



COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences



Beef Cuts and By-Products

Hillary Pope





Cloverbud Objectives

Upon completion of the Beef Cuts and By-Products unit CLOVERBUD 4-Her's (8 years & under) will be able to:

- Understand the basis of beef products and by-products
- Understand primal cuts of beef
- Identify the location of primal cuts of beef
- Understand the differences in by-product categories
- Identify different types of by-products
- Relate the use of by-products to their daily lives



Junior Objectives

Upon completion of the Beef Cuts and By-Products units JUNIOR 4-H'ers (9-13 years) will be able to:

- Understand the basis beef of products and by-products
- Understand primal cuts of beef
- Identify the location of primal cuts of beef
- Understand beef grades
- Identify the difference in Prime, Choice and Select Grades
- Understand the differences in by-product categories
- Identify different types of by-products
- Identify source of where by-products come from
- Relate the use of by-products to their daily lives



Senior Objectives

Upon completion of the Beef Cuts and By-Products unit SENIOR 4-H'ers (14-18 years) will be able to:

- Understand the basis of beef products and by-products
- Understand primal cuts of beef
- Identify the location of primal cuts of beef
- Understand the differences in cuts of beef
- Identify different retail cuts of beef
- Understand beef grades
- Identify the difference in Prime, Choice and Select Grades
- Understand the differences in by-product categories
- Identify different types of by-products
- Identify the source of where by-products come from
- Relate the use of by-products to their daily lives



COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences



Beef Cuts

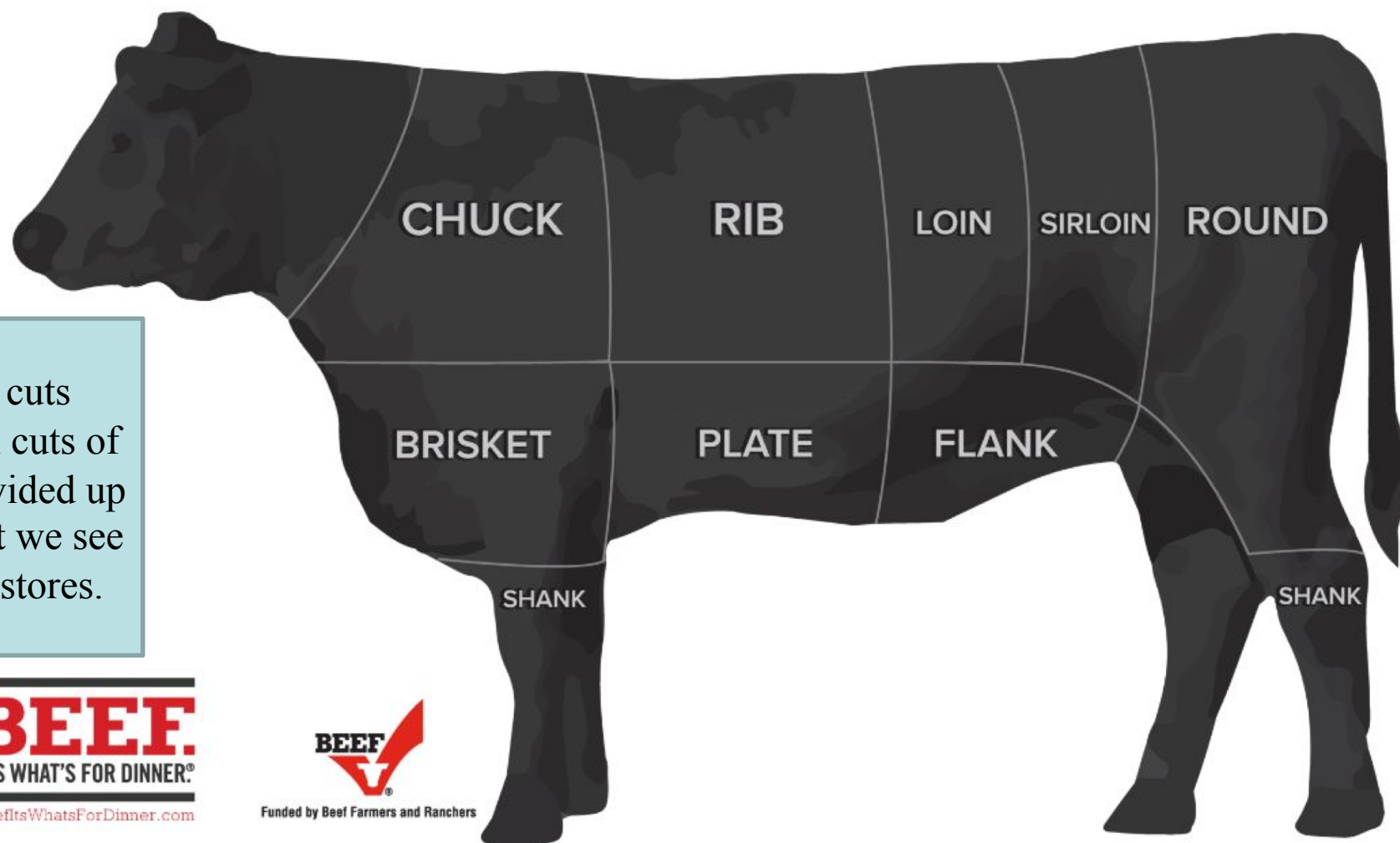


Beef Cuts

- There are several different cuts of beef
- These cuts come from a variety of locations
- There is also a grading system to determine the quality of the meat
 - There are eight levels of quality grades, Prime, Choice, Select, Standard, Commercial, Utility, Cutter, and Canner
 - Marbling, Age, and Maturity of the beef dictates the quality grade
 - Prime is the highest quality grade with canner being the lowest quality grade
- There are nine primal cuts of meat
 - The location of the meat affects the tenderness and marbling of final cuts



Beef Primal Cuts



There are 9 main cuts known as the primal cuts of beef that are then divided up into smaller cuts that we see and buy at grocery stores.



Photo Credit: Iowa Beef Industry Council



Chuck

- The chuck is a primal cut that comes from the animal's shoulder
- It makes up about 26% of the carcass weight
- The chuck is made up of mostly connective tissue
 - Consist of five rib bones and portions of the blade and arm bones
 - Cattle use their shoulder muscles in order to move around
 - This makes the final cuts less tender, but very flavorful
- There are approximately 19 retail cuts of beef

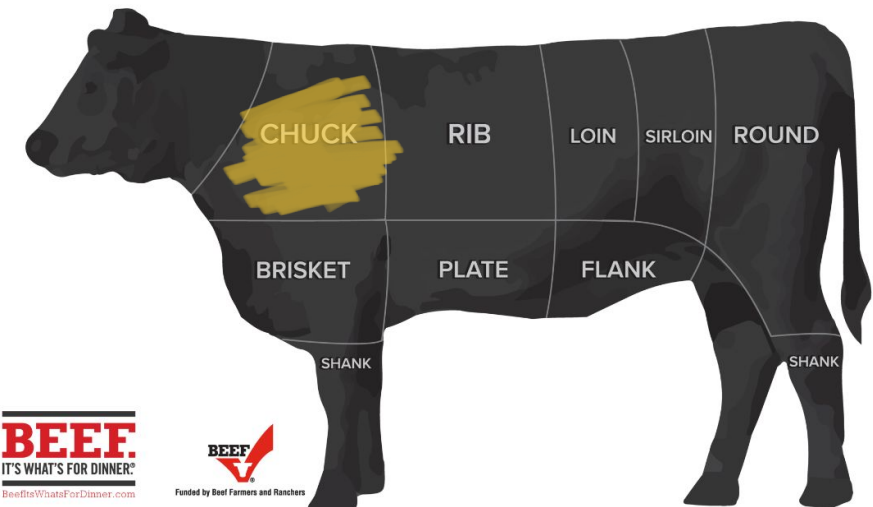
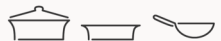


Photo Credit: Iowa Beef Industry Council



Chuck Cuts

Arm Chuck Roast



Cross Rib Chuck Roast



Arm Chuck Steak



Shoulder Roast

| LEAN

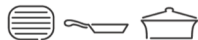


Blade Chuck Roast



Shoulder Steak*

| LEAN



Blade Chuck Steak*



Ranch Steak

| LEAN



7-Bone Chuck Roast



Flat Iron Steak





Chuck Cuts

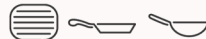
Chuck Center Roast



Top Blade Steak



Denver Steak



**Shoulder
Petite Tender**

| LEAN

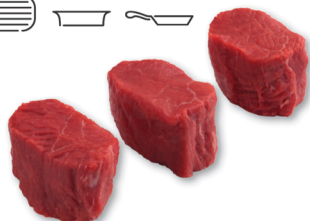
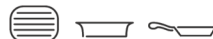


Chuck Eye Roast



**Shoulder Petite
Tender Medallions**

| LEAN



Chuck Eye Steak



Short Ribs, Bone-In



Country-Style Ribs





Brisket

- The brisket is about 10% of the carcass weight
- This primal cut is found below the shoulder
- The meat that comes from the brisket are very flavorful

