

# Beef Carcass Grade Standards



# Purpose

- Identify Consumer Preference
- Identify Differences of Value
- Transmit Signals within Industry



# Value Based Marketing Grid

All prices are on a cwt basis

	Pr	Ch +/o	Ch -	Se	St	HB	DC/BS
YG 1	\$254	\$244	\$242	\$237	\$217	\$211	\$208
YG2	\$252	\$243	\$241	\$236	\$216	\$211	\$208
YG3	\$250	\$241	\$239	\$235	\$215	\$211	\$208
YG4	\$236	\$227	\$228	\$223	\$213	\$197	\$194
YG5	\$232	\$223	\$224	\$219	\$209	\$193	\$190

Weight Discounts: <500 lbs (\$28); 500-549 lbs (\$14); 1000-1050 lbs (\$7);  
>1050 (\$24). Dairy Type (\$3); Older than 30 MOA (\$18)



# Agricultural Marketing Act of 1946

"...the quality of agricultural products may be marketed to the best advantage, that trading may be facilitated, and that consumers may be able to obtain the quality of product which they desire."



# History of Grading

United States Department of Agriculture

Service and Regulatory Announcement No. 99  
(AGRICULTURAL ECONOMICS)

OFFICIAL  
UNITED STATES STANDARDS FOR  
GRADES OF CARCASS BEEF

UNDER AN ACT OF CONGRESS  
APPROVED FEBRUARY 10, 1925  
(43 STAT. 822, 844-845, 68TH CONGRESS)

ISSUED JUNE, 1925

WASHINGTON : GOVERNMENT PRINTING OFFICE : 1925



# Major Changes

1939, 1941, 1949,  
1950, 1956, 1965,  
1973, 1975, 1980,  
1987, 1989, 1997

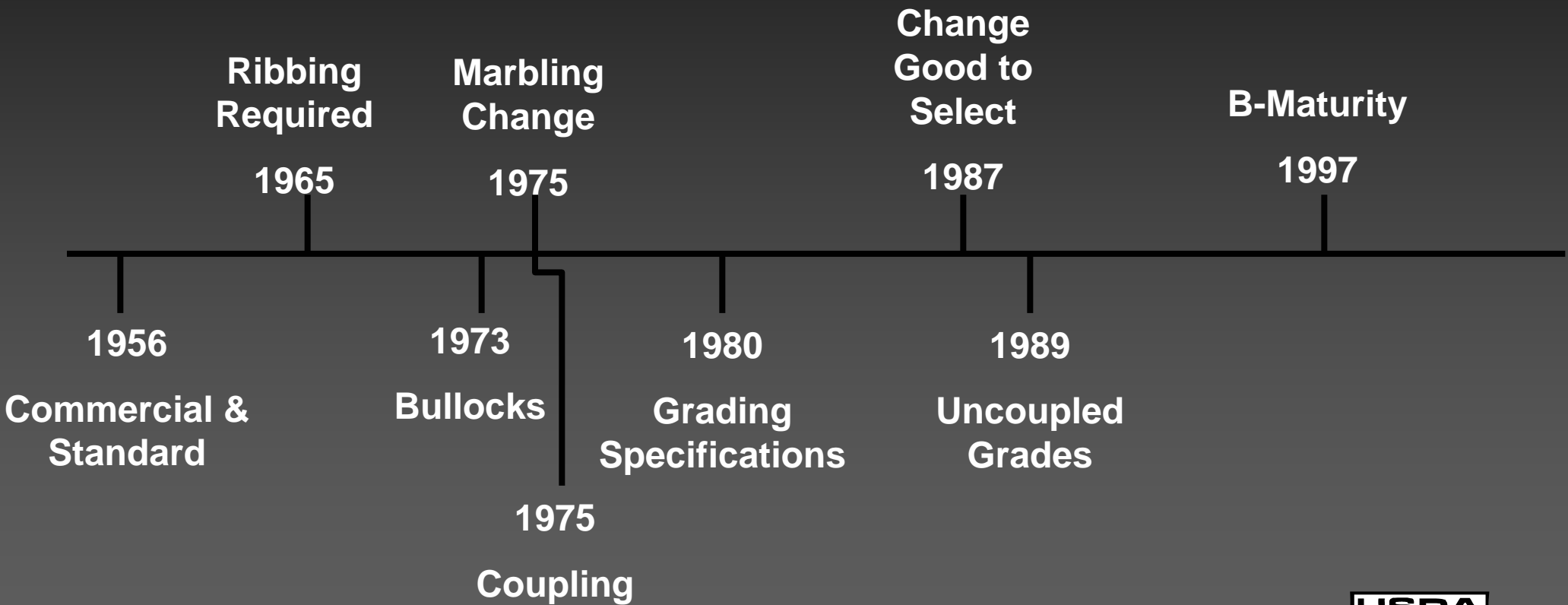


# Reasons for Change

- Scientific Evidence
- Changing Trade Practices
- New Technology
- Changing Market Conditions



# Historical Timeline of the Meat Grading Service





# Quality Grades



# Requirements for Grading

- Easy Access
- Adequate Illumination >100 cp
- Properly Chilled 30 - 40° F
- Ribbed between 12/13<sup>th</sup> rib
- Ribbed >10 Minutes
- Slaughter Establishment



# Ribbing

- Procedure

- Time



# Ribbing

When both sides are ribbed and the characteristics of the two ribeyes would justify different quality and/or yield grades, the final grade shall reflect the “highest” grade as determined from either side.



# Quality Grade refers to Palatability Attributes

- Tenderness
- Flavor
- Juiciness



# Quality Grade Determination

- Maturity

  - Bone

  - Lean

- Marbling

- Firmness of lean





# Maturity

Physiological maturity determined by evaluating the size, shape and ossification of the bones and cartilages and the color and texture of the lean at the ribeye.

