AWA Annual Meeting
IS BEEF OUT TO PASTURE?

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BEEF CONSUMPTION TODAY IS ALMOST HALF OF 1972

- Many experts suggest this is no problem because we are producing about the same total amount of beef with one third less cattle
- Producers have been led to believe that efficiencies in the system due to economies of scale will solve their problems and insure the continued consumption of beef at a level to guarantee their survival

Steven Covey

- “Begin with the end in mind”
- Consumers are the ultimate judge of what you do
- A consumer may not care that this steak came from a steer that gained 5 pounds a day if it was tough
- They simply will not buy it again

WHAT PLANS DO YOU HAVE TO MARKET YOUR CATTLE AS THE BEEF ECONOMY GETS WORSE?

Have you made any?

- Will you work with the feeder to make more profit possible in feeding cattle?
- Will you consider local marketing for your meat?
- Will you change your program to produce beef for a local market?
- Will you retain ownership and assume the current losses?

Cost of Prime

- Domestic Beef 3% Prime
- Cost of the Animal $1079

  $1079/.03
- $44.95/pound if 100% prime

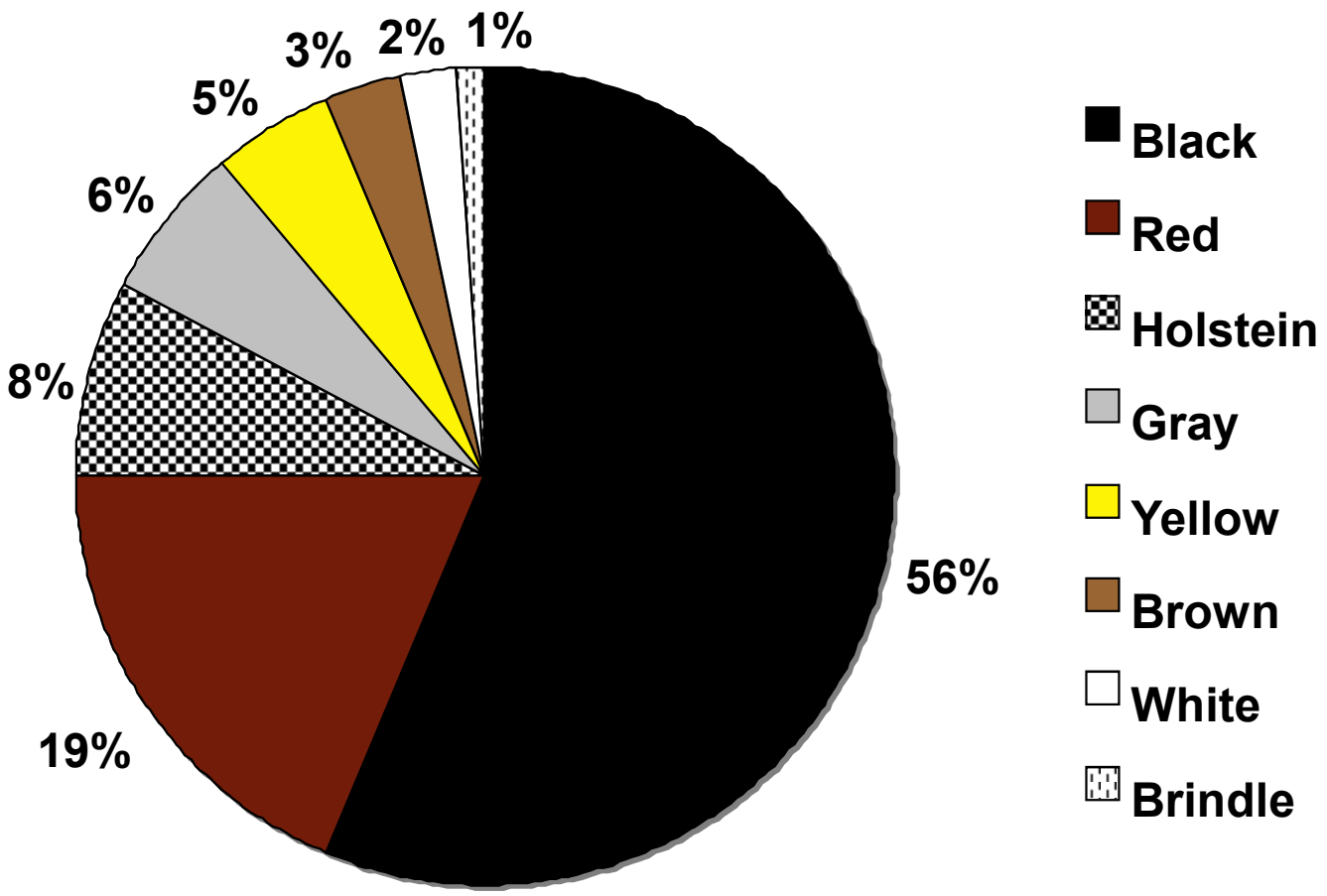
- Wagyu 65% prime
- Cost of Animal $1450
- $1450/.65
- $2.78/pound if 100% prime

National Beef Quality Audit -- 2005

- Gary C. Smith, Jeff W. Savell, J. Brad Morgan, and Ty E. Lawrence

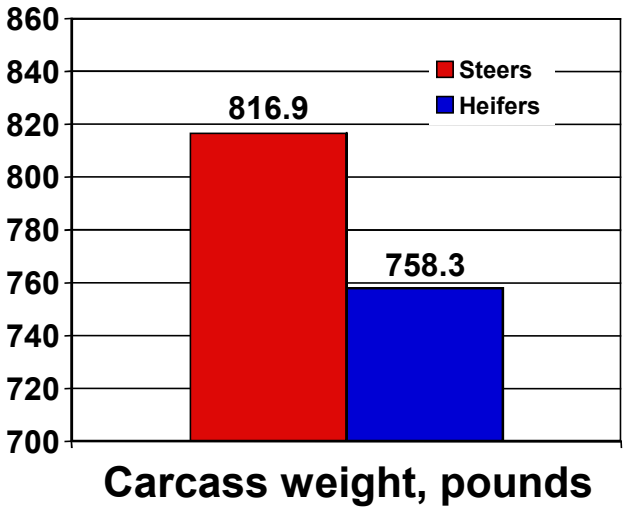
Funded, in part, by beef and veal producers and importers through their $1-per-head check off through the Cattlemen's Beef Board and state beef councils by the National Cattlemen's Beef Association.