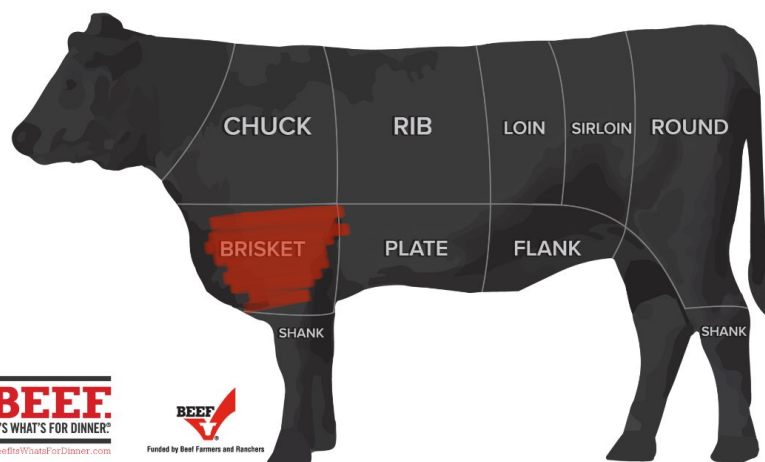


Photo Credit:
Iowa Beef
Industry
Council



Brisket Flat

| LEAN



Brisket Point



Photo Credits: Federation of State Beef Councils



Rib

- The rib makes up about 10% of the carcass weights
- It is located between the chuck and loin
 - Consists of the rib through the 13th / 14th rib
- The ribeye muscle is the extremely tender due to providing structural support
 - Also has lots of marbling throughout giving the cuts of meat lots of flavor
- There are 8 different retail cuts that come from the Rib primal cut

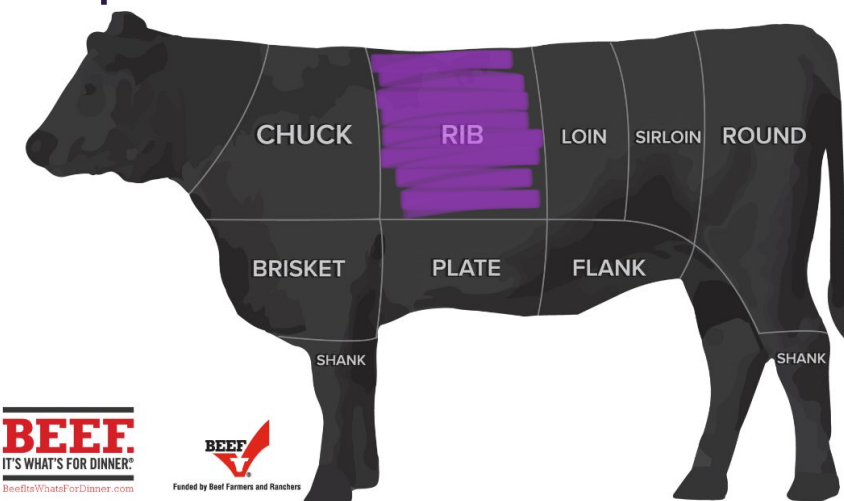


Photo Credit: Iowa Beef Industry Council



Rib Cuts

Ribeye Roast, Bone-In



Ribeye Steak, Bone-In



Back Ribs



Ribeye Roast, Boneless



Ribeye Steak, Boneless



Ribeye Cap Steak



Ribeye Petite Roast



| LEAN

Ribeye Filet



| LEAN



Plate and Flank

- Located directly below the rib, loin, and sirloin
- Makes up about 10% of the carcass weight
- These cuts of meat are made up of connective tissue

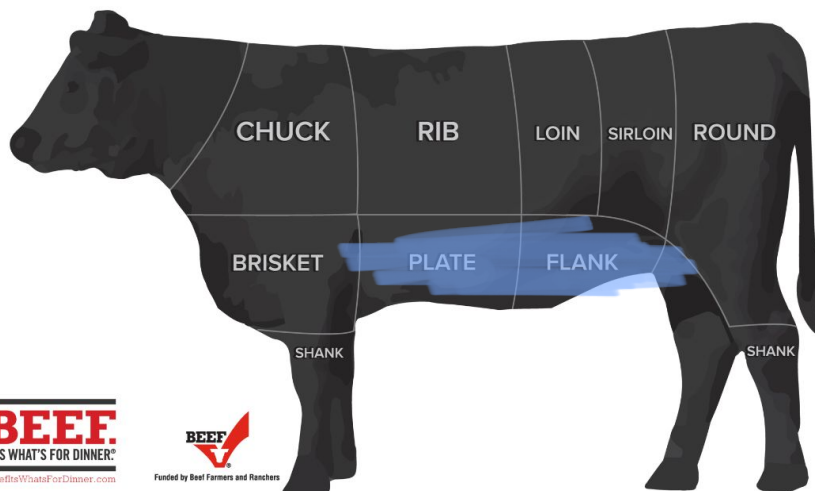


Photo Credit:
Iowa Beef
Industry
Council



Photo Credits: Federation of State Beef Councils



Loin

- The loin primal cut is found behind the rib
- Accounts for about 8% of the carcass weights
- Produces the most tender and expensive retail cuts of beef
- There are 8 retail cuts of that meat that come from the loin