- All maturity indicating factors are considered – composite evaluation
- Factors seldom develop to the same degree – limitless number of potential combinations to consider



# Maturity Groups

A  
B  
C  
D  
E



Maturity groups range by 10%  
0 (youngest) to 100 (oldest)



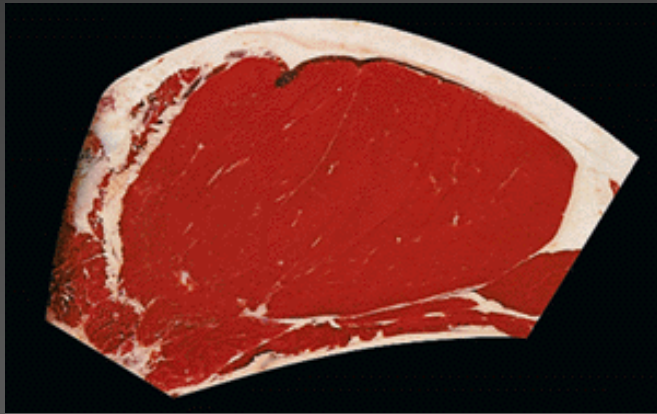


# Relationship of Carcass Maturity to Chronological Age

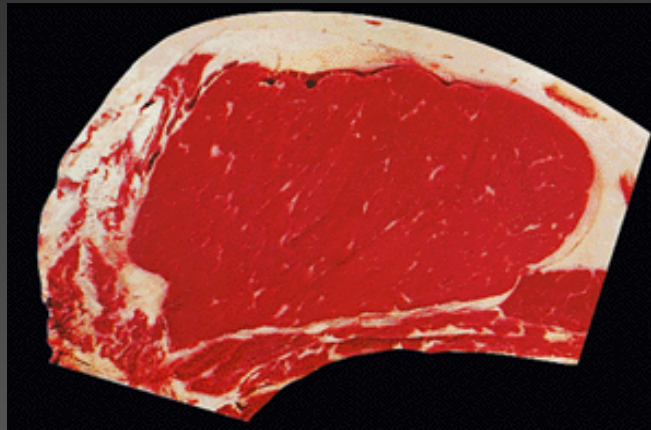
Maturity Group	Approximate Age
A	9-30 months
B	30-42 months
C	42-72 months
D	72-96 months
E	96 months or older



# USDA Grades



USDA **Select**



USDA **Choice**



USDA **Prime**



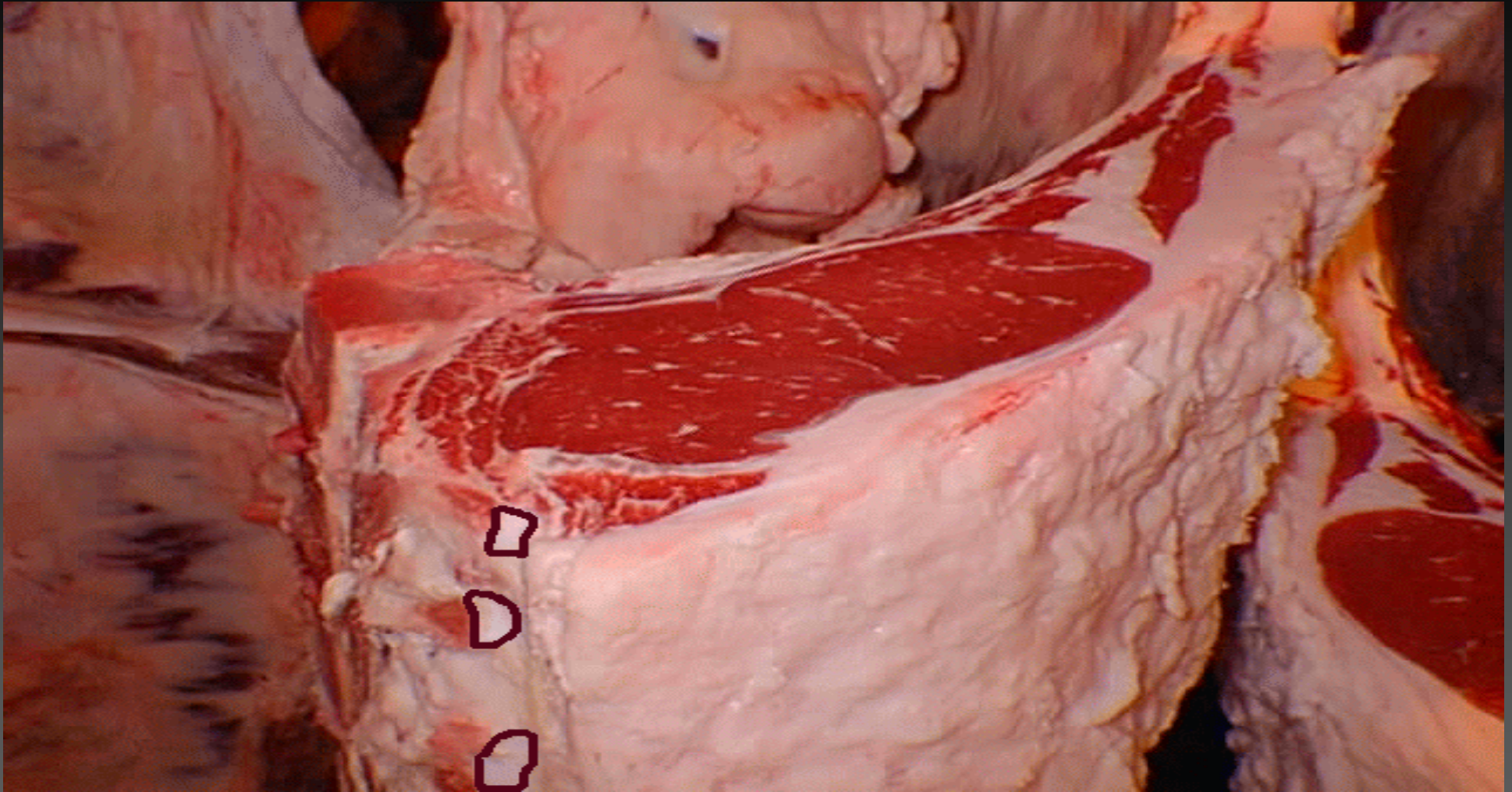
# Maturity

● Lean

● Skeletal







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# Color

- Light Grayish Red
- Light Red
- Moderately Light Red
- Slightly Light Red
- Slightly Dark Red
- Moderately Dark Red
- Dark Red
- Very Dark Red

