

## From Pig to Pork Chop: How Much Meat to Expect from a Butcher Hog

*Supporting document for video with a description of live animal and carcass data*

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This factsheet is a supporting document for the video **“From Pig to Pork Chop: How Much Meat to Expect from a Butcher Hog”** produced by Washington State University Extension and the Department of Animal Sciences educational video which details how much meat and the types of retail cuts you can expect from a butcher hog. Whether you are a consumer considering purchasing a live pig to be butchered for your freezer or a pig producer wanting to sell animals to consumers for home use, there are many things to consider. Both the consumer and producer should educate themselves on what makes a good butcher hog, while having realistic expectations of types and amounts of retail meat cuts they will receive from a market ready butcher pig. The goal of the video and the supporting data in this document is to provide viewers with information on pork meat quality and quantity when purchasing or selling a pig directly for consumption. In the video three different types of market hogs are evaluated from live and through carcass fabrication. This was done to demonstrate measurements of meat quality impacting palatability, as well as factors influencing yield, or the pounds of meat one can expect from a butcher hog.

Most market hogs are raised for optimal meat quality and yield between 5-7 months of age, or between 250-325 pounds. We harvest gilts which are young female pigs and barrows which are castrated males. Gilts tend to be leaner than barrows. Intact males or those that are improperly castrated will offer increased growth and leanness however they typically yield a pungent off flavor referred to as boar taint. Pork fat is the most palatable fat of the food animal sector. We tend to select for hogs within the ideal weight range that have a minimum 10<sup>th</sup> rib backfat measurement of 0.70 tenths of an inch, assuring adequate belly thickness for quality bacon. In this educational video we will be evaluating 3 different types of butcher hogs with varying weights to showcase the differences in meat quality and pounds of lean product after carcass fabrication.

The first pig evaluated live is a 275 pound white crossbred barrow or castrated male. This pig is typical of pigs raised by commercial producers because of their fast growth, efficient conversion of feed into pounds of pork and acceptable meat quality. These pigs come from genetic lines that have strong maternal characteristics to birth and raise an above average number of piglets. Many commercial pig producers will use a terminal sire breed that is selected for both amount and quality of meat produced. These pig are typically long bodied with adequate muscle need for a good yield of retail meat cuts. Commercial producers select pigs that are not extreme in any one trait, they do look for hogs with a balance of production traits and carcass characteristics. This balance results in meeting the producers need for efficient growth and profitability and a consumer’s love for pork at a reasonable price.



The second pig in the education video evaluated is a 260 pound Hamp cross pig that was raised by a producer who markets hogs for exhibition at county fairs by youth 4-H or FFA exhibitors. Show pigs are typically selected for their physical appearance including muscle shape and definition, structural soundness, superior balance and conformation offering more bone. Trends influence the show pig industry more than commercial or niche hog production. Today's show pigs are selected for their depth of body and usually have adequate backfat needed for quality bacon and a good eating experience; however in the early 2000's many of the top show pigs were extreme in their muscle and leanness which negatively affected eating quality of retail cuts and belly thickness fell short resulting in many bellies from ultra-lean hogs going to trim rather than bacon.



The third and final pig evaluated is a heritage breed hog called a Large Black. This barrow weighed 315 pounds just prior to butcher. Heritage breed pigs are increasing in production and popularity as a result of consumer demand solely focused on palatability attributes linked to quality (marbling, color, texture and firmness). Similar types of hogs are popular in forage or pasture environments, resulting in pork that fits a specific niche' as a result of eating experience. Many heritage pigs tend to grow slower and are less feed efficient than a commercial and/show pig on the same diet for the same period of time. Further they are typically lighter in muscle and will accumulate more fat resulting in a lower percentage of total product, but what they lack in quantity or yield they make up for in quality.



Market hogs weighing between 250 – 325 pounds will dress on average 70% (range 68 to 72%) with the skin-on and the head-off, resulting in a hanging carcass weight range of 175 - 228 pounds. Dressing percentage reflects only that portion of the carcass that hangs on the rail after the animal is butchered and is the relationship between the live weight and hot carcass weight. The more muscle or the fatter an animal is, the higher the dressing percentage will be. Other factors that can affect dressing percentage negatively: gut fill, cleanliness of animal, carcass damage during harvest, a skinned carcass, etc. The skin is approximately 6% of the carcass weight. Some facilities will also leave the head on which will increase the hanging weight by approximately 6%. The hanging weight of a carcass is the weight that is typically used to calculate the cut and wrap fee.

A hanging pork carcass will typically yield about 75% of the carcass weight, in mostly bone-in meat cuts, resulting in approximately 130-194 pounds of meat to take home. However, if you have more cuts made into boneless products, or more grind done for sausage or cured/smoked products, the hanging carcass will yield about 65% boneless retail meat cuts and some cured meat items, about 114-149 pounds of take-home meat. Fat trim, bone removal, and further processing such as curing/smoking will yield less take-home product.

