International Pork Specifications

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The Demands of the Global Pork Market

The pork export market can very significantly from the U.S. domestic market. The U.S. exported pork or pork variety meats to 90 different countries in 2001. Frequently the demands for various pork cuts or byproducts are unique to these countries. Just as frequently, unique requirements or standards exist in areas such as processing, carcass fabrication, food safety, sanitation and hygiene. Yet exports represented only 8.2 percent of domestic production, which means that the needs of the U.S. domestic market are still the primary driver of our industry.

The Global Pork Trade Situation

U.S. pork exports have increased dramatically both in volume and value in the last decade. Figure 1 shows USDA data for pork and pork variety meat exports since 1991. Annual growth has averaged 15.1 percent by volume and 13.9 percent by value during this period. Figure 2 shows imports, exports and net pork trade as a percent of domestic production. Exports now represent 8.2 percent of domestic production. During the last decade, the U.S. went from being a net importer of pork to a net exporter.

The United Nations projects that the world population will increase by upwards of 2.9 billion people over the next fifty years. And the global economy is expected to continue to grow. As countries develop and per capita incomes increase, populations spend significantly more money on meat protein. Pork remains the world's meat of choice, representing 41% of all meat consumed. So the world will have many more people, with more money to spend on meat and who prefer pork to other meats. The International Food Policy Research Institute (IFPRI) projects that world pork consumption will grow from 74 million metric tons in 1993 to 122 million metric tons in 2020. This presents an enormous opportunity for the U.S. Pork industry.

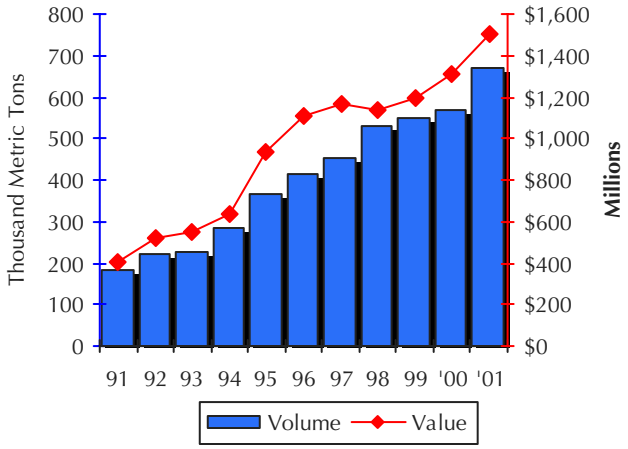

Figure 1. U.S. Pork and Pork Variety Meat Exports by Volume and Value (Source: USDA)

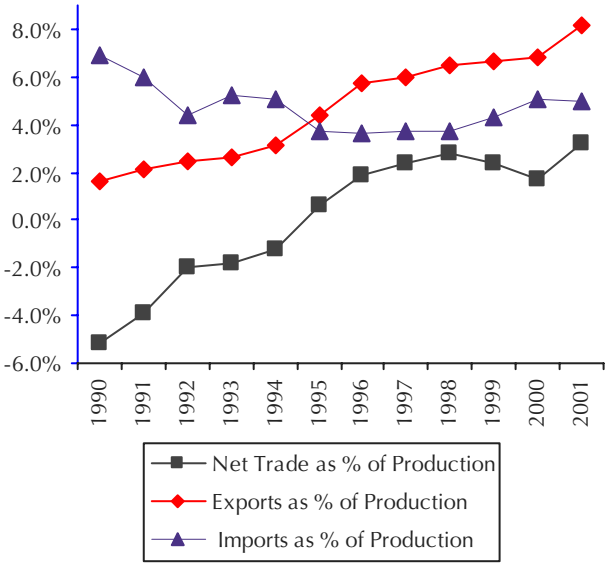

Figure 2. U.S. Pork Trade as a Percent of Domestic Production.

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Importance of Exports to the U.S. Producer

Exports make a significant contribution to producer profitability by increasing the value of U.S. pork products. Exports permit more of the hog to be used -- without exports, many variety meats would be worth little or nothing. Exports create opportunities for producers to grow and expand their operations. Exports also help diversify our markets so our dependence on any one country for growth in pork consumption is reduced.

