WASHINGTON STATE UNIVERSITY EXTENSION

EB1461E

WASHINGTON HOG OF MERIT

Purpose of Program

1. To create an awareness of current market demands.
2. To recognize exhibitors and breeders for producing high-value carcasses.
3. To provide information about carcasses produced in youth shows.
4. To identify selection, breeding, nutrition, and management practices that result in desirable carcasses.
5. To promote and improve the educational value and public image of youth shows.

Requirements for the Washington Hog of Merit

1. ***Hot Carcass Weight (Skin-on).*** Must weigh 170 to 205 pounds.
2. ***Backfat.*** Carcasses must have between 0.50 and 0.85 inch of last rib backfat, rounded to the nearest one hundredth. Ribbed carcasses must also have between 0.50 and 0.85 inch of 10th rib fat.
3. ***Muscling***. If ribbing is possible, carcasses must have a minimum of 5.0 square inches of loin eye, rounded to the nearest tenth of an inch. Ribbed and unribbed carcasses must have a muscle score of intermediate (2) or better. (Carcasses should be ribbed if possible because loin eye area can be determined more objectively than muscle score.) An ultrasound measurement of loineye area can also be used if a carcass measurement is not available.
4. ***Muscle Quality.*** Carcasses must have acceptable color and firmness of lean. Carcasses which possess any of these muscle characteristics: soft and watery, pale color (NPPC Color Score 1), dark color (NPPC Color Score 5 or 6), or too little marbling (NPPC Color Score 1), as described in the National Pork Producers Council's "Pork Composition and Quality Assessment Procedures" and "Official Color and Marbling Standards" are unacceptable.
5. ***Carcass Acceptability.*** Carcasses must be free from defects that significantly reduce carcass value. For example, carcasses with extremely soft fat or excessive (greater than 5%) muscle, fat, or bone removal due to bruises or localized infections should be eliminated.
6. ***Average Daily Gain.*** Minimum of 1.70 pounds per day. Pigs must be fed a minimum of 75 days before the show. It is highly recommended that hogs be fed a minimum of 90 days.

Requirements for the Washington Pork Carcass of Merit

Identical to the Washington Hog of Merit except Average Daily Gain is not included. Use Pork Carcass of Merit if an initial live weight cannot be obtained at least 75 days prior to the show.

Changes in Merit Requirements

Individual programs may need to adjust the requirements outlined in this bulletin. If requirements are changed, add the local county or area name to the name of the merit program.

Placement of Carcasses

Neither the Washington Hog of Merit nor Pork Carcass of Merit programs have been designed to rank carcasses. Instead, these programs award a superior level of achievement in producing high cutability and quality carcasses. Many good ranking systems are available and can be designed to use Hog of Merit data. Select a ranking system that is consistent with demands of local producers and packers. You can obtain ranking systems through your county Extension office. Percent muscle and lean gained per day on test (described below) can be used in a ranking system. Do not rank carcasses when different individuals collect data from several plants.

Procedure and Definition of Terms Recorded or Used in Washington Hog and Pork Carcass of Merit Programs

1. ***Initial and Final Live Weight.*** Use similar pre-weighing conditions for both initial and final live weights. The initial weight should be taken at least 75 days before the final weight at the show.

2. ***Average Daily Gain.*** (Final live weight - Initial live weight) / days on test.

3. ***Hot Carcass Weight (Head-off, Skin-on).*** Carcass weight immediately after slaughter prior to chill. If chilled weights are recorded, convert to hot carcass weight by dividing by 0.985 (most carcasses shrink about 1.5% during the chilling process). Head-off Skin-on carcasses are recommended because more accurate measurements can be obtained when the skin is left on and head-off carcasses are more aesthetic for an educational program. Adjust skinned, head-off carcasses to a skin-on basis by dividing warm weight by 0.94 (skin is about 6% of the carcass). Adjust head-on skin-on carcasses to a head-off basis by multiplying by 0.94 (the head is about 6% of the carcass). Head-on skin-off carcasses require no weight adjustment.

4. ***Dressing Percent.*** (Hot carcass weight / final live weight) x 100.

