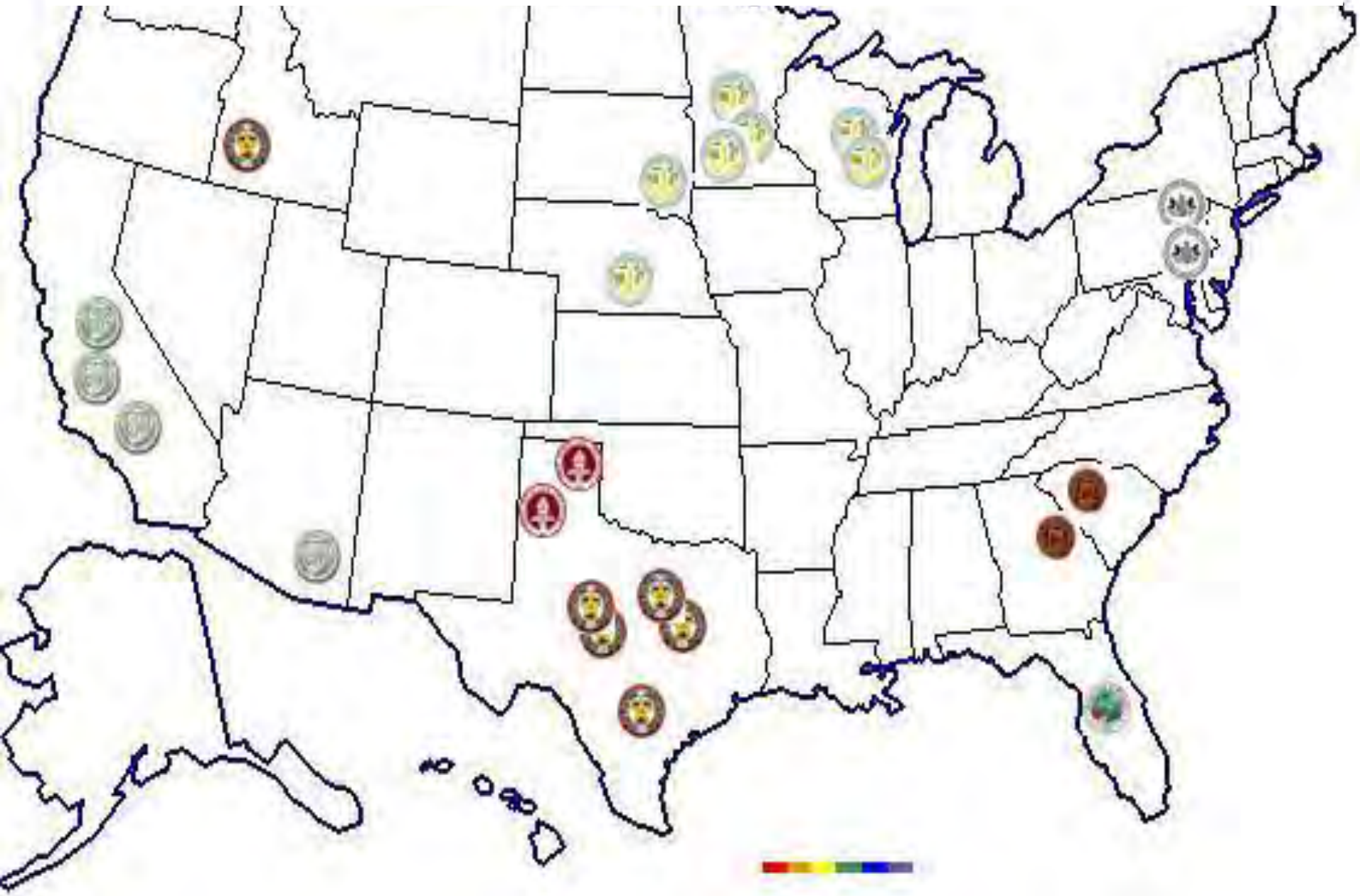
National Market Cow and Bull Beef Quality Audit-2007:

A Survey of Producer Related Defects

Packing Plant Audits



Data Collection Totals

- December '06 – September '07

-Approximately 5,500 live animals surveyed

-Approximately 5,000 carcasses surveyed during harvest

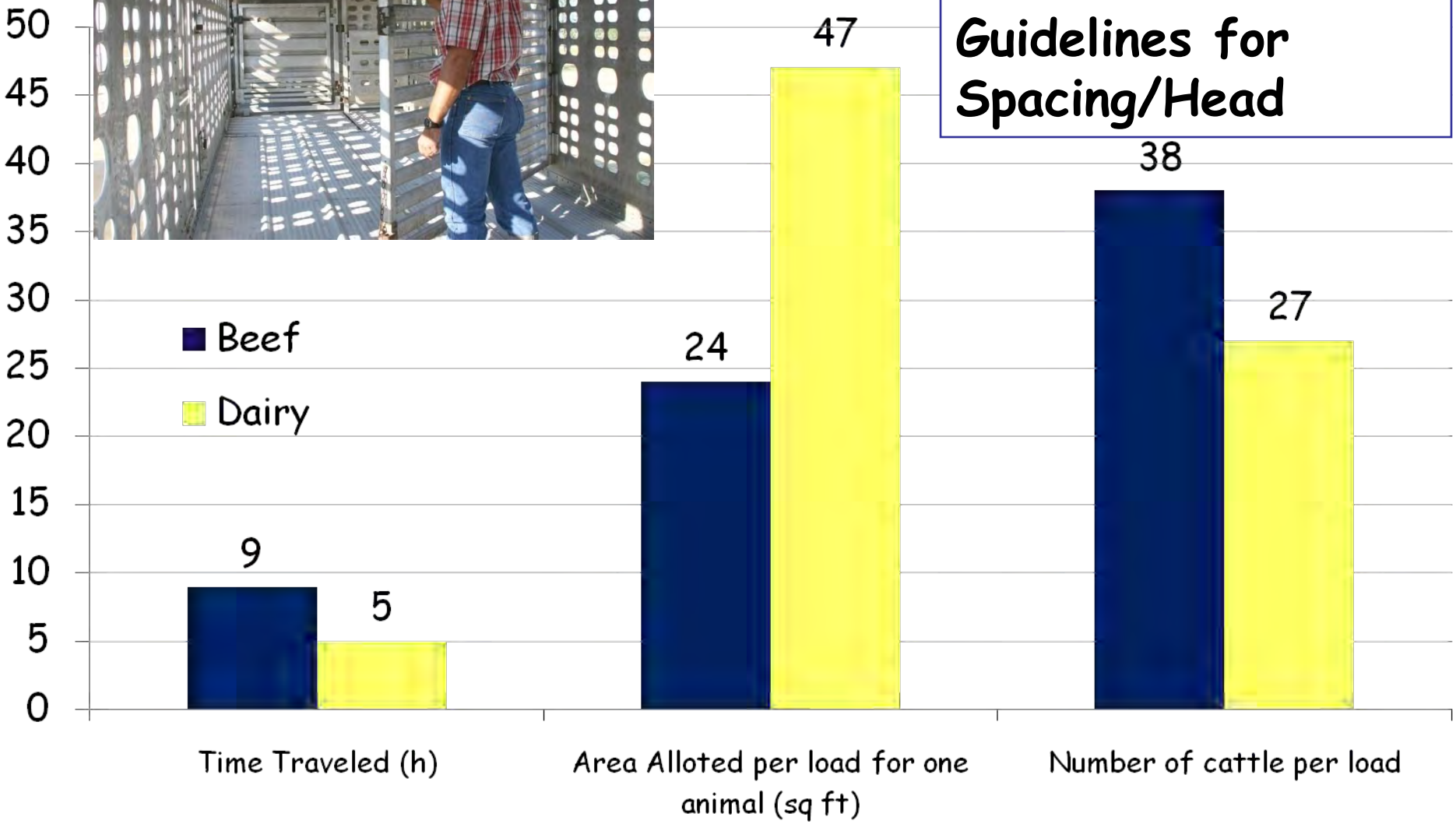
-Approximately 3,000 carcasses surveyed while in the coolers

Receiving

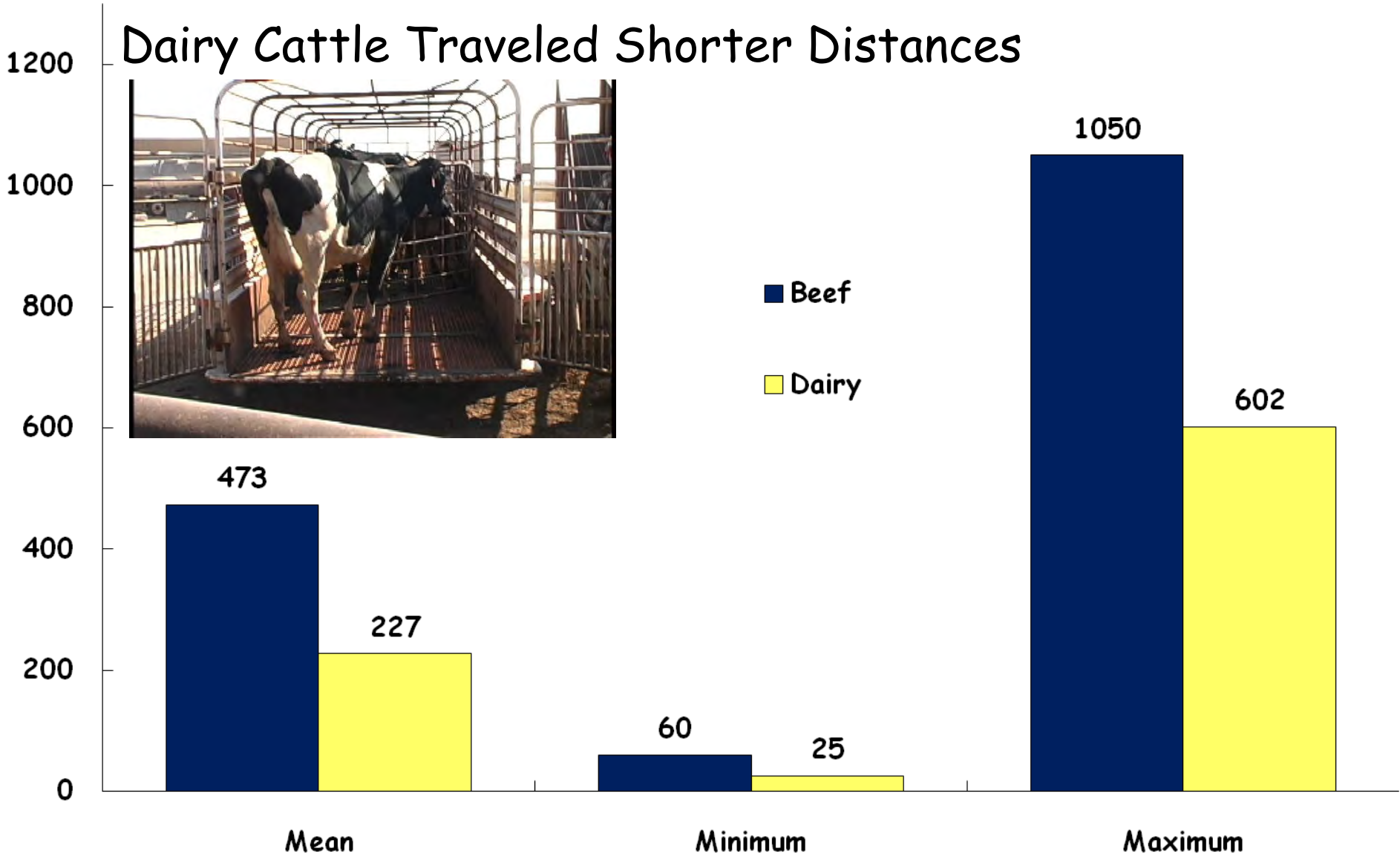
Travel Time and Cattle Loaded on a Truck

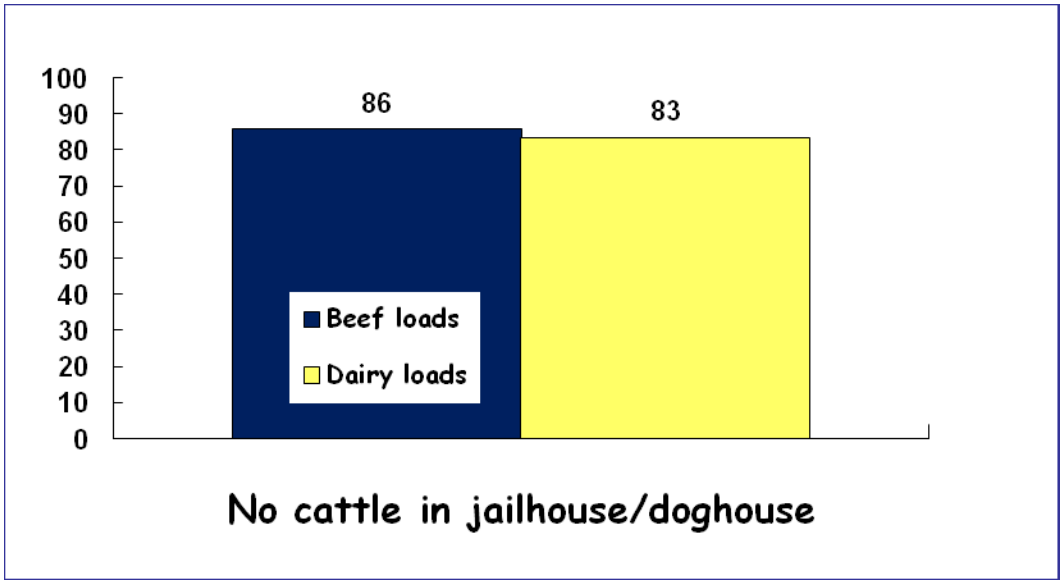
Loads Over 28 Hours: 1%

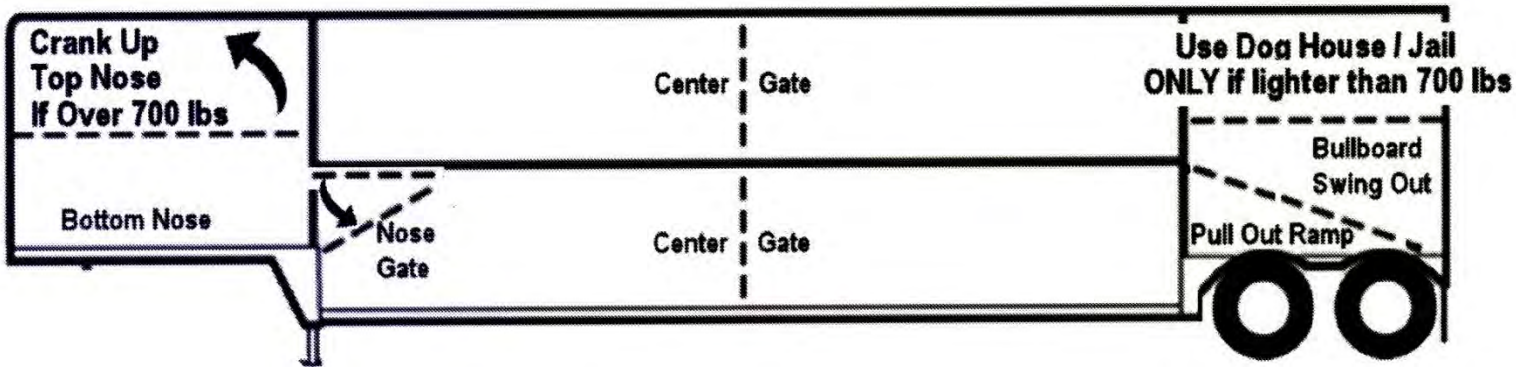
All Loads Met AMI Guidelines for Spacing/Head