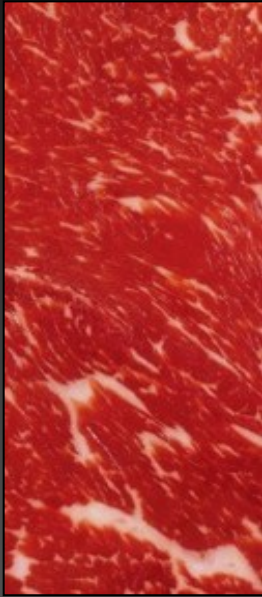




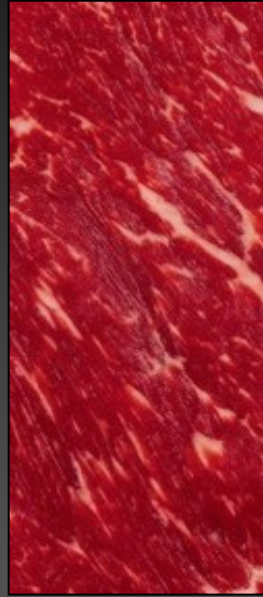
# Lean Maturity



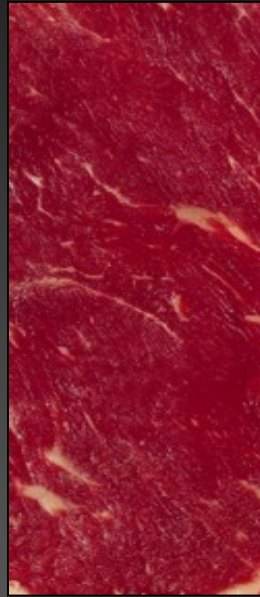
A<sup>20</sup>



A<sup>50</sup>



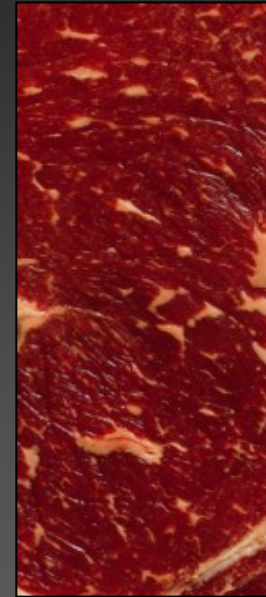
B<sup>00</sup>



C<sup>00</sup>



D<sup>00</sup>



E<sup>00</sup>



E<sup>100</sup>



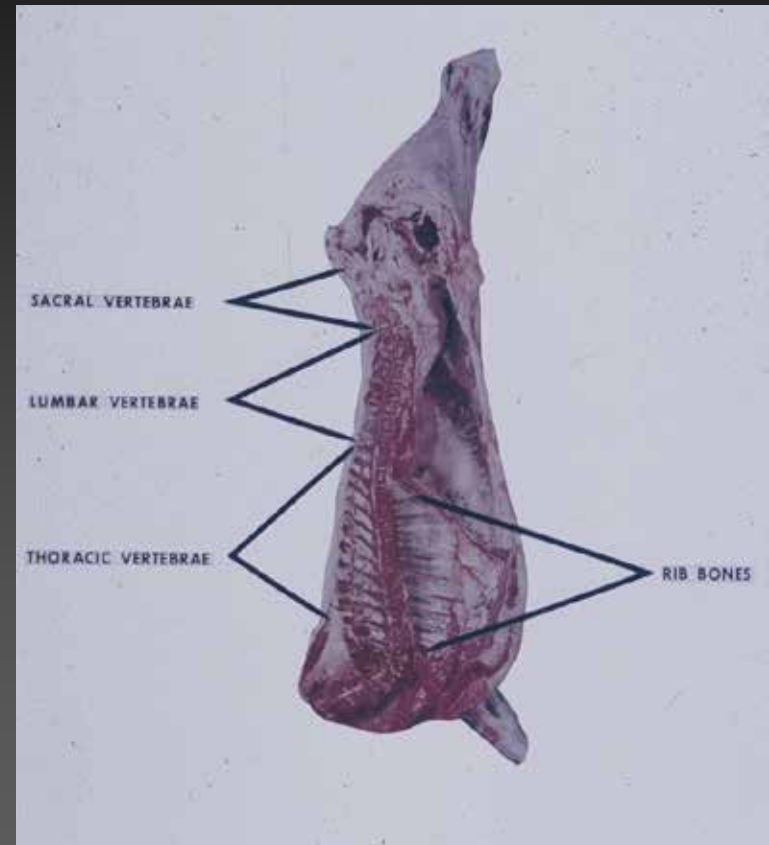
# Texture

- Very Fine
- Fine
- Tends to be Fine
- Moderately Fine
- Slightly Coarse
- Coarse
- Very Coarse



# Skeletal Maturity

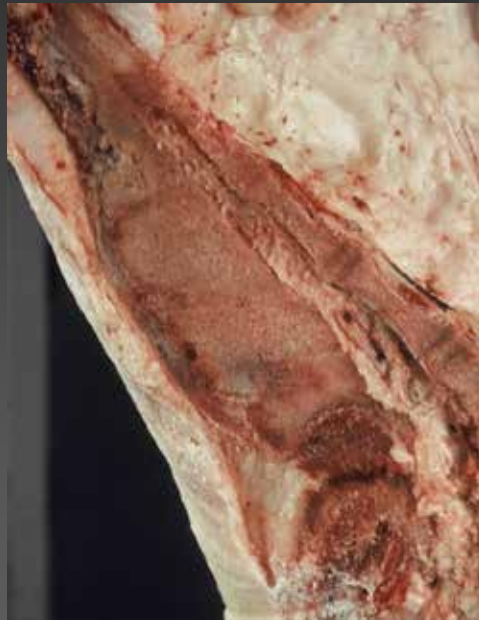
- Sacral Vertebrae
- Lumbar Vertebrae
- Thoracic Vertebrae
- Rib Bones
- Chine Bones





# Skeletal Maturity

## Sacral Vertebrae



# Skeletal Maturity

## Lumbar Vertebrae



# Skeletal Maturity

## Thoracic Vertebrae





# Skeletal Maturity

## Rib Bones



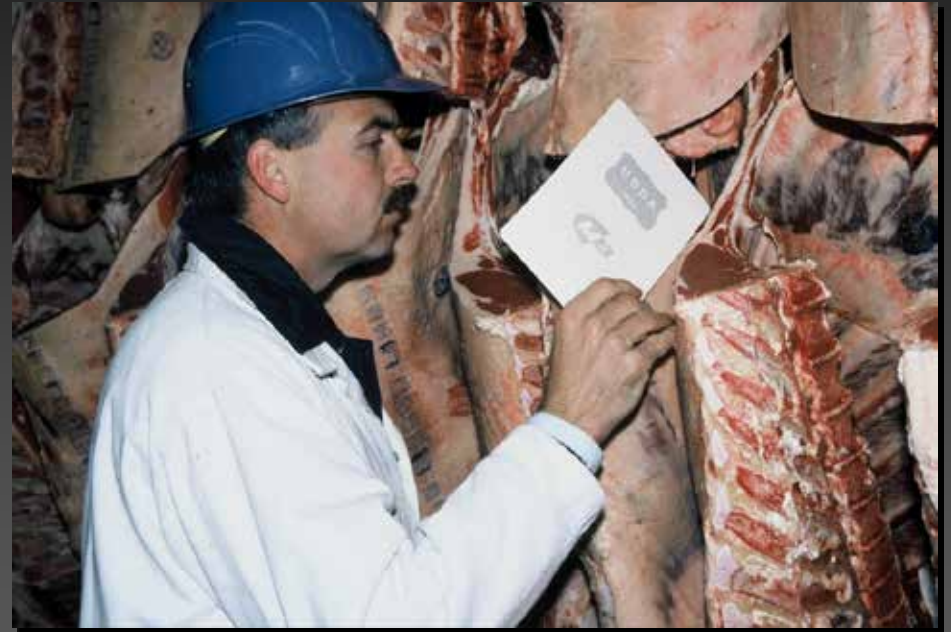
# Firmness

- Firm
- Moderately Firm
- Slightly Firm
- Slightly Soft
- Moderately Soft
- Soft
- Soft and Slightly Watery
- Soft and Watery
- Very Soft and Watery