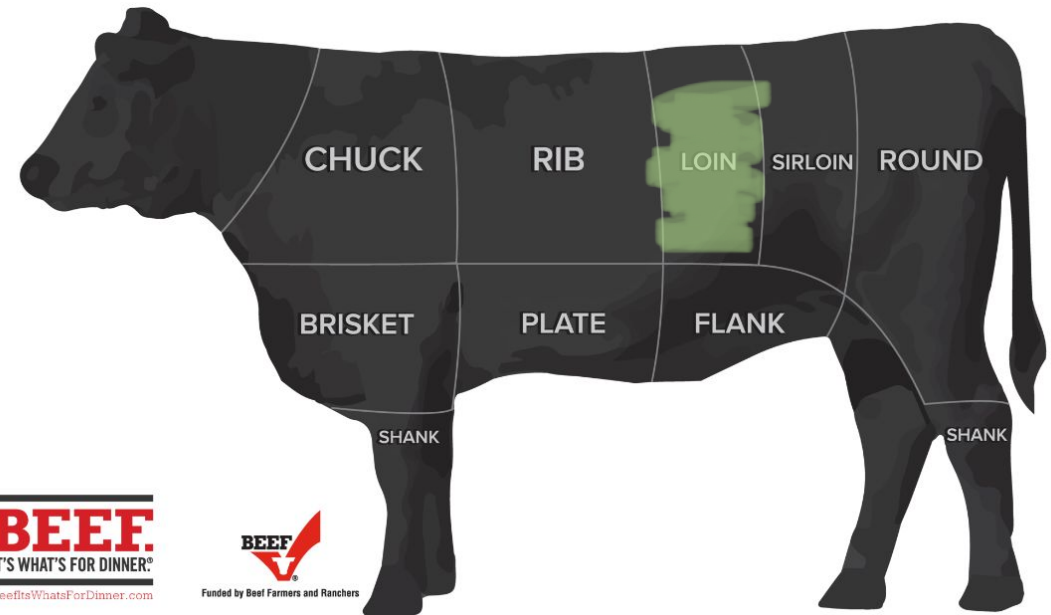


Photo Credit: Iowa Beef Industry Council



Loin

Porterhouse Steak



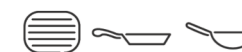
T-Bone Steak



Strip Steak, Bone-In | LEAN



Strip Steak, Boneless | LEAN



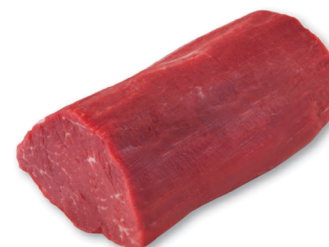
Strip Petite Roast | LEAN



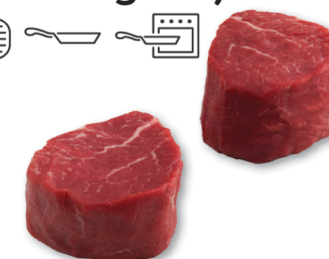
Strip Filet | LEAN



Tenderloin Roast | LEAN



Tenderloin Steak (Filet Mignon) | LEAN





Sirloin

- Is located between the loin and round
- Makes up for approximately 9% of the carcass weight
- Contains part of the back and hipbones
- Cuts are flavorful and tender
- There are 9 different retail cuts that come from this primal cut