Predominant Hide Color

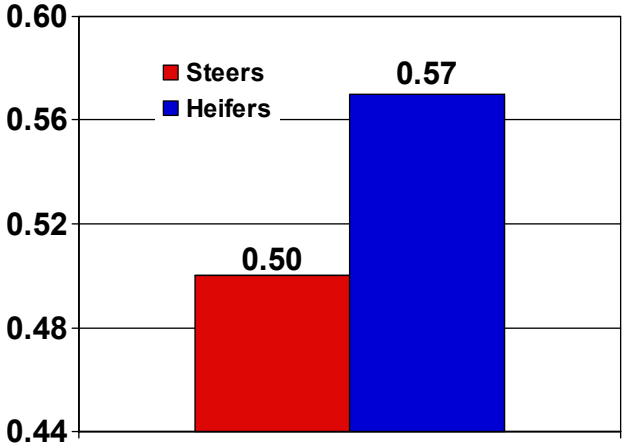


Source: National Beef Quality Audit -- 2005

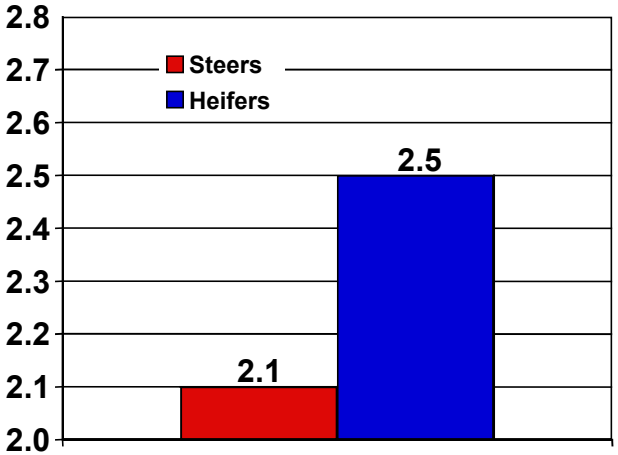
Steer and Heifer Comparison



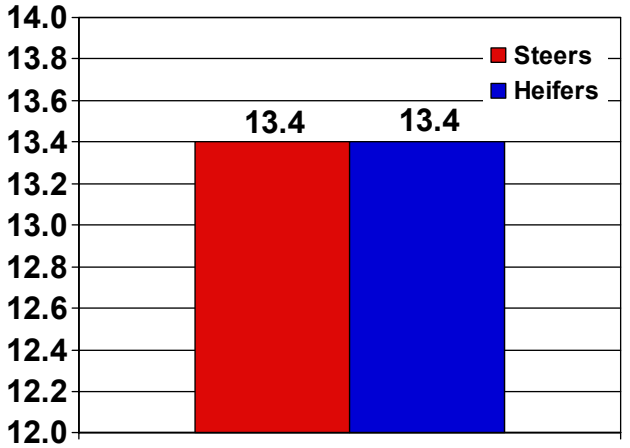
Carcass weight, pounds



Fat thickness, inches



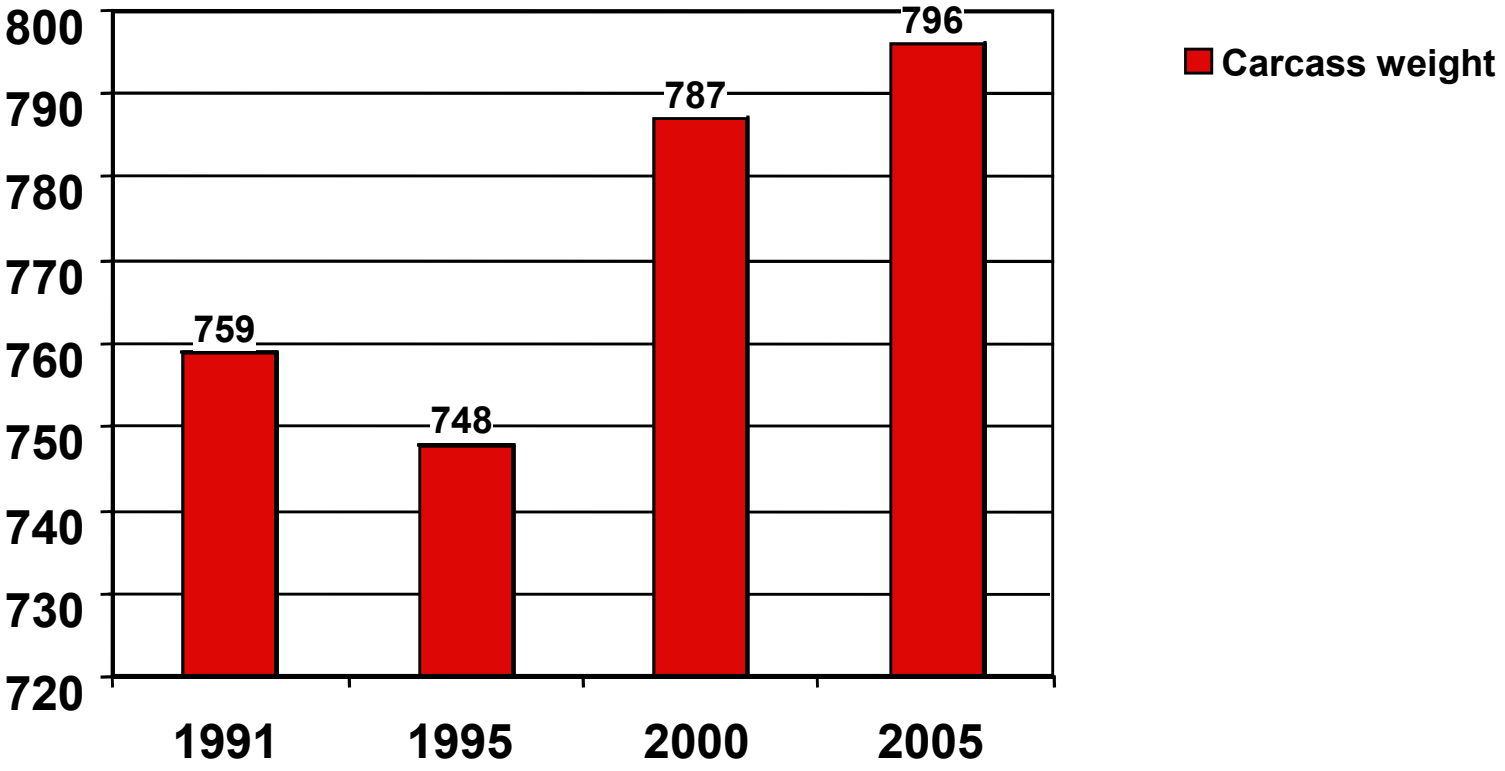