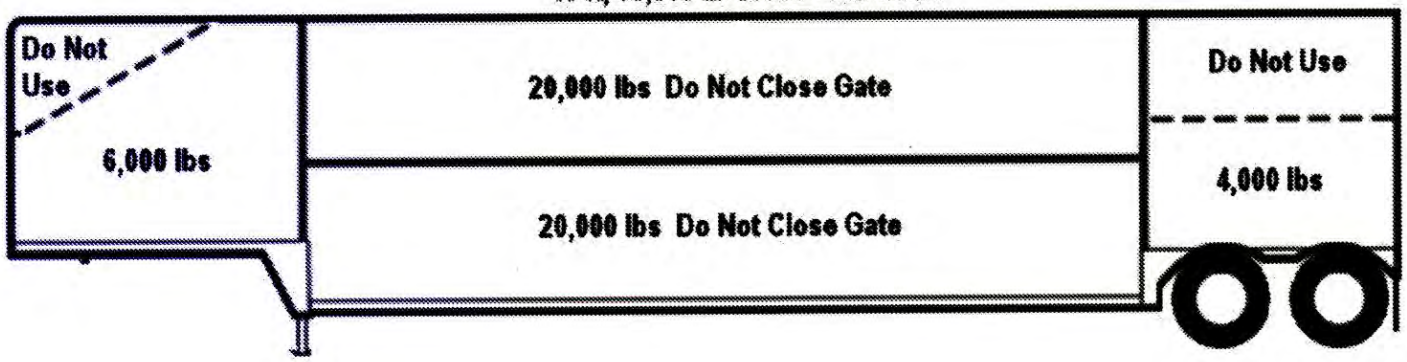
Travel Distance on a Truck





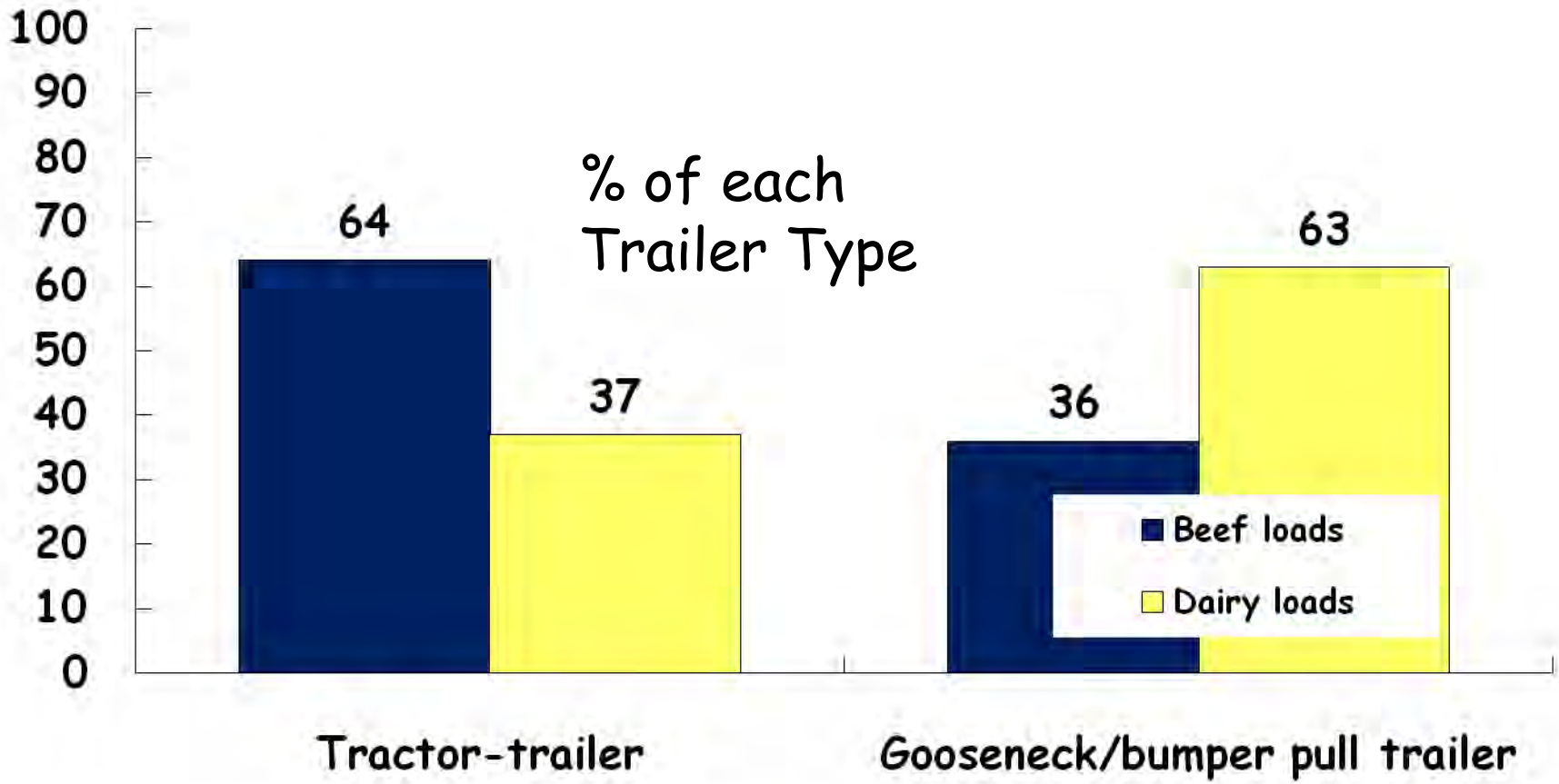


48 ft, 50,000 lb Gross - Fat Cattle

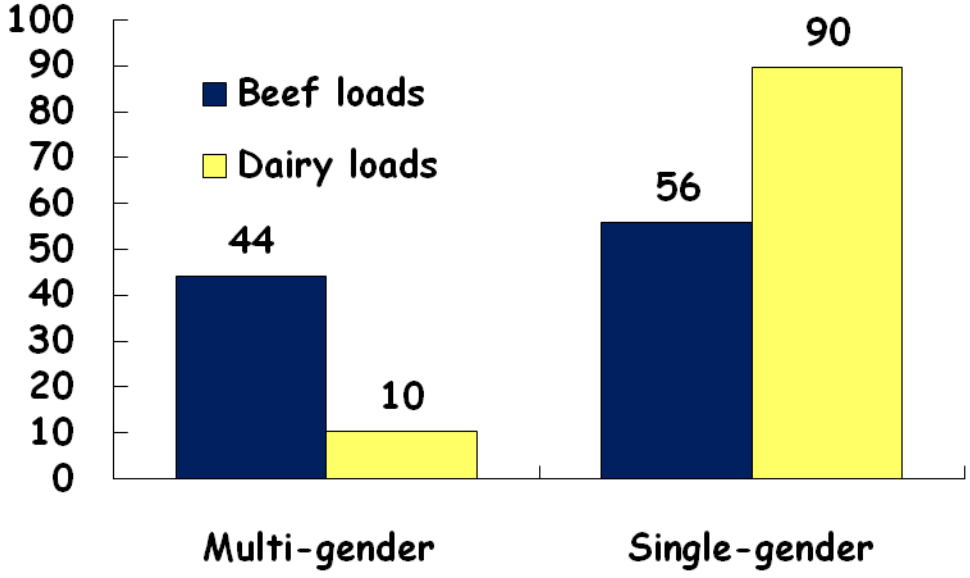


Trailer Information

More Dairy Cattle Coming in on Smaller Trailers

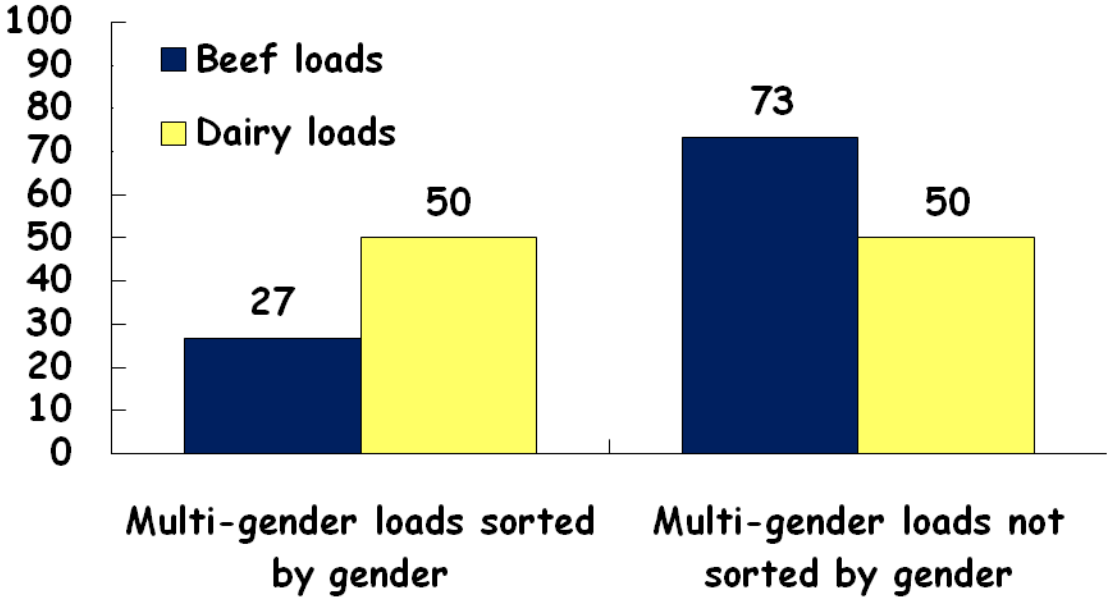


Load Sorting Information

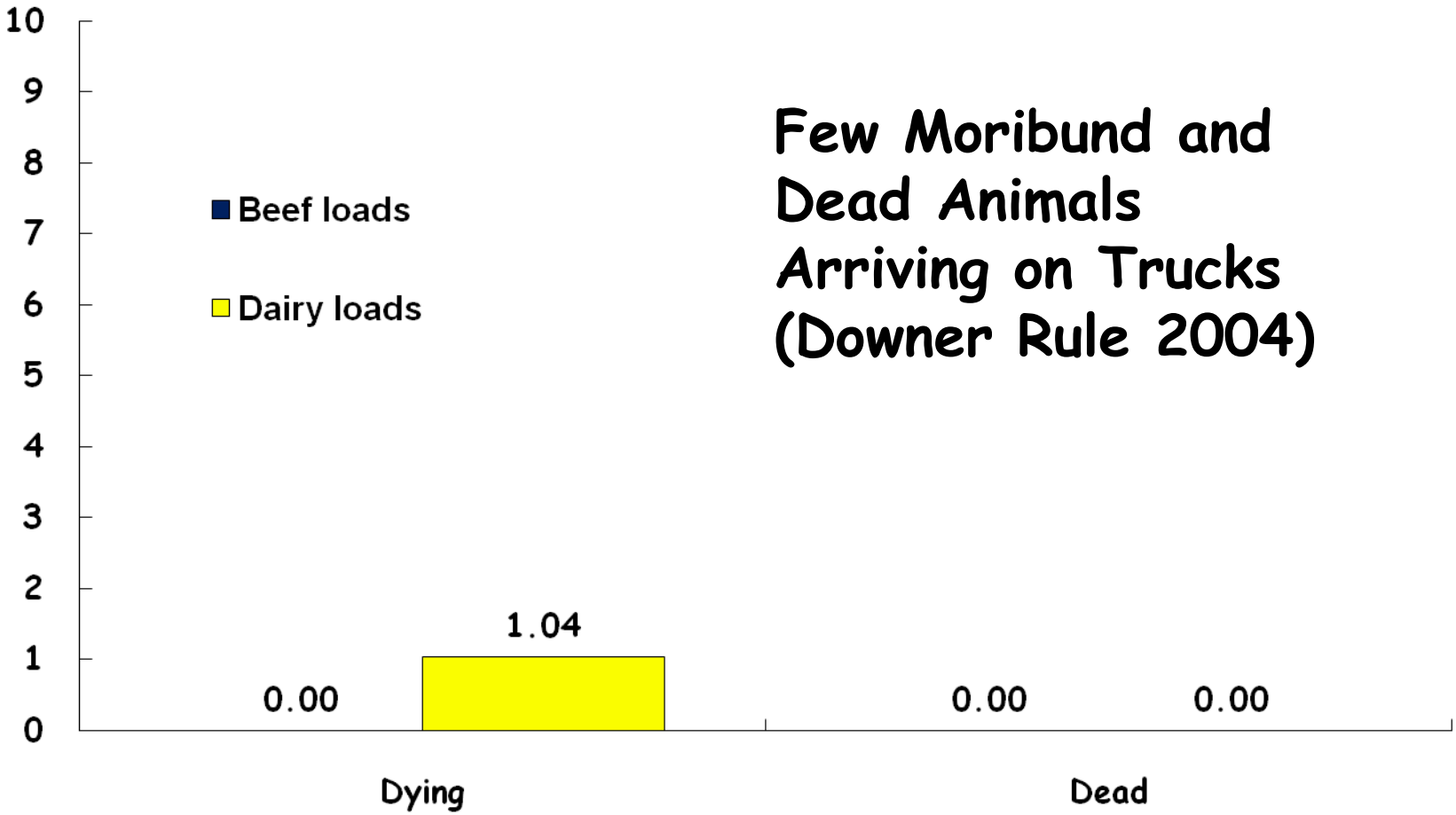


73% of Beef Loads WERE NOT Separated by Gender

% Sorted by Gender



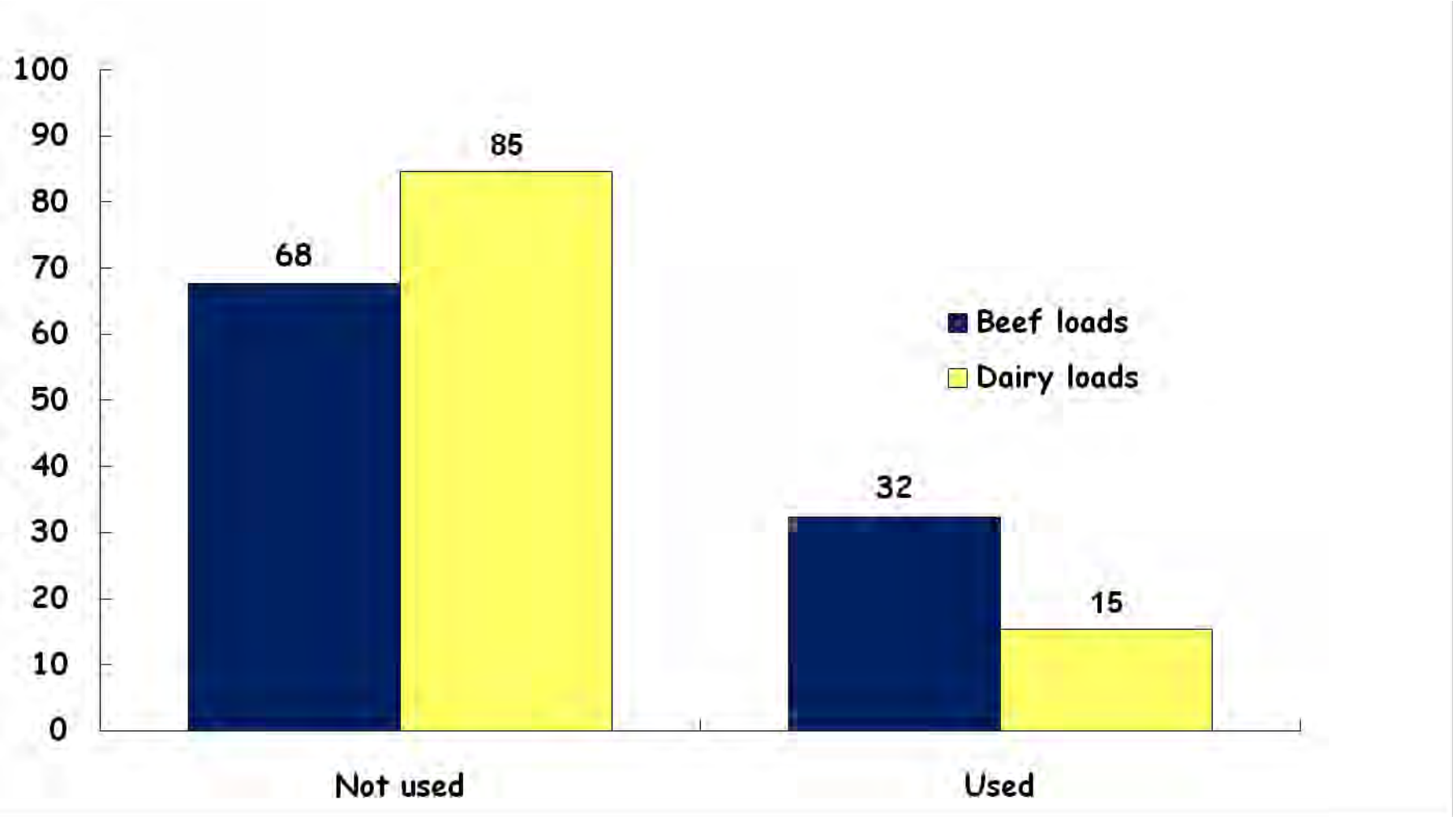
Dead/Dying Cattle



Few Moribund and Dead Animals Arriving on Trucks (Downer Rule 2004)

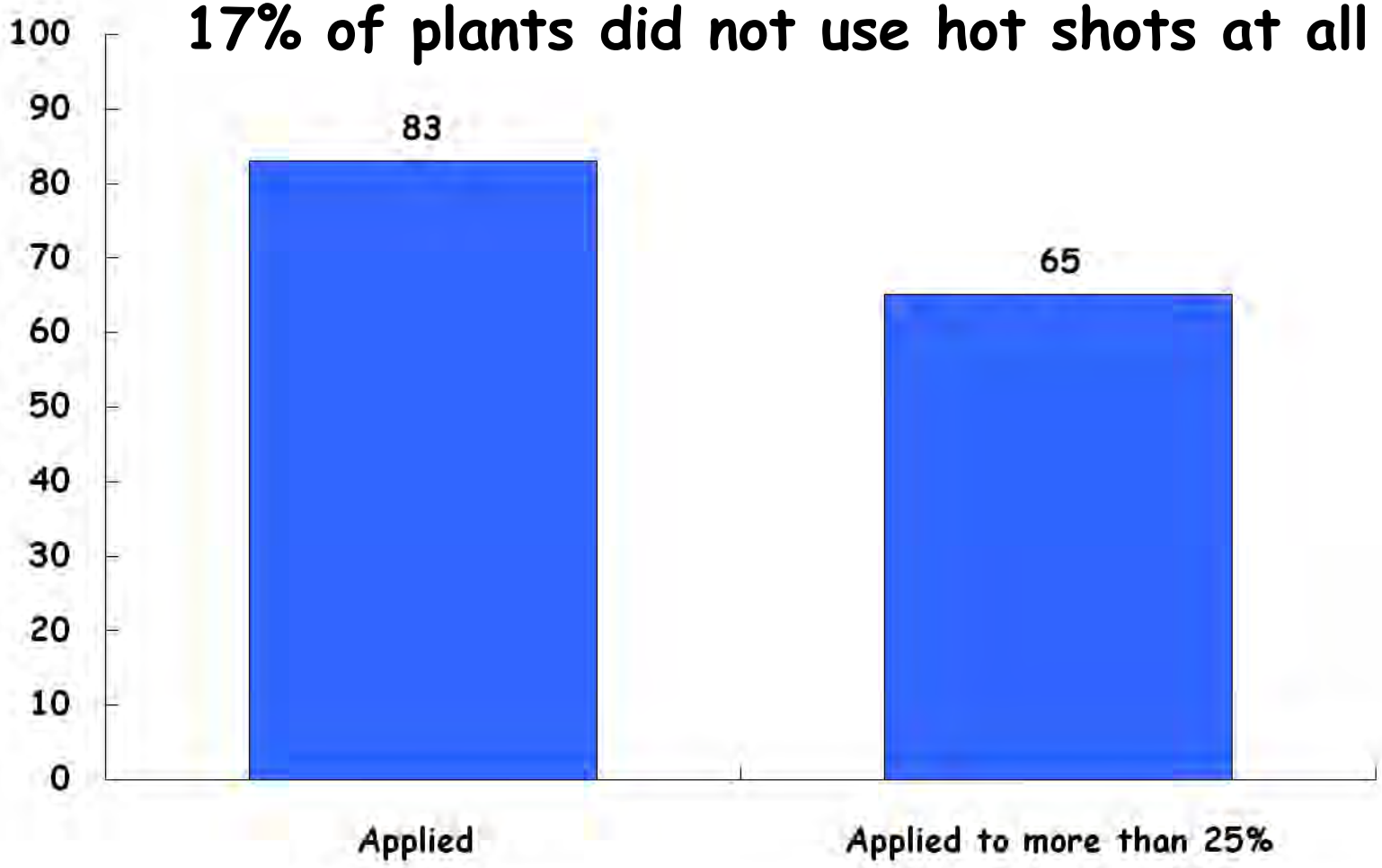
Hot Shot Usage for Cattle Unloading

Fewer Dairy Loads Driven with a Hot Shot than Beef



Hot Shot Usage for Moving Cattle to Knock Box

17% of plants did not use hot shots at all



65% of Plants Used Hot Shot on >25% of Animals

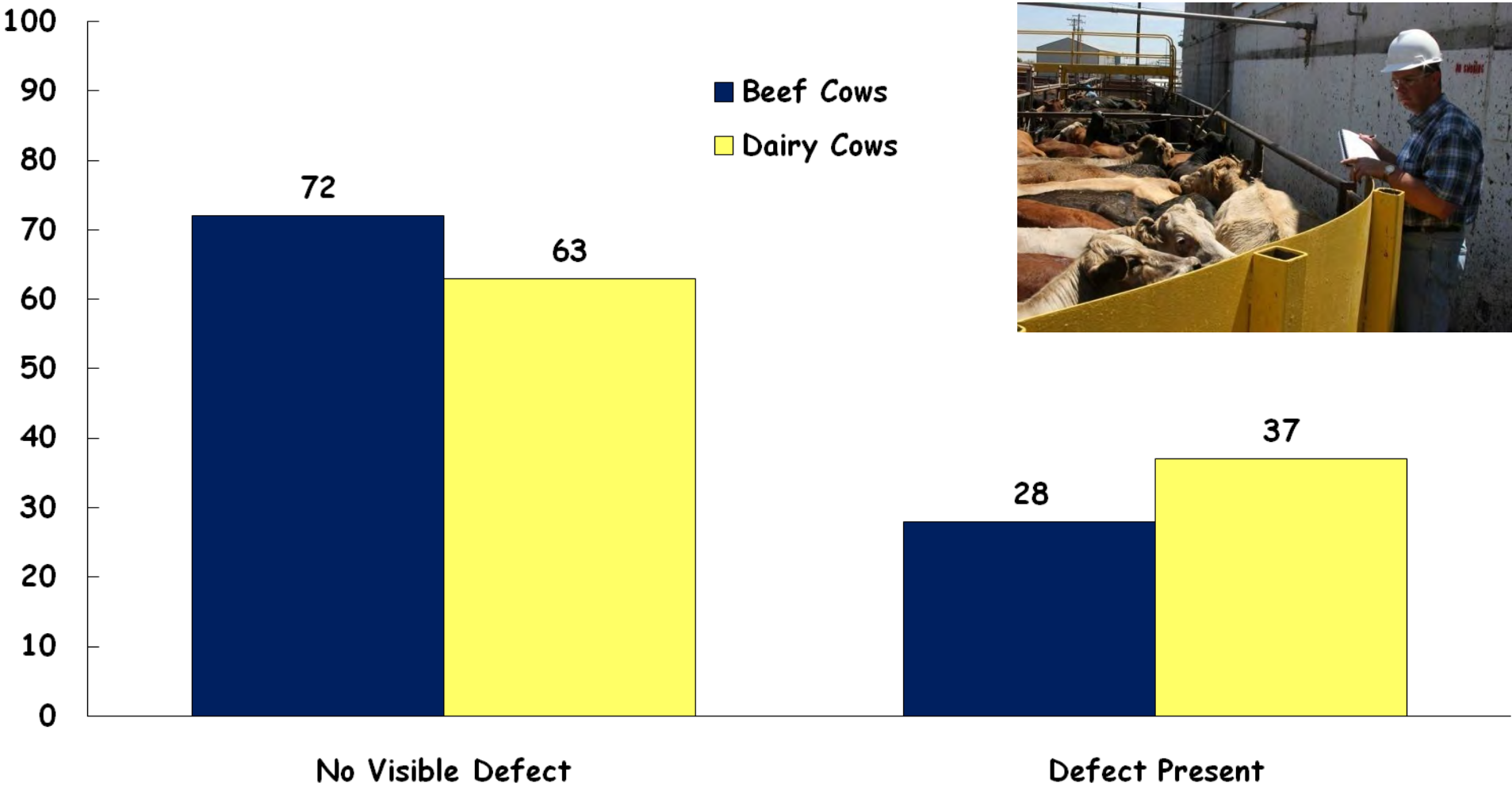
Key Points

- Big improvement in reduction of downer cattle
- All loads met the AMI Guidelines for spacing
- <1 % of the cattle traveled greater than 28 h
- 65% of the plants used the electric prod on greater than 25% of the animals

