

Muscle Profiling.

The beef carcass is made up of over a hundred different muscles. These muscles have different properties which affect processing characteristics and consumer acceptability. There has been a continued trend to separate muscles, based on these characteristics, to better market them. Today the majority of the cuts found in the retail case and on restaurant menus are boneless, increasing the need for detailed knowledge of beef carcass musculature.

Checkoff-funded research was conducted to profile the physical and chemical characteristics of 39 beef muscles to more fully realize their value. This information aids processors in the development and preparation of new products based on the inherent properties of each beef muscle.

Muscle Profiling research was initiated in the late 1990s with the goal of improving the then declining value of the beef chuck and round in relation to middle meat cuts. This in-depth research identified several “diamonds in the rough,” or individual muscles that were often overlooked but perform very well individually as value-added cuts. These value-added cuts create more steak options that are moderately priced and grillable. For example, Muscle Profiling research revealed that the *infraspinatus*, or top blade muscle, is the second most tender muscle in the carcass if its inherent connective tissue is managed correctly. This knowledge resulted in the development of the successful beef Flat Iron Steak.

Value-added cuts have recently taken off at foodservice and retail and this activity has significantly improved the value of the beef chuck.

2007 Foodservice Volume:

- 90 Million lbs Flat Iron
 - 47 Million lbs Petite Tender
 - 37 Million lbs Ranch Steak
- (Compared to 29 Million lbs Porterhouse and 59 Million lbs T-bone)

Availability of Beef Value Cuts at Retail:

- 2006 – 9,900 Retail Stores
 - 2005 – 5,000 Retail Stores
 - 2003 – 321 Retail Stores
- (Predominately driven by a push from Kroger to offer the Flat Iron in each of their stores)

Improved chuck & round values have increased total carcass value \$50 - \$70 per head since 1998 (Cattle-Fax).

Individual muscle data is shared through an interactive Web site hosted by the University of Nebraska-Lincoln (<http://bovine.unl.edu>). This Web site has been extremely well received since its development and receives more than 2 million hits per year from users around the globe.