KPH, %



Ribeye area, sq. inches

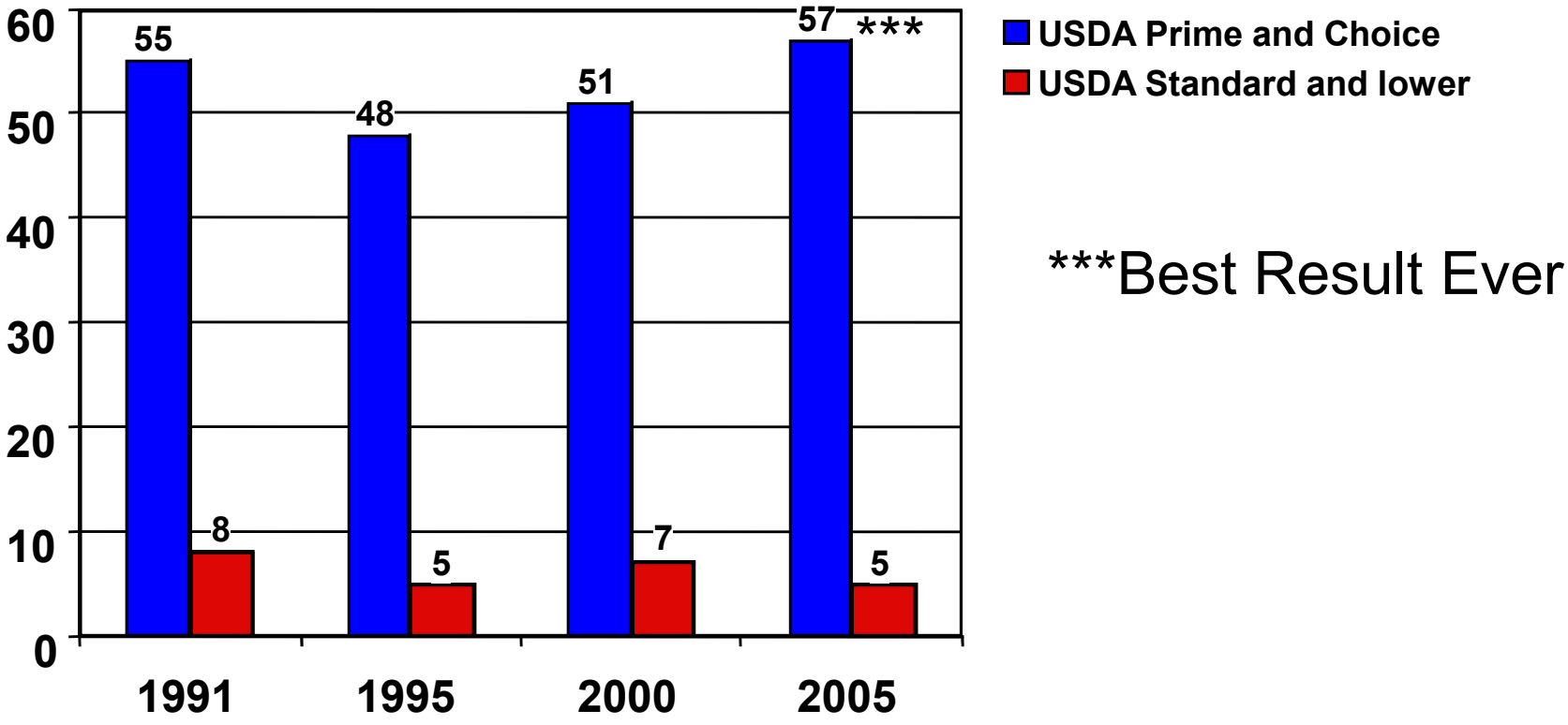
Source: National Beef Quality Audit -- 2005

Comparison of Past Audits: Carcass Weight



Source: National Beef Quality Audit -- 2005

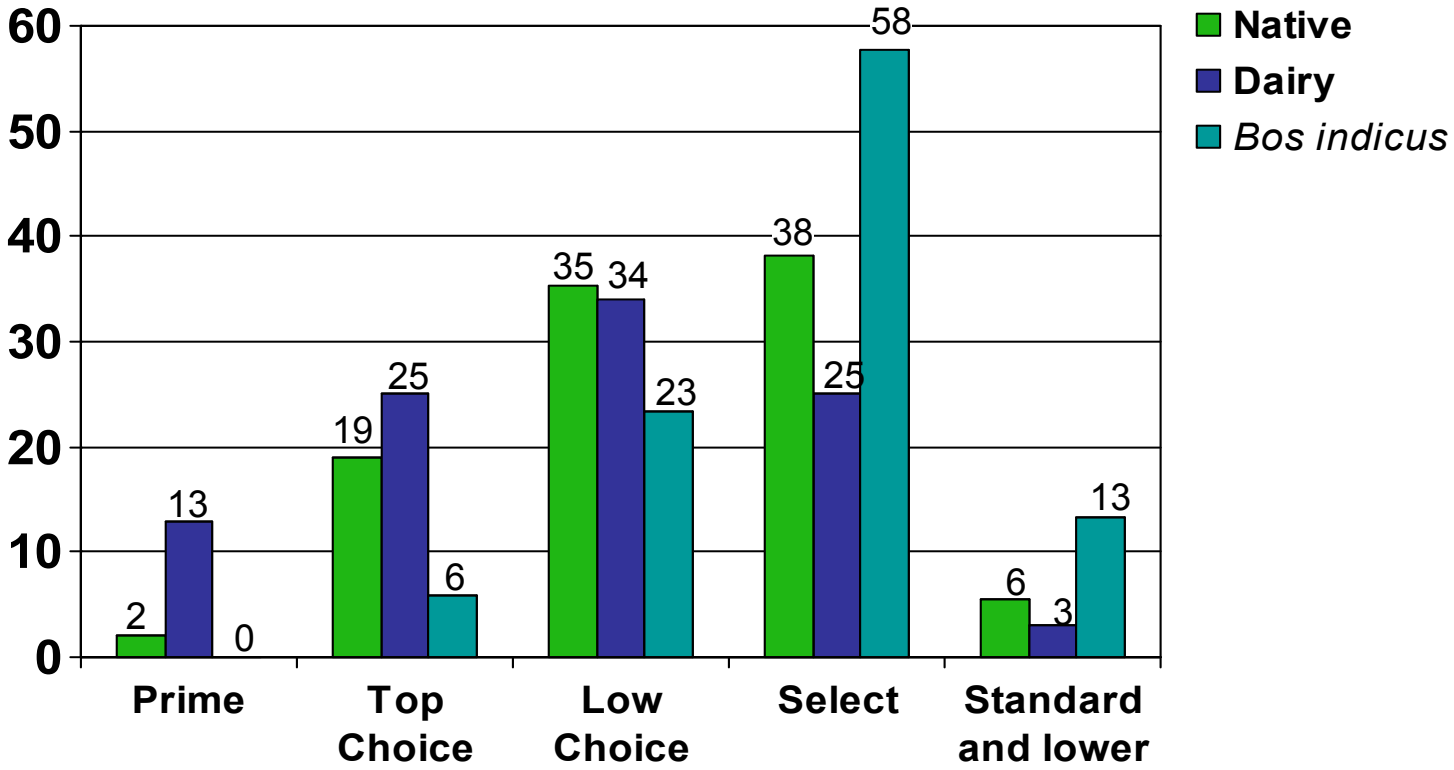
Comparison of Past Audits: USDA Quality Grade