Holding Pen - Part 1

Visible Defects

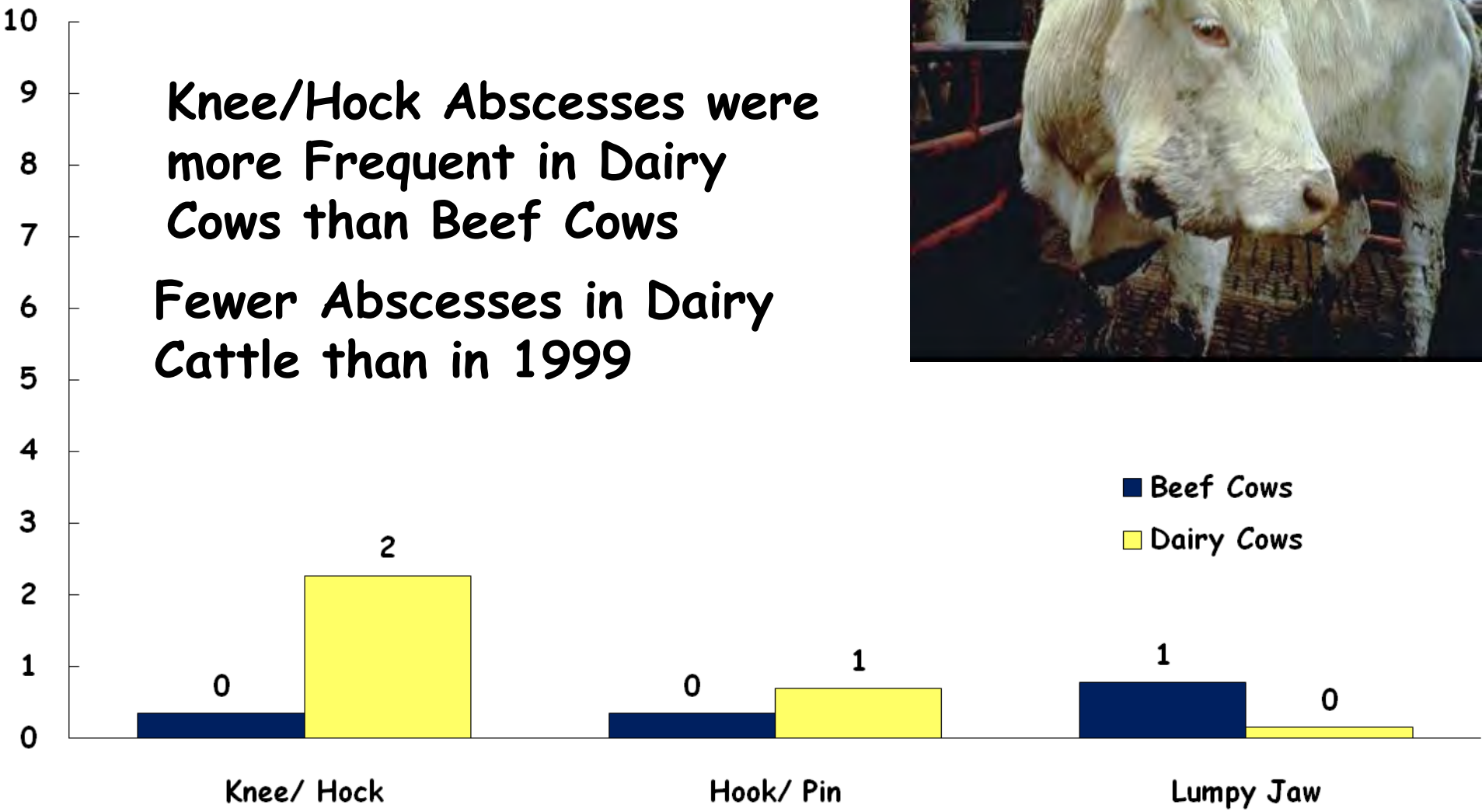
Dairy Cows had More Visible Defects



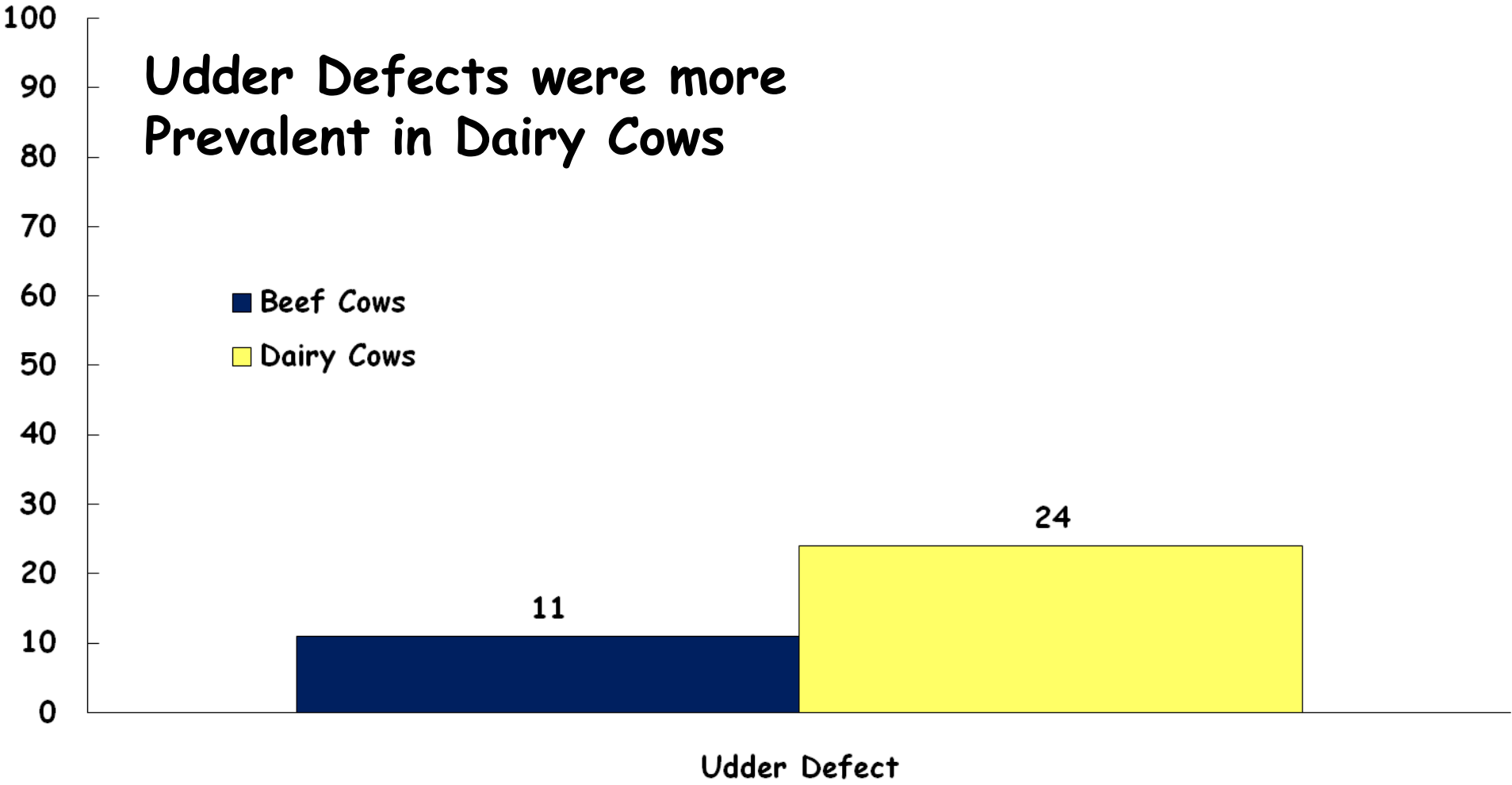
Abscesses and Lumpy Jaw

Knee/Hock Abscesses were more Frequent in Dairy Cows than Beef Cows

Fewer Abscesses in Dairy Cattle than in 1999

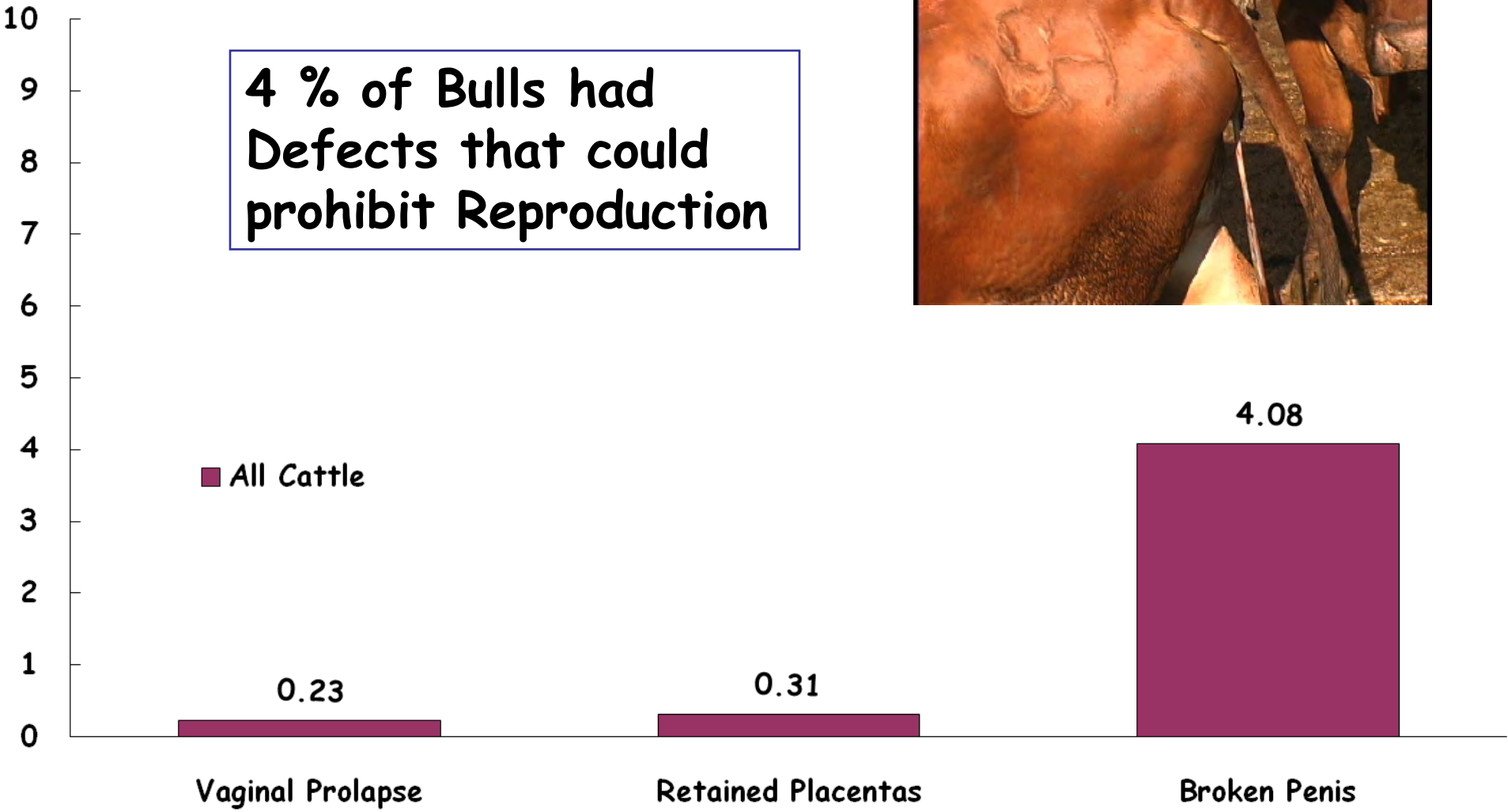


Udder Defects

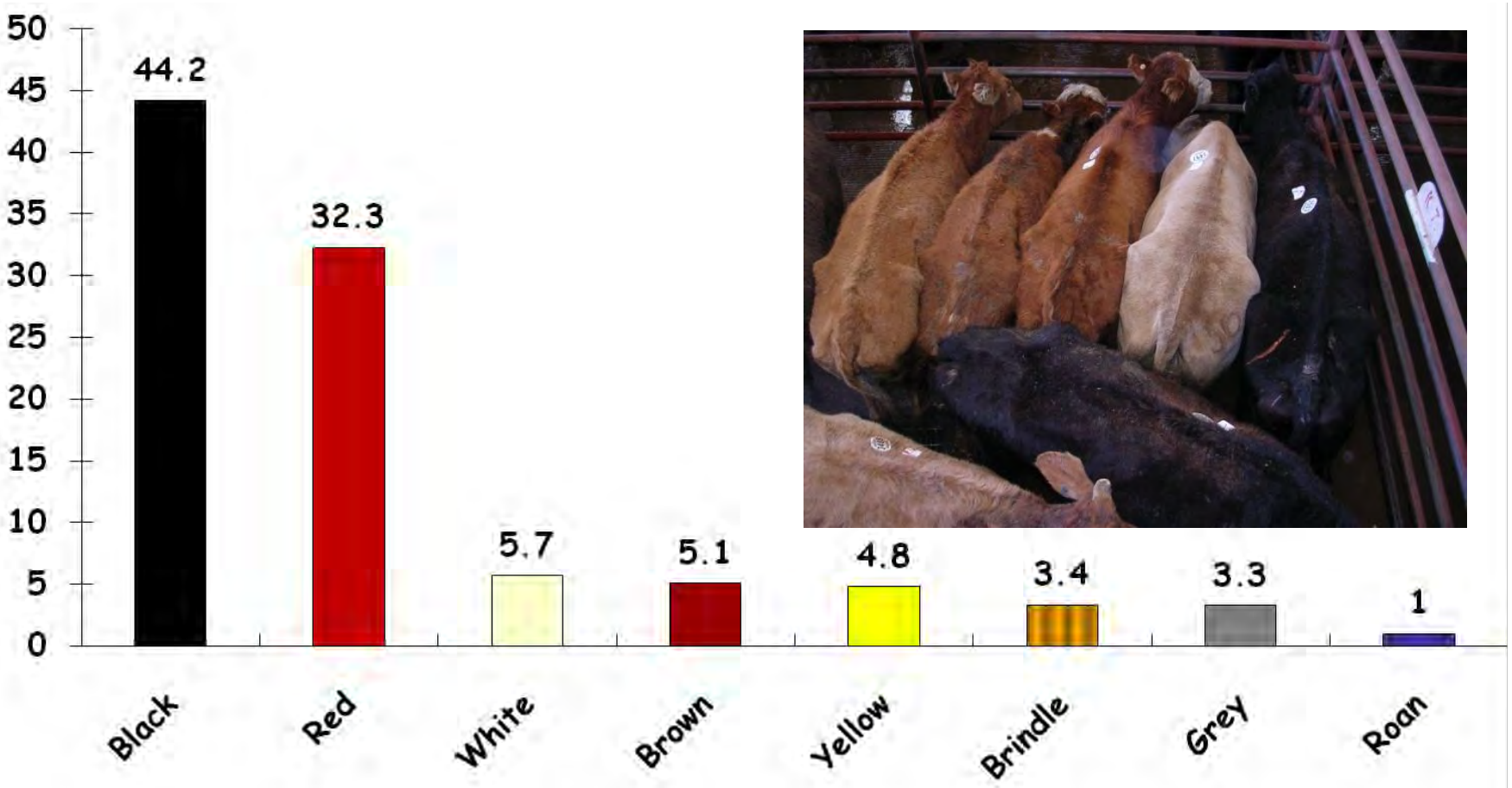


Reproductive Defects

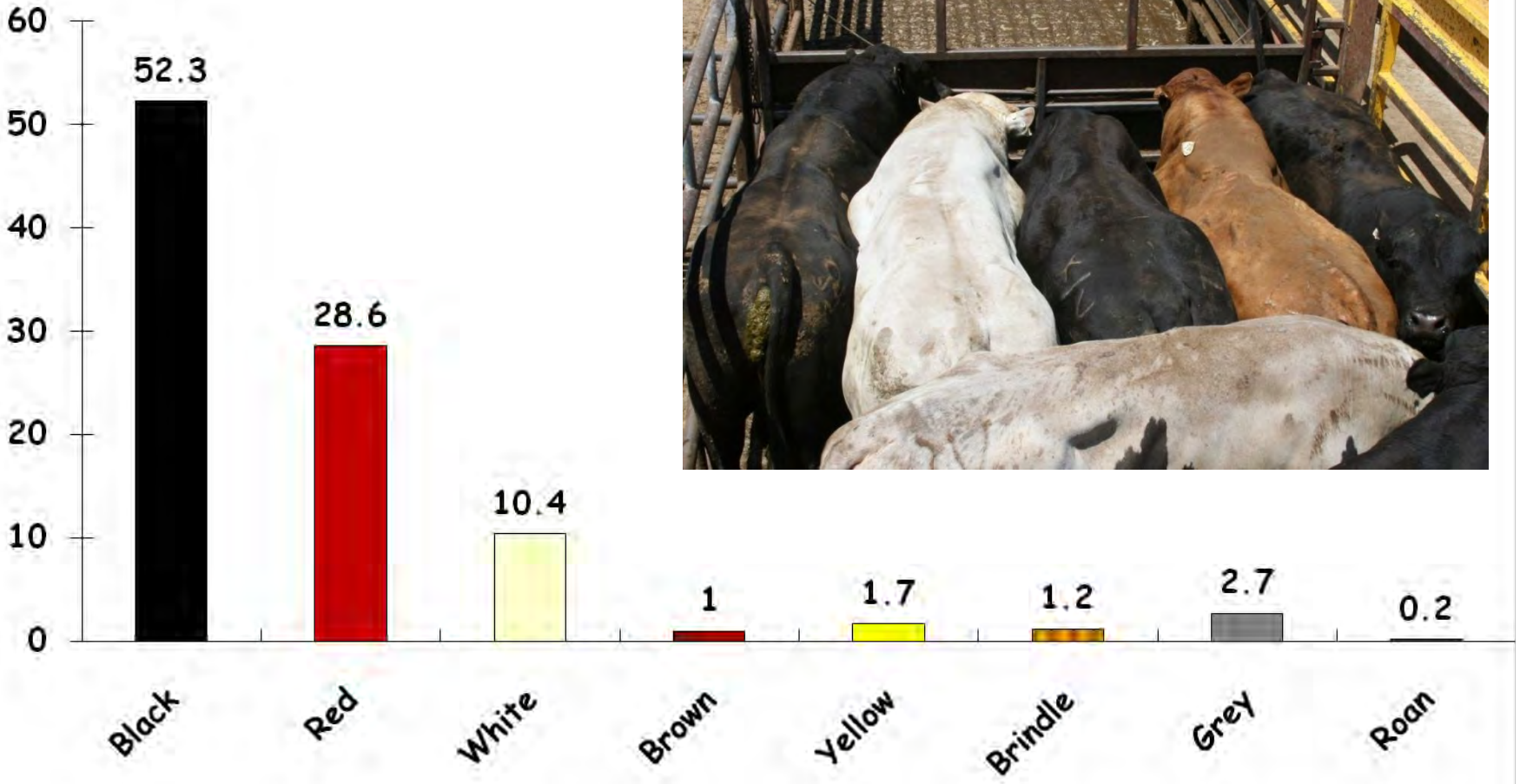
4 % of Bulls had Defects that could prohibit Reproduction