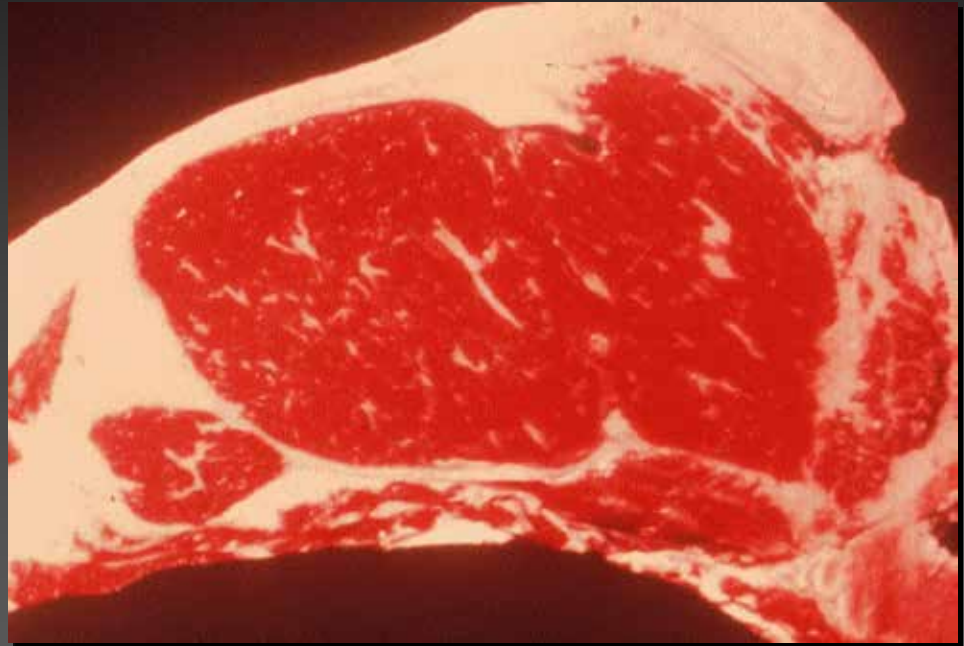
# Marbling

- Fat Within the Muscle (Intramuscular Fat)
- Evaluated in the Ribeye between the 12th-13th Ribs.



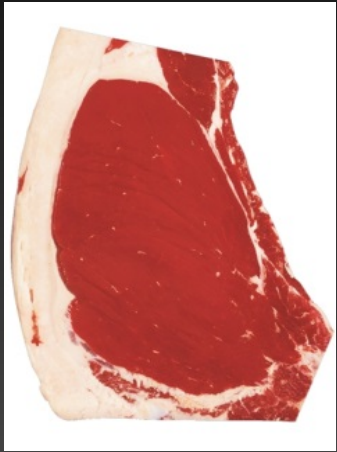
# Marbling Evaluation

- Amount
- Texture
- Distribution



# U.S. Marbling Scores

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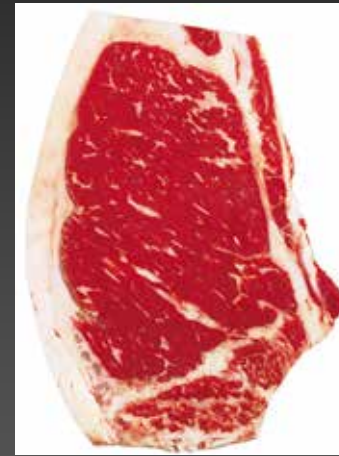
**SL<sup>0</sup>**



**SM<sup>0</sup>**



**MT<sup>0</sup>**



**MD<sup>0</sup>**



**SLAB<sup>0</sup>**





# Marbling Degrees

Recognized for Carcass Evaluation  
Purposes

Very Abundant

Abundant

Moderately Abundant



# Quality Grade Abbreviations

## Percent of a Grade

0, 10, 20, 30, 40,

50, 60, 70, 80, 90,



# Marbling Evaluation

## Influences

- Chill
- Bloom
- Heat Ring
- Lighting



# USDA Grades

		<u>Maturity</u>				
<u>Degrees of Marbling</u>		A	B	C	D	E
		9 mo.	30 mo.	42 mo.	6 yr.	8 yr.
Abundant						
Moderately Abundant		Prime				
Slightly Abundant				Commercial		
Moderate						
Modest		Choice				
Small					Utility	
Slight		Select				
Traces		Standard				Cutter
Practically Devoid						