***Best Result Ever

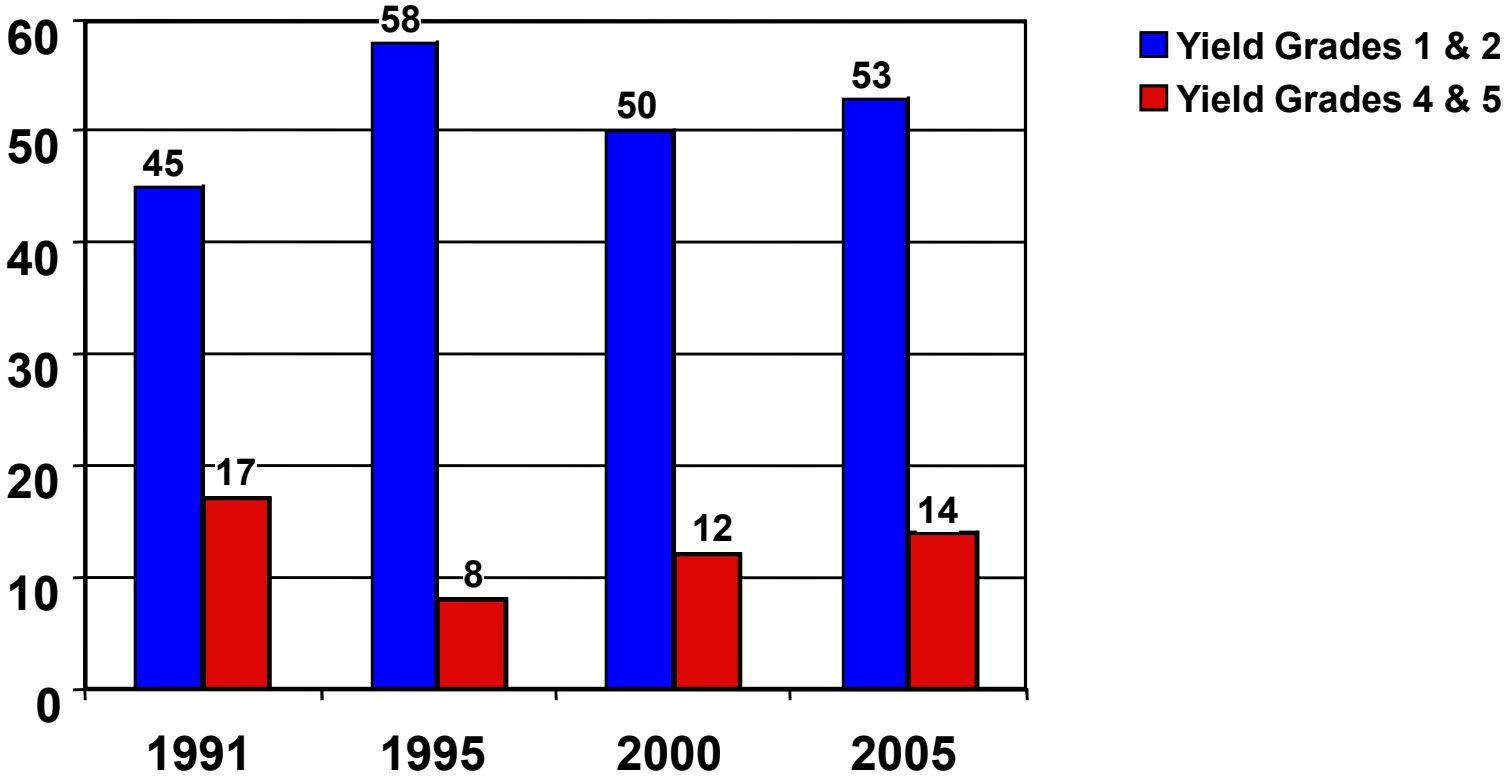
Source: National Beef Quality Audit -- 2005