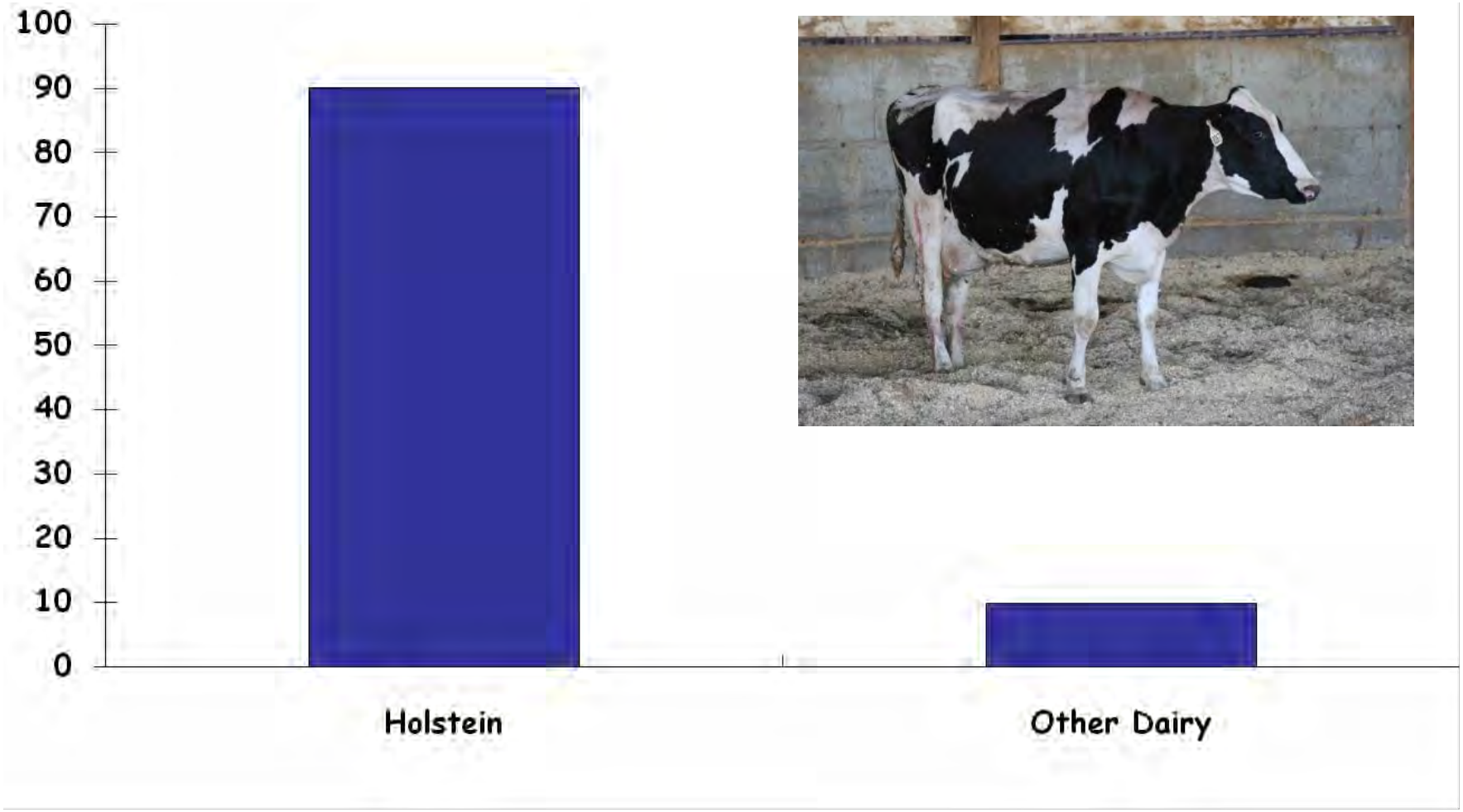
Predominant Hide Colors – Beef Cows



Predominant Hide Colors – Beef Bulls

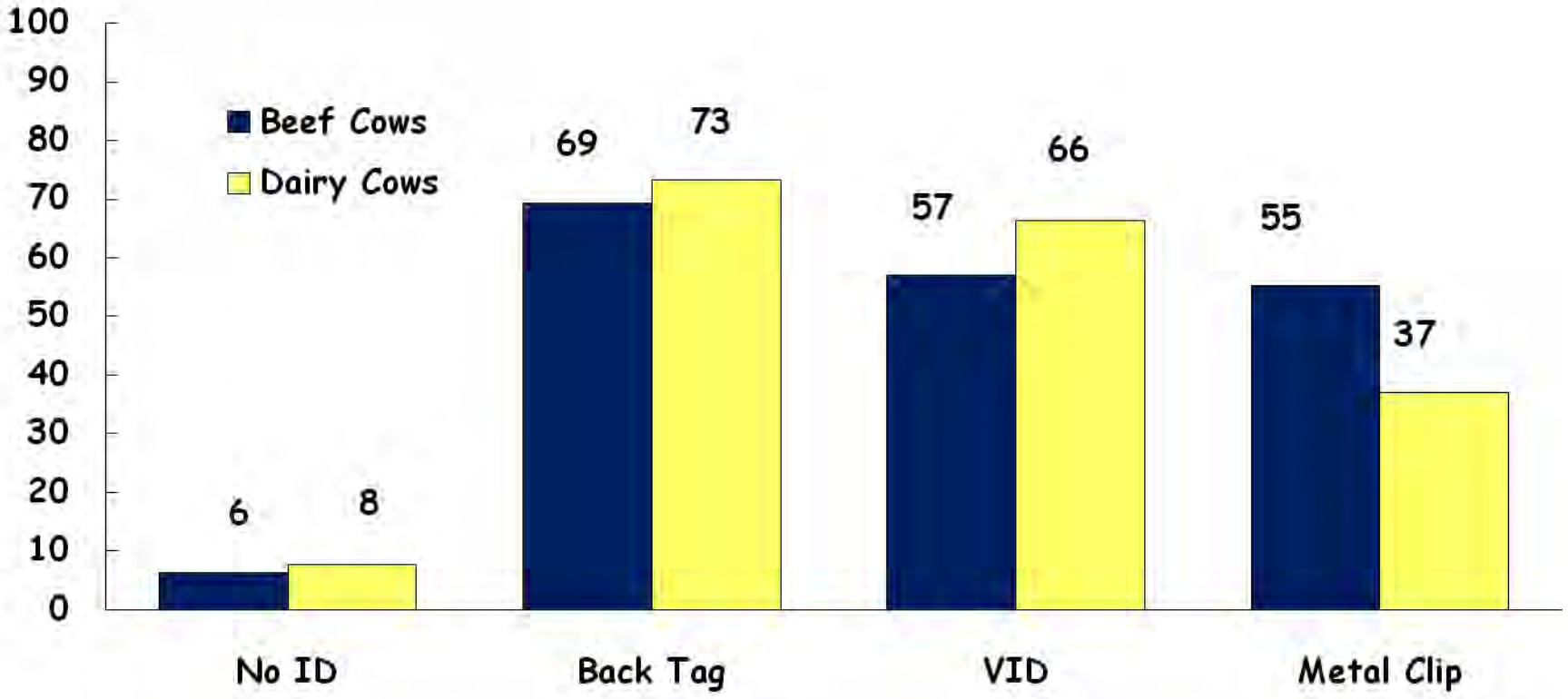


Predominant Hide Colors - Dairy



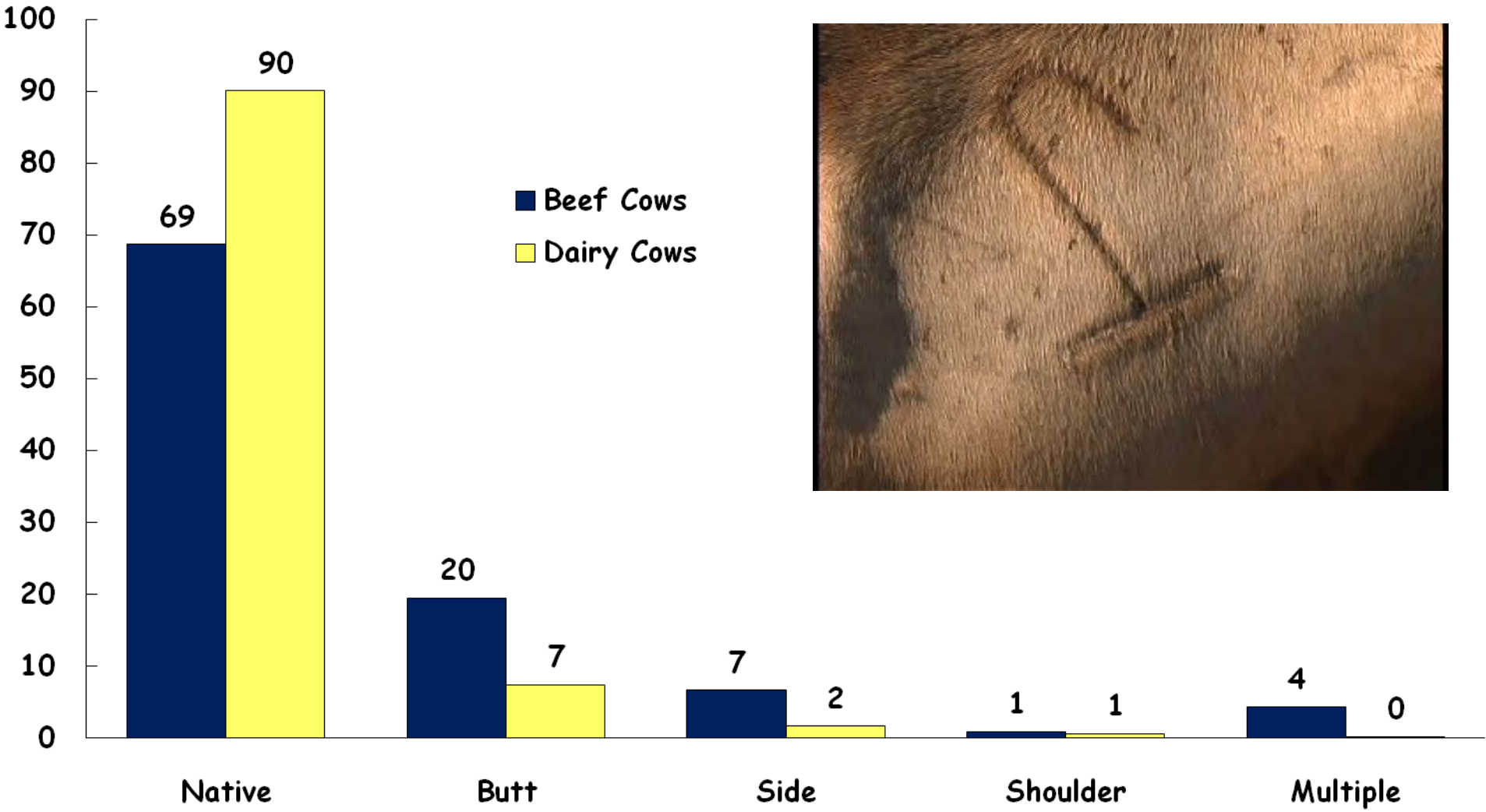
Identification Types

Approximately 68% of All Cattle Had Back Tags

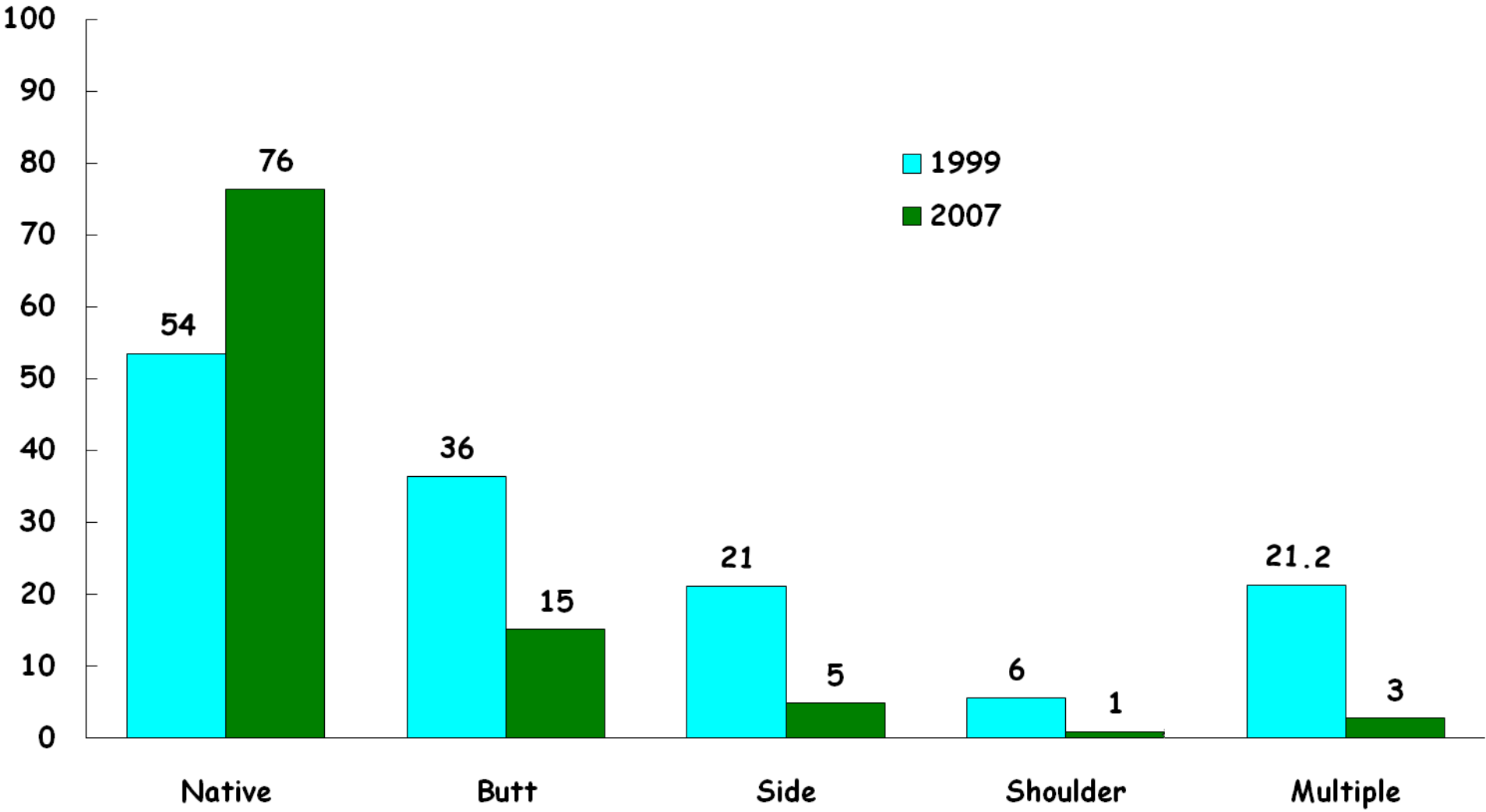


Brands by Location

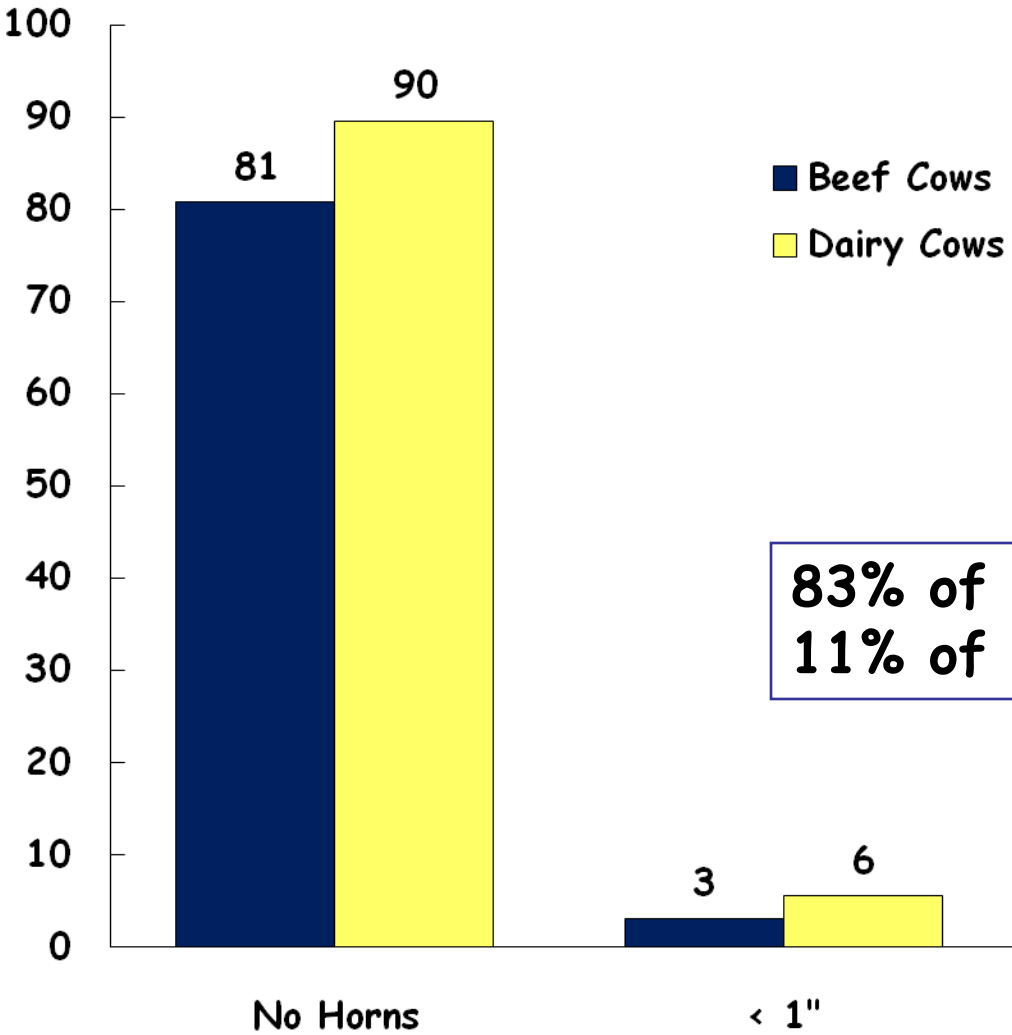
76% of all Animals were not branded



Brands for 1999 vs. 2007



Horns

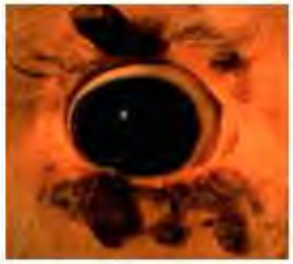


83% of Animals were Polled
11% of Beef Cows were >5"

Key Points

- More cattle were polled than in 1999
- More cattle had no brands than in 1999
- 92% of the cattle had an ID (predominantly back tag)
- Prevalent color for beef cattle was black

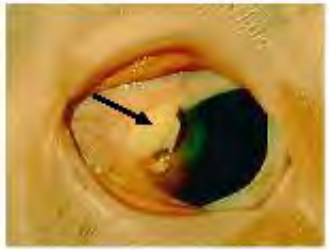
Cancer Eye Scoring Standards



Grade 1
Small benign tumor producing finger like growth
Precancerous

Grade 2
Small white elevated plaque on the eyeball
Precancerous

Grade 2
Small white elevated plaque on the eyeball
Precancerous



Grade 2
Papilloma on the eyeball
Precancerous

Grade 3
Growth on the third eyelid or a tumor that is vascular in nature
Cancerous

Cancerous

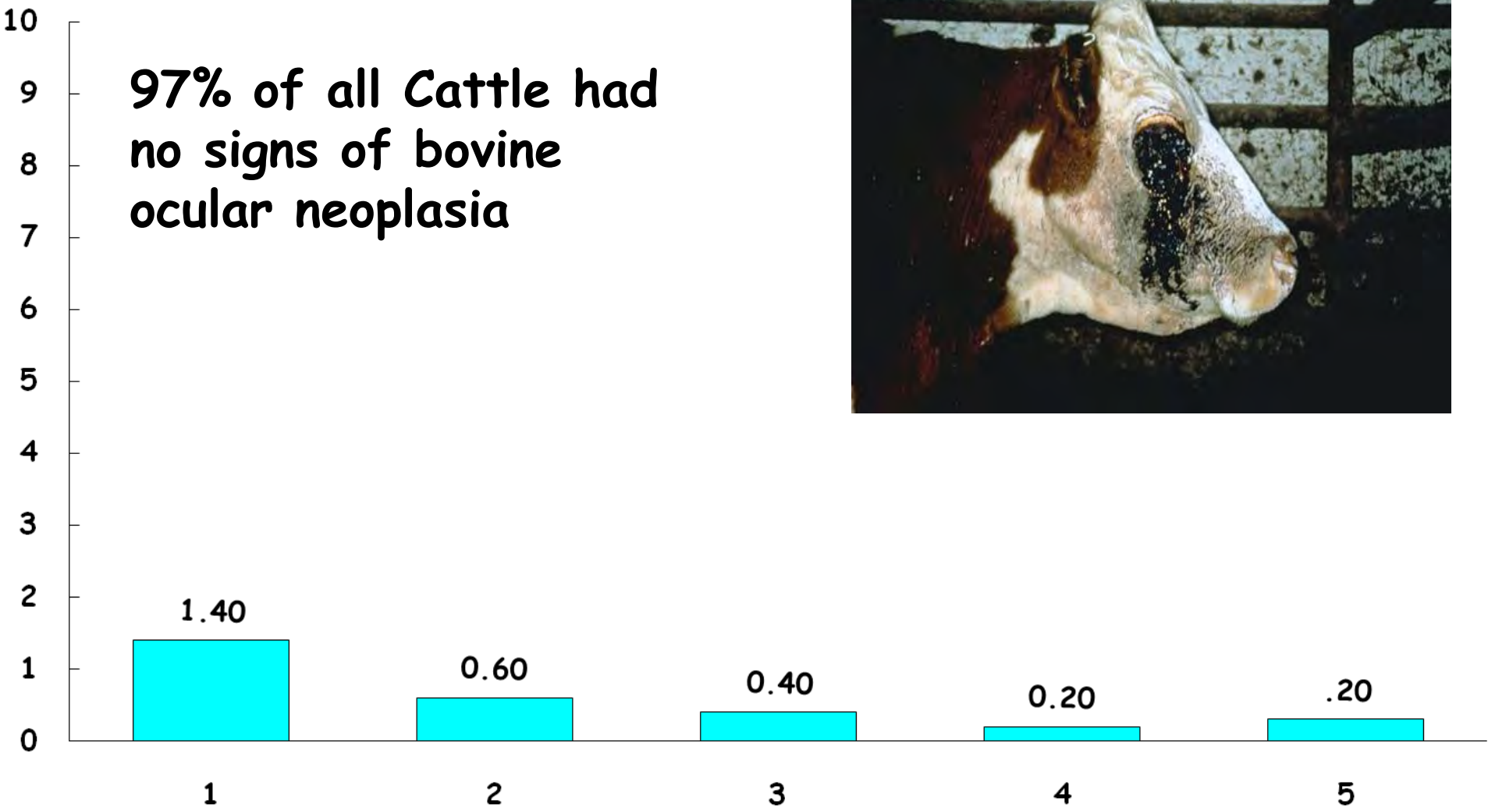
Grade 4
Tumors that have metastasized to the bony structure around the eye or exhibit lymphatic involvement of the parotid gland

Grade 4
Tumors that have metastasized to the bony structure around the eye or exhibit lymphatic involvement of the parotid gland
Cancerous

Grade 5
Cattle in which the eyeball has prolapsed from the orbit and/or exhibits a necrotic condition
Cancerous

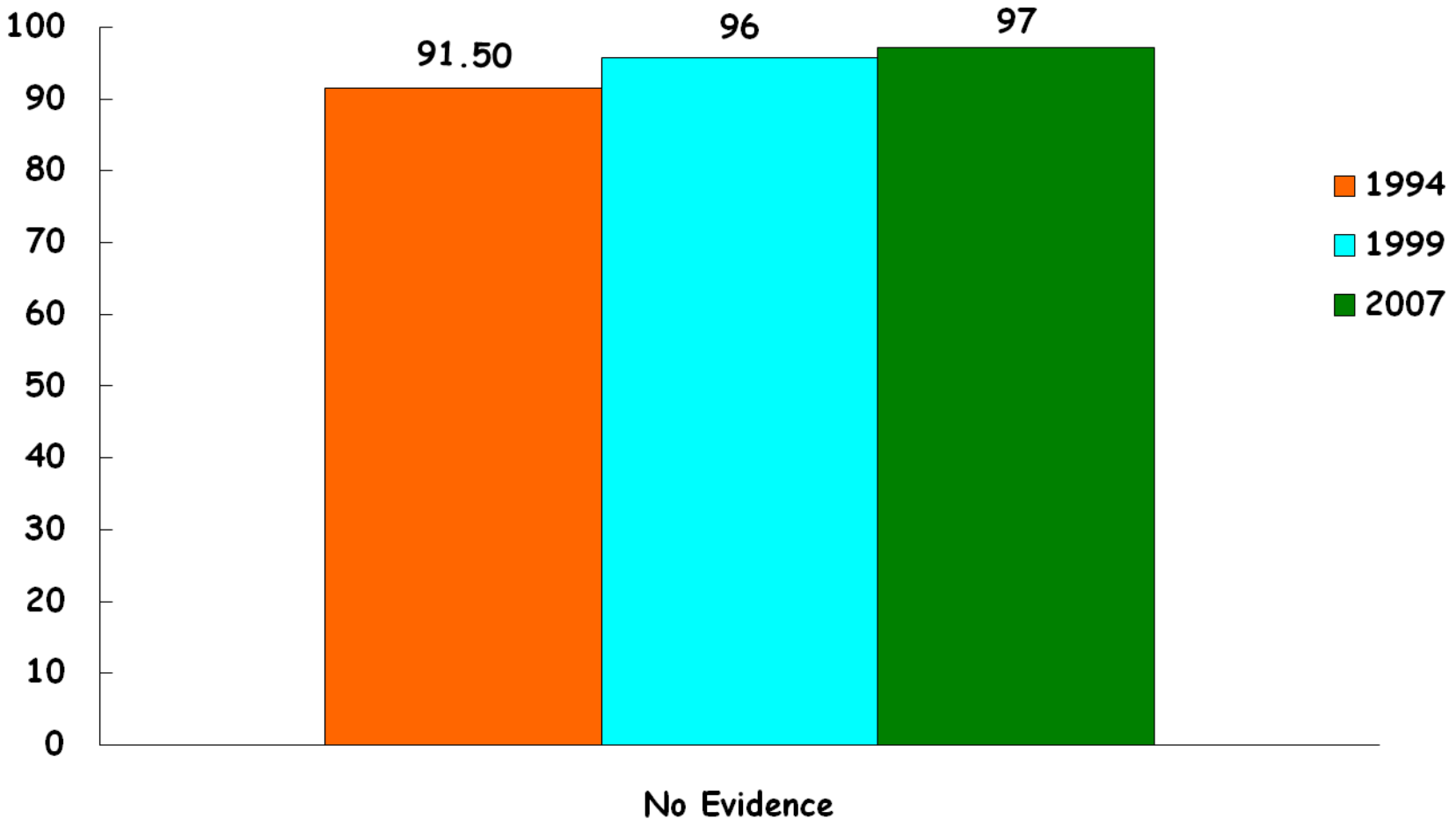
Cancer Eye Scores

97% of all Cattle had no signs of bovine ocular neoplasia

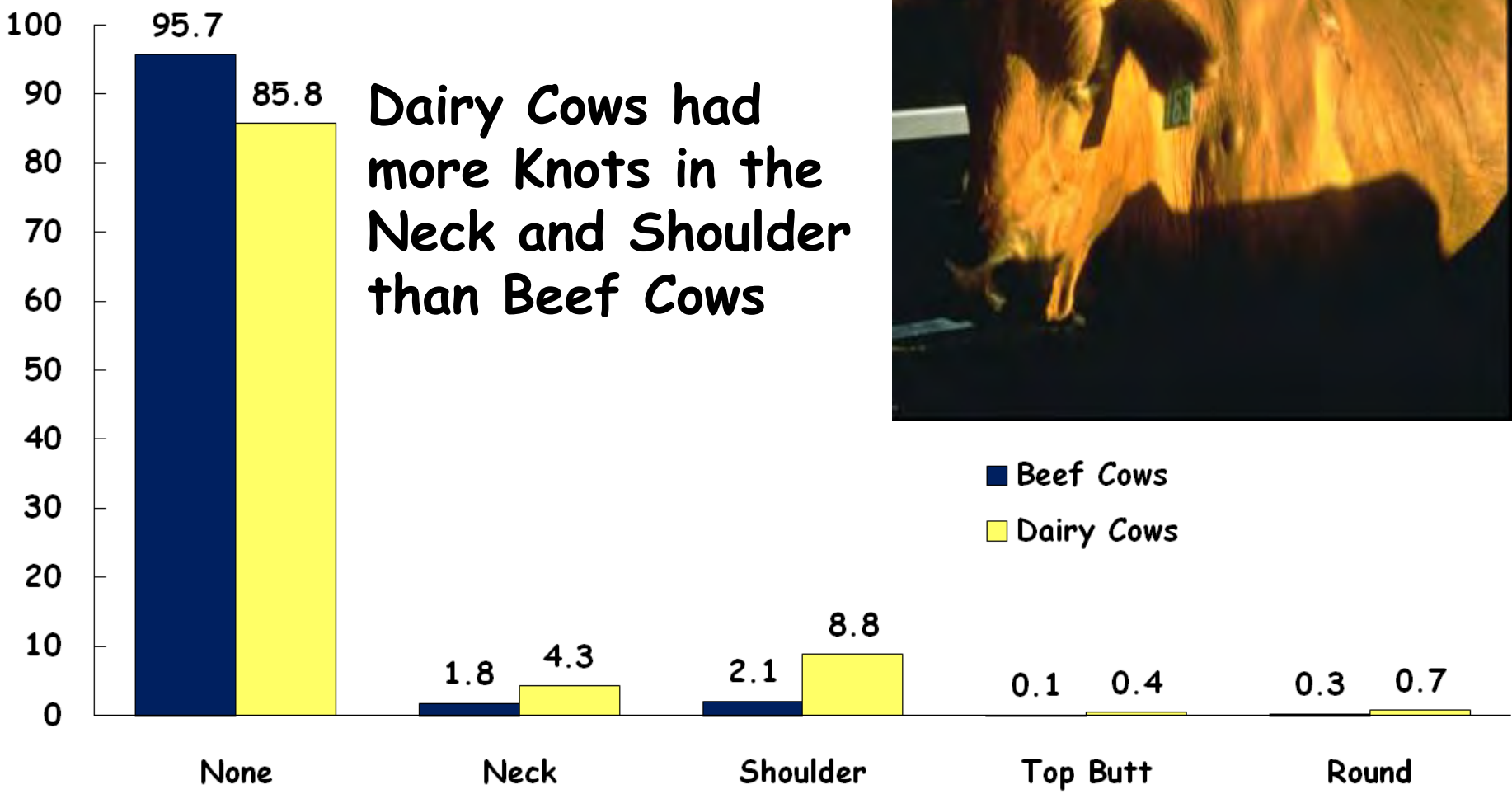


Cattle with No Evidence of Cancer Eye Across All Audits

Bovine Ocular Neoplasia is on a downward trend since 1994



Knots



Dairy Cows had more Knots in the Neck and Shoulder than Beef Cows

Lamness/Locomotion Score

Locomotion Score **1**

Clinical Description:
Normal

Description:
Stands and walks normally. All feet placed with purpose.

Locomotion Score **2**

Clinical Description:
Mildly Lame

Description:
Stands with flat back, but arches when walks. Gait is slightly abnormal.

Lamness/Locomotion Score

Locomotion Score 3

Clinical Description:
Moderately Lame

Description:
Stands and walks with an arched back. Short strides with one or more legs.

Locomotion Score 4

Clinical Description:
Lame

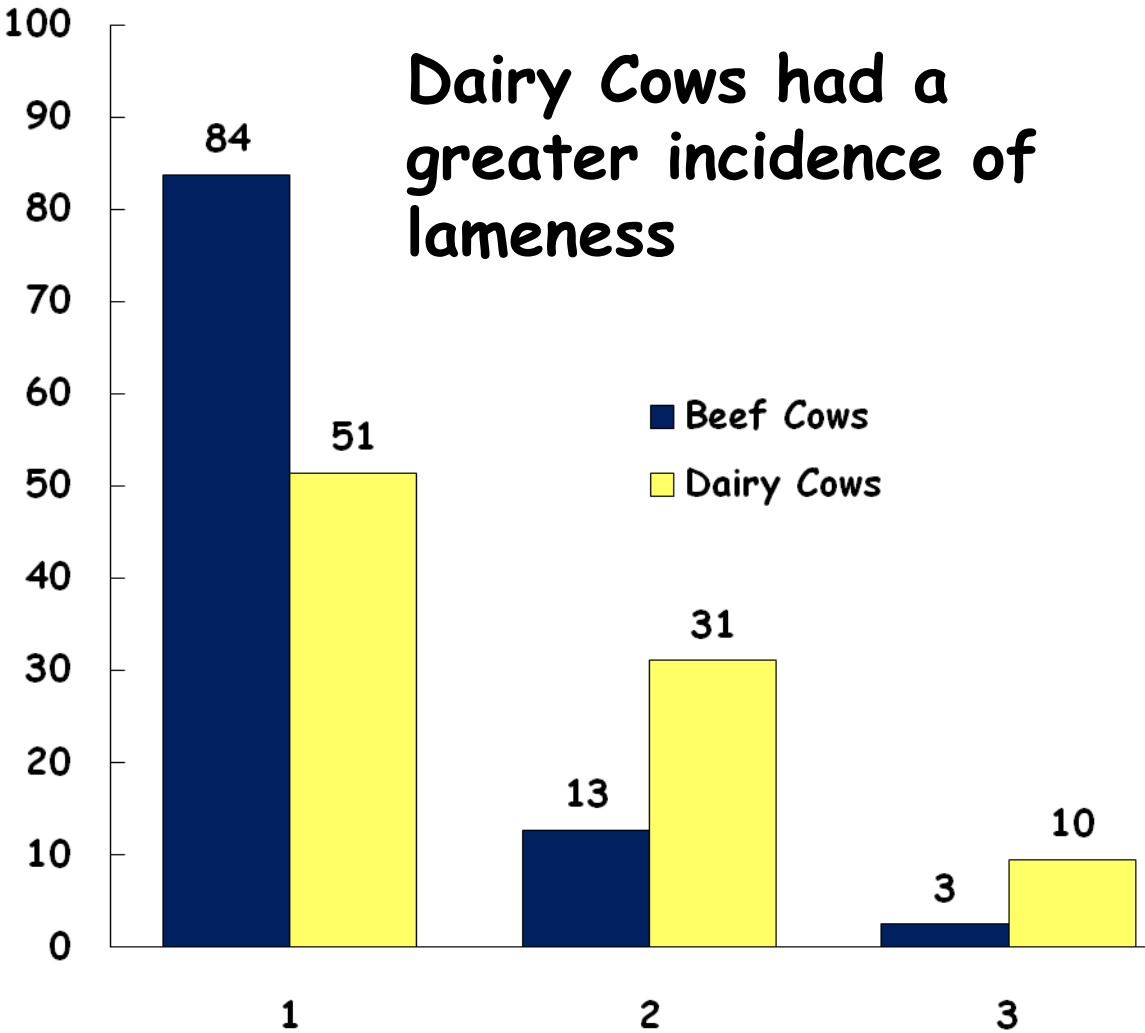
Description:
Arched back standing and walking. One or more limbs favored but at least partially weight bearing.

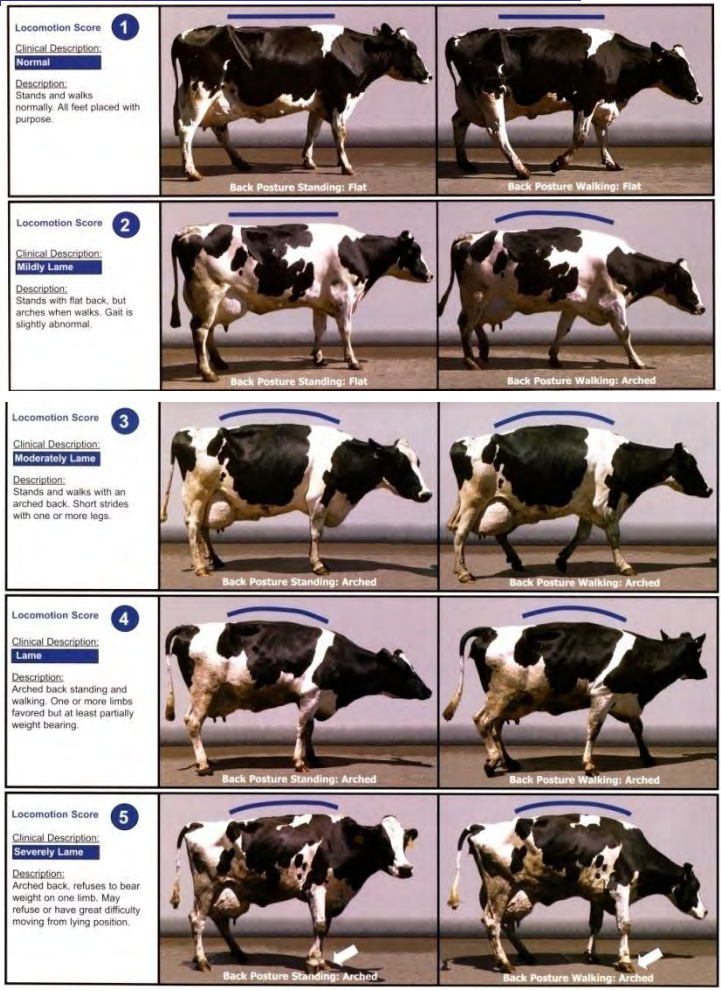
Locomotion Score 5

Clinical Description:
Severely Lame

Description:
Arched back, refuses to bear weight on one limb. May refuse or have great difficulty moving from lying position.