# Discounts for Dark Cutters

Prime, Choice, or Select

Up to 1 Full Grade

Standard or Commercial

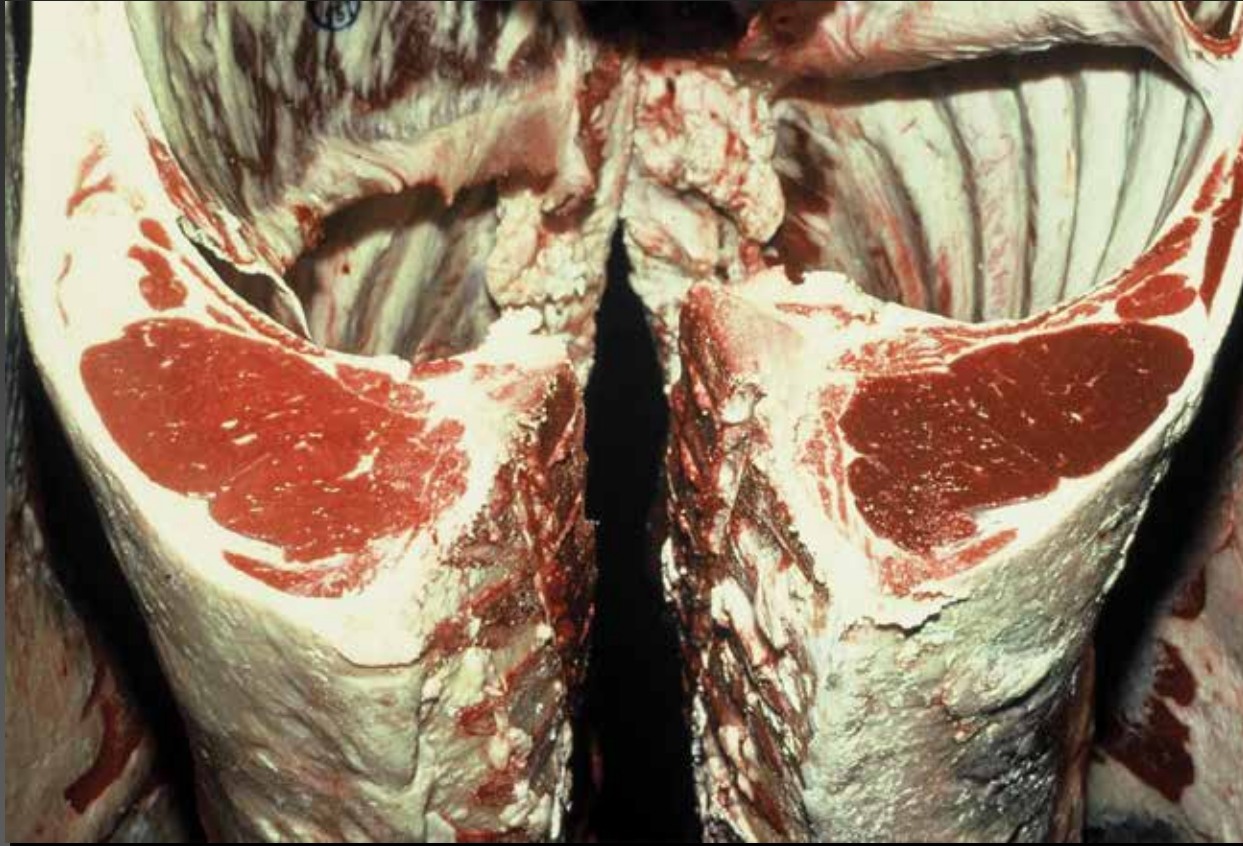
Up to 1/2 a Grade

Utility, Cutter, or Canner

Not Considered



# Dark Cutters



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# Dark Cutters

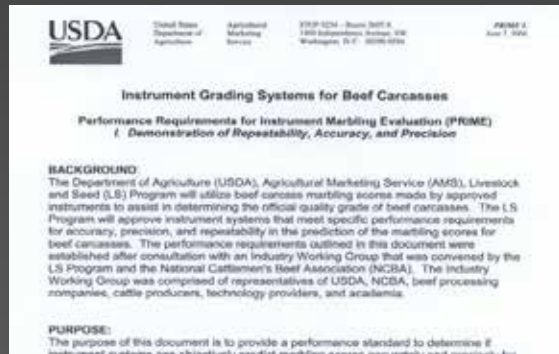




# Instrument Grading

Published June 2006

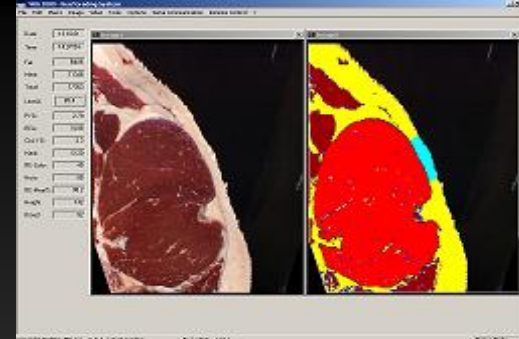
## “Performance Requirements for Instrument Marbling Evaluation (PRIME)”







# Objectives

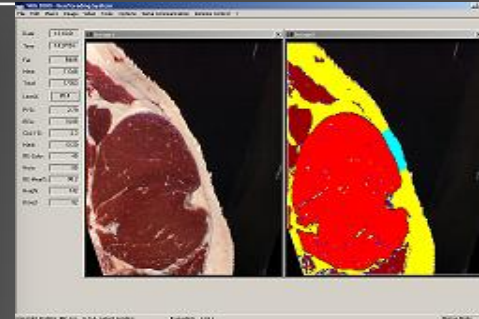
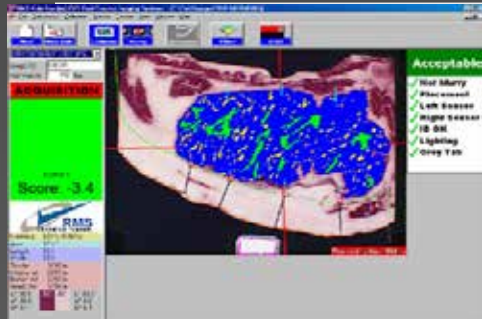


- Reduce variation
  - Ø Within shifts and between shifts
  - Ø Between plants, areas and regions
- Increase accuracy, precision and resolution of grade factor assessment
  - Ø Official yield grades in tenths
  - Ø Refinement of marbling degree categories

