

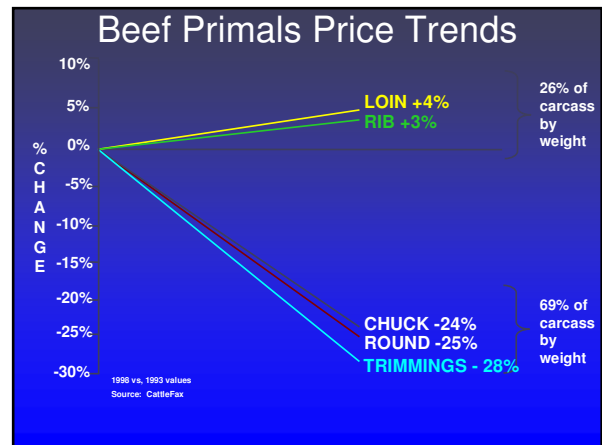
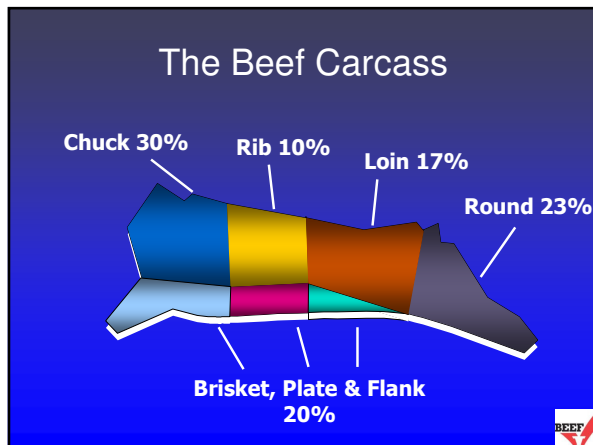
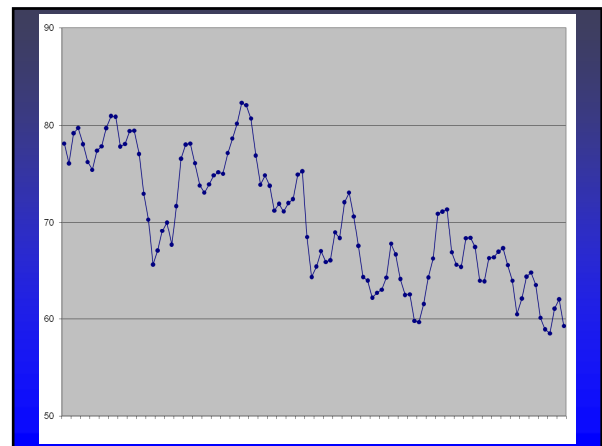
UNIVERSITY OF
Nebraska
Lincoln

**New Beef Products
Research**

Chris Calkins
NE Beef Industry Professor of Animal Science
University of Nebraska – Lincoln

beef innovations group

BEEF
Funded by The Beef Checkoff



Cheap Chuck Roast

Better Than 1/2 Price!

Beef Chuck Blade Steak or Roast
Bone-in.
SAVE up to \$1.80 lb.

99¢
lb
SAFETY CLIP PRICE

Muscle Profiling is:

A comprehensive body of work that fully characterizes the chuck and round, such as:

- Tenderness
- Composition
- Processing traits
- Dimensions
- Color
- Others

Profiling Muscles of the Chuck and Round

		550-650 lbs.	Carcass Weight 700-800 lbs.	850-950 lbs.
Upper 2/3 Choice	YG1			
	YG2			
	YG3			
	YG 4&5			
Low Choice	YG 1			
	YG 2			
	YG 3			
	YG 4&5			
Select	YG 1			
	YG 2			
	YG 3			
	YG 4&5			