The University of Missouri has calculated that the change in net exports in 2001 was worth $590.6 million to producers' incomes. Exports added, on average, $6.03 to every hog slaughtered in 2001. Pork exports help support producer prices by maintaining the demand for live hogs. Live hog demand is up 13% since 1995, the year that NAFTA and the GATT agreements took effect, strong evidence that exports help support U.S. hog prices.

Pork Variety Meat Values

One of the best examples of how pork exports permit more of the hog to be used can be seen by looking at variety meat exports. In 2001, variety meat exports were $113.7 million - the equivalent of $1.16 per head. Variety meat specifications can have a significant impact on the value of variety meats and in the end, the value of the hog. According to Hayes, an Iowa State economist, the Chinese market, if fully opened to U.S. pork variety meats, would add about $5 per head to each of the 100 million hogs that the US slaughters each year. More recently, in a study by the National Pork Board, it was found that the estimated per hog byproduct value is $12.63. If we assume that on average 20% of all available byproducts are unavailable due to condemnation or other reasons, then the total theoretical value for all byproducts from the hog would be approximately $504 million (97.914 million hogs x .80 x $12.63).

Live Animal and Carcass Specifications

A primary difference between the United States pork industry and others around the world is the weight at which our hogs are slaughtered. The economics of slaughter and fabrication have driven and continue to drive U.S. plants to increase their slaughter weights. Table 1 presents the average slaughter weights for some representative pork importing or exporting countries. The U.S. slaughters hogs at, on average, 12 to 20 kilograms more than pork industries in most other countries around the globe. This extra weight has a significant effect on average cut size.

Table 1. Live Weight and Carcass Fabrication Style for Pork Importing and Exporting Countries (Source: NPPC)

Country	Preferred or Average Live Weight (Kg)	Carcass Fabrication at Shoulder
Mexico	90-110	4th / 5th rib
Brazil	95-100	4th / 5th rib (Some 7th/8th)
Canada	106-109	2nd / 3rd rib
Japan	100-110	4th / 5th rib
Denmark	105*	4th / 5th rib
Korea	100-110	4th / 5th rib
Argentina	100	4th / 5th rib
United States	118.8	1st / 2nd rib

*Calculated from average carcass weight using dressing yield (73.4%)

Cut size is an important issue in many markets including Mexico, Japan and Hong Kong. One reason Brazilian loins are preferred in Hong Kong is because of their similarity in size and weight to Chinese-produced pork loins. Smaller loins are also preferred in Japan, both because of similarities to Japanese-produced pork and because the large eye size of U.S. loins can impact portion size in the foodservice sector and package size/cost at retail.

Carcass Fabrication for the Export Market

The fabrication method used to break the carcass is even more important to our export customers than is slaughter weight. Most of the United State's customers or competitors fabricate the hog differently than the U.S. Table 1 shows the carcass break for some of these countries. The primary difference is the separation of the shoulder from the loin. The U.S. standard is a 1st/2nd rib split. Most other countries use a 4th/5th rib split. Some countries such as Japan and Spain also leave the sirloin on the ham instead of the loin like in the US and Canada.

While most U.S. packers now have some international fabrication capabilities, there are several limiting factors precluding the expansion of U.S. production of the "International Break". These include the inability to dispose of underutilized "non-US style" cuts, and the cost impact on the carcass cutout due to a loss or reduction in yields. Table 2 shows the impact that the international (Japanese) fabrication method can have on yields. While only a small pilot test, the increases in the shoulder and picnic yield and the decreases in the belly and loin yield are clearly evident. At this time, packers that are expanding production of this fabrication style are generally requiring customers to take the "full set" of primal cuts. More work needs to be done to find uses for underutilized cuts.