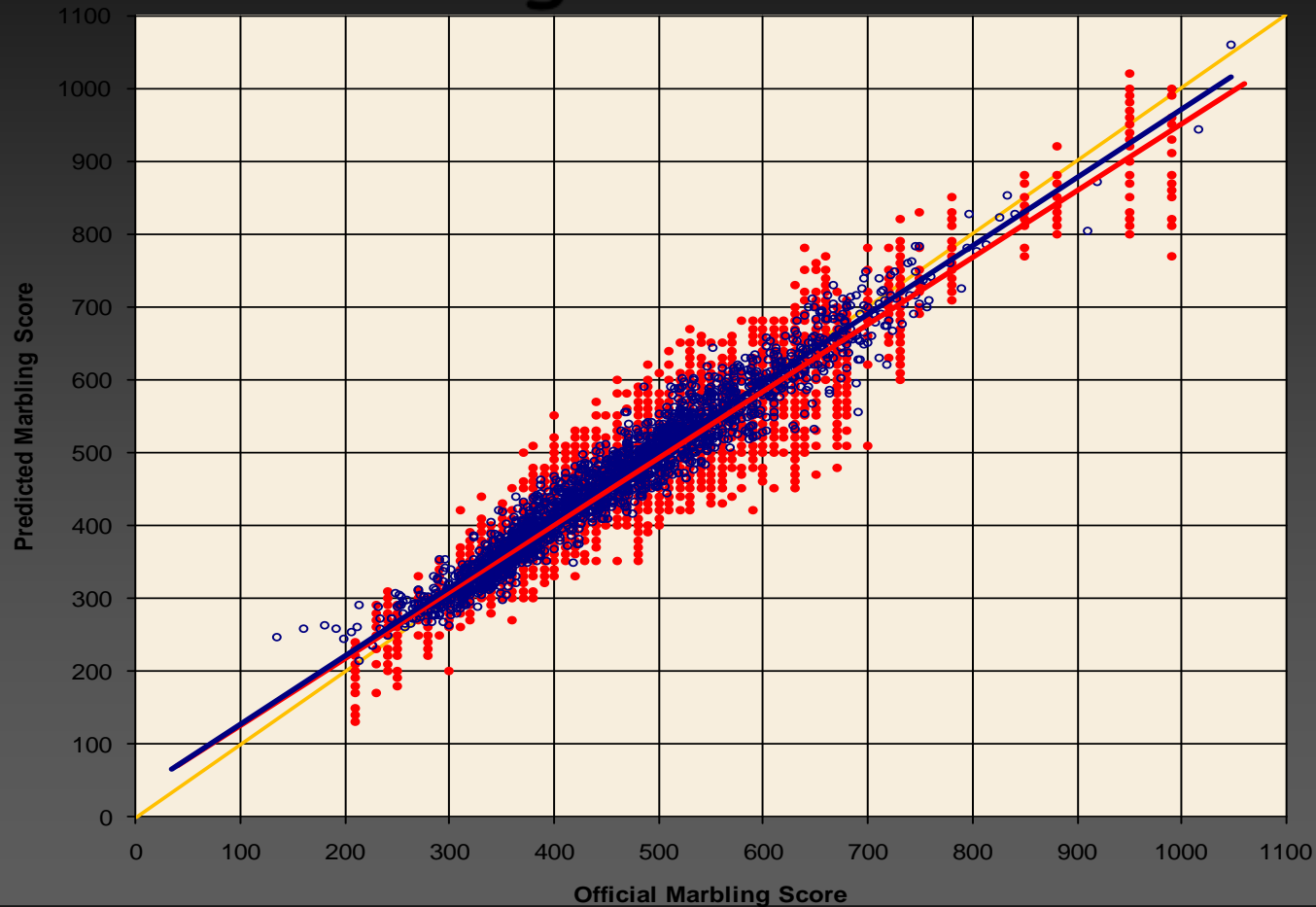


# Accuracy, Precision and Bias of Instrument Marbling Assessment

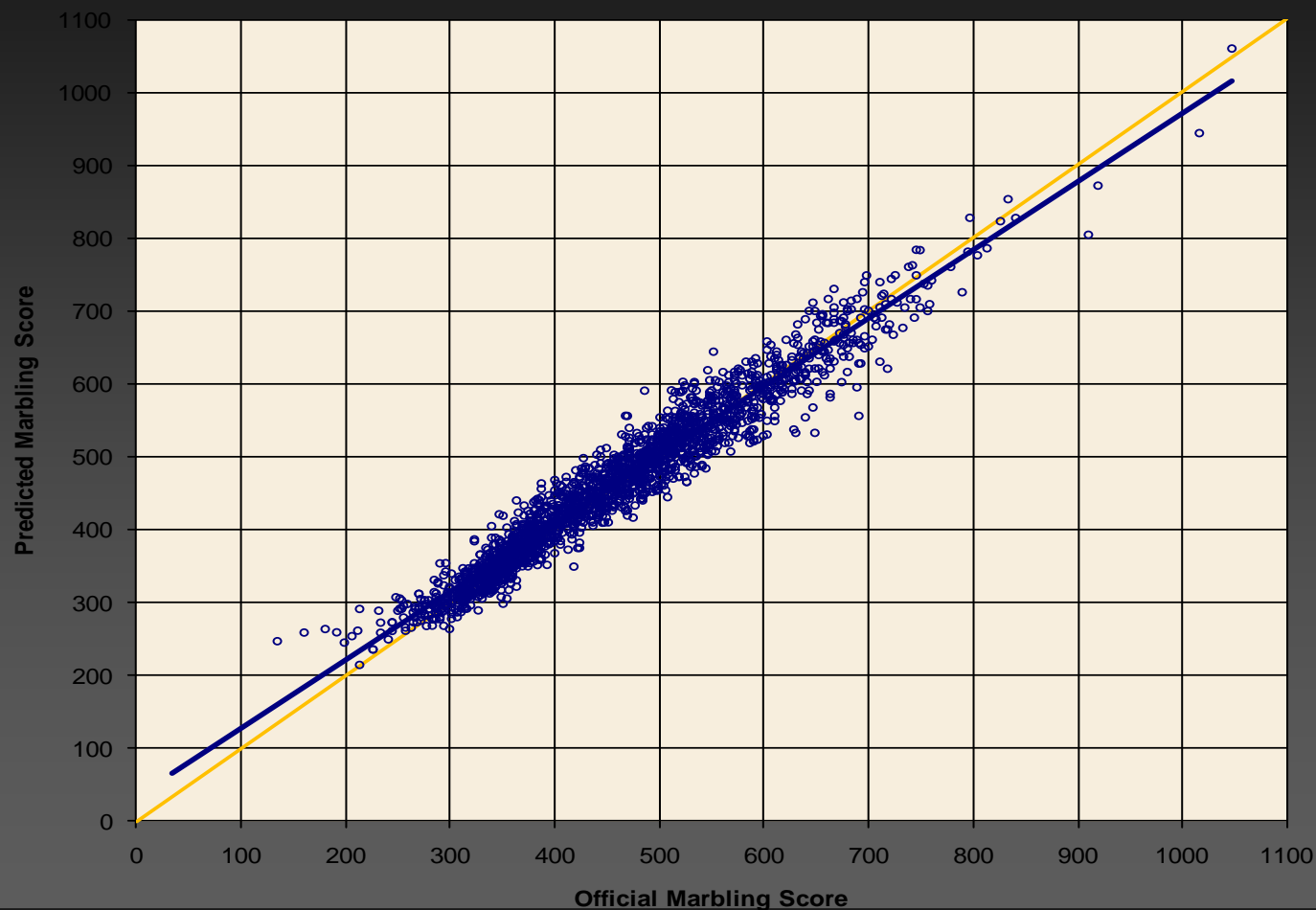
Performance Element	Standard	Instruments
Average residual (Instrument - MEMS)	$0 \pm 10$	2.1
Standard deviation of the residuals (RSD)	$\leq 35$	30.5
Bias (Slope of the residual vs avg of inst. + MEMS*)	$0.000 \pm 0.075$	-0.050



# Instrument and USDA Supervisor Marbling Assessments



# Instrument Marbling Assessment



# Yield Grade

The indicated yield of closely trimmed (1/2 inch or less), boneless retail cuts expected to be derived from the major wholesale cuts (round, sirloin, short loin, rib, and square-cut chuck) of a carcass.





