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New Beef Products Research

Chris R. Calkins
University of Nebraska - Lincoln, ccalkins1@unl.edu

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Chris R. Calkins
Department of Animal Science
University of Nebraska
Lincoln, Nebraska

INTRODUCTION

Muscle profiling research conducted in the early part of this decade by the University of Nebraska and the University of Florida for The Beef Checkoff was highly successfully. This research led to the development of the flat iron steak, the petite tender, and the ranch cut from the shoulder clod and has been credited with increasing the value of market cattle by $50 - $70 per head. In 2007, over 92 million pounds of flat iron steaks, 40 million pounds of petite tenders, and 37 million pounds of ranch steaks were sold into foodservice. Although difficult to track, additional sales were made at retail. A logical progression of the work was to look for additional opportunities to add value to beef through development of new beef cuts. Under the leadership of the Beef Innovations Group - the product development arm of the National Cattlemen's Beef Association - an initiative was begun to explore value-adding opportunities in the beef chuck roll. New cuts have now been developed and are described below.

BACKGROUND

The beef chuck roll consists of the portion of the beef chuck (shoulder) that lies under the shoulder blade (scapula), from the fifth rib to the neck. It weighs approximately 20 pounds and consists of two primary parts - the chuck eye roll and the underblade. Typically, retail fabrication consists of 2-3 chuck eye steaks from the chuck eye roll and the remainder of the chuck roll is sold as pot roasts. Considerable opportunity exists to add further value to this cut through optimal utilization of the muscles. Consumers have repeatedly shown a willingness to pay for convenience and consistency in eating quality. Cutting beef in a way to create single-muscle cuts or cuts that are consistent for a popular recipe should return value to the industry.

Although the chuck roll may be cut into a chuck eye roll and an underblade (defined below), this seldom occurs in the United States because the value-added opportunities have not been well studied. This research was conducted to determine the potential economic impact of alternative cutting strategies for the beef chuck roll.

Work on this project was a collaborative effort. Credit is due Antonio (Tony) Mata (Mata Development Group, Colleyville, TX), who lead the initiative. Other team members included Kari Underly (Range, Inc., Chicago, IL), Jake Nelson (Oklahoma State University, Stillwater, OK), Brandon Lobaugh (iQ Foods, Fayetteville, AR), Ellen Gibson (Beef Innovations Group of the National Cattlemen’s Beef Association, Englewood, CO), Steve Wald (Beef

Innovations Group of the National Cattlemen's Beef Association, Englewood, CO) and myself. Acknowledgement is extended to the Robert M. Kerr Food and Agricultural Products Center at Oklahoma State University for additional funding, personnel, and facility use and to The Beef Checkoff.

RESEARCH STRATEGY

The chuck eye roll contains portions of the m. longissimus thoracis, m. spinalis dorsi, m. complexus, m. multifidus dorsi, and the m. longissimus capitus et atlantis and the underblade contains the m. rhomboideus, m. serratus ventralis, and m. splenius.

Data from 8 chuck rolls were used to construct a spread sheet depicting the expected yield of cuts and economic values that result from three different cutting styles. Style 1 was the traditional method, where a few chuck eye steaks were removed from the caudal end of the chuck eye roll and the remainder of the chuck roll was cut into chuck roasts, stew meat and trim for grinding. Style 2 converted the chuck eye roll into boneless country style ribs and the underblade into steaks from the m. serratus ventralis (called the Denver cut), a steak from the m. splenius (called the Sierra cut), stew meat and trim for grinding. Style 3 converted the chuck eye roll into chuck eye steaks, boneless country-style ribs, and a chuck eye roast (called America's beef roast). The underblade was cut as described for style 2. The Sierra cut has similar characteristics to a flank steak (m. rectus abdominus) and so was valued in a similar fashion. Denver cuts are rich in marbling and offer a strong, succulent flavor and a pleasurable eating experience.

After fabrication, data were used to calculate the gross margin return, retail value per lb, average cost per lb, per lb gross profit, and net margin percent. Time required to fabricate was recorded and labor costs were included in the calculations.

RESULTS AND DISCUSSION

Table 1 presents the cutting yields for the three fabrication styles that were studied. The traditional style yields 67% chuck roasts, which have relatively low value in the United States market. In style 2 the chuck roll yielded 37% boneless, country-style ribs and 21% Denver cuts. Both of these cuts are of greater value than the traditional chuck roast. Cutting style 3 provided a greater variety of cuts with even greater retail value in the United States.

The prices used in the calculations are provided in Table 2. Labor costs were estimated at $18.00 per hour and a marketing cost of 5% of the retail price was included. These are estimated prices and would be expected to change over time. Even so, the differences in economic return are rather dramatic. The traditional cutting style resulted in gross profit of $1.90 per lb while style 2 yielded $2.46 per lb and style 3 resulted in $2.72 per lb of gross profit (Table 3). These prices include the cost of added labor. Clearly, there is substantial economic value in altering the way the beef chuck is fabricated at retail in the United States. It is anticipated that the foodservice market would realize similar gains with these new approaches.

Table 1. Cutting yields (%) from three different fabrication styles for the beef chuck roll.

Cut	Style 1 Traditional	Style 2 Ribs	Style 3 Diverse
Chuck roasts	67.23		
Chuck eye roast	10.50		27.56
Chuck eye steaks			10.22
M. splenius (Sierra cut)		5.97	7.11
Country-style ribs		37.25	1.78
M. serratus ventralis (Denver steaks)		21.42	20.44
M. rhomboideus (stew meat)		6.99	9.33
Stew meat	8.40	6.41	8.00
80% lean trim	8.40	12.29	8.89
Fat trim	0.00	2.19	0.00
Unusable (connective tissue, shrink, purge, cut loss)	5.47	7.48	6.67

Table 2. Cost assumption for calculation of value.

Cut	Price, $ per lb
Chuck roll	1.45
Chuck roasts	4.29
Chuck eye roast	4.99
Chuck eye steaks	4.99
M. splenius (Sierra cut)	5.99
Country-style ribs	4.99
M. serratus ventralis (Denver steaks)	6.99
M. rhomboideus (stew meat)	3.99
Stew meat	3.99
80% lean trim	3.99
Fat trim	0.00

It is likely that individual muscles of the chuck eye roll have further potential that could be realized through single-muscle merchandising. Anecdotal evidence suggests these muscles are especially rich in flavor. Further research is needed to resolve fabrication and quality issues before recommendations can be made.

CONCLUSION

Taking the time to cut the beef chuck roll into specific retail cuts rather than chuck roasts is economically valuable and offers strategies to increase retail profit in the meat department. Consumers gain additional benefits when beef cuts are identified with simple names that are easy to remember and that represent cuts that deliver consistent, desirable eating experiences.

Table 3. Value and gross margin provided by three different fabrication styles for the beef chuck roll.

	Net margin $ per lb	Net margin %	Retail value $ per lb
Style 1 Traditional	1.95	51.11	4.02
Style 2 Ribs	2.48	56.02	4.65
Style 3 Diverse	2.72	59.46	4.81