**In summary:** A butcher will ask if you have special instructions beyond harvest and standard processing of a butcher hog. This is the consumers opportunity to identify roasts, steaks, chops, cutlets, ground product, etc. This is the consumers opportunity to determine thickness of chops and portions per package. You want to consider your family's cooking and eating preferences when choosing cuts and package sizes. One will also need to understand meat cutting instructions (de-boning and grind) will affect the weight of the take-home product. The take-home meat weight will be less than the hanging weight used to calculate the cut and wrap cost. It is important to understand how much meat and the specific meat cuts you will receive from your butcher hog. A skilled butcher will be able to assist in deciding what meat cuts are available from specific portions of the carcass. They can help in your decisions on further processing, such as curing or sausage, which are favorites for consumers. Pork, it's what can be for breakfast, lunch and dinner.

**Pork Carcass Data and Breakdown Sheet (all cuts trimmed to 1/4")**

<i>Carcass Identification Number</i>	1	2	3
<b>Hog Description</b>	<b>White X/Commercial</b>	<b>Hampshire X/Exhibiiton</b>	<b>Large Black/Heritage</b>
Live Weight, lbs	275	260	315
Hot Carcass Weight, lbs	<b>188</b>	<b>187</b>	<b>202</b>
<b>Dressing % = (Hot Carcass Weight/Live Weight)*100</b>	<b>68.36363636</b>	<b>71.92307692</b>	<b>64.12698413</b>
<b>Measures of Yield</b>			
Rib-eye Area, sq in.	7.4	6.25	3.8
10th Rib Fat, in.	0.8	1	2.2
<b>Calculated Lbs of Fat Free Lean</b> (8.588 - (21.896 x 10th rib fat depth) + (.465 * HCW) + (3.005 x REA))	<b>100.7282</b>	<b>92.42825</b>	<b>65.7658</b>
Last Rib Fat, in.	0.9	1.2	1.7
Muscle Score	2	2.5	1.5
<b>USDA Grade Calculation</b> = (4*LRF) - (Muscle Score):	<b>1.6</b>	<b>2.3</b>	<b>5.3</b>
USDA Grade 1-4	<b>1</b>	<b>2</b>	<b>4</b>
<b>Measures of Quality</b>			
Color.Texture.Exudation = <b>PSE</b> (pale soft exudative), <b>RFN</b> (Red, firm, normal), or <b>DFD</b> (dark, firm, dry)	RFN	RFN	RFN
Visual Color Standards (1 pale: 6 dark)	2	3	4
Mechanical Measurement of Color - Hunter LAB - L* (0 = Darkness:100 = Lightness)	56.98	50.95	33.87
Mechanical Measurement of Color - Hunter LAB - a* ( + # Red:- # Green)	9.51	10.67	6.67
Mechanical Measurement of Color - Hunter LAB - b* ( + # yellow:- # blue)	18.95	16.02	28.66
Marbling Score (1 min:10 max)	2	2	3
<b>Wholesale/Primal Cuts</b>	<b>Sub-primals and Retail Cuts</b>		
<b>Pork Shoulder (pre-trim/collar on)</b>	<b>42</b>	<b>44.8</b>	<b>41.6</b>
Pork Jowl	2.8	5.2	6.4
Boston Butt	11.6	11.2	8.8
2 - Blade Steaks (1" thick)	6	5.6	4
Picnic Shoulder - Collar off	21.2	20.8	21.2
Neck Bones	2.8	3.6	3.6
<b>Pork Loin (pre-trim/skin on)</b>	<b>52</b>	<b>49.2</b>	<b>57.2</b>
Center Cut Rib Roast - 8	15.2	12	10.8
4 Center Cut Rib Chop	8.4	8	5.6
3 Center Cut Loin Chop (1")	5.2	5.2	2.4
3 Center Cut Loin Porterhouse Chop (1")	7.2	6	5
Pork Cutlets	4.2	4	2.8
<b>Pork Leg (fresh ham/collar off)</b>	<b>41.6</b>	<b>42.8</b>	<b>47.6</b>
<b>Belly (skin on)</b>	<b>29.2</b>	<b>29.2</b>	<b>38</b>
Belly/Side - ribs removed trimmed	21.2	18	26
Spare Ribs	4.4	6	5.2
<i>Minimal trim (Bone and fat) equates to &lt;10% loss from hot carcass weight (Shoulder (pre-trim/collar on), Loin (pre-trim/skin on), leg (fresh ham/collar off) and Belly (skin on))</i>			
<b>Weight of Wholesale/Primals</b>	<b>164.8</b>	<b>166</b>	<b>184.4</b>
<b>Deboned Lean (roughly 90% Lean), lbs, compare this value to the calculated value based on data collected for lbs of fat free lean</b>	<b>101.6</b>	<b>98</b>	<b>74.4</b>
<b>Calculated Lbs of Fat Free Lean - Data captured on line 10</b>	<b>100.7282</b>	<b>92.42825</b>	<b>65.7658</b>
<b>Seperated Fat (roughly 10% lean), lbs</b>	10.4	19.6	59.6
<b>Bone, lbs</b>	32.8	36.4	27.2
<b>Skin, lbs</b>	19.2	17.6	16.2