USDA Quality Grade by Cattle Type



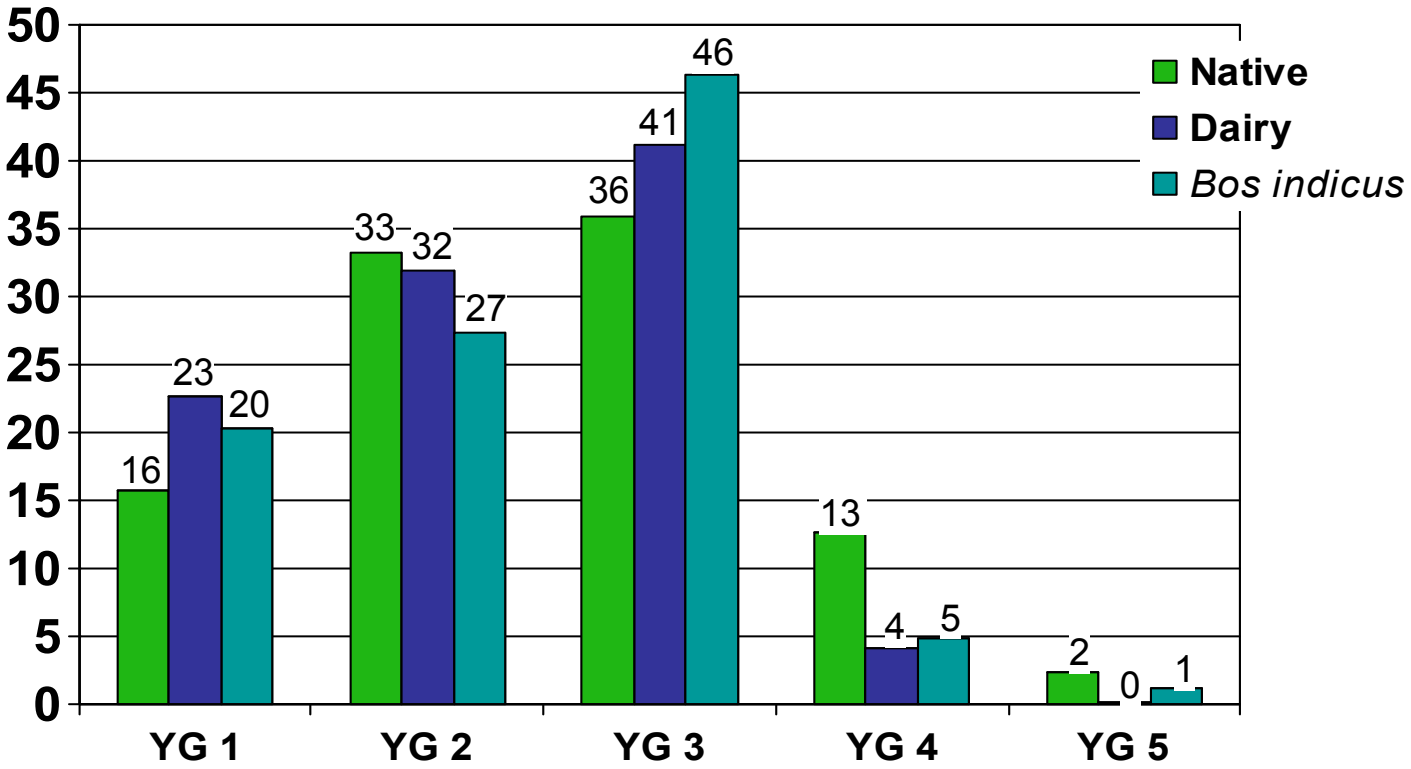
Source: National Beef Quality Audit -- 2005

Comparison of Past Audits: USDA Yield Grade



Source: National Beef Quality Audit -- 2005

USDA Yield Grade by Cattle Type



Source: National Beef Quality Audit -- 2005

Ideal Consist of USDA Quality Grades and Yield Grades

Quality Grade	
• Prime	7%
• Top Choice	29%
• Low Choice	33%
• Select	31%
• Standard & lower	0%

Yield Grade	
• YG 1	14%
• YG 2A	23%
• YG 2B	30%
• YG 3A	24%
• YG 3B	8%
• YG 4	1%
• YG 5	0%

Source: National Beef Quality Audit -- 2005

Have we improved Beef?

- From the Meat We Eat 1972
- Prime 7%
- Choice 71%
- Good 20%
- Standard 2%

Beef Quality Concerns of Those Who Trade Beef to Export Markets

Top Five Beef Quality Concerns:

- Unknown age and source (need mandatory ID and traceability)
- Size and weight variability
- Insufficient marbling
- Dull and dark lean color
- Administration of growth-promoting implants

Other Concerns:

- Feeding vitamin E should be mandatory
- Appropriate animal welfare should be assured
- Tenderness should be genetically assured
- Beef is excessively fat
- Should be injection-site free

Source: National Beef Quality Audit -- 2005

Percentage Growth Expected in Demand for "Natural" Beef

Time period	Domestically	Internationally
In the next year	4%	4%
In the next five years	9%	8%
In the next ten years	14%	10%

Source: National Beef Quality Audit -- 2005

What Contribution Can Genetics Have In Improving Beef Quality And Demand?

- Evaluate the 2005 Beef Quality Audit
- Altered with permission from Gary Smith
- What Genetic Principles can we use to correct the noted deficits?

Genetics in Livestock Production

- Heretibility– A genetic component that is generally additive in nature GROWTH
  - Top gaining bulls of one breed when bred to a top gaining female of another breed will produce an offspring that was bigger than the parent in most situations if the calf can be delivered alive

EPD

- Expected Progeny Difference
- This tool has been in use since the early nineties to help producers understand where a bull is in a contemporary group and in a national ranking system
- New EPD's under development for many traits

Genetics cont

- Heterosis– This genetic component is not additive and is seen in traits with low heretability FERTILITY and SURVIVABILTY
  - Heterosis is measured by the actual result compared to the predicted expectation and is then a percentage advantage or disadvantage of the mean of the contributing parents

TOOLS

- Understanding where a ranch wants to be (goal)
- Knowing where the ranch is now (study records of past performance)
- Plan to reach the goal (implement management or genetic alterations)