Chuck Summary Data

	Fat %	pH	WHC	Bind, mL	Myoglobin mg/g	Collagen mg/g	Moist WBS	Dry, WBS	Shear Force	G = <8.5 Y = 8.5-11.0 R = >11.0
Biceps brachii										
Brachiocephalicus omo.										
Brachialis										
Cutaneous omo brachialis										
Complexus										
Deep pectoral										
Deltoidus										
Dorsalis oblique										
Infraspinatus										
Intertransversales										
Latissimus dorsi										
Longissimus cap. et Atl.										
Longissimus costarum										
Longissimus dorsi										
Levatores costarum										
Multifidus & spinalis dorsi										
Rhomboideus										
Scapulus dorsalis										
Serratus ventralis										
Splenius										
Superficial pectoral										
Subscapularis										
Supraspinatus										
Tensor fasciae antibrachii										
Teres major										
Trapezius										
Triceps brachii										

Fat G = <5%
 Y = 5-10%
 R = >10%
 pH G = >5.8
 Y = 5.8 - 5.7
 R = <5.7
 Pressable G = <36%
 Moisture Y = 36-38%
 (WHC) R = >38%
 Bind G = >175 mL
 Y = 170-175 mL
 R = <170 mL
 Myoglobin G = >25 mg/g
 Y = 20-25 mg/g
 R = <20 mg/g
 Collagen G = <10 mg/g
 Y = 10-15 mg/g
 R = >15 mg/g

INFRASPINATUS



This muscle extends from the junction of the arm of the arm bone and scapula lying on top of the blade bone. The apex of the blade bone lies anterior to this muscle. It can be characterized by appearance of heavy sheen of connective tissue on the internal and external surfaces. The muscle fibers run parallel to the length of this muscle.

SENSORY EVALUATION		
	MOIST	DRY
Tenderness	Moderately tender	Moderately tender
Flavor intensity	Moderately intense	Slightly intense
Juiciness	Moderately juicy	Moderately juicy
Connective	Traces amount	Traces amount

Shear Force, lbs.



INFRASPINATUS

NUTRITIONAL INFORMATION - AVERAGE	
Moisture, mg/g	70.81
Fat, mg/g	9.18
Ash, mg/g	1.06
Protein, mg/g	18.65
Kcal/100g	103.65

*Calculated by difference

PHYSICAL TRAITS (DETERMINED)

	Carcass Weight		
	220-250	260-280	320-350
Length, in	13.81 (1.32)	14.41 (1.41)	14.91 (1.49)
Width, in	4.87 (0.32)	5.4 (0.32)	5.46 (0.32)
Maximum depth, in	0.49 (0.14)	0.47 (0.14)	0.51 (0.20)
Maximum depth, in	2.46 (0.24)	2.56 (0.30)	2.49 (0.30)
Weight, lbs. (corrected)	3.78 (0.39)	4.00 (0.37)	4.40 (0.41)
Weight, lbs. (uncorrected)	3.78 (0.39)	4.00 (0.37)	4.40 (0.41)
% of chuck (corrected)	3.40 (0.33)	3.80 (0.36)	3.75 (0.37)
% of chuck (uncorrected)	3.50 (0.36)	3.60 (0.36)	3.56 (0.32)

	Mean (s.d.)	Quality grade	Yield grade	Carcase grade
pH	5.78 (0.32)	NS	NS	NS
Expressible moisture, %	37.65 (1.76)	NS	<10	NS
Residual capacity, ml./100g	171.61 (14.87)	NS	NS	NS
Myoglobin concentration, mg/g	21.51 (2.87)	NS	NS	NS
Color	36.87 (2.46)	NS	NS	NS
L* value	31.21 (1.08)	<0.1	NS	NS
a* value	24.82 (1.46)	<0.1	NS	NS
Collagen, mg/g	8.72 (1.33)	<0.05	NS	NS
Shear force, lbs./cm ²	6.22 (1.42)	<0.1	NS	NS
Shear force, lbs./cm ²	5.96 (1.72)	<0.1	NS	NS