Locomotion Scores

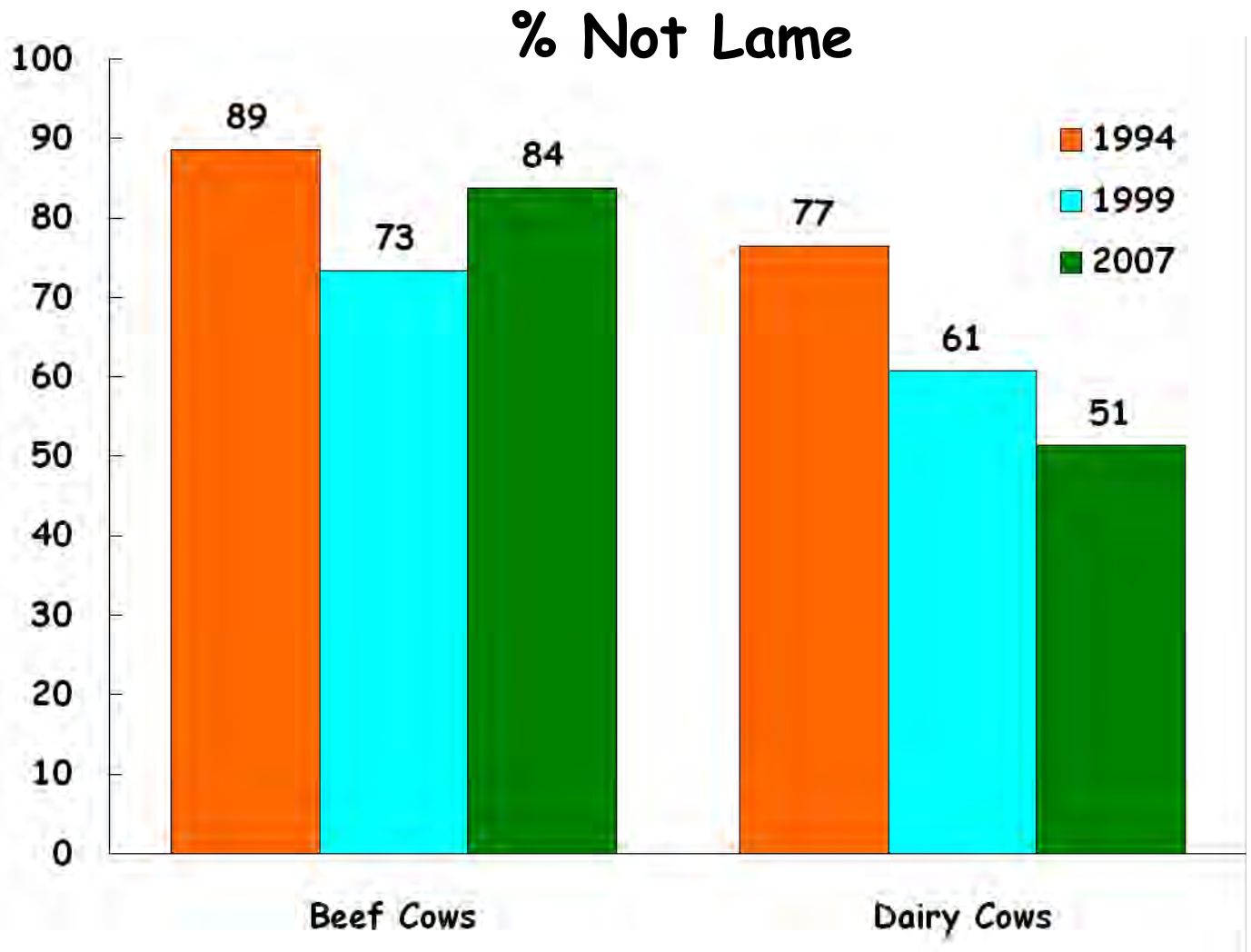




Cattle that were Not Lame - Across all Audits

Fewer Beef Cows were Lame than in 1999

More Dairy Cows were Lame than in 1999 and 1994

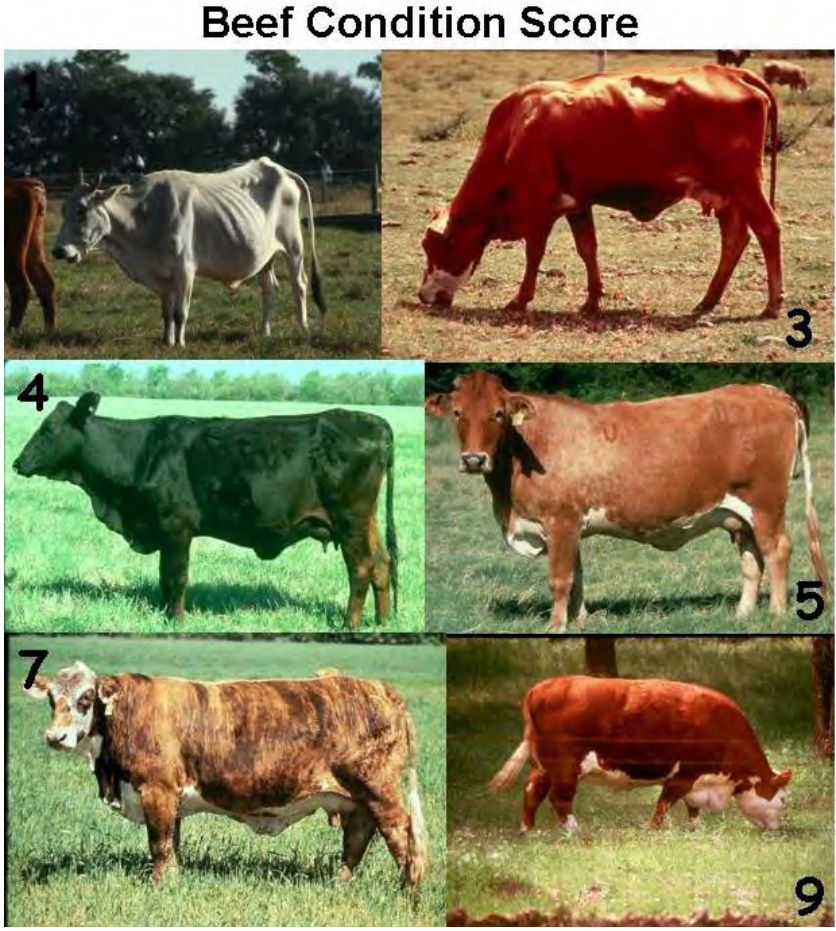


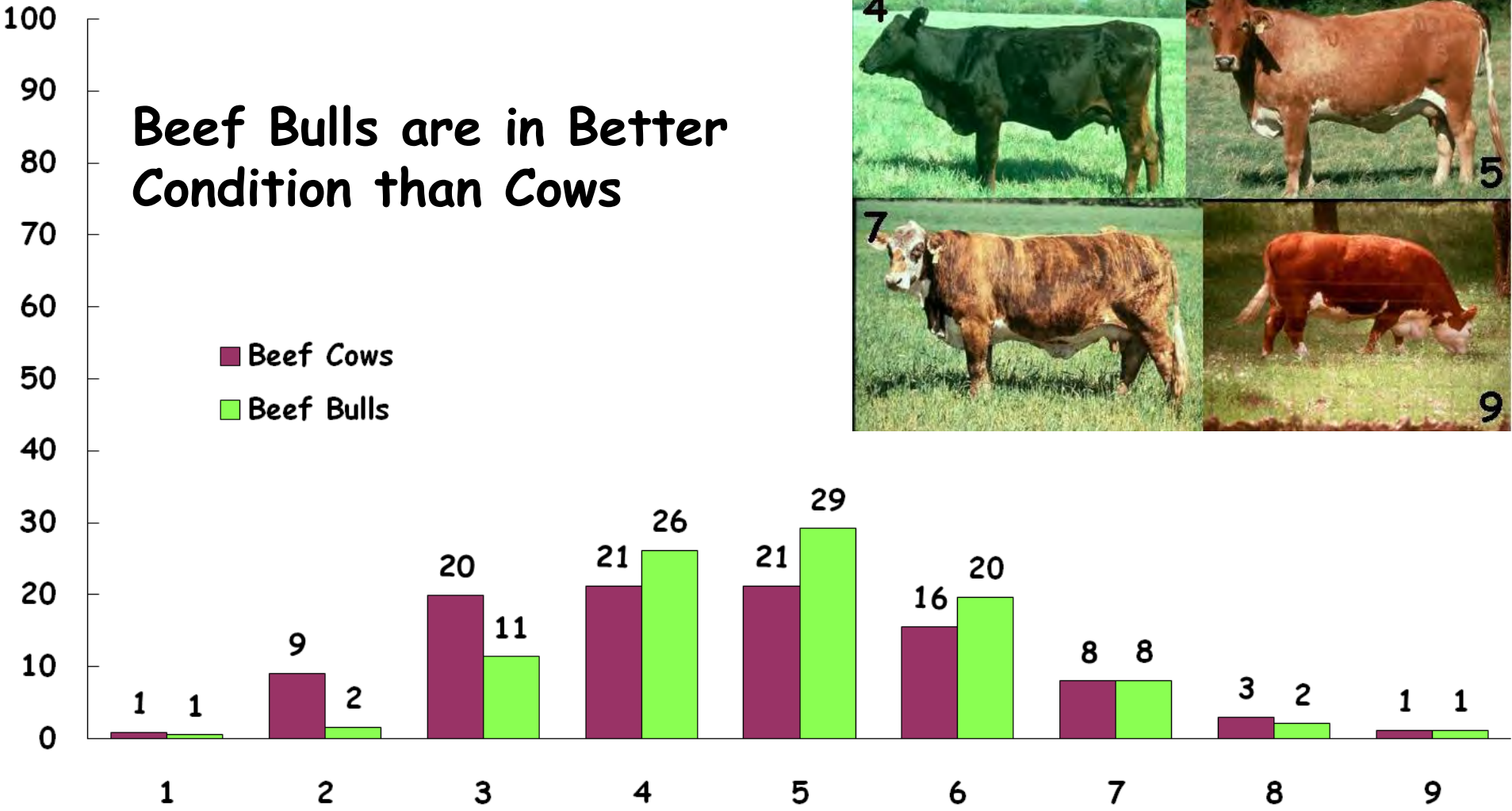
Beef Condition Score


What's the defect?

What's the defect?

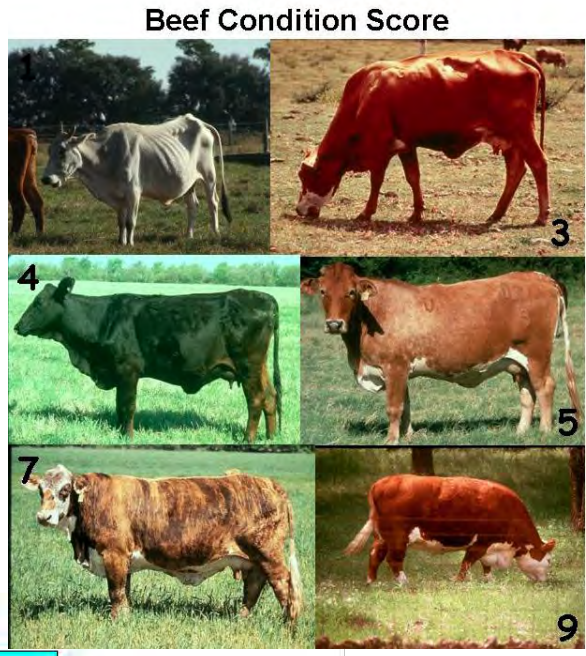
Body Condition Scores for Beef Animals

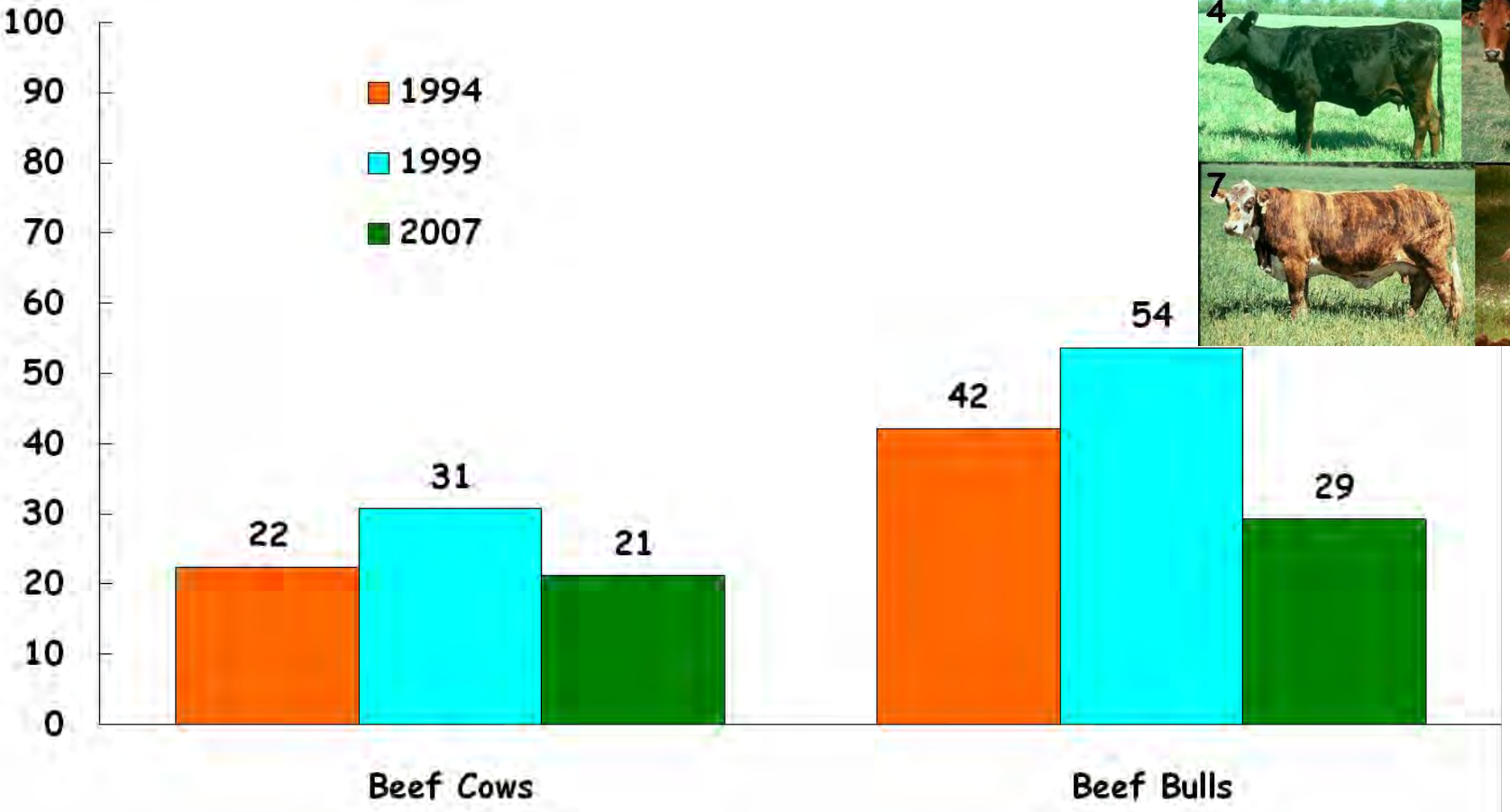




Moderate (Score of 5) Conditioned Beef Cattle Since 1994

Less Moderately Conditioned Beef Cows and Bulls Since 1999





Key Points

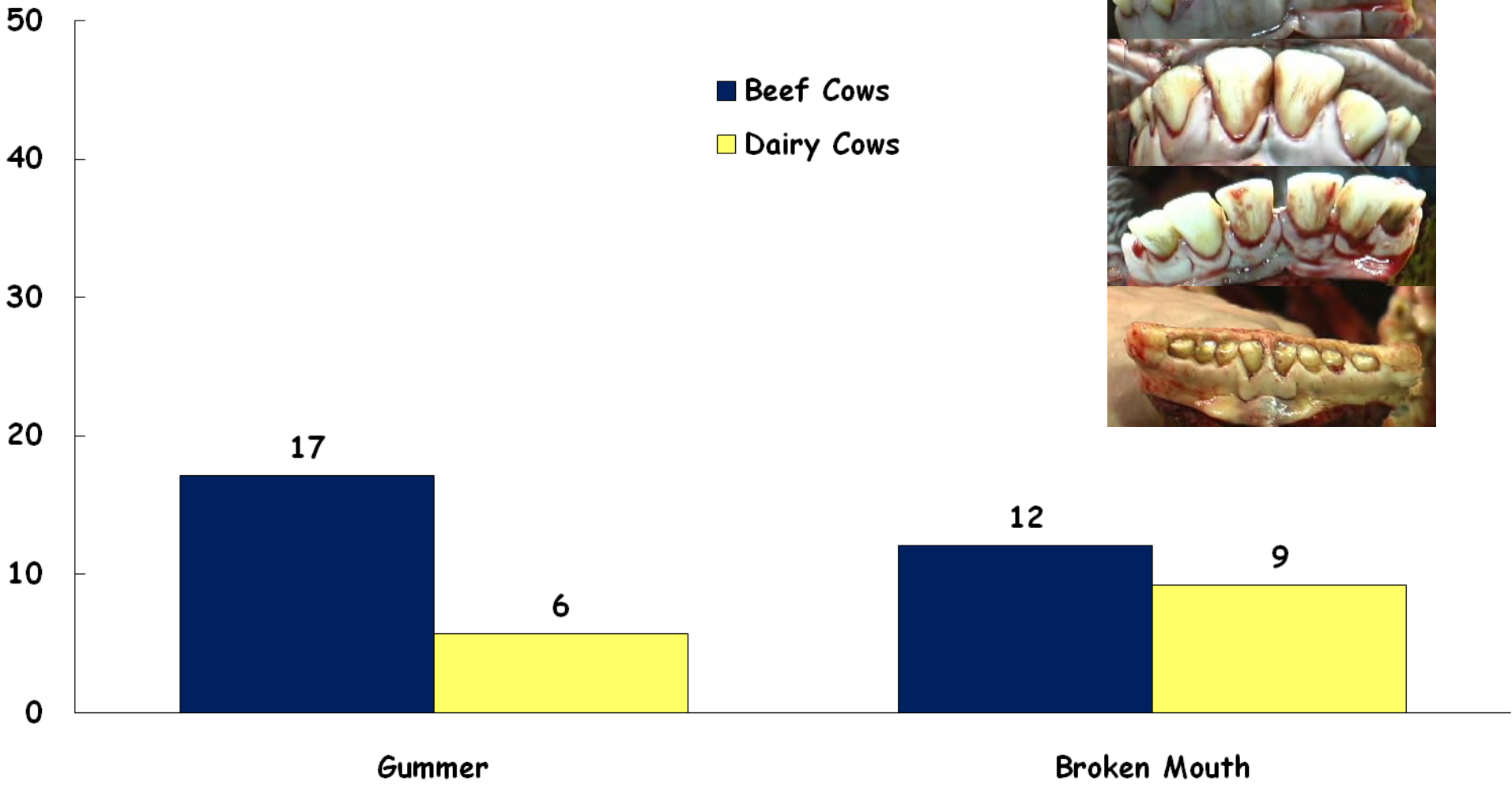
- 97% of the cattle had no evidence of cancer eye (better than 1999 and 1994)
- There was a higher incidence of lame dairy cows in 2007 than in 1999 and 1994
- Fewer beef cows were lame
- More beef cows were thinner