Table 2a. Carcass Data (n=8) from 1997 USMEF/University of Illinois Carcass Yield Test

Trait	American Style	Japanese Style
Length (in.)	31.10	31.10
1st rib fat depth (in.)	1.54	1.54
Last rib fat depth (in.)	1.10	1.10
Last lumbar fat depth (in.)	1.01	1.01
10th rib fat depth (in.)	1.04	1.04
Loin eye area (sq. in.)	5.80	5.80
% lean	0.50	0.50
Carcass side weight (lb.)	85.27	85.84

Table 2b. Selected Primal Cut Yields from 1997 USMEF/University of Illinois Carcass Yield Test*

	American Style		Japanese Style		
Primal Cut	Wt. (lb)	% of side	Wt. (lb)	% of side	% Difference
Ham	21.23	24.6	21.19	24.4	
Jowl	2.21	2.6	2.15	2.5	
Picnic	9.45	11.0	10.70	12.3	+1.3
Boston butt	9.20	10.7	11.12	12.8	+2.1
Belly	15.07	17.5	13.50	15.5	-2.0
fresh side	12.28	14.2	11.01	12.7	
spare ribs	2.69	3.1	2.53	2.9	
Loin	24.57	28.5	21.67	24.9	-3.6
bone-in ¼"	19.10	22.1	16.42	18.9	
boneless ¼"	7.77	9.0	6.92	8.0	
back ribs	1.37	1.6	1.27	1.5	
tenderloin	0.94	1.1	0.95	1.1	

*Sixteen matched sides fabricated to American or Japanese specifications; all ham cuts made to U.S. specifications

Primal Cut and Product Specifications for the Export Market

There are a number of cuts that are unique to the export market. Several of these dominate trade in pork products in some countries. Examples of these unique cuts include the single-ribbed belly, Japanese MM loin and the collar butt. The single-ribbed belly represents one of the major pork cuts traded around the world. For example, average SR belly imports by Korea over the last five years equaled 49,000 MT per year --seventy percent of total Korean imports. Japan's annual imports averaged between 50-80,000 metric tons or between nine and fourteen percent of total imports. To fabricate the single-ribbed belly, the ribs are removed individually leaving the intercostal meat on the belly. Usually, the costal cartilage remains in the belly. While the U.S. does produce single-ribbed bellies, we are currently not competitive with other countries. U.S. SR-belly prices are impacted by both the strong demand for bacon in the US and the yield loss due to destruction of the sparerib. Danish bellies are also preferred in many Asian countries due to their leanness and smaller size.

Single-ribbed loins are produced in a similar fashion with the backbone and ribs removed individually. The U.S. has been able to successfully substitute chilled, vacuum-packed boneless loins for SR-Loins in Japan where chilled loins are in high demand for retail and foodservice uses.

The bone-in or boneless collar butt is fabricated from a shoulder fabricated according to the international (4/5 rib break) style similar to a beef chuck roll.97.914

In addition to differences in cutting styles, many primal cuts are priced differently in the International markets, i.e., Korea, Taiwan, and Japan as compared to the U.S. market. Table 3 shows a comparison of primal values and ranked according to country's domestic market value.

Table 3. Pork Primal Comparison Between U.S. and Korea, ranked by country wholesale value ($/lb).

Rank	U.S. Cuts[a]	Korea Cuts[b]
1	Tenderloin (2.34)	Single Ribbed Belly (3.91)
2	Bnls Loin (1.59)	Collar Butt (3.55)
3	Spareribs (1.36)	Breast Ribs (2.25)
4	Trimmed Butt (0.80)	Tenderloin (1.88)
5	Picnic (0.74)	Picnic Shoulder (1.63)
6	Bnls Ham (0.69)	Pork Loin (1.63)
7	Belly (0.62)	Bnls Ham (1.37)

[a]USDA Market News Report, June 12, 2002
[b]USMEF, Korea, domestic pork price, June 12, 2002

Conclusion

In conclusion, to increase the acceptability of U.S. pork in the international markets, the U.S. pork industry must meet the demands of export customers. They expect the U.S. processor to meet their cutting specifications. However, more importantly is their evaluation of pork quality for acceptance of U.S. pork. Our industry must continue to improve the quality of our fresh pork and improve our image with our international customers. Most importantly, by better meeting customer needs, the US industry can add value to many products produced from US hogs, helping to improve the economic viability of the U.S. Pork industry.

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