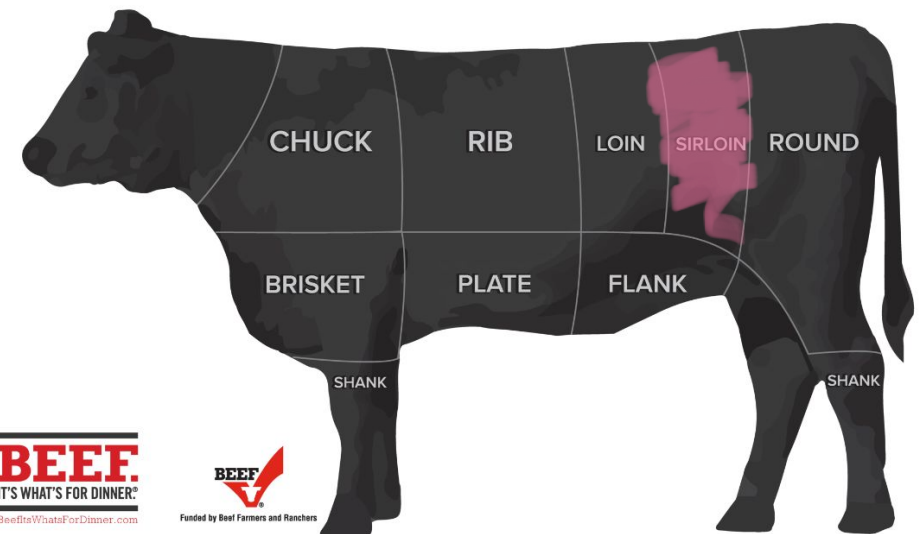


Photo Credit: Iowa Beef Industry Council



Sirloin





Round

- Accounts for about 27% of carcass weight
- Comes from the hip and hind leg of the animal
- Cuts are lean and flavorful
- There are 7 different types of retail cuts that come from the round

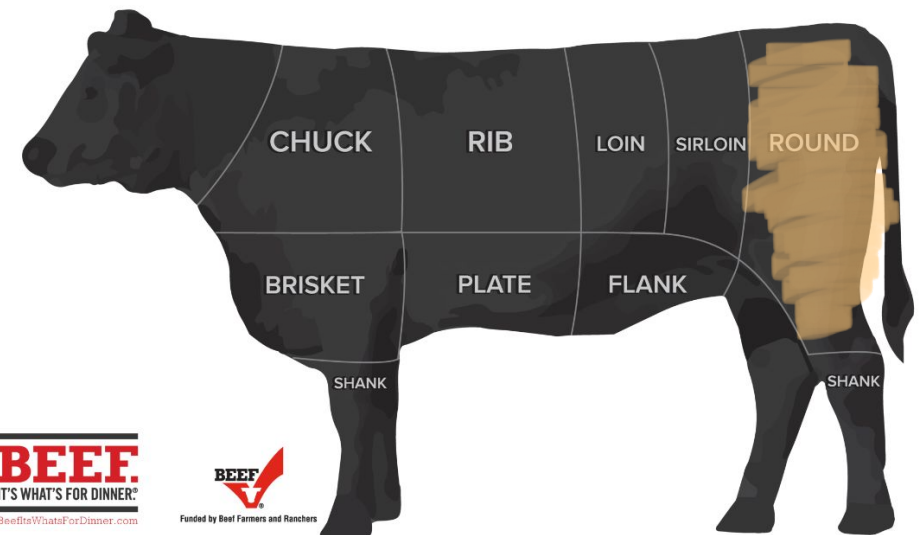


Photo Credit: Iowa Beef Industry Council



Round

Top Round Roast*

| LEAN



Top Round Steak*

| LEAN



Bottom Round Roast

| LEAN



Bottom Round Steak*

| LEAN



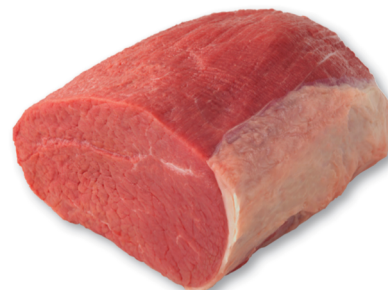
Bottom Round Rump Roast

| LEAN



Eye of Round Roast

| LEAN



Eye of Round Steak*

| LEAN

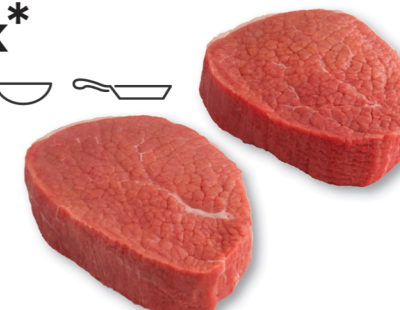


Photo Credits: Federation of State Beef Councils



Shank, Ground, and Ingredient Cuts

- Shank is the top part of the leg located just below the brisket and round
- Ground
 - Consist of meat and fat that has been trimmed from individual cuts are blended
 - Comes in a variety of leanness ranging from 70-90%
 - The popular choice of ground is an 80-85% lean
 - Percentage Lean means the amount of fat that is found in ground beef products. The higher the percentage the less amount of fat in the cut
 - Fat gives the meat, flavor, juiciness, and tenderness
- Ingredient Cuts
 - Consist of meat trimmings from other cuts

