on 38% of the hams.

Packers rated 92% of the cuts as "sufficient" in marbling, while 4% were judged to be inadequate and 4% were excessive in marbling.

10% of the hams and loins were found to be PSE, and 4% were DFD. Two-toned muscle color was reported in hams/loins of 14% of the carcasses.

Some degree of blood splash was found in about 10% of hams and loins.

The survey results estimated that the average U.S. market hog weighs 247 pounds, dresses 73.4%, has 1.1 inches of backfat and contains 49% muscle.

Overall, the results obtained in this portion of the Pork Chain Quality Audit direct the industry to place a high priority on:

Reducing the variability in the slaughter swine population.

Reducing overall carcass fatness.

Reducing the incidence of PSE and DFD.

Decreasing animal and carcass defects which lead to condemnation and trimming losses.

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The average economic loss associated with each U.S. market barrow or gilt at slaughter due to quality defects was estimated to be \$10.08. Major contributors to this value reduction were: Excess backfat on carcasses and seam and

external fat on cuts, \$5.52; condemnations and trimming; \$1.64; and lean quality problems; \$1.11.

(For a copy of the complete April, 1994, Progress Report of the "Pork Chain Quality Audit," contact the National Pork Producers Council, P.O. Box 10383, Des Moines, IA 50306).

Reference

NPPC (1994). Pork Chain Quality Audit (Progress Report — April 6, 1994). National Pork Producers Council, Des Moines, Iowa.