Harvest Floor Audit

Carcass Condemnation
Offal Condemnation
Dentition
Bruising
Fetuses

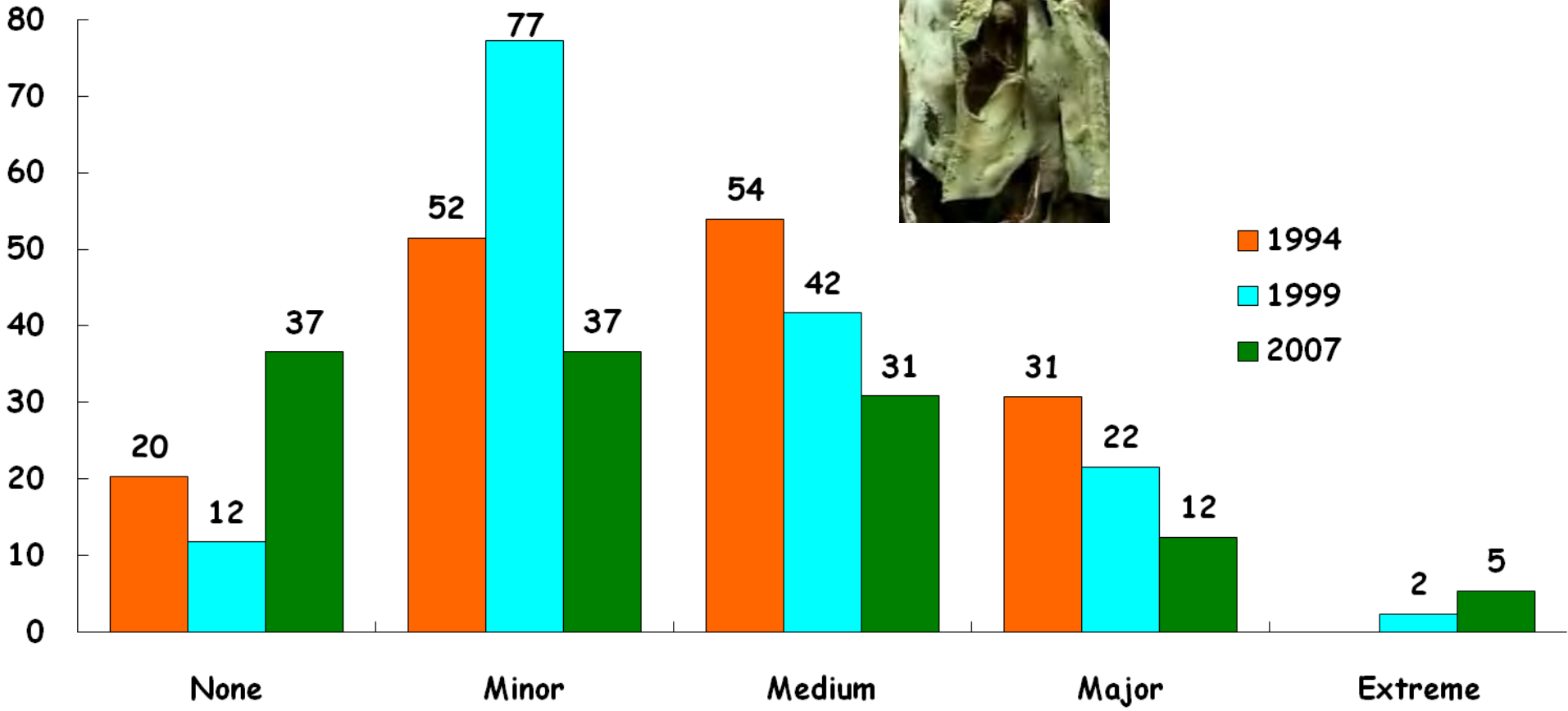
Dentition

11.2% Gummer for all cattle in audit

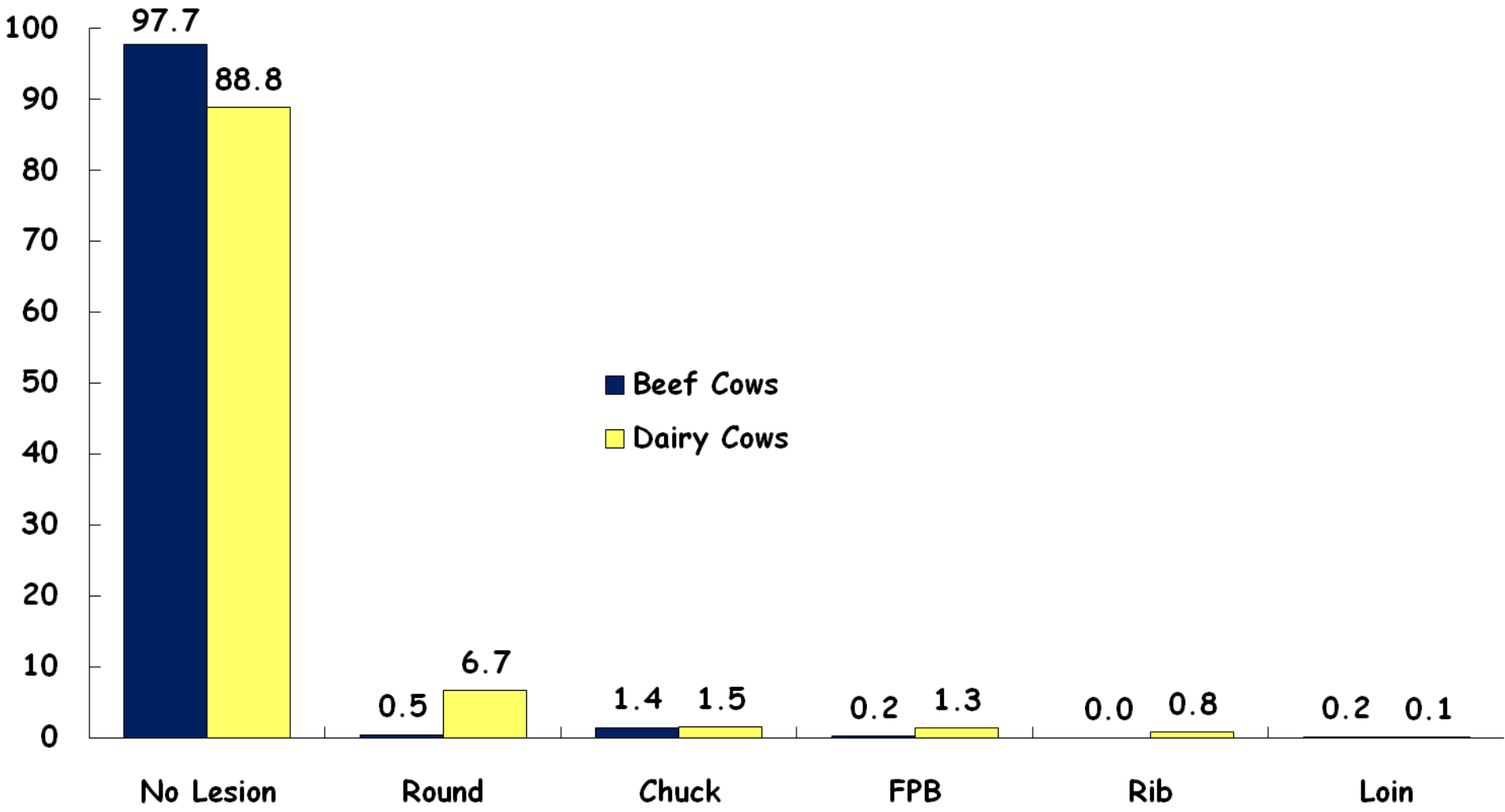


Bruising Severity

All Cattle
1999 - 11.8% No Bruises
2007 - 36.6% No Bruises

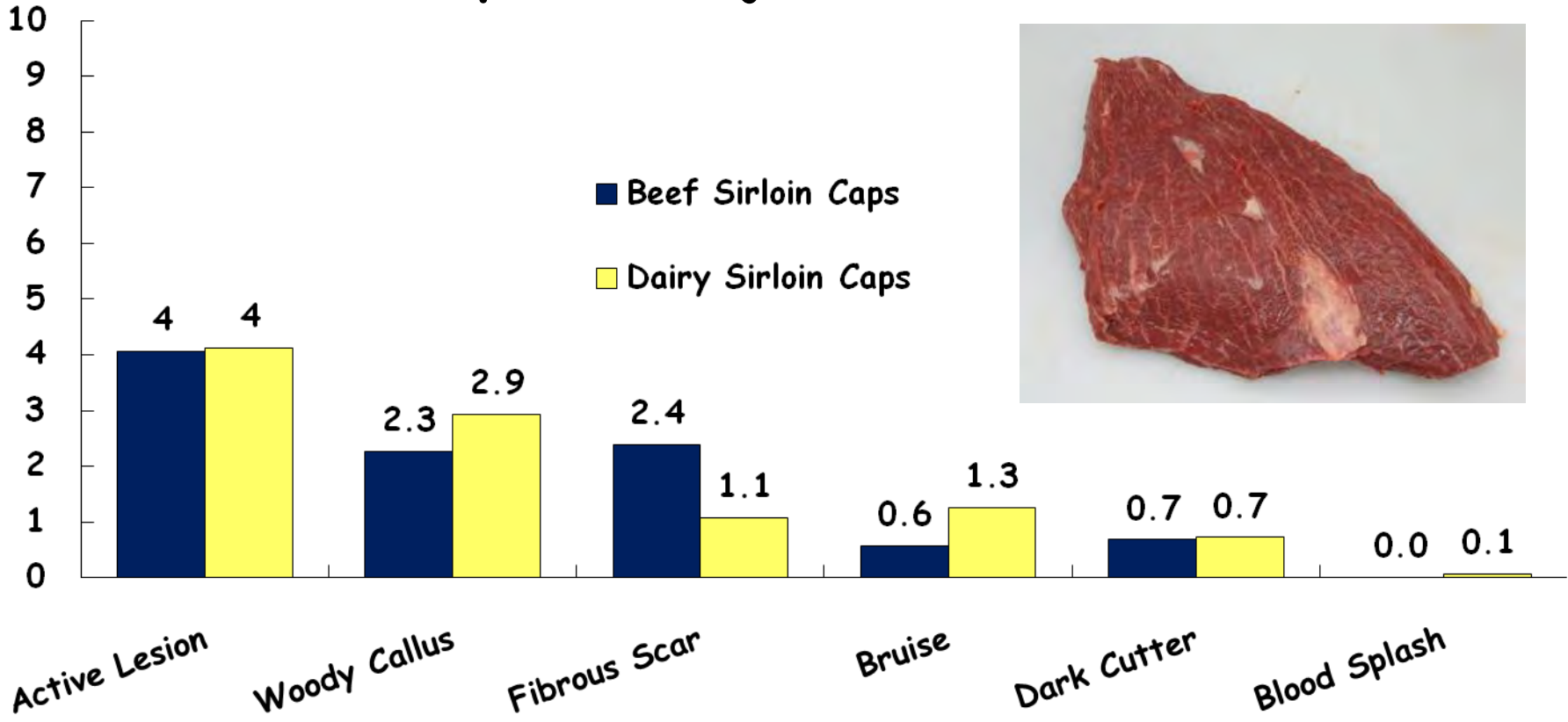


Injection Site Location



Top Sirloin Cap Defects

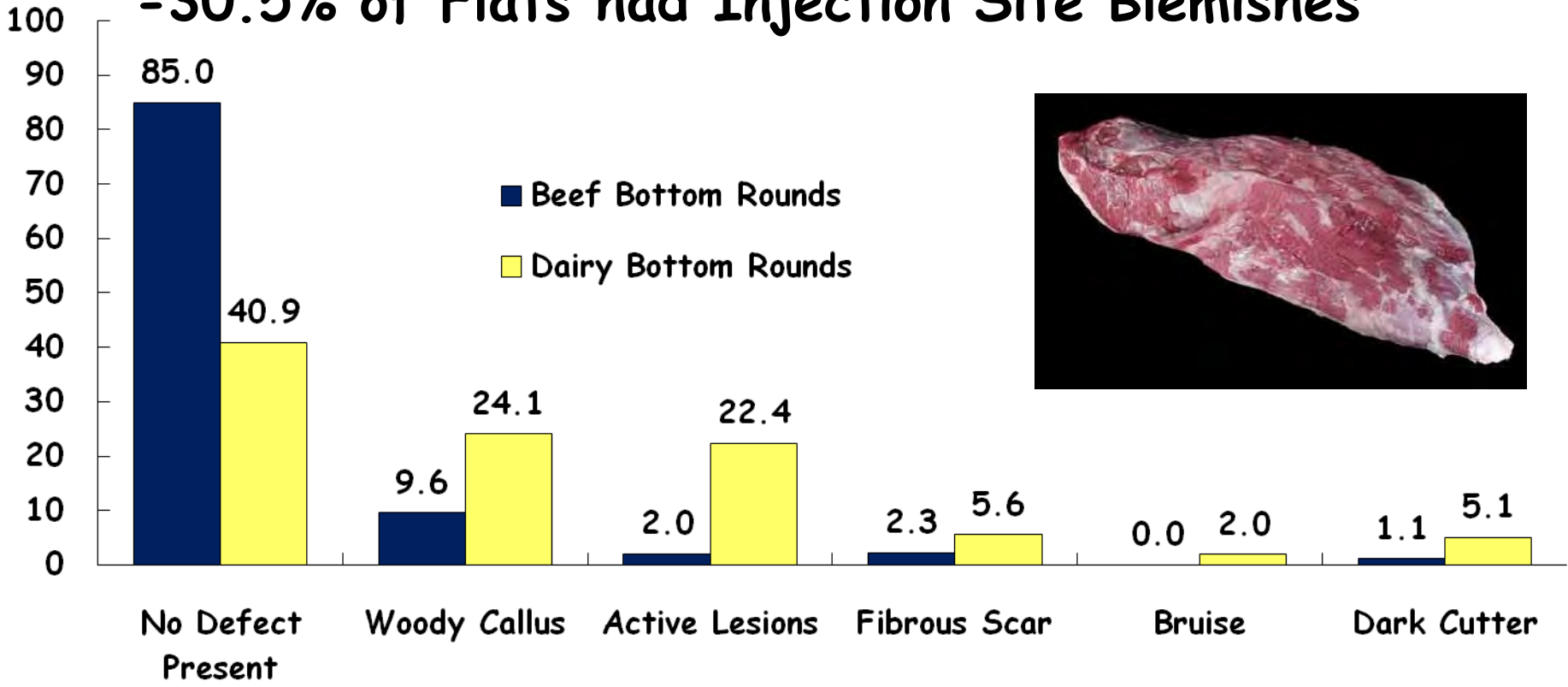
9.4% of Caps had Injection Site Blemishes



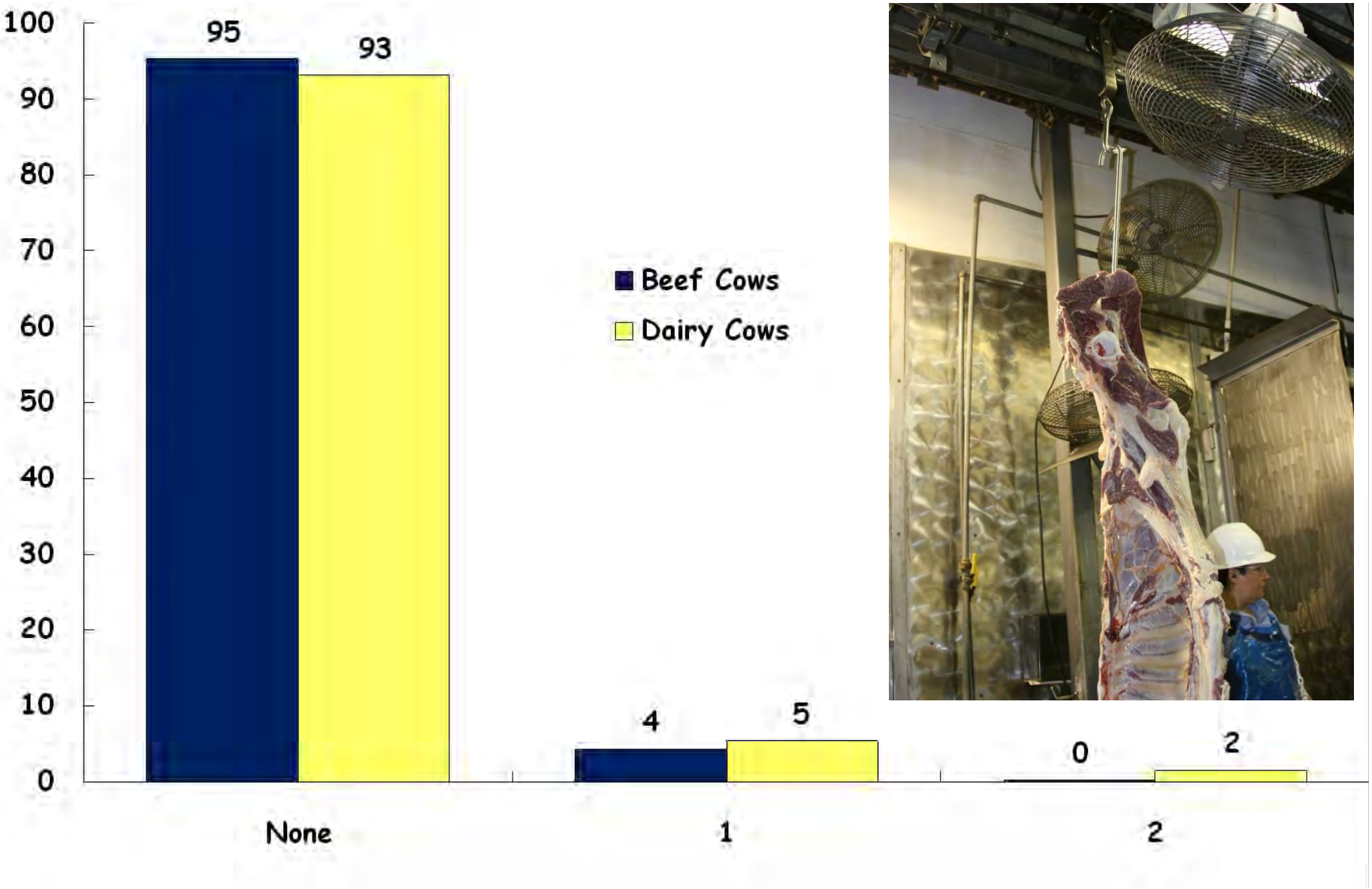
Bottom Round Defects

-Dairy Flats had Twice as Many Defects as Beef

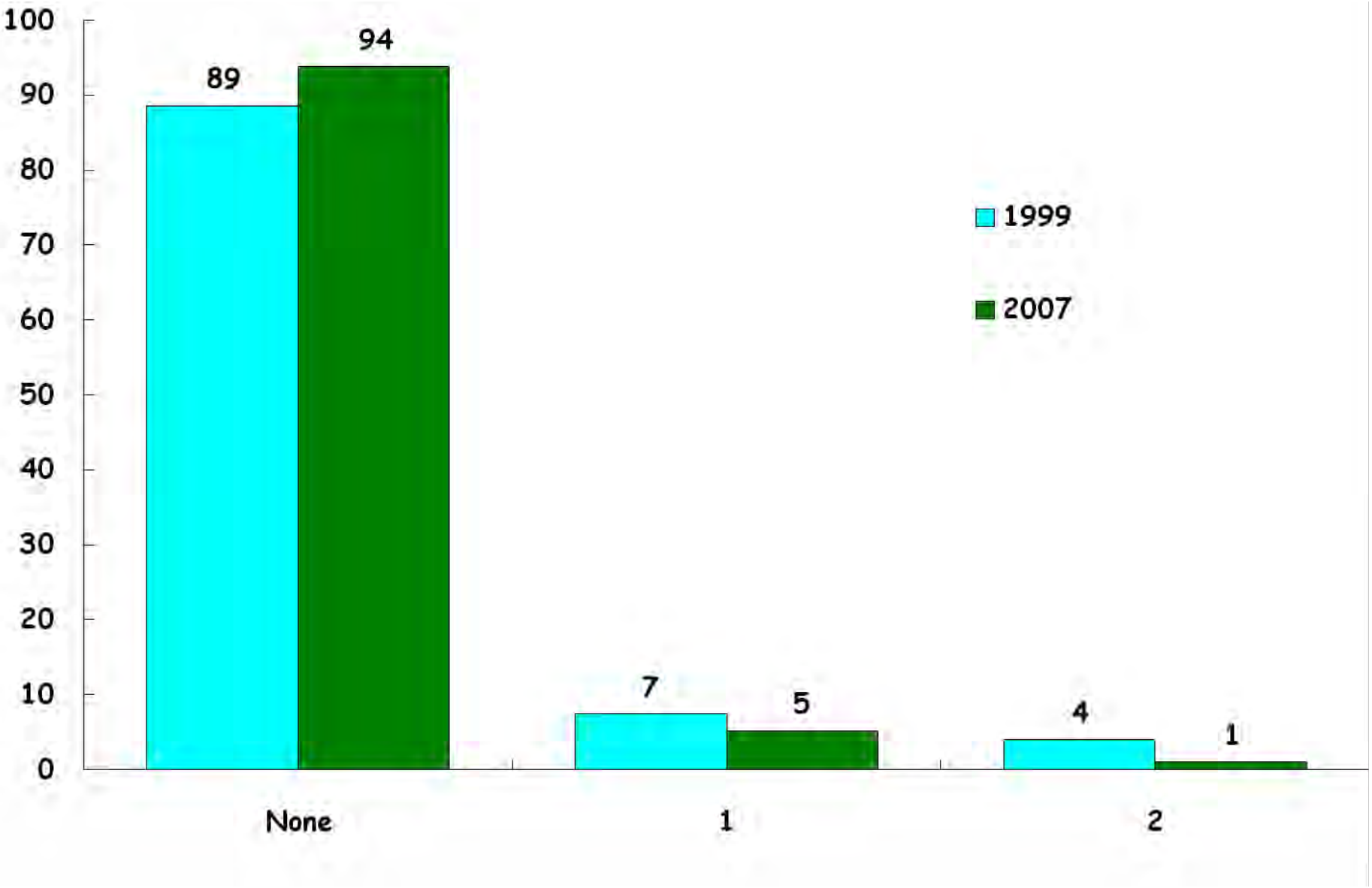
-30.5% of Flats had Injection Site Blemishes



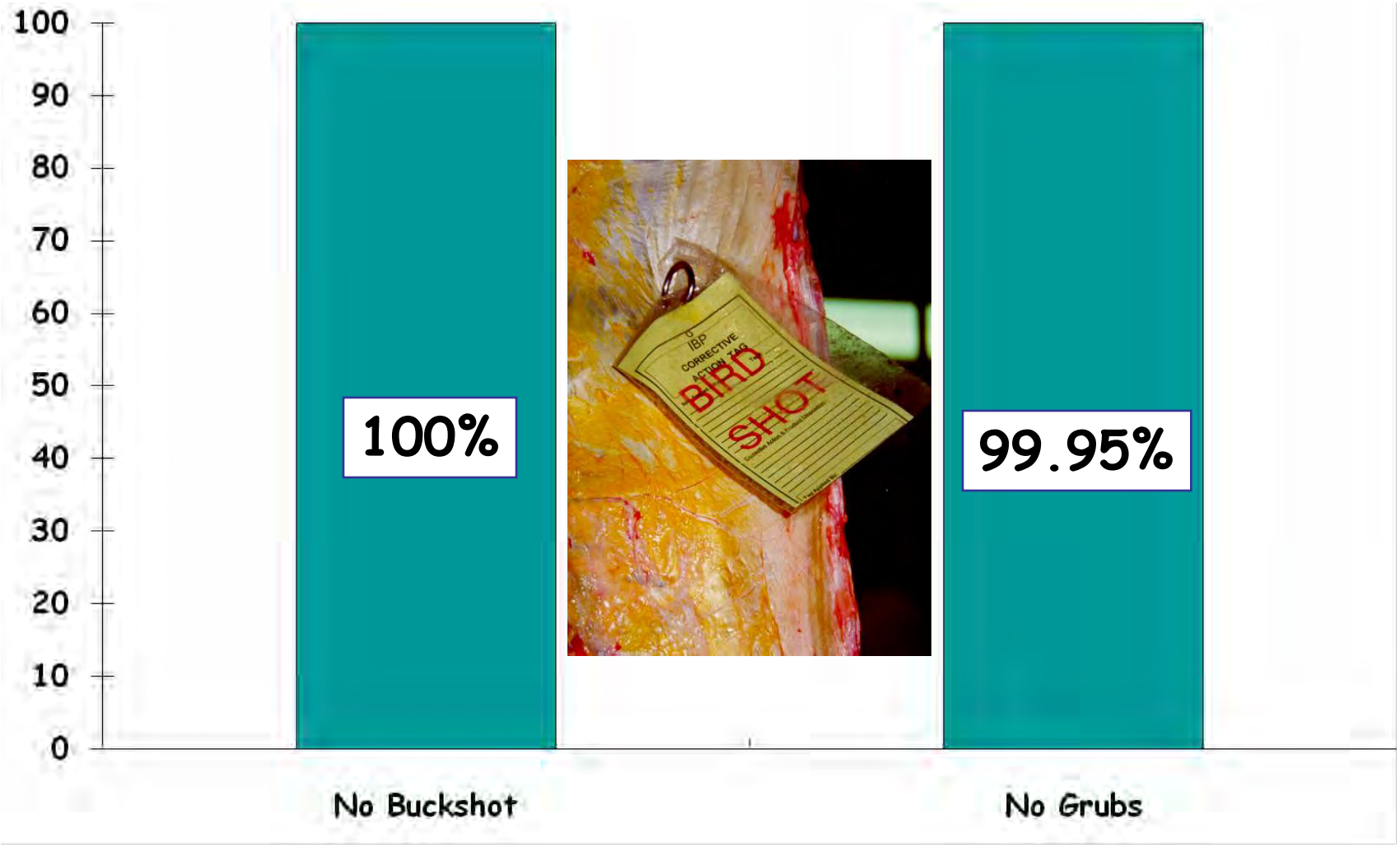
Arthritic Joints %



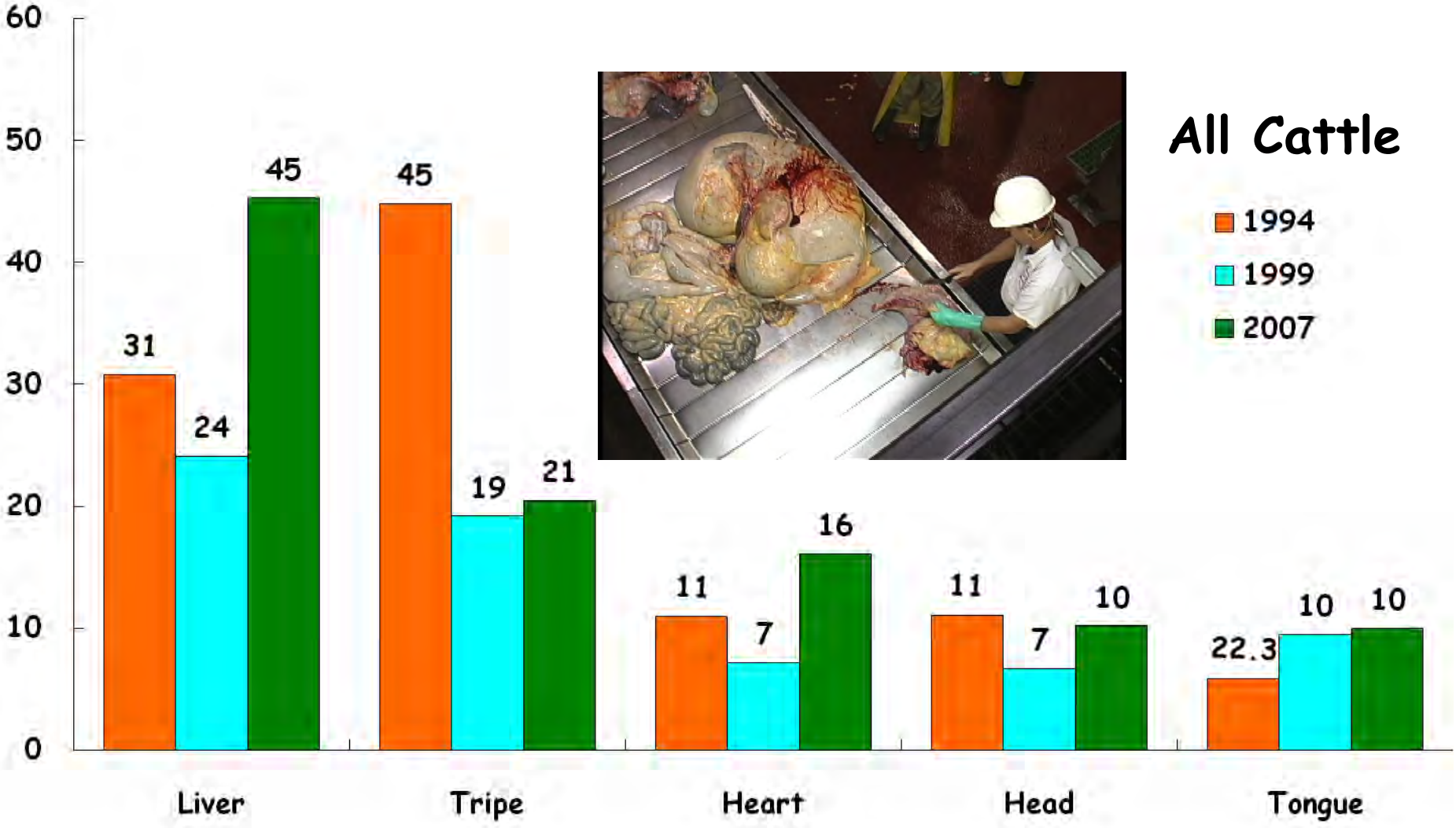
Carcasses with Arthritic Joints Between 1999 and 2007