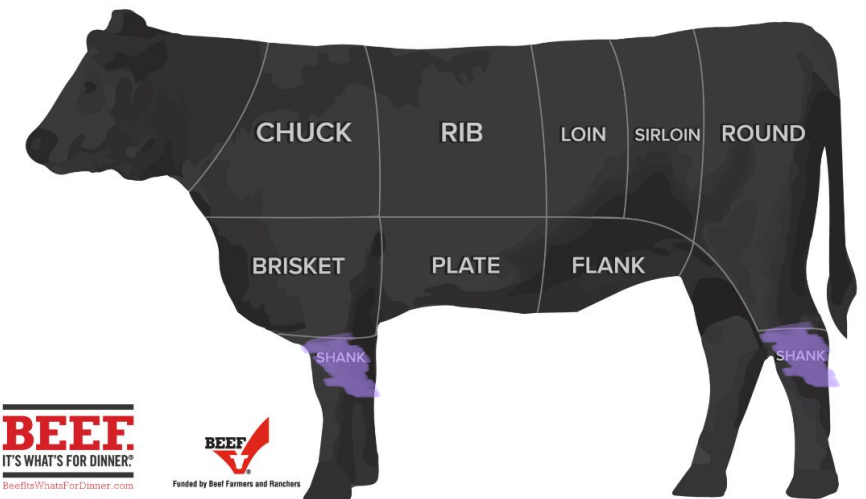


Photo Credit: Iowa Beef Industry Council



Shank, Ground, and Ingredient Cuts

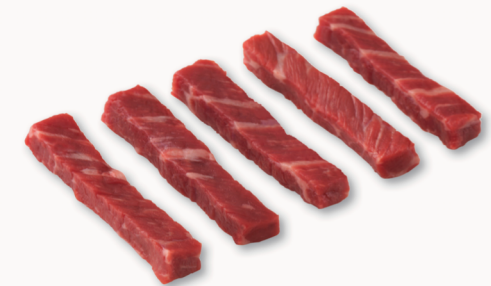
**Ground Beef and
Ground Beef Patties**



Cubed Steak



Strips



Kabobs*



Shank Cross-Cut | LEAN



Stew Meat





Beef Cut Grades

- There are eight levels of quality grades, Prime, Choice, Select, Standard, Commercial, Utility, Cutter, and Canner
 - Marbling, Age, and Maturity of the beef dictates the quality grade
 - Marbling is intramuscular fat and specs of fat found in retail cuts of beef
 - The higher the marbling content the more flavor found in the cut of beef
 - Prime is the highest quality cuts of beef
 - These cuts are usually found at expensive restaurants
 - Canner is the lowest quality cut of beef
 - These cuts are used to make hotdogs



Beef Cut Grades



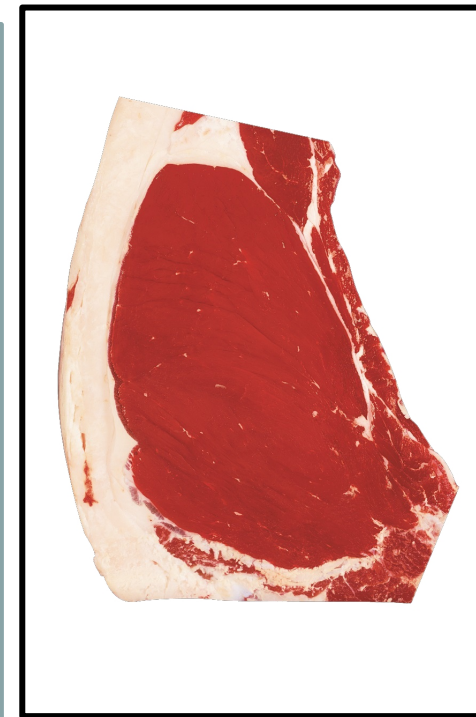
**USDA
PRIME**

When grading beef butchers look at the marbling. Marbling is the white streaks found within the red part of the meat.



**USDA
CHOICE**

The higher the marbling content the higher grade it has. Prime has the highest amount of marbling while Select has the least.



**USDA
SELECT**



COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences



Beef By- Products



Beef By- Products

- By-Products are an incidental or secondary product
- We use beef by-products everyday whether we know it or not
- There are 3 different categories of beef by-products
 - Edible
 - Inedible
 - Medicinal

Fun Fact!

We use 100% of the cow and nothing goes to waste.



Edible By-Products

- Edible by-products consist of:
 - Variety meat
 - Liver, Kidneys, tongue
 - High in nutritional value
 - These cuts are found in gourmet dishes
 - Gelatin comes from bones
 - Gummy worms, marshmallows, and jello
 - Fatty Acids from Fats
 - Chewing gum, oleo, and margarine

Fun Fact!

Oleo and margarine are used to bake cookies, and cakes.



