

## **Project Summary**

### **Innovative Fabrication Procedures for Beef Carcasses—An International Perspective**

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**Study Completed  
May 2008**



*Funded by The Beef Checkoff*

# **Innovative Fabrication Procedures for Beef Carcasses—An International Perspective: Project Summary**

## **Background**

Export markets represent huge opportunities to increase demand for U.S. beef. Internationally, carcass fabrication procedures are diverse, reflecting the uses for meat cuts in a particular country, as well as for export purposes. The researchers involved in this project felt that the U.S. beef industry could gain by studying international beef fabrication strategies in Mexico, Central and South America. Of special interest are fabrication methods that eliminate cutting muscles into multiple pieces, as is done with many traditional U.S. beef cuts. Fabricating whole muscles has already proven to be advantageous in identifying new opportunities for marketing underutilized cuts through the checkoff-funded Muscle Profiling Project (2000). International fabrication methods may highlight other opportunities to enhance carcass values.

## **Methodology**

Two international trips were organized, one to Mexico and Costa Rica, and one centered around Argentina and Uruguay. For each trip, a team of fabrication experts was assembled. The teams visited meat processing and fabrication facilities, as well as retail operations. Carcass fabrication methods were documented through photography and videos. Based on this information, the team identified two primary changes that could be implemented in the U.S. beef processing industry with minimal disruption to existing procedures.

A series of cutting tests were performed to determine the approximate yield of product from U.S. carcasses when these innovative fabrication techniques were applied. A one-on-one session with a national processor was held to get input and insight into the potential application of these concepts. At the conclusion of the project, a national fabrication workshop was conducted.

## **Findings**

The researchers' review of international cutting methods revealed two primary changes that could occur in the U.S. meat industry with minimal disruption to existing practices. This included dropping the aitch bone before removing the sirloin from the round. Doing so allows for the sirloin cap to be cut longer, keeping together similar portions of a muscle and retaining the sirloin nomenclature. The researchers observed this innovation in Mexico and Costa Rica.

The general process involves exposure and removal of the aitch bone before the sirloin/round separation. Doing so, allows a knife cut to define the size of the sirloin cap. Research has shown that this portion of the *biceps femoris* muscle is equivalent in tenderness to the portion over the sirloin. This provides additional justification to separate the sirloin and round at a point that results in a larger sirloin cap. The added value that might be obtained also provides justification for fabricating a carcass in this manner. One challenge to this procedure would be determining the proper nomenclature, and whether the piece should be labeled as coming from the round or the sirloin.

The second innovation entails cutting the ribeye roll and the chuck eye roll in one continuous piece, which the researchers tentatively named a "forequarter log." The anterior portion to this cut represents the roast portion of the current chuck eye roll and could be sold at retail for roast application. The continuous piece can be fabricated into steaks.

To fabricate a forequarter log, the researchers removed the thoracic limb from the carcass. This exposes the *serratus ventralis*, which if left whole, is much more valuable than when fabricated in pieces as is done traditionally.

Cutting tests were conducted to determine the yield of muscles with the new fabrication system. The forequarter log weighs about 35 pounds per animal and the sirloin cap, per animal, weighs approximately seven pounds. The economic estimate showed a potential net gain of approximately \$45 per head for the forequarter log and \$17 per head for the sirloin cap.

A third application was also observed, but was not explored further by the researchers within the scope of this project. Venting, or pre-cutting between muscle seams while the carcass is still hot, has the advantages of making fabrication easier as well as aiding in more efficient cooling.

At the conclusion of the project, a national workshop was held to release these recommendations to the industry.

### **Implications**

Alternative fabrication methods observed in international markets may give U.S. beef processors opportunities to maximize values of specific subprimals. Cutting the ribeye roll and chuck eye roll in one continuous piece was viewed favorably by a retailer that was shown a prototype.

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