5. ***Last Rib Fat Depth.*** Measured opposite the last rib perpendicular to the skin and includes both layers of fat exposed on the split surface of the backfat and skin. Subjective adjustments should be made only when there are mechanical disfigurations or very unusual fat distributions. If the skin has been removed, add 0.1 inch to adjust to a skin-on basis.

6. ***10^{th} Rib Fat Depth.*** For carcasses ribbed between the 10th and 11th rib. Fat depth is measured three-fourths of the length of the longissimus (loin eye) muscle from the chine bone (backbone) and perpendicular to the outside surface of the fat (including skin). If carcasses have been skinned, add 0.1 inch to adjust to a skin-on basis.

7. ***Adjusted Fat Depth to 250 Pounds Live Weight.*** Both last rib and 10th rib fat depths are adjusted to a 250-pound live weight basis using the following equation:

   Adjusted fat depth to 250 pounds = actual fat depth + (250-actual weight) x [actual fat depth / (actual weight - 15)].

8 ***Loin Eye Area.*** For carcasses ribbed between the 10th and 11th ribs, loin eye area is the cross-sectioned area of the longissimus (loin eye) muscle (use a plastic pork and lamb grid to measure to the nearest 0.05 inch). All adjacent secondary muscles are excluded in the measurement.

9. ***Muscle Score.*** Scores of 1 to 3 with 1 = thin, 2 = intermediate, and 3 = thick.

10. ***Percent Muscle.*** The percentage of fat-free muscle in a carcass predicted by an equation.

    Percent muscle for ribbed carcasses = {[8.588 + (0.465 x hot carcass weight, pounds) + (3.005 x loin eye area, square inches) - (21.896 x 10th rib fat depth, inches)] / hot carcass weight} x 100.

    Percent muscle for unribbed carcasses = {[23.568 + (0.503 x hot carcass weight, pounds) - (21.348 x 10th rib fat depth, inches)] / hot carcass weight} x 100.

11. ***Lean Gain per Day on Test.*** Predicted pounds of acceptable quality fat-free lean gain per day on test. Lean gain per day = [(pounds of lean in carcass) - (pounds of lean in feeder pig)] / (days on test).

    For ribbed carcasses: Lean/day = {[8.588 + (0.465 x hot carcass weight, pounds) + (3.005 x loin eye area, square inches) - (21.896 x 10th rib fat depth, inches)] - [(0.418 x initial live weight) - 3.650]} / days on test.

    For unribbed carcasses: Lean/day = {[23.568 + (0.503 x hot carcass weight, pounds) - (21.348 x 10th rib fat depth, inches)] - [(0.418 x initial live weight) - 3.65]} / days on test.

Reference Material

Information about pork carcass evaluation:

1. American Meat Science Association. 2001. *Meat Evaluation Handbook*. Fax: 217-398-4119 or <http://www.meatscience.org> or mail: 1111 North Dunlap, Savoy, IL 61874.

2. Boggs, Donald L., Robert A. Merkel, and Matthew A. Doumit. 1998. *Livestock and Carcasses: An Integrated Approach to Evaluation, Grading, and Selection*, 5th Ed. Kendall/Hunt Publishing Company, Dubuque, Iowa 52002.

3. National Pork Producers Council. 2000. *Pork Composition and Quality Assessment Procedures*. National Pork Producers Council, P.O. Box 10383, Des Moines, Iowa 50306.

4. Romans, J.R., W.J. Costello, C.W. Carlson, and K.W. Jones. 2001. *The Meat We Eat*, 14th Ed. The Interstate Printers and Publishers, Inc., P.O. Box 50, Danville, Illinois 61834-0050.

Pork carcass evaluation equipment:

1. NPPC Official Color and Marbling Standards. National Pork Producers Council. P.O. Box 10306, Des Moines, IA 50306.

2. Pork Loineye Grids and Fat Probes. NASCO West, Fax: 209-545-1669, Phone: 800-558-9595, or http://www.enasco.com/prod/Home at 4825 Stoddard Rd., P.O Box 3837, Modesto, CA 95352-3837.

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