Inedible By-Products

- We use inedible by-products daily without realizing it
 - From the horns and hooves
 - We get piano keys, and pet chews
 - From the hair
 - We get Artists' paintbrushes, and felt for weather stripping
 - From the hide
 - We get leather that is used to make upholstery, luggage, clothing, gloves, wallets, purses, boots and shoes, basketballs, baseballs, baseball mitts, etc.
 - The Intestines are used to make tennis racquet strings, and instrument strings
 - Fats and Fatty Acids are used in
 - cosmetics, soaps, deodorants, pet foods, candles, crayons, shaving cream, etc.
 - Gelatin from bones
 - Glue, emery boards, and adhesive bandages

Fun Fact!

1 cow hide makes 12 basketballs, or 144 baseballs, or 20 footballs, or 18 volleyballs, or 18 soccer balls, or 12 baseball gloves.



Medicinal By-Product

- Cattle also provide by-products that are used in medicines
 - Pancreas
 - Insulin- for treating diabetes and high blood sugar
 - Chymotrypsin- promotes healing of burns and wounds
 - Pancreatin- aids in digestion
 - Glucagon- treats hypoglycemia or low blood sugar
 - Liver
 - Heparin- anti-coagulant
 - liver extract- treatment of anemia
 - Vitamin B-12- prevention of B-Complex deficiencies

Fun Fact!

It takes 26 pancreases to provide enough insulin to keep one diabetic person alive for a year.