ANIMAL GROWTH

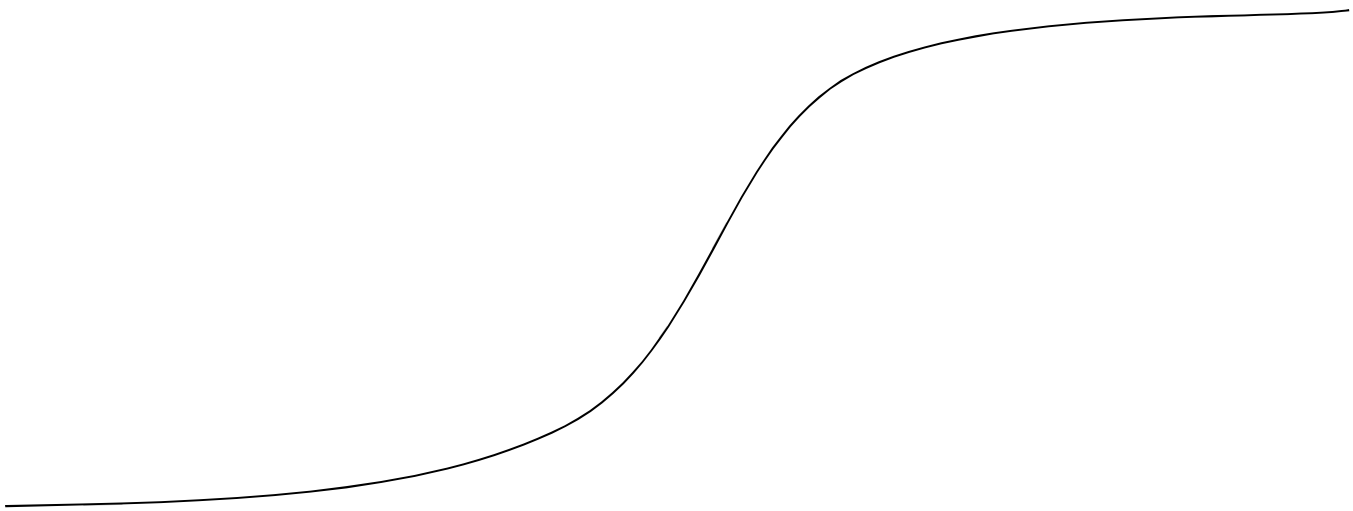
- A generalized increase in body size that occurs over time
- Genetic and environmental effects
- Increased accumulation of muscle, bone, skin, fat, and enlargement of gi tract
- Increased production of tissue or reduction of tissue breakdown and replacement
  - Genetics of cattle
  - Management (certain implants)

Growth cont

- Growth occurs when nutrient intake necessary for maintenance is exceeded
- As animals grow maintenance need also increases
- Dry matter intake is the driving force behind growth
- Any factor that affects dmi will create a flat spot in the growth curve

Growth Curve

- Time on x axis Weight on y axis
- Depends upon caloric intake and age



Growth Management

- Decades of cheap corn has influenced decisions in the cattle breeding and feeding that may put our business at great risk
- May have to re-evaluate how much corn we can afford in feeding programs
- Yearling operations re-emerge as a method to provide growth needed to finish cattle

SELECTION

- Look at the 2005 survey results to consider other breeds that help meet the areas of demand determined by the survey
- Increasing quality with increased cost of corn may be a real challenge with the current cattle available

FOLLOWING SLIDES

Stolen from Smith et al

JAS 2007.85:380-387

COMPARASONS 16 months of age

Short fed steers	WT #	quality	Fat thickness	Yield grade
Corn				
Angus	710	Choice +	.57 inch	3.33
Wagyu	554	Choice	.38 inch	2.75

COMPARASONS 20 months of age

Short fed steers	WT #	quality	Fat thickness	Yield grade
Hay				
Angus	675	Av Choice	.52 inch	3.33
Wagyu	622	Av Choice	.42 inch	3.06

COMPARASONS 24 months of age

Long fed steers	WT #	quality	Fat thickness	Yield grade
Corn				
Angus	898	Prime	1.01 inch	5.17
Wagyu	785	Prime +	.6 inch	3.27

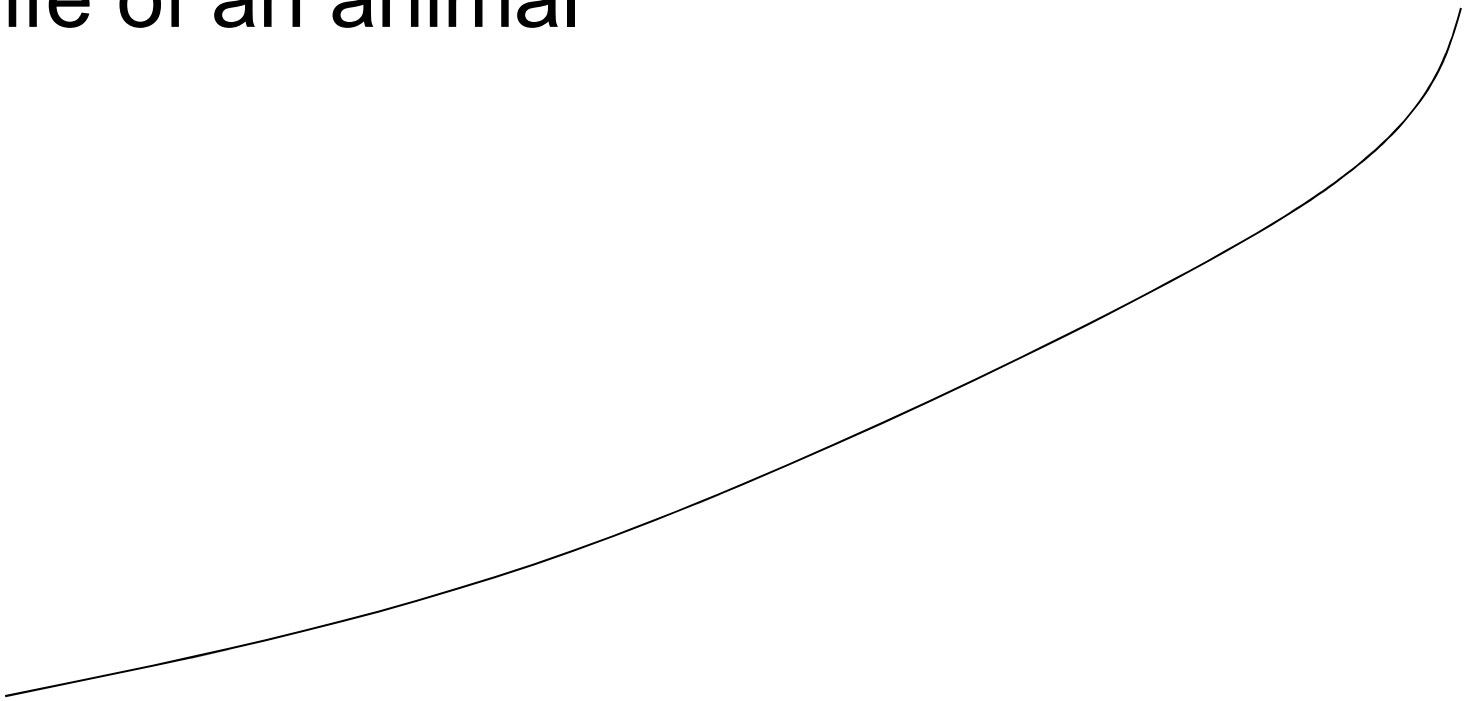
COMPARASONS 28 months of age

Long fed steers	WT #	quality	Fat thickness	Yield grade
Hay				
Angus	887	Choice	.76 inch	4.04
Wagyu	777	Prime -	.4 inch	3.29