BOVINE MYOLOGY & muscle profiling

Steven J. Jones
Chris R. Gathlin
Bryan Carpenter

Bucky L. Swartz
D. Duane Johnson

Nebraska Press

Produced by Nebraska Cattlemen's Beef Association

Funded by America's Beef Producers through the Cattlemen's Beef Board

Bovine Myology – Muscle Profiling Web Site

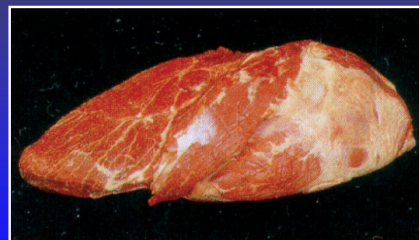
Univ. of NE

<http://bovine.unl.edu>

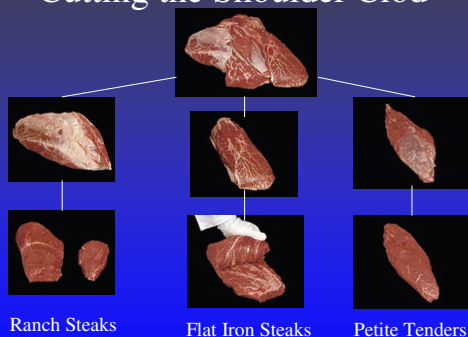
Muscle Rank based on Tenderness

Rank	Muscle name	Common name	Primal cut	Cortes bovino
1	Psoas major	Tenderloin	Tenderloin	Lomo
2	Infraspinatus	Top blade	Clod	Marucha
3	Spinalis dorsi	Rib cap	Ribeye	Tapu de bife ancho
4	Serratus ventralis	Boneless short rib	Chuck roll	10 costillas - Plancha
5	Multifidus dorsi		Chuck roll	Aguja
6	Subscapularis		Chuck roll	Tapu de aguja
7	Teres major	Petite tender	Clod	Aguja
8	Echus femoris	Sirloin tip center	Knuskle	Bola de lomo (centro)
9	Longissimus dorsi	Loin eye	Loin	Bife angusto
10	Obliquus internus abdominus	Bottom sirloin flap	Sirloin	Bife grande de vacio
11	Gracilis	Round cap	Inside round	Tapu de nalga
12	Triceps brachii	Clod heart	Clod	Centro de carnaza de pioleta
13	Gastrocnemius	Heel	Heel	Banania
14	Rectus abdominis	Flank	Flank	Bife de vacio
15	Semimembranosus/Adductor	Inside round	Inside round	Nalga de adentro sin tapa
16	Biceps femoris	Outside round flat	Outside round	Cuadrada
17	Supraspinatus	Mock tender	Clod	Chingolo
18	Semilendinosus	Eye of round	Eye of round	Peceto
19	Splenius	Sierra cut	Chuck roll	Aguja
20	Superficial & deep pectoral	Brisket	Brisket	Pecho
21	Gluteus medius	Top sirloin	Sirloin	Cudril sin tapa
22	Trapezius	Lifter meat	Chuck roll	Tapu de bife ancho
23	Rhomboides	Hump	Chuck roll	Aguja