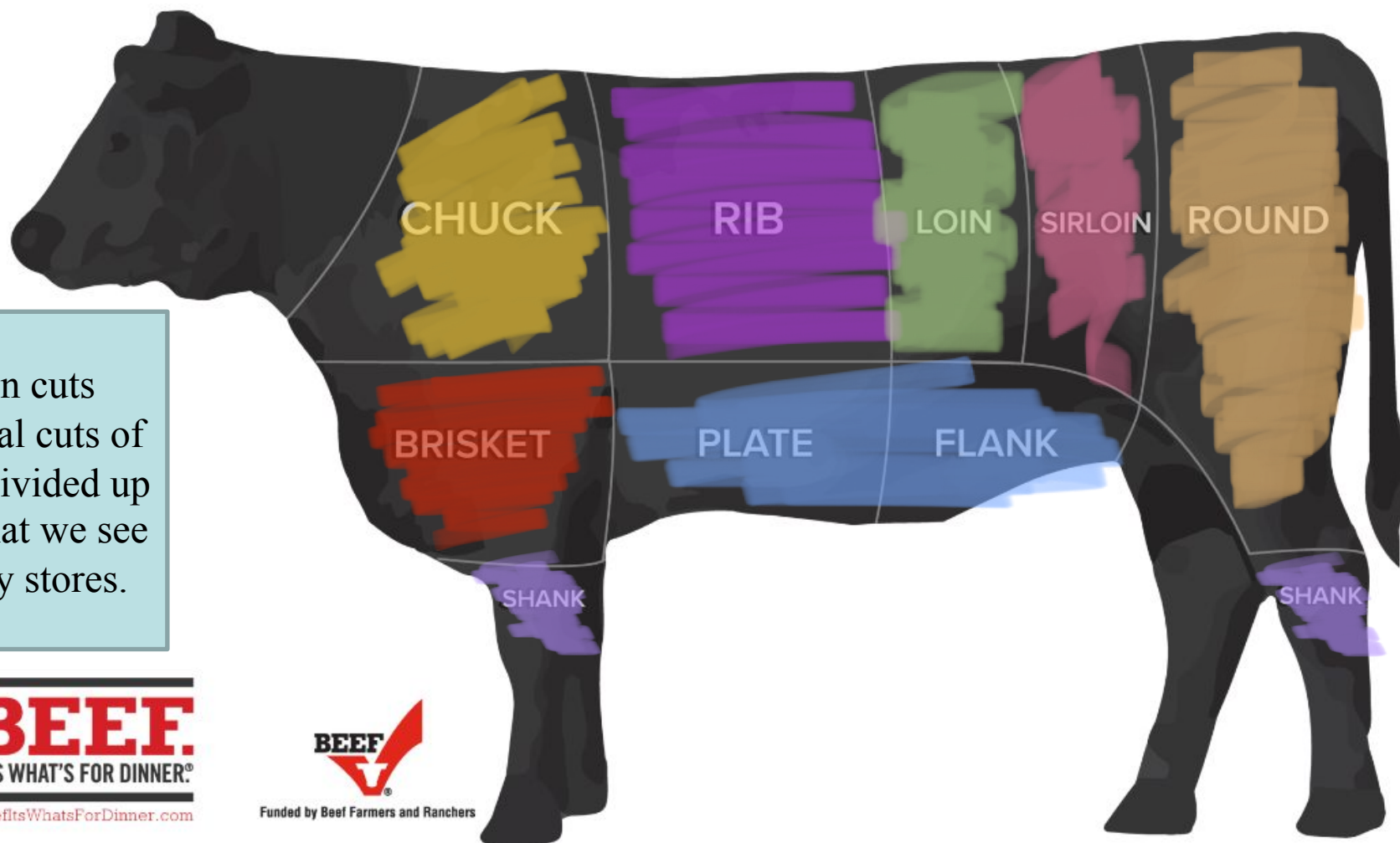


Medicinal By-Product

- Bone
 - Bone marrow- Treatment of blood disorders
 - Soft cartilage- plastic surgery component
 - Bone meal- calcium and phosphorous source
- Pituitary Gland
 - Prolactin- Promotes lactation
 - Pressor hormone- Regulated blood pressure
 - ACTH- treatment of arthritis and allergies
- Blood
 - Iron- Treatment of anemia
 - Thrombin- coagulant which helps blood clot



Review



There are 9 main cuts known as the primal cuts of beef that are then divided up into smaller cuts that we see and buy at grocery stores.



Review

- The Chuck is a primal cut that comes from the animal's shoulder
 - It makes up about 26% of the carcass weight
- The Brisket primal cut is found below the shoulder
 - It makes up about 10% of the carcass weight
- The Rib is found behind the chuck
 - The rib makes up about 10% of the carcass weights
- The Plate and Flank is located directly below the rib, loin, and sirloin
 - Makes up about 10% of the carcass weight



Review

- The Loin primal cut is found behind the rib
 - Accounts for about 8% of the carcass weights
- The Sirloin is located between the loin and round
 - Makes up for approximately 9% of the carcass weight
- The Round comes from the hip and hind leg of the animal
 - Accounts for about 27% of carcass weight
- Shank is the top part of the leg located just below the brisket and round
- Ground Consist of meat and fat that has been trimmed from individual cuts and blended
- Ingredient Cuts consist of meat trimmings from other cuts



Review

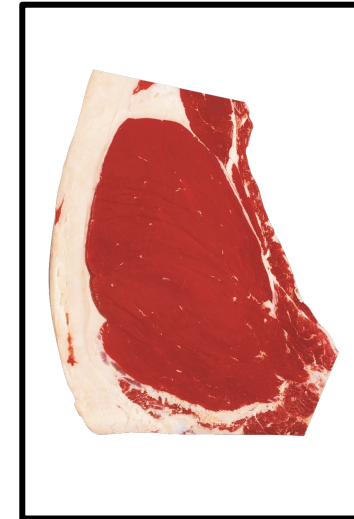
- There are eight levels of quality grades, Prime, Choice, Select, Standard, Commercial, Utility, Cutter, and Canner
- Marbling, Age, and Maturity of the beef dictates the quality grade
- Marbling is the white streaks found in the cuts of beef



USDA
PRIME



USDA
CHOICE



USDA
SELECT



Review

- By-Products are an incidental or secondary product
 - Three different categories edible, inedible, and medicinal
- Edible By-Products
 - Are products other than popular cuts of meat
 - Include, variety of meats, gelatin that's used for gummy candies, and fats that are used for baking
- Inedible By-Products
 - Are products that are not suitable for human consumption
 - Includes a wide range of products that we use daily, sports equipment, cosmetics, crayons
- Medicinal By-Products
 - Are products that are used to help keep people healthy
 - Includes Insulin, Vitamin B-12



References

- “All About Beef .” Illinois Agriculture in the Classroom .
- “Beyond the Beef- Background Information .” *Ag in the Classroom* , USDA , forces.si.edu/main/pdf/6-8-BeyondTheBeef.pdf.
- “Cattle By-Products .” Dairy Max .
- Do You Raise Beef? (n.d.). Retrieved September 10, 2020, from <https://www.iabeef.org/raising-beef/iowa-local-beef-directory/do-you-raise-beef>
- It's What's For Dinner - Cut Charts. (n.d.). Retrieved September 10, 2020, from <https://www.beefitswhatsfordinner.com/cuts/cut-charts>
- Israelsen, B. (n.d.). Beef: Making the Grade. Retrieved September 10, 2020, from <https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=698>
- “The Truth About Beef Byproducts.” *The Truth About Agriculture*, 17 June 2015, thetruthaboutag.com/2015/06/17/the-truth-about-beef-byproducts/.
- Thiboumery, A., & Jepsen, K. (2013). *Beef and Pork Whole Animal Buying Guide* [PDF]. Ames: Small Meat Processors Working Group.



Questions

Hillary Pope
Extension and 4-H Agent
803-584-4207
hpope3@clemson.edu