REVIEW OF ROBBIE PRITCHARD'S PRESENTATION AT AVC DECEMBER 2006

Fat Curve

- Subcutaneous fat is distributed throughout life of an animal

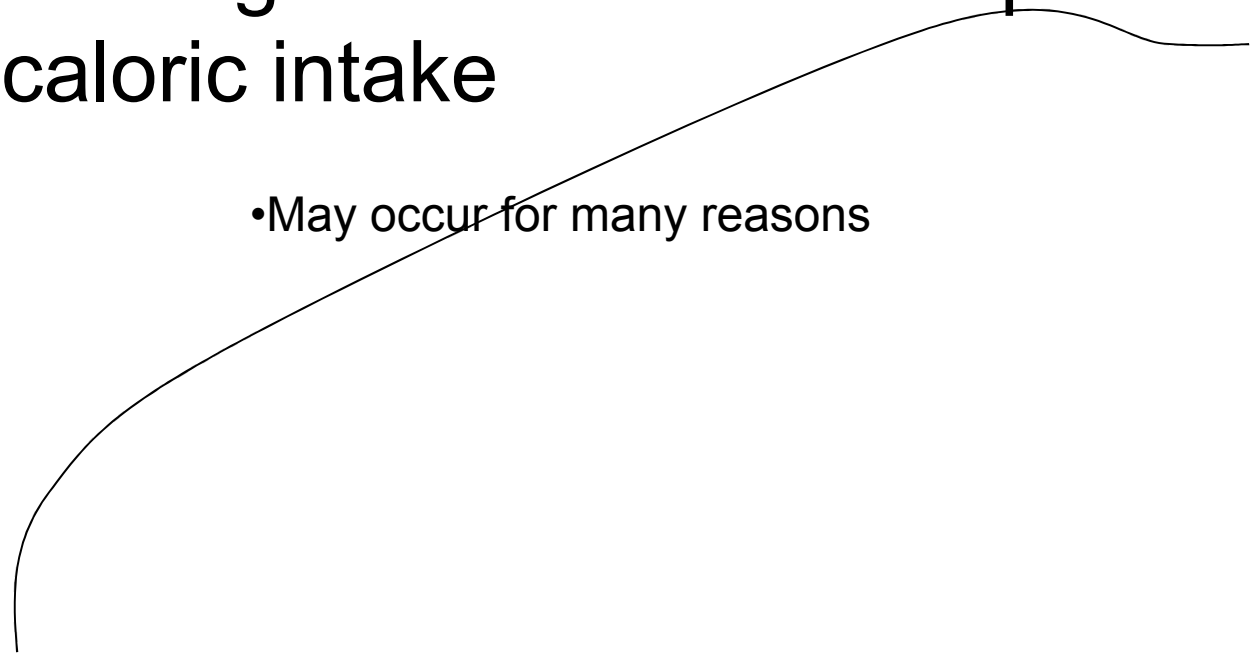


MARBLING

- Marbling is an accumulation of fat within the muscle on an animal bred for meat production
- Marbling is strongly associated with flavor and overall palatability of meat
- The exact role of marbling in an animal is not understood
- It is a method of energy storage, but how it is used by the animal is not known

Marbling Deposition

- Marbling in domestic cattle begins about 4 months of age and continues depending upon caloric intake



What is Beef?

- 1975 New College Dictionary
  - The flesh of an adult domestic animal when killed for food
  - Complaint

Beef Improvement

- May be important to focus more on the product - not production to make lasting change that consumers will demand even in inflation against other proteins
- May need to spend more time on the second definition of beef

Natural and Organic Foods

- Largest opportunity in retailing foods
- Consumers are willing to pay more because of perceived improved quality and value
- Grass fattening is implied to be more healthful to the animal and the consumer

- Tyson and CAB joint venture for natural CAB type beef.

Beef Value

1 USDA quality grade

Subjective grade determined by the amount of visible fat in the muscle

Current popular breeds have difficulty increasing marbling without increasing subcutaneous fat

Yield Grade

- Is a calculation used to estimate the amount of muscle that may be sold as whole cuts
- The yg evaluates a carcass for amount of fat that would need to be trimmed to present the meat for retail sale

Beef Yield Grade

- The equation penalized heavy weight in addition to excess fat
- This calculation has interesting entries
  - 12.5 times more pressure on sq fat than KHP
  - If all factors are held constant except cwt increasing cwt will increase yg which is generally discounted in grids

WHY WAGYU ?

WHY WAGYU

- BIRTH WEIGHT HAS THE HIGHEST CORRELATION WITH DYSTOCHIAL BIRTHS
- IMPROPER FETAL SIZE AND HEIFER PELVIC CANAL FUNCTIONAL AREA