Shoulder Clod, 114 A



Cutting the Shoulder Clod

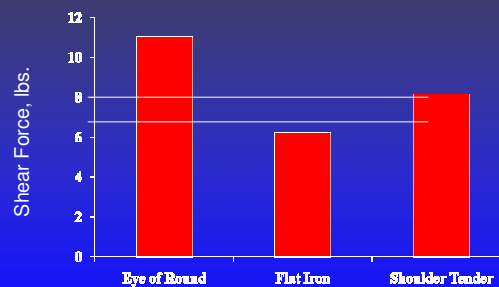


Ranch Steaks

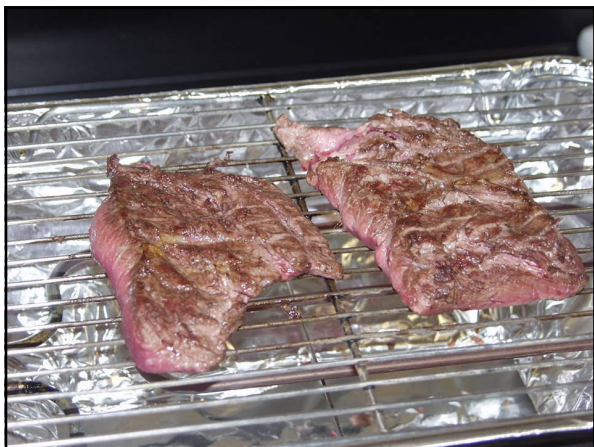
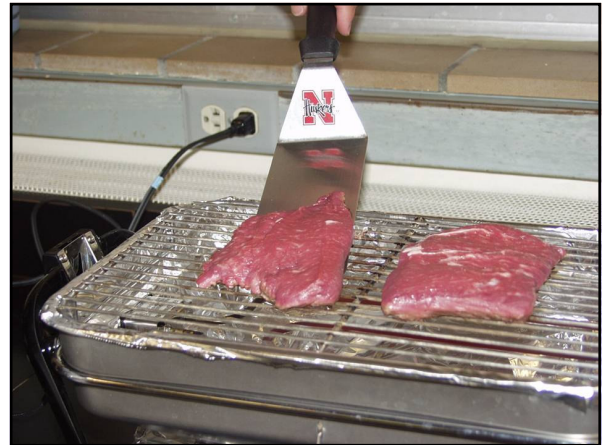
Flat Iron Steaks

Petite Tenders

Value-added Cuts









Volume of Cuts in Foodservice 2007 (million pounds)

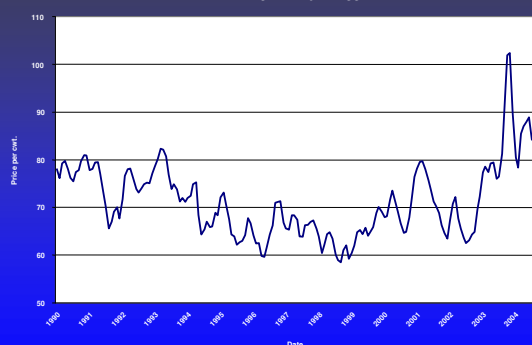
<u>Cut</u>	<u>2007</u>
Flat Iron	92
Petite Tender	40
Ranch Cut	<u>37</u>
Total	169

Volume - Steaks in Foodservice 2007

<u>Steaks</u>	<u>Pounds in Millions</u>	<u>%</u>
Ribeye and Strip Steaks	373	26
Sirloin	292	21
Other steaks	222	16
Filet Mignon	253	18
T- Bone	62	4.4
Porterhouse	35	2.5
Flat Iron	92	6.5
Petite Tender	40	2.8
Ranch Cut	37	2.6

Source: Technomic Usage and Volumetric Assessment of Beef, 2006

Live Animal Price



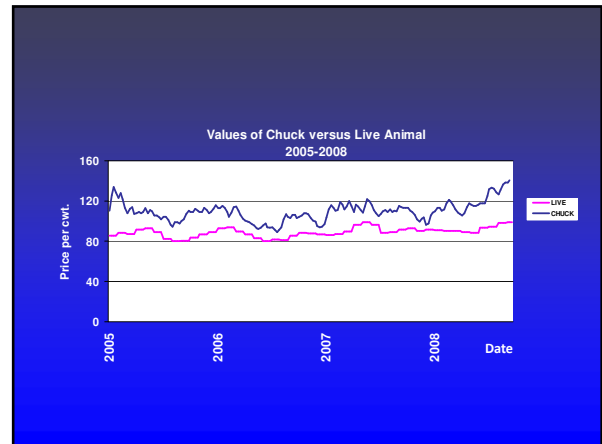
Producer Bottom Line:

Chuck Increased Values
\$50 - \$70 per head



Value of Chuck versus Live Animal 1995 - 1999





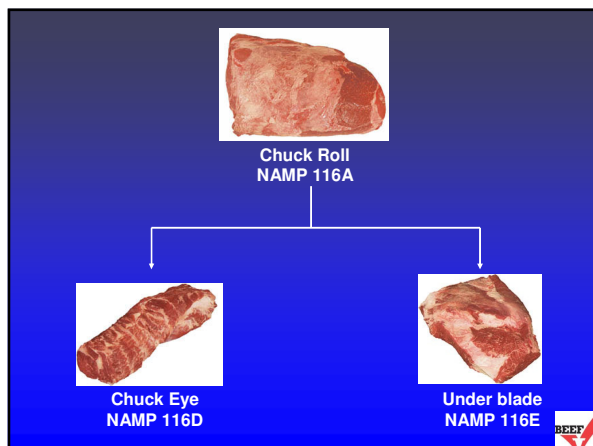
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7	Teres major	Petite tender	Clod	Aguja
8	Rectus femoris	Sirloin tip center	Knuckle	Bola de lomo (centro)
9	Longissimus dorsi	Loin eye	Loin	Bife angosto
10	Obliquus internus abdominus	Bottom sirloin flap	Sirloin	Bife grande de vacio
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12	Triceps brachii	Clod heart	Clod	Centro de cárnaza de paleta
13	Gastrocnemius	Heel	Heel	Bananita
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20	Superficial & deep pectoral	Brisket	Brisket	Pecho
21	Gluteus medius	Top sirloin	Sirloin	Cuadril sin tapa
22	Trapezius	Liher meat	Liher meat	Tapo de bife ancho
23	Rhomboideus	Hump	Chuck roll	Aguja

Next Frontier...Chuck Roll



Chuck Roll
NAMP 116A



Chuck Eye Steaks



Boneless, Country-Style Beef Chuck Eye Ribs



America's Beef Roast



Sierra Cut



Denver Cut



The Chuck is on a Roll!

Chuck Eye Roll



Blade Roast



Delmonico Steak
(Chuck Eye
Steak)



Country-Style
Beef Chuck Ribs



America's
Beef Roast



Sierra
Cut



Denver Cut



Delmonico Steak



Boneless Country-Style Ribs



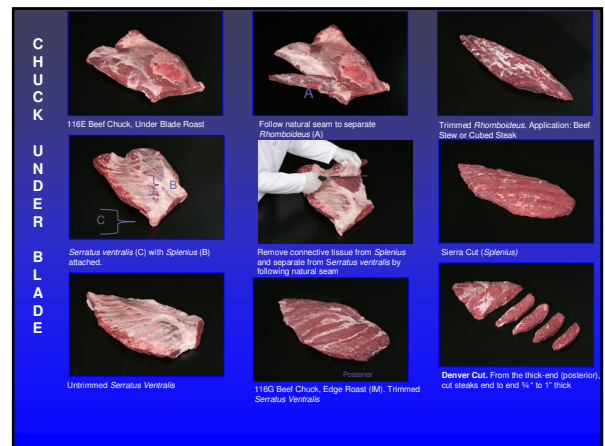
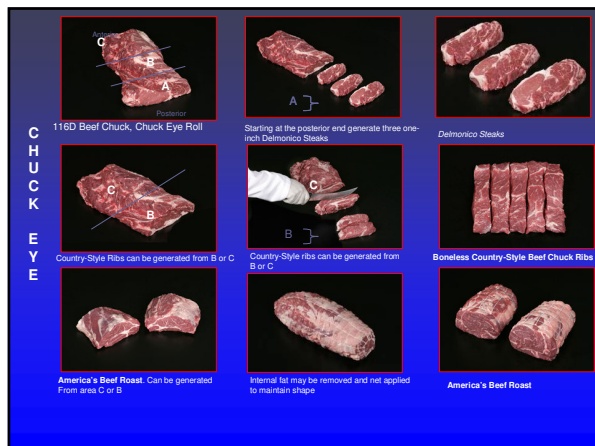
America's Beef Roast