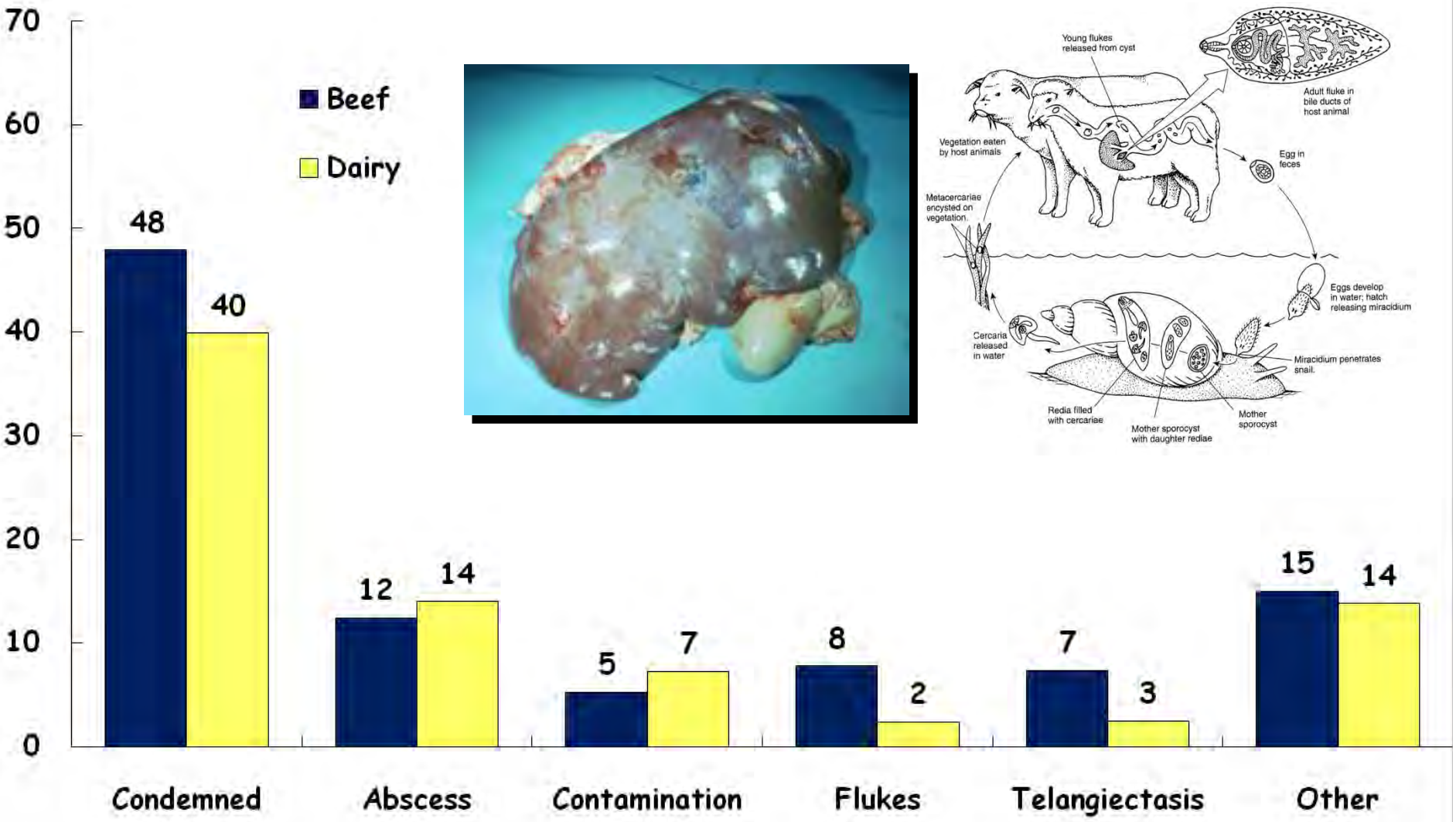
No Buckshot and No Grubs %



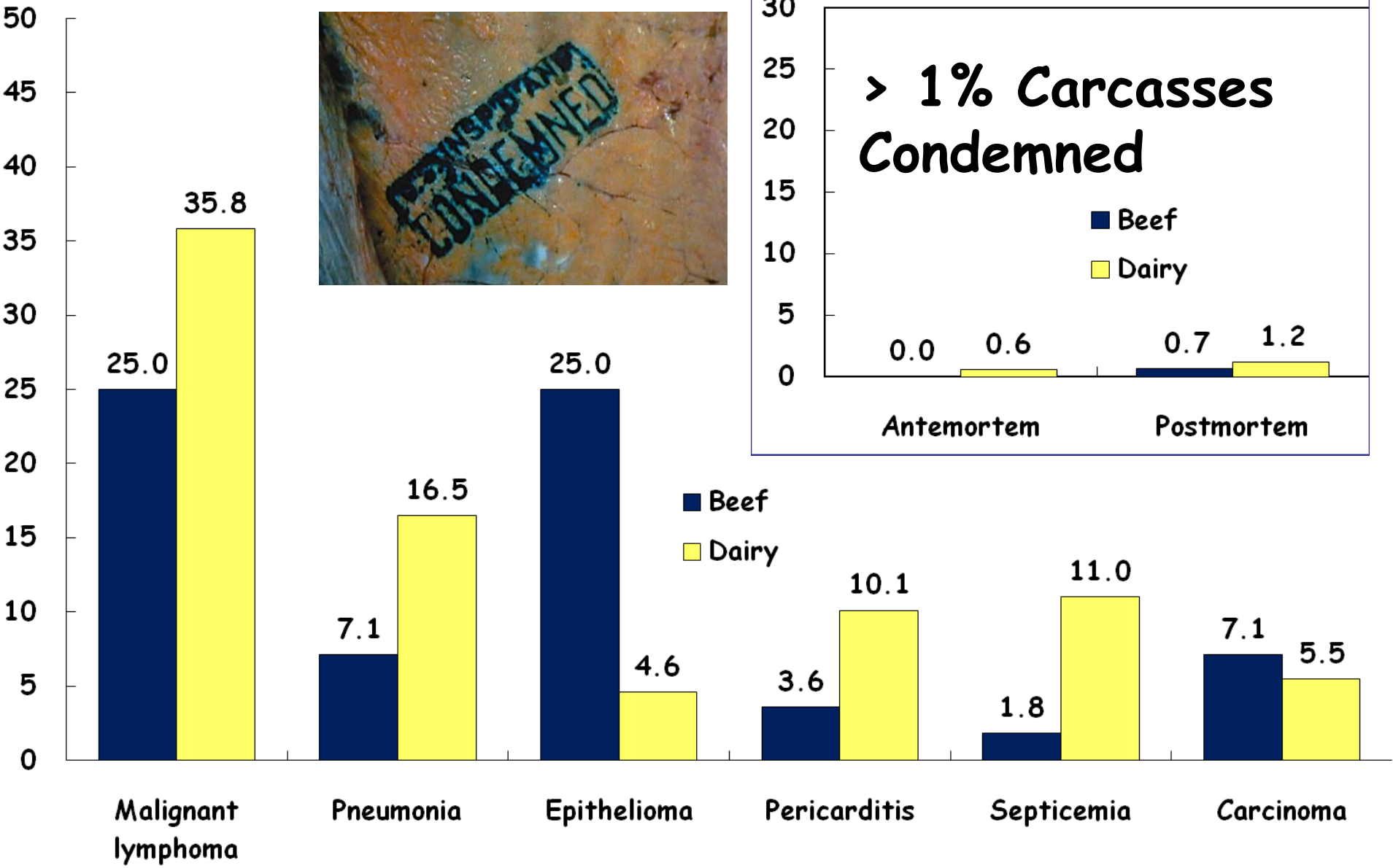
Offal Condemnation % 1994, 1997, 2007



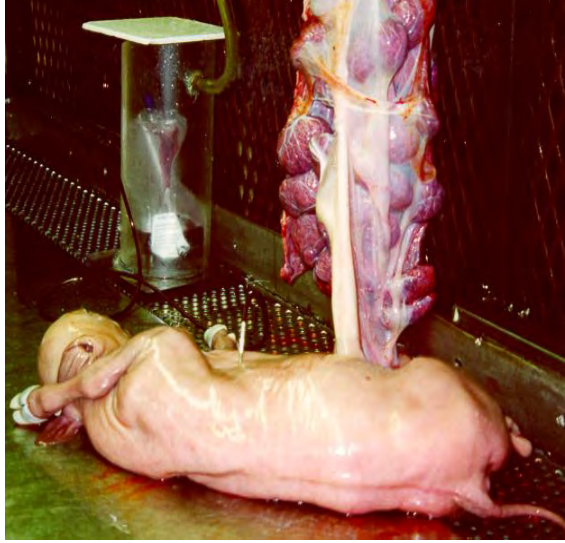
Liver Condemnation %

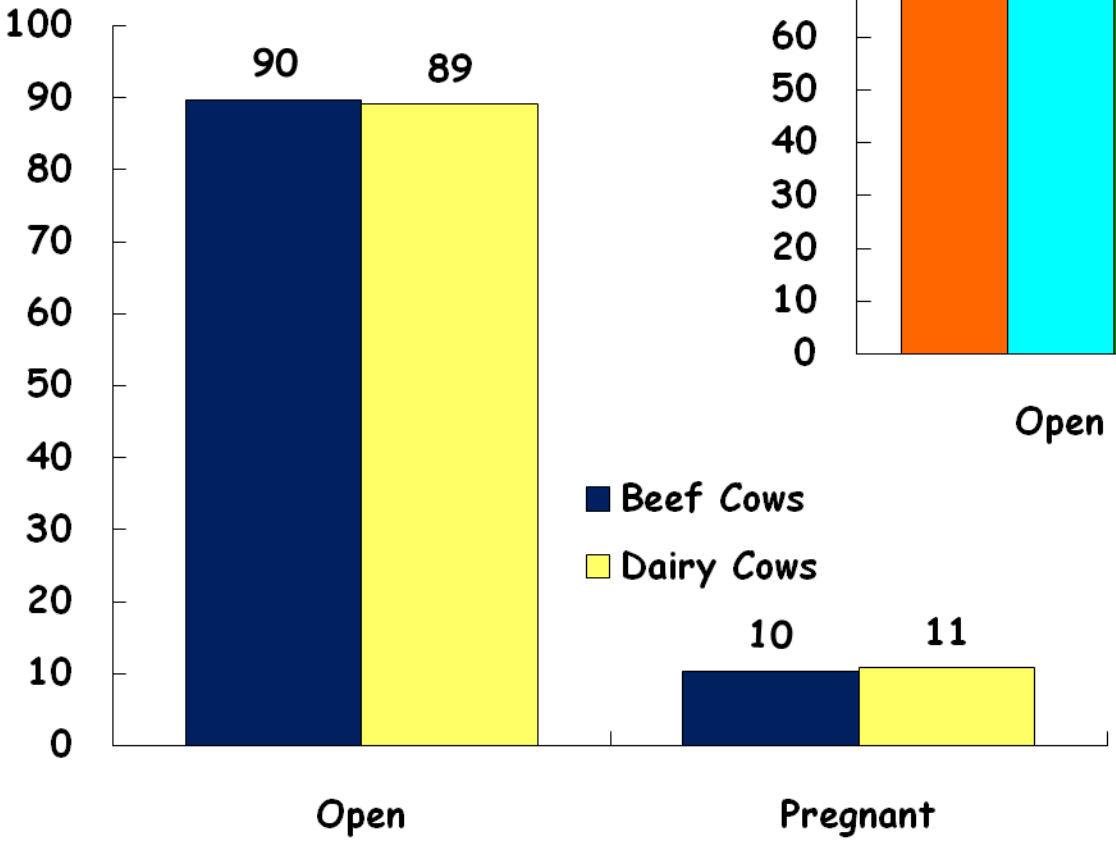


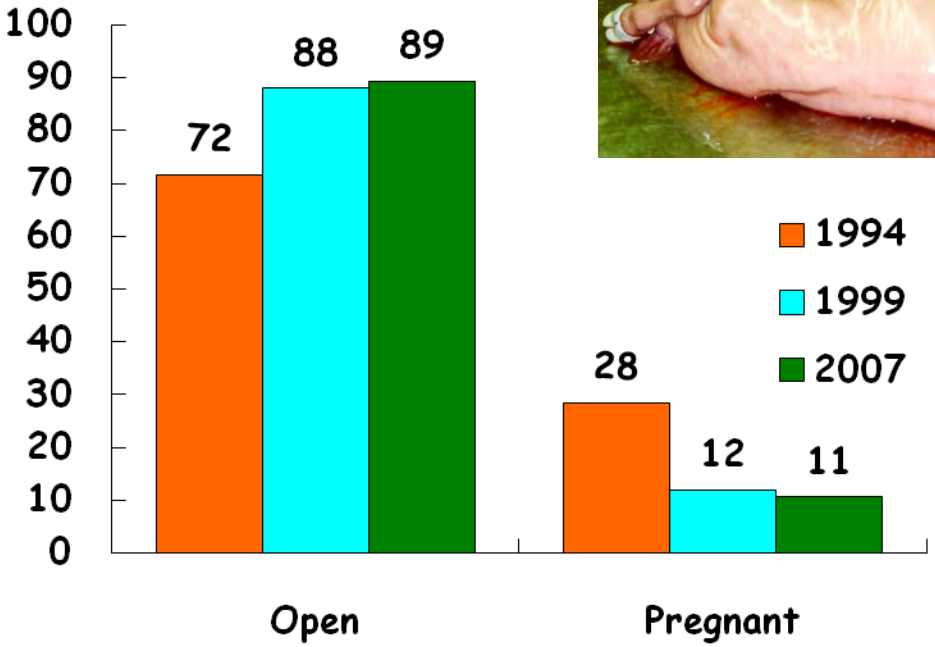
Whole Carcass Condemnation %



Fetal Calf Prevalence







Key Points

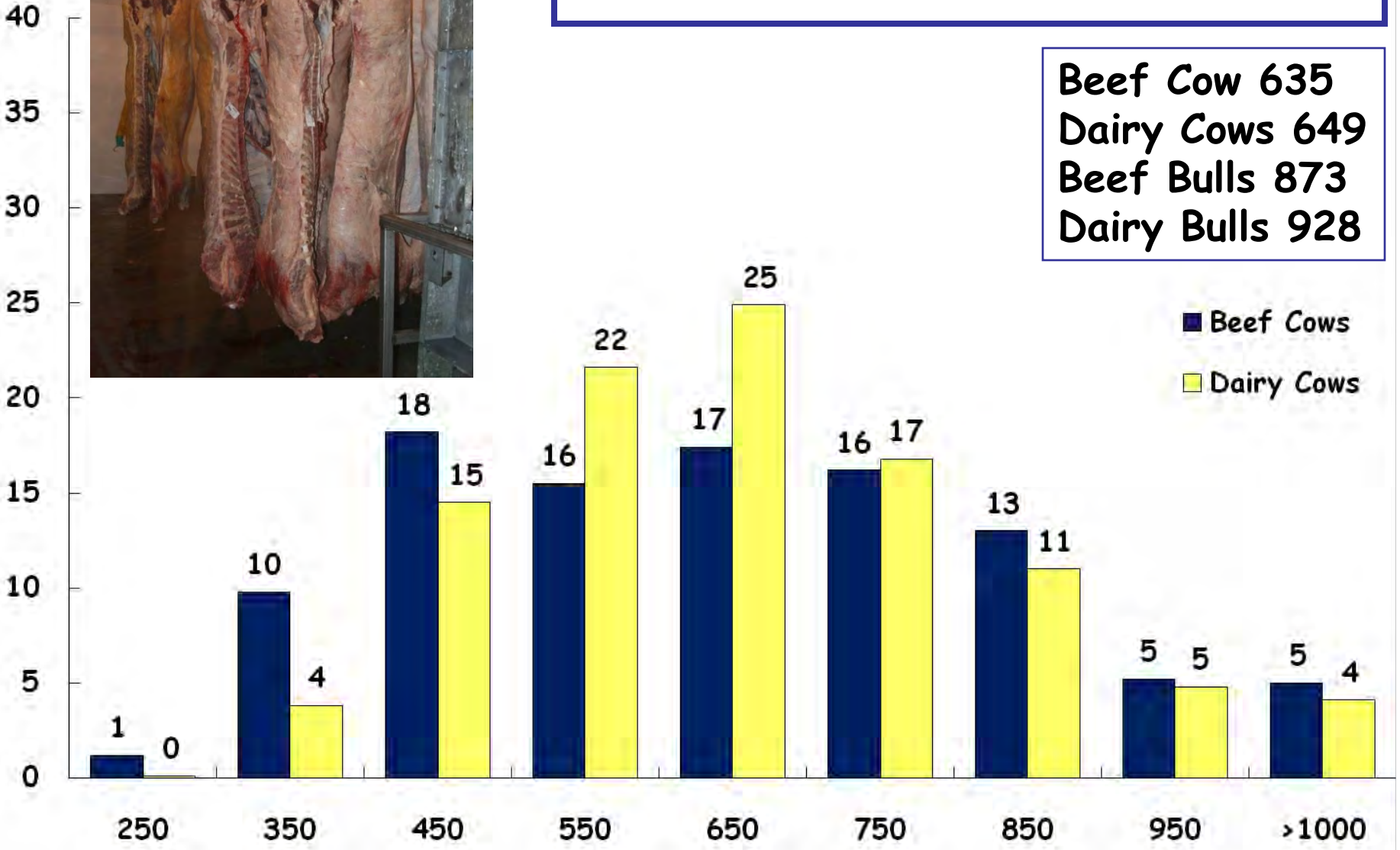
- Fewer cattle had bruises than in 1994 and 1999
- Overall 94% of the cattle had no evidence of injection sites
- Dairy cattle had more visible injection site blemishes (11% dairy cows vs 2% beef cows)
- Fewer arthritic joints than in 1999
- No buckshot/bird shot observed during the audit
- Fewer cows were pregnant at harvest than in 1999

Cooler Audit
Dwain Johnson, University of Florida

Carcass Type
Gender
Packer Grade
Yield Grade
Quality Grade
Carcass Weight
Fat Thickness
Ribeye Area
Muscle Score
Lean Maturity
Skeletal Maturity
Marbling
Other Defects

Carcass Weight %

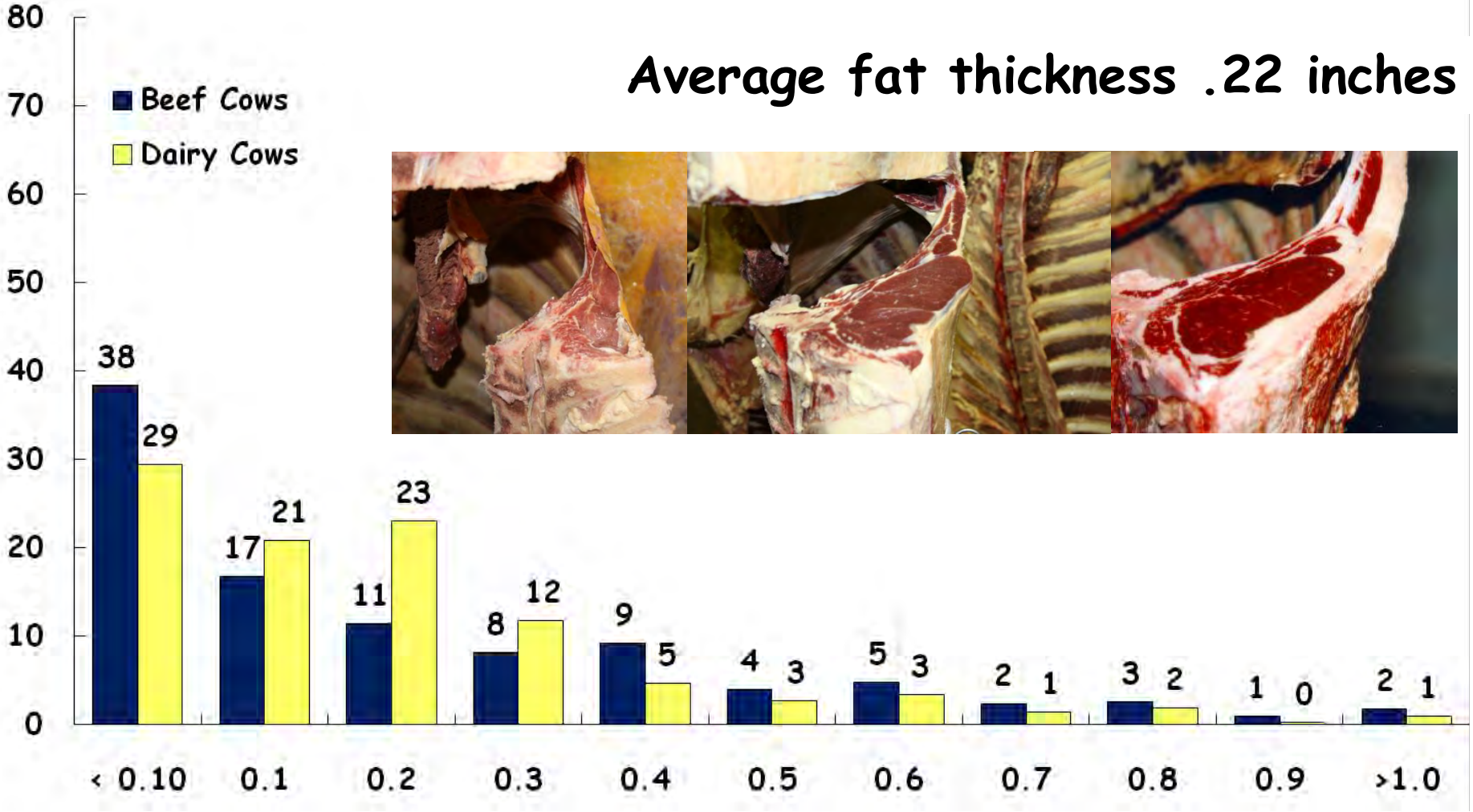
Beef Cow 635
Dairy Cows 649
Beef Bulls 873
Dairy Bulls 928