USE OF THE WAGYU BREED

- MARC GERMPLASM EVALUATION PROGRAM PROGRESS REPORT 20
- LARRY CUNDIFF
  - PRINCIPLE INVESTIGATOR

RESULTS

ANGUS

- GL 282.3
- CD 1.18
- UNAIDED 96.8
- BW 86.3
- CALF SURVIVAL 93.8
- 200 DAY WT 505.1

WAGYU

- GL 286.9
- CD 1.04
- UNAIDED 99.3
- BW 80.3
- CALF SURVIVAL 95
- 200 DAY WT 458.6

PERFORMANCE

ANGUS

- ADG 3.13
- LIVE WT 1344
- HCW 825
- DP 61.4
- MARBLING 578
- CHOICE 88
- YG 3.5
- FAT THICK .53
- REA 12.58

WAGYU

- ADG 2.69
- LIVE WT 1196
- HCW 736
- DP 61.5
- MARBLING 562
- CHOICE 85
- YG 2.7
- FAT THICK .36
- REA 12.55

PRODUCT
H X A WAGYU

- # MEAT 494
- # FAT 218
- # BONE 115.1

- # MEAT 460
- # FAT 174
- # BONE 106.1

MEAT QUALITY

ANGUS

- # SHEAR 7.87
- TENDERNESS SCORE 6.48
- FLAVOR SCORE 4.73
- JUICENESS SCORE 5.29

WAGYU

- # SHEAR 7.82
- TENDERNESS SCORE 6.60
- FLAVOR SCORE 4.76
- JUICENESS SCORE 5.39

Wheeler, Cundiff, Shackelford, and Koohmarie

- JAS 2004, 82: 1177-1189
- Relative to other sire breeds Wagyu sired steers had the highest percentage of USDA Choice, Yield grade 1 and 2 carcasses, but their carcasses were the lightest.

ANGUS

- REA/100CWT
- .015
- 38 grams meat/ME

WAGYU

- REA/100CWT
- .017
- 39.5 grams meat/ME

IMPLICATIONS

- Angus calves get fat much earlier than Wagyu calves
- Wagyu cross calves will continue to add intramuscular fat as they get older
- Ideal target is to run them to yearlings on grass and hay based diet them feed on grain for a few months with slaughter at around 20-24 months of age

JAS 2009,87:2971-2976.
Radunz,Loerch
Lowe, Fluharty, and Zerby

- Effect of Wagyu-versus Angus-sired calves on feedlot performance, carcass characteristics, and tenderness

Angus

- Weaning wt kg 158.4
- Weaning Age 140
- ADG kg/d 1.43
- DMI 7.56
- G:F kg/kg .175
- Final BW 549.5
- Days on Feed 272
- Age at Slaughter 414

Wagyu

- Weaning wt kg 142.2
- Weaning Age 137
- ADG 1.15
- DMI 7.02
- G:F kg/kg .18
- Final BW 541.3
- Days on Feed 349
- Age at Slaughter 485

Effect of breed on carcass

Angus

- HCW 343.1
- 12th rib fat cm 1.85
- LMA cm2 76.6
- KPH% 2.24
- YG 3.86
- 6th rib fat cm 4.93

Wagyu

- HCW 342.3
- 12th rib fat cm 1.72
- LMA cm2 80.5
- **KPH 3.09**
- YG 3.63
- **6th rib fat cm 2.92**

Effect of breed on IMF

Angus

- USDA marbling 594
- 12th rib imf % 10.5
- 6th rib imf % 11.9
- USDA quality grade%
  - Prime 21.1
  - Up 2/3 choice 52.6
  - Low 1/3 choice 26.3
  - Cooking Loss 21.3

Wagyu

- **USDA marbling 771**
- 12th rib imf % 12.9
- **6th rib imf % 15.1**
- USDA quality grade %
  - **Prime 65**
  - Up 2/3 choice 35
  - Low 1/3 choice 0
  - **Cooking Loss 18.2**

PADLOCK SPRING CALVING 2003

- NO CALVING SHED
- 21 DEAD CALVES
- 1538 HEIFERS COUNTED
- 1.3% DEATH LOSS FROM CALVING

PADLOCK HISTORY

- 1980’S THIRTY PERCENT OF ALL CALVES RECEIVED ASSISTANCE AT BIRTH
- BETTER HEIFER SELECTION
- USE OF SIRES SPECIFICALLY FOR CALVING EASE helped reduce dystochial rate to less than 6%
- WAGYU USE ALLOWED PREMIUMS AND GREATLY REDUCED DYSTOCHIAL BIRTHS

HEIFERS RAISING WAGYU CALVES

- Less trouble calving
- More heifers bring home a calf at weaning
- More heifers get bred back after first calf

DYSTOCHIA'S IMPACT ON LIFE TIME PERFORMANCE

- Reduced colostrum following birth reduces calf's life time performance by reducing survival to weaning and weaning to finish
- May also impact cell mediated immunity by reducing T lymphocytes from dam that provide experience to an immature immune system

SHOW ME THE MONEY

- REPLACEMENT COST OF COWS IS ONE OF THE MOST EXPENSIVE COSTS IN A YEARLY BUDGET ON A RANCH
- HEIFERS GENERALLY MAKE UP THE LARGEST PERCENT OF THE HERD
- LARGE LOSS IN VALUE IF NOT KEPT
- TRUE DEPRECIATION
- RISK OF UNKNOWN PERFORMANCE

WAGYU CAN SOLVE THESE ISSUES

- Create beef that is improved in the areas of concern
- Marbling
- Tenderness
- Perhaps beef should be valued by its eating quality not by how fast it can grown.

IMF Comparasins

Generic

- Prime rib steak >9.9%
- Choice rib steak 5-9.9%
- Select rib steak <4.9%

- Tenderloin
  - 4.8%
  - 3.74
  - 3.26

Wagyu

- >30% up to 39.6%

- 21.6% - 25%

IMF of selected muscles continued

- Prime top round 3.7%
- Choice round 2.8%
- Select round 2.5%
-

- 12 % - 20%

- Flat Iron steak area
- 18% - 19%

Marbling From Wagyu Cross cattle

- Contains up to 62% Oleic acid depending on how the animals are fed and how long
- Oleic acid in human diets improves the HDL:LDL ratio in Serum
- Increase in HDL is associated with reduced cardiovascular disease
- Texas A & M February 2008

IMPROVE QUALITY REDUCE COST OF PRODUCTION

- Most business models would suggest this is the process that will insure survival of the business
- Most businesses can only achieve one of the goals at a time
- Wagyu use on first calf heifers can reduce labor, improve opportunity for a heifer to become a cow and improve the meat

Cowboy Facts

- Few Commercial Ranches use AI
- Most rely on bulls to breed the mature cows and heifers
- To Increase Wagyu use in the beef cattle industry the supply of low-cost bulls must increase

Initial Bull Purchase Price Greatly Influences calf cost of Production

- $6000 purchase price equates to a $73 per calf cost
- $2000 purchase price equates to $25 per calf cost.
- On most large commercial ranches one bull does not represent a significant proportion of production to justify a large input cost

SUMMARY:

IT’S THE MEAT

Thank you for your attention