Sierra Cut



Denver Cut



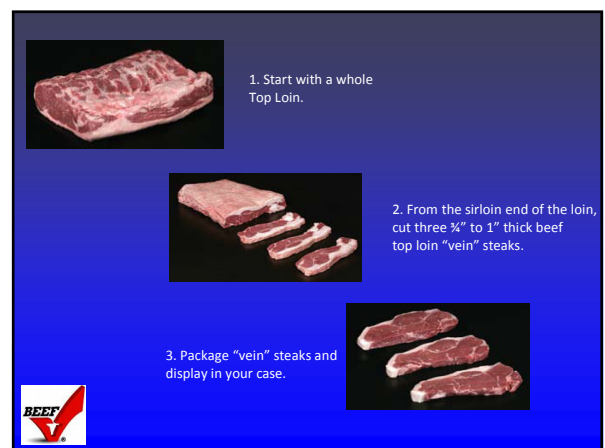
Access to Cutting Sheets, Sell Sheets and Videos

- <http://www.beefinnovationsgroup.com/>
- Click on Value-Added Cuts for:
 - How To Cut
 - Sell Sheets

BAM - Beef Alternative Merchandising

beef innovations group

BEEF
 Funded by The Beef Checkoff





4. Locate and remove tail from the loin.



5. Remove heavy connective tissue on the thicker back side. Cut in half lengthways.





Beef Top Loin Petite Roast




Beef Top Loin Filet



Beef Top Sirloin Cap Steaks

Top Sirloin Filet

Beef Top sirloin Filet



Beef Top Sirloin Petite Roast



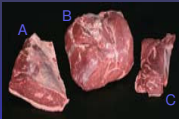
1. Start with a whole Top Sirloin. Trim fat and connective tissue.



2. Locate and remove top sirloin cap from center portion of the top sirloin. Trim and remove any unwanted fat and connective tissue.



3. Follow the natural seam and remove "mouse" muscle from the center portion of the top sirloin.

4. Top Sirloin Cap (A), Center (B) and extra muscle (C).



5. Start with the center portion of the top sirloin (B).





Top Sirloin Petite Roast




Top Sirloin Filet

5. Start with the top sirloin cap.



6. Locate the direction of the muscle fiber and cut across the grain to generate top sirloin cap steaks 1" thick.



7. Cut steaks end to end.




Beef Top Sirloin Cap Steak





Beef ribeye Filet

Ribeye Filet



Beef ribeye cap steak



Ribeye Roast



1. Start with a whole boneless Ribeye.



2. Cut 3 to 6 ribeye steaks ¾" thick.



3. Remove ribeye tail and intercostal meat.



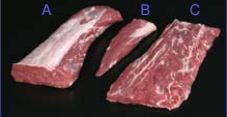

4. Trim any unwanted fat from ribeye roll.



5. Locate ribeye cap and *complexus* muscle by following the natural seam.




6. Separate ribeye roll. Ribeye (A) Complexus muscle (B) Ribeye Cap (C).



7. Section ribeye. *NOTE: All sections can be used as filets or as roasts; section A is shown in the following step.*



Beef ribeye Roast



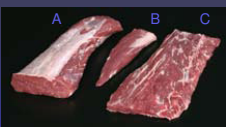
Beef ribeye Filet



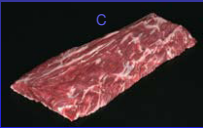
8. Net or tie sections. Leave whole or portion into 1½ to 2½ lb roast.



6. Separate ribeye roll. Ribeye (A) Complexus muscle (B) Ribeye Cap (C).



7. Remove fat and connective tissue and leave whole.



8. Cut into portions.



Beef ribeye cap steak