# Official USDA Yield Grades For Beef Carcasses

Yield Grade 1

Yield Grade 2

Yield Grade 3

Yield Grade 4

Yield Grade 5



# Percent Boneless, Closely Trimmed Retail Cuts From the Round, Loin, Rib, and Chuck

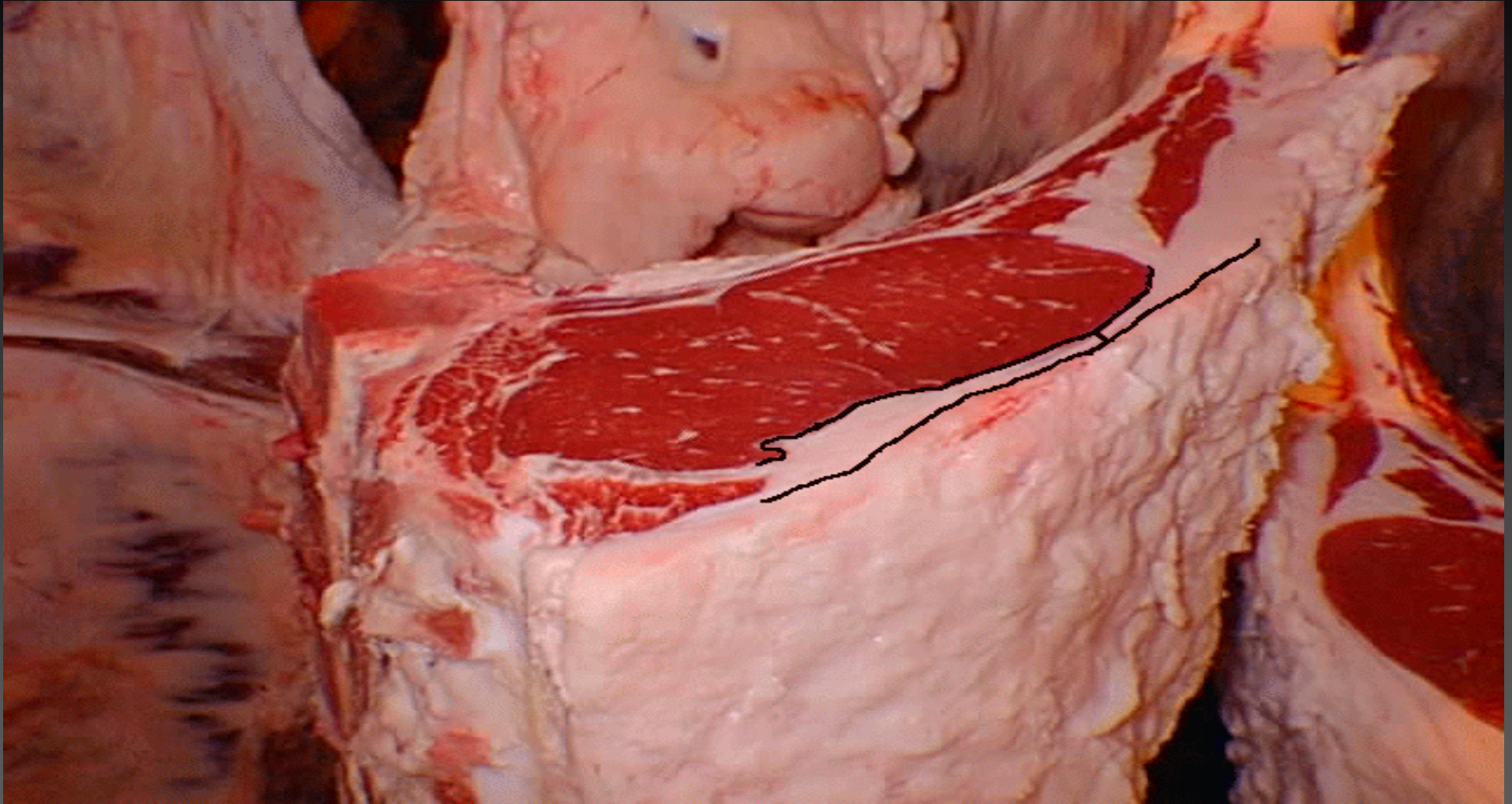
Yield Grade	Yield of Cuts
1.0	54.6
2.0	52.3
3.0	50.0
4.0	47.7
5.0	45.4



# Yield Grade Factors

- Thickness of Fat Over the Ribeye
- Ribeye Area
- Percent Kidney, Heart, and Pelvic Fat
- Hot Carcass Weight





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# Hot Carcass Weight



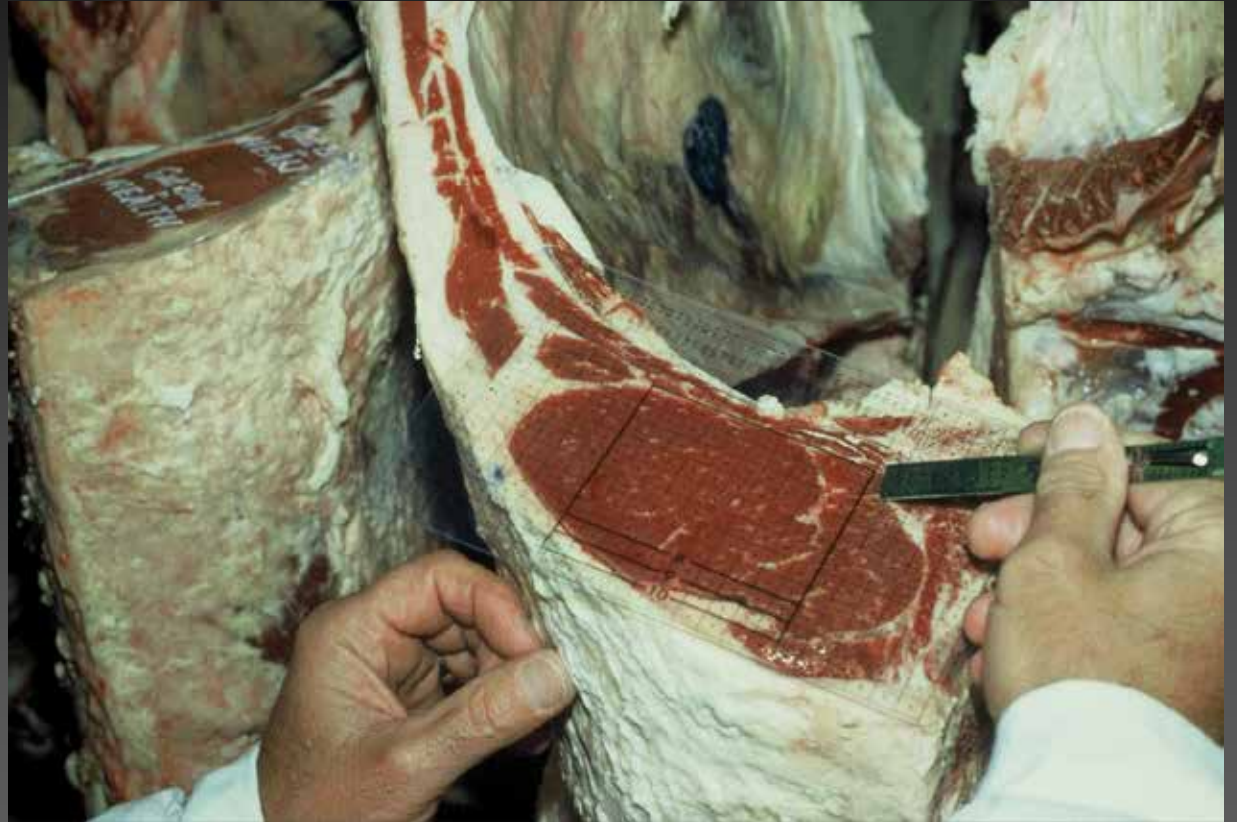




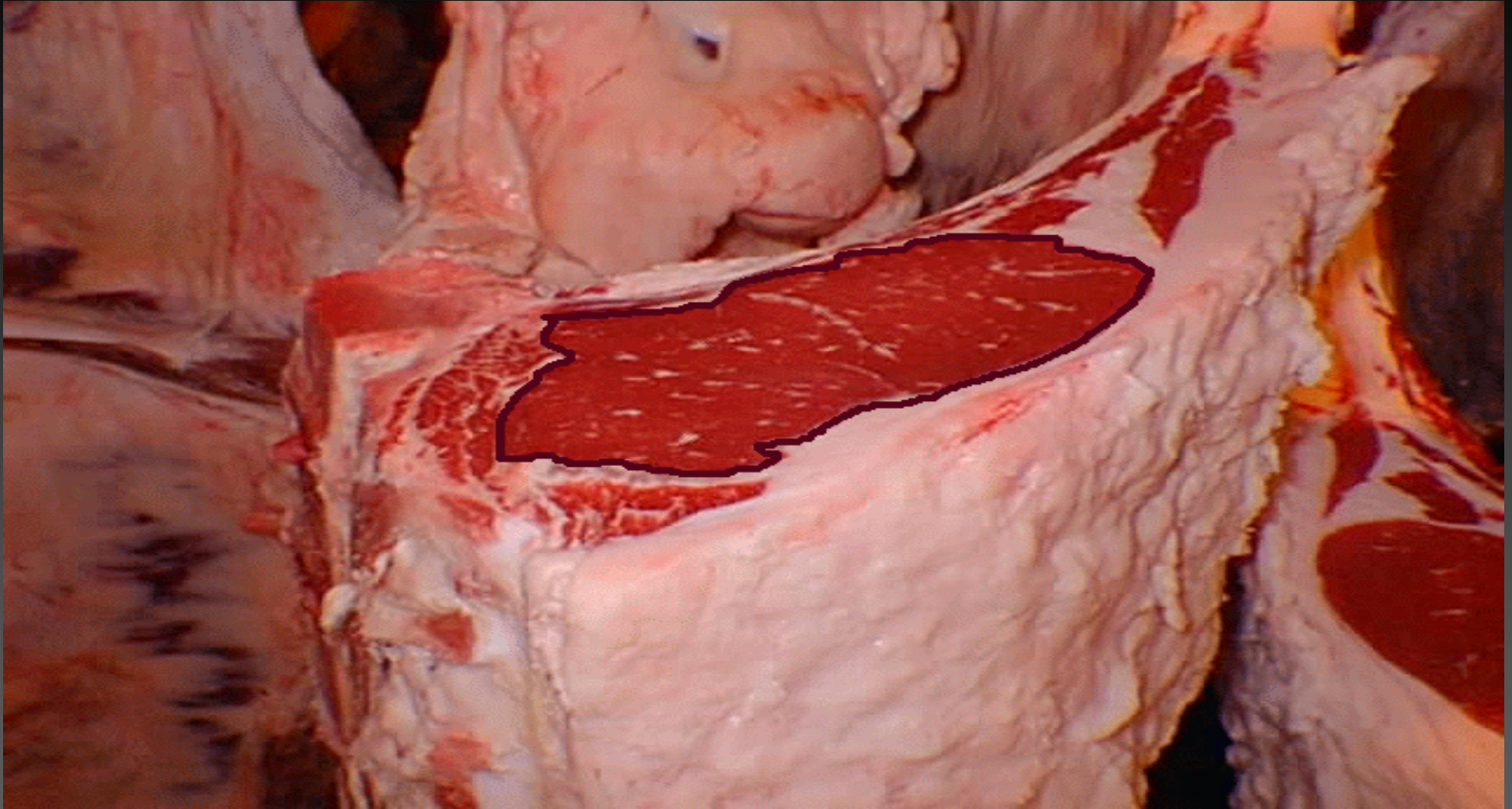
# KPH Fat



# Ribeye Area







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# Preliminary Yield Grade

PYG

Fat

2.0

0.00

2.5

.20

3.0

.40

3.5

.60

4.0

.80

PYG

Fat

4.5

1.00

5.0

1.20

5.5

1.40

6.0

1.60



# REA/HCW Schedule

HCW	REA	HCW	REA
600	11.0	800	13.4
625	11.3	825	13.7
650	11.6	850	14.0
675	11.9	875	14.3
700	12.2	900	14.6
725	12.5	925	14.9
750	12.8	950	15.2
775	13.1	975	15.5





# USDA Certified

## Industry Brands



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# GL Specifications

- Phenotype
- Genotype
- Other
- GL A
- GL AHA
- GL Ak
- GL TL
- GL W
- NHTC
- NE3
- < 30 Months Age



# Certified Cattle Brand Schedules

- Akaushi – 1
- Angus – 63
- Any breed – 23
- Hereford – 3
- Longhorn – 1
- Wagyu – 3



# G Specifications

- USDA Prime, Choice, Select, Standard, Commercial & Utility
- Maturity
- Marbling score
- Yield grade



# G Specification Quality Factors

- Marbling Texture
- Capillary Rupture
- Free of Dark Cutting
- Max hump Height
- Carcass class (type)





# G Specification Yield Factors

- Yield Grade 1, 2, 3, 4, or 5
- Ribeye area
- Hot carcass weight
- Fat thickness
- Muscling





*Delicious*  
TASTE THE DIFFERENCE



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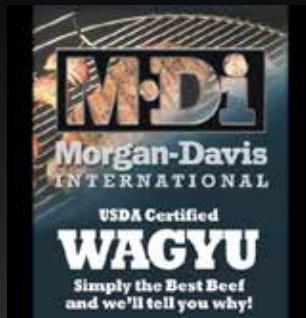
PREMIUM BLACK ANGUS BEEF™



*-Eat Smart for Life-*



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TEXAS RAISED WAGYU BEEF



**SEMINOLE PRIDE**  
— BEEF —



Naturally Native



**SIMPLY ESSENTIALS**



SINCE 1893  
**STOCK YARDS**  
THE WORLD'S FINEST STEAKS & CHOPS



**RANCHER'S**  
LEGACY  
MEAT CO.



*discover superior*  
**QUALITY & TASTE**



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# Beef Standards Information

- <http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateP&navID=Resources&rightNav1=Resources&topNav=&leftNav=&page=LivestockStandardizationStandards&resultType=&acct=lsstd>



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