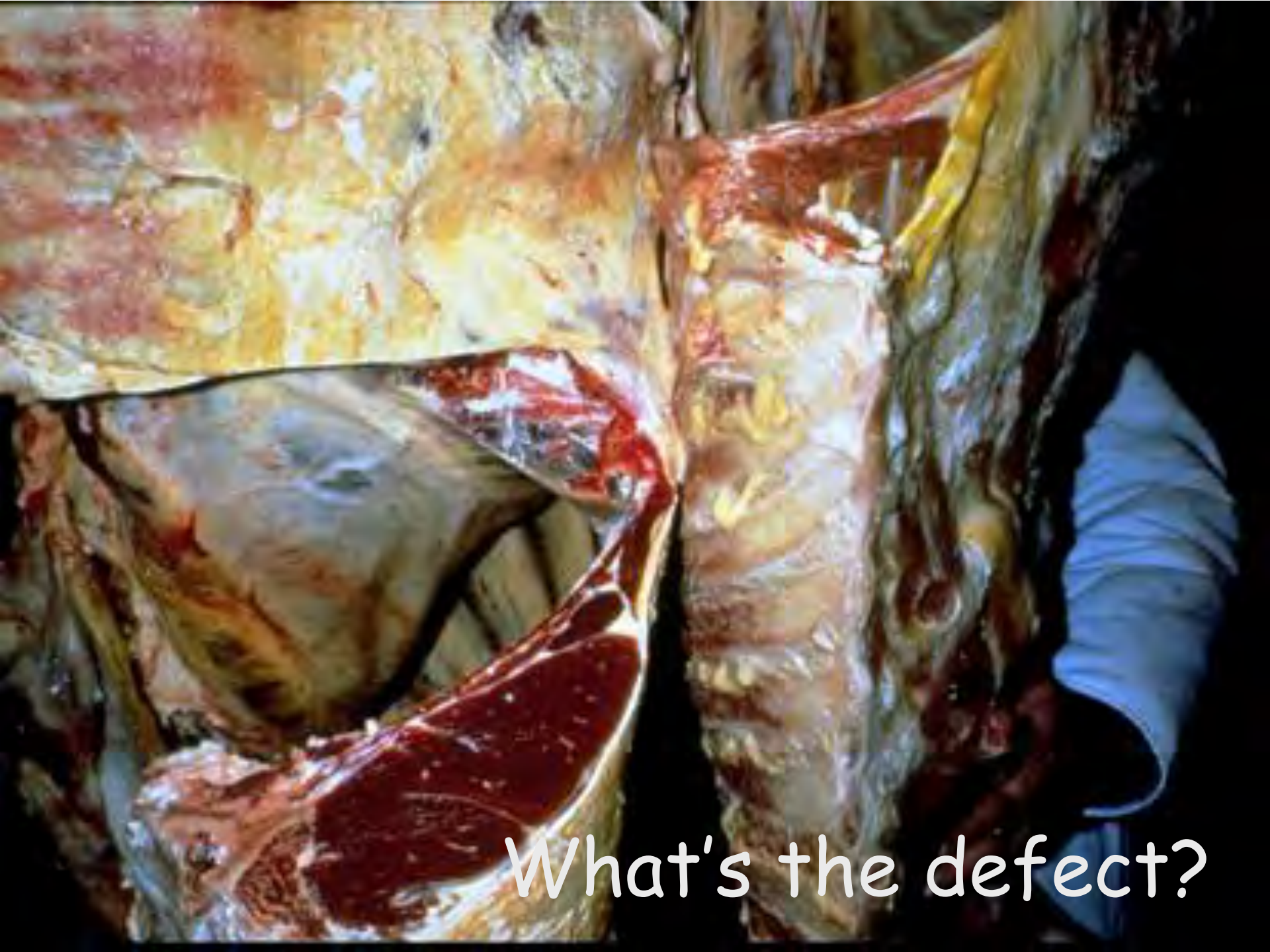


1/G1
R-Small
2194

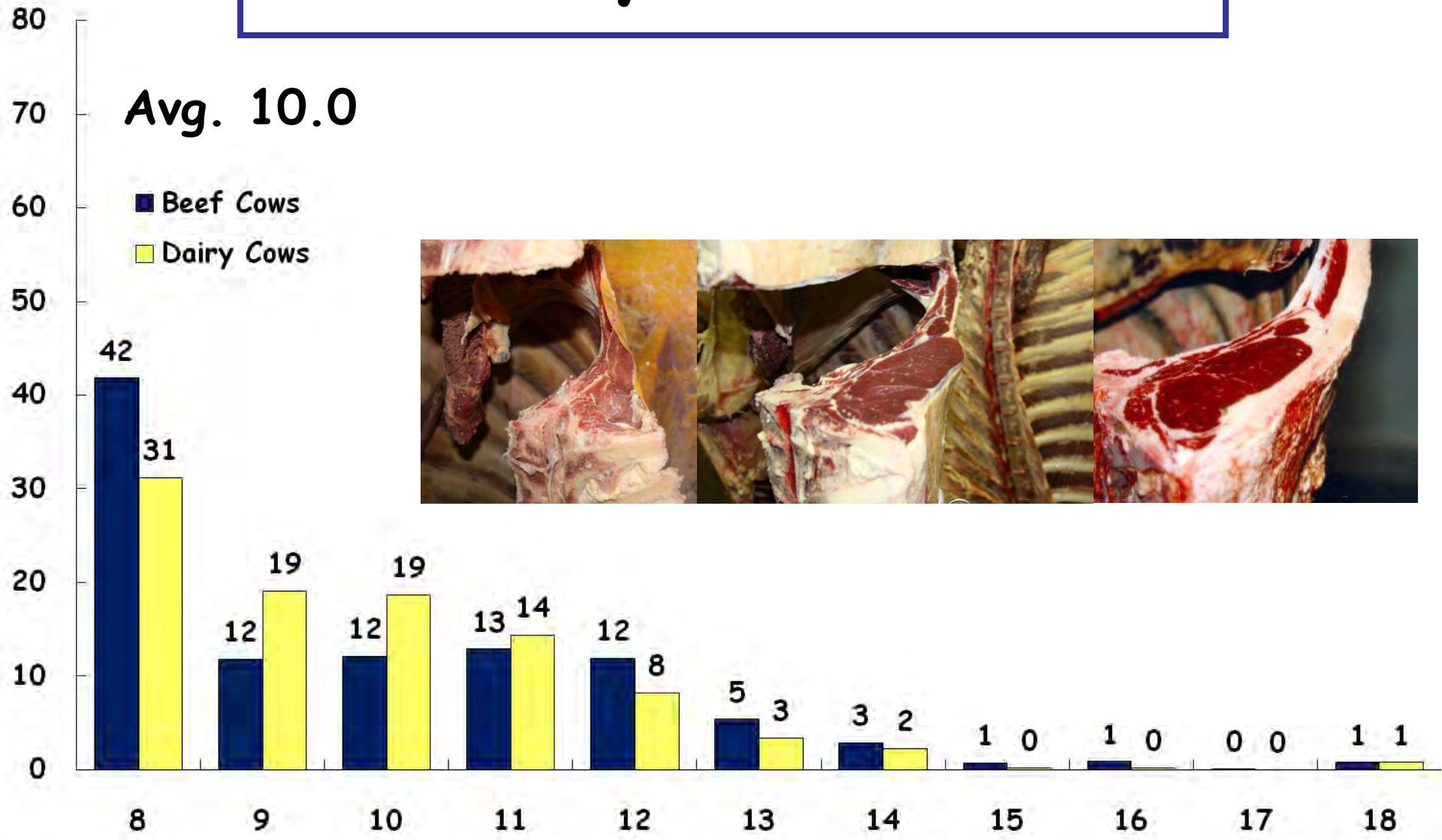
Fat Thickness %

Average fat thickness .22 inches



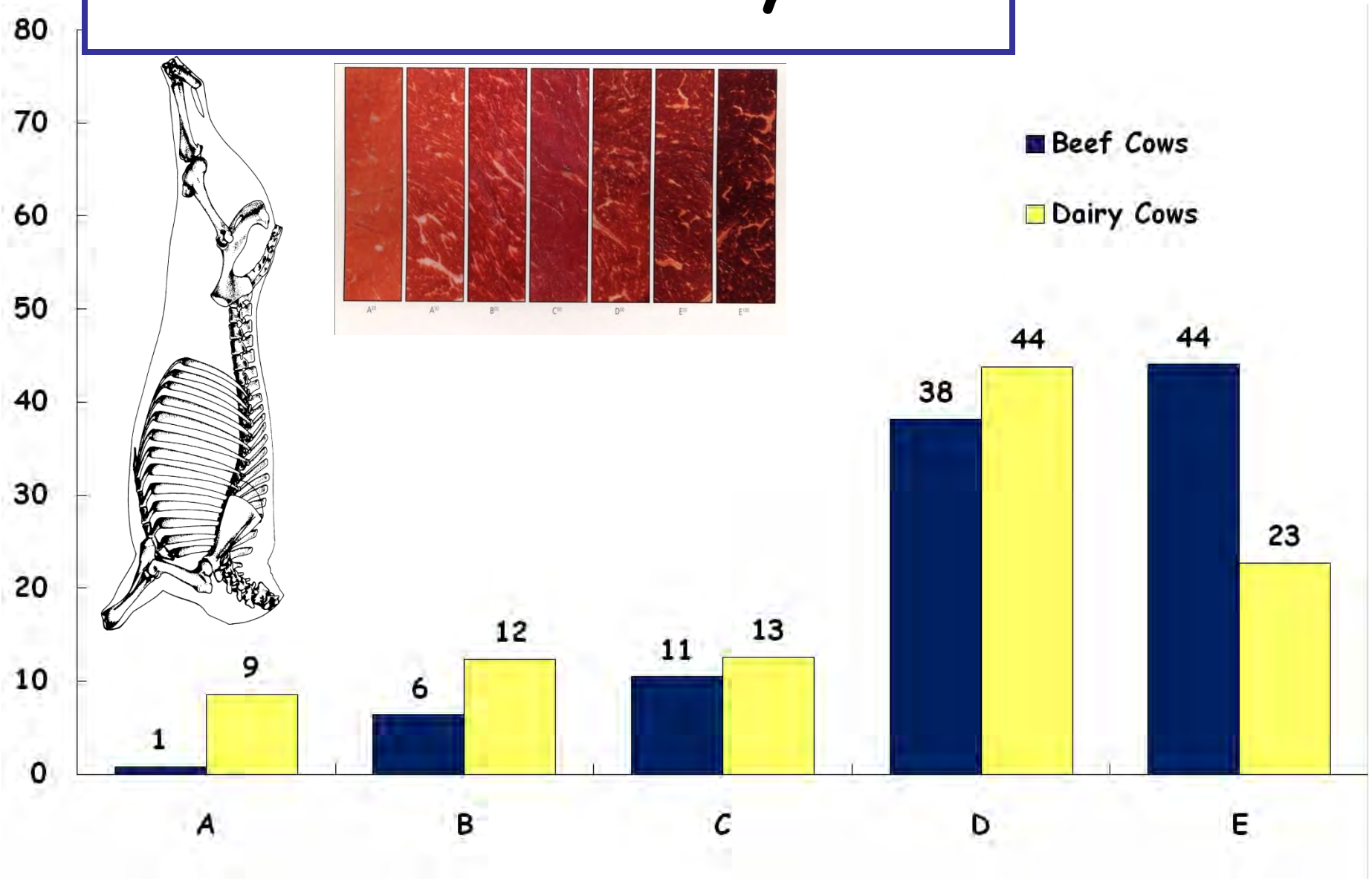

What's the defect?

Ribeye Area %


Avg. 10.0
Beef Cows
Dairy Cows
80
70
60
50
40
30
20
10
0
42
31
12
19
12
19
13
14
12
8
5
3
3
2
1
0
1
0
0
0
1
1
8
9
10
11
12
13
14
15
16
17
18

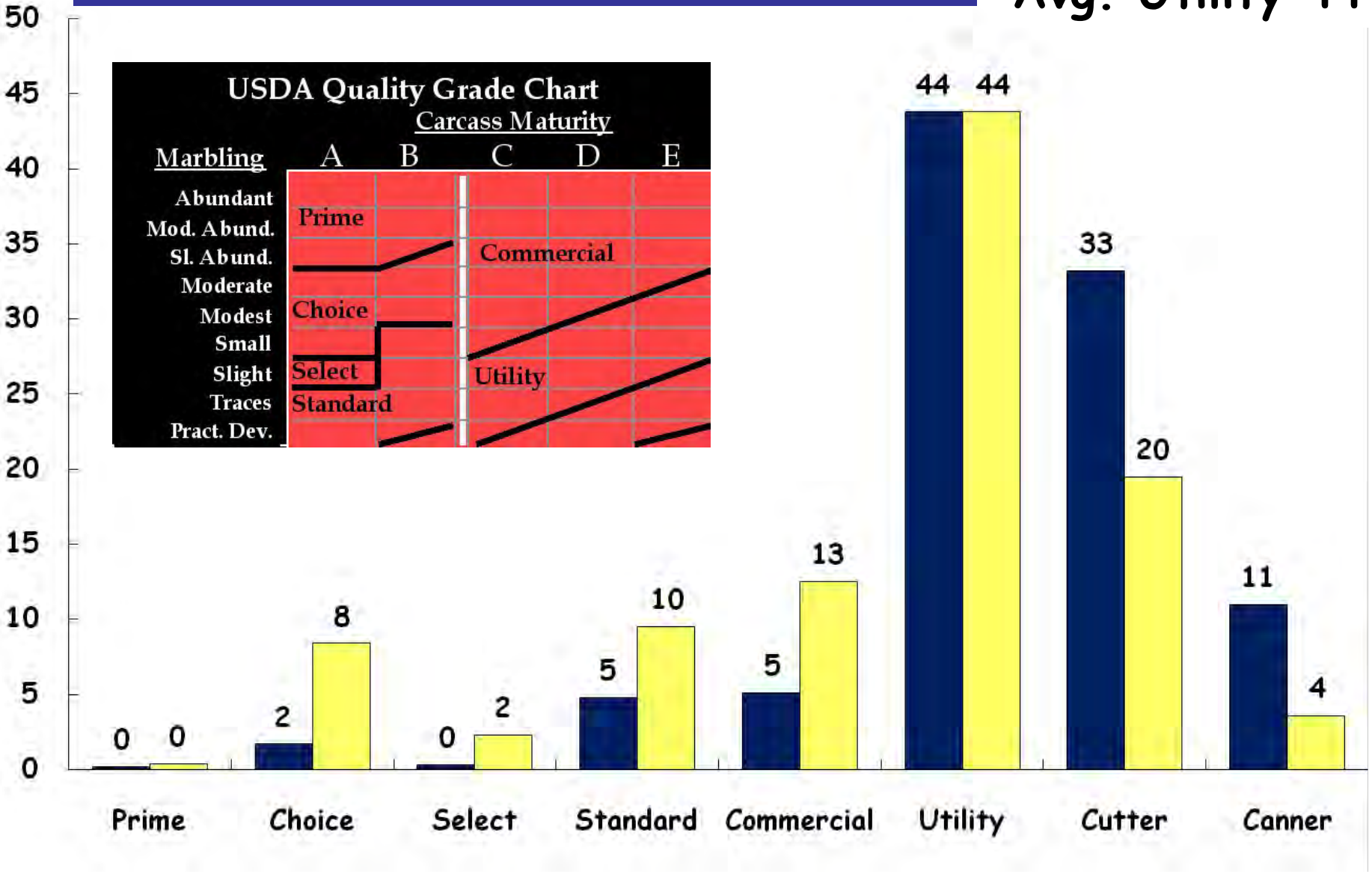
Overall Maturity %

Avg. D 54



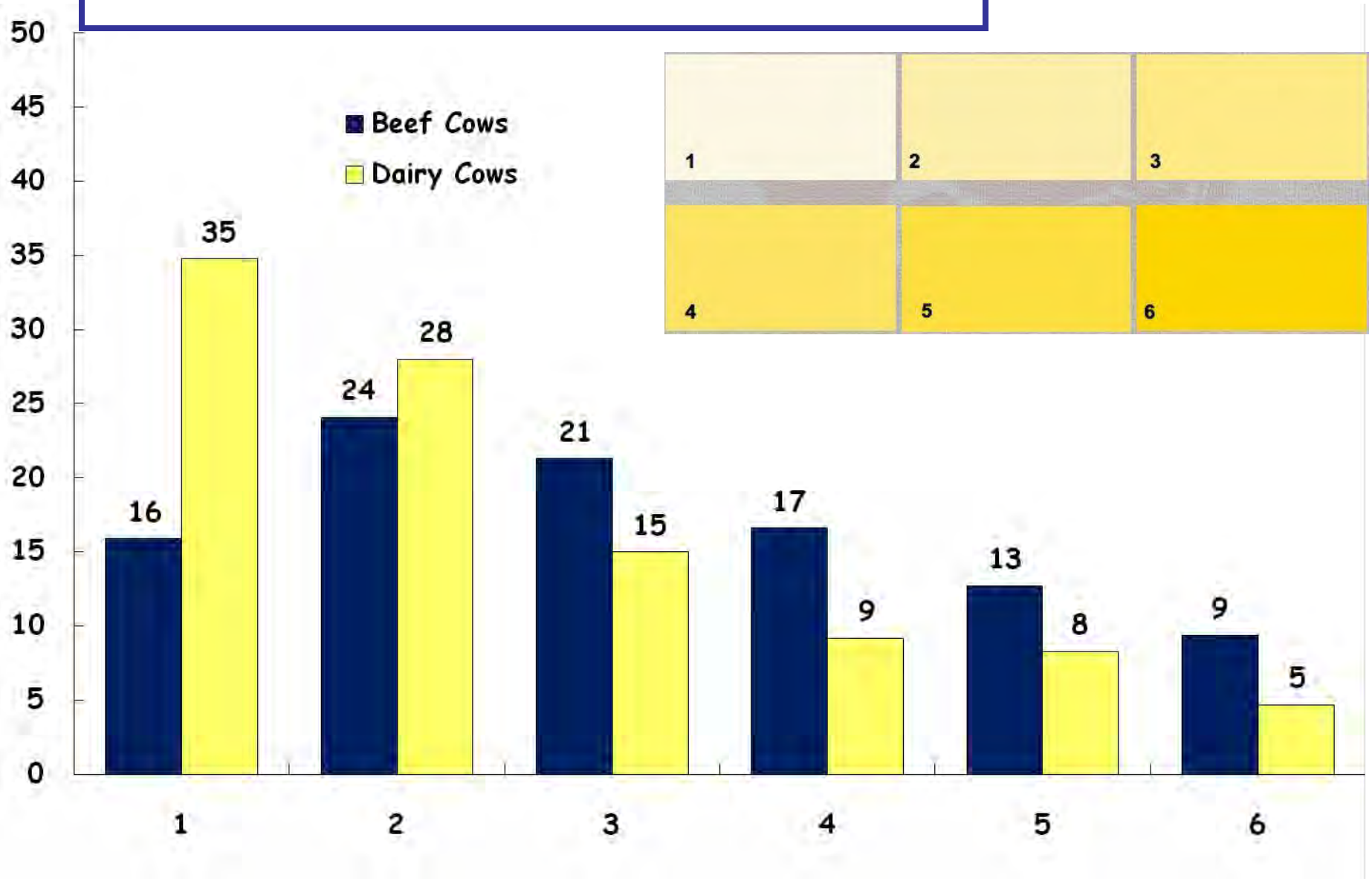
Quality Grade %

Avg. Utility 44



Fat Color Score %

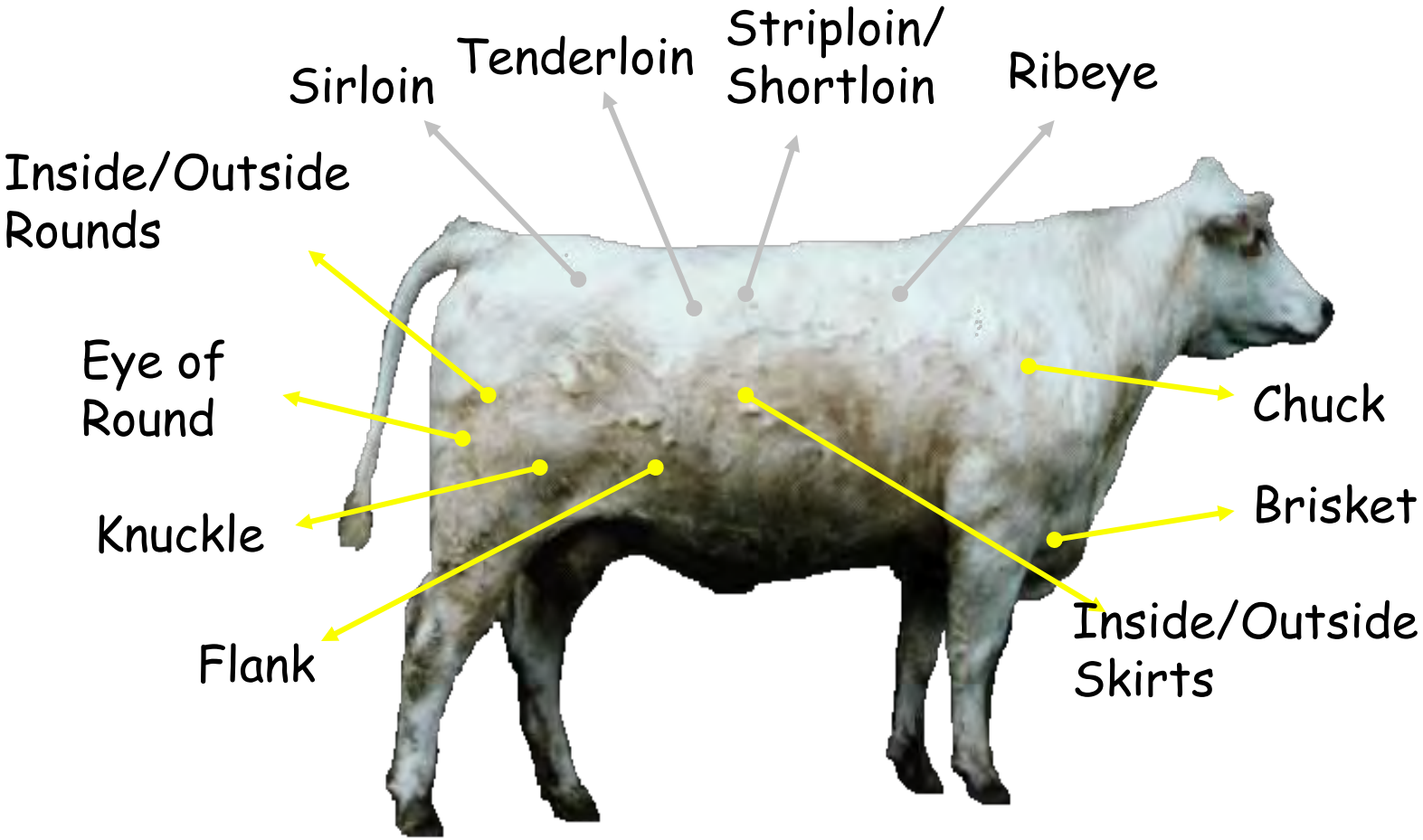
Avg. 2.7



Key Points

- Cows and Bulls were heavier than in 1999
- Cows and bulls had a lower fat thickness than in 1999
- More dairy cows had fat color scores of 1 and 2 (whiter color)

Fabrication



Retail meat markets, steak cutting companies, family restaurants, airlines and commissaries

Pre-cooked entrees, jerky, marinated fajita meat, corned beef, roast beef, pastrami and other products

National Market Cow and Bull Beef Quality Audit (NCBA/CSU, 1999)

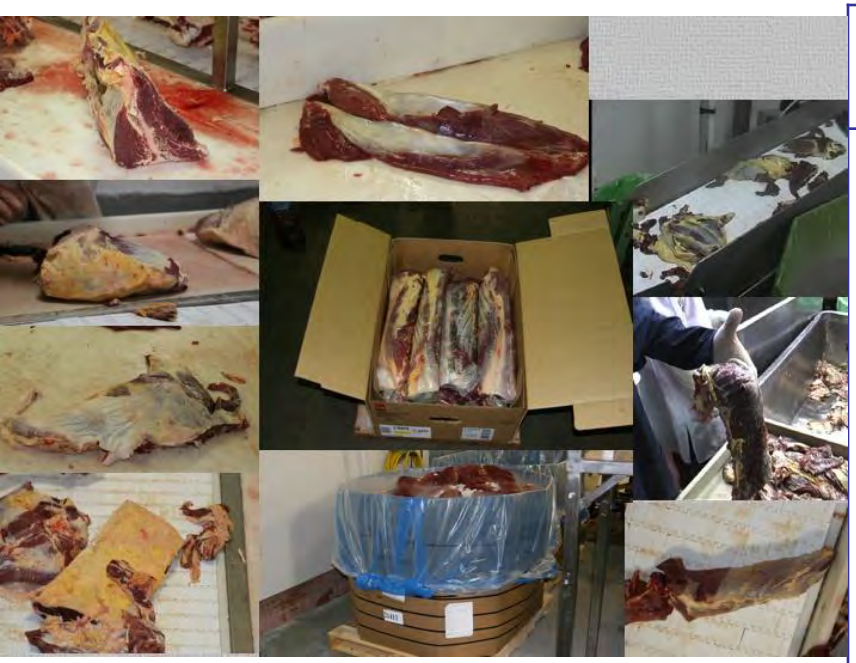
Not All Packing Plants Are Created Equal

- Some packers will market as much as 75% of the carcass as whole muscle cuts
- Other packers will specialize in producing only boneless manufacturing beef

	price/value
– 100% visual lean	$160/cwt
– 90% lean, 10% fat (90/10)	$105/cwt
– 85% lean, 15% fat (85/15)	$100/cwt
– 75% lean, 25% fat (75/25)	$75/cwt
– 65% lean, 35% fat (65/35)	$67/cwt
– 50% lean, 50% fat (50/50)	$44/cwt

National Market Cow and Bull Beef Quality Audit (NCBA/CSU, 1999)

Percent of Plants Fabricating Subprimals from Cow and Bull



Primal Region	% of Plants
Rib	100
Loin	100
Round	85.7
Flank	85.7
Chuck	57.1
Brisket	14.3

Reported as % of plants that submitted fabrication information

% of Plants that Produce Each Item

Product	1999 %	2007 %
Ribeye	74	100
Tenderloin	79	100
Knuckle	37	86
Flank	74	86
Inside Round	42	79
Strip Loin	68	71
Top Sirloin Butt	5	71
Chuck Tender	16	57
Eye of Round	42	57
Bottom Round	37	50
Chuck Roll	16	28.6
Bottom Sirloin Flap	21	28.6
Brisket	21	21
Shortloin	32	14
Clod	16	14
Tri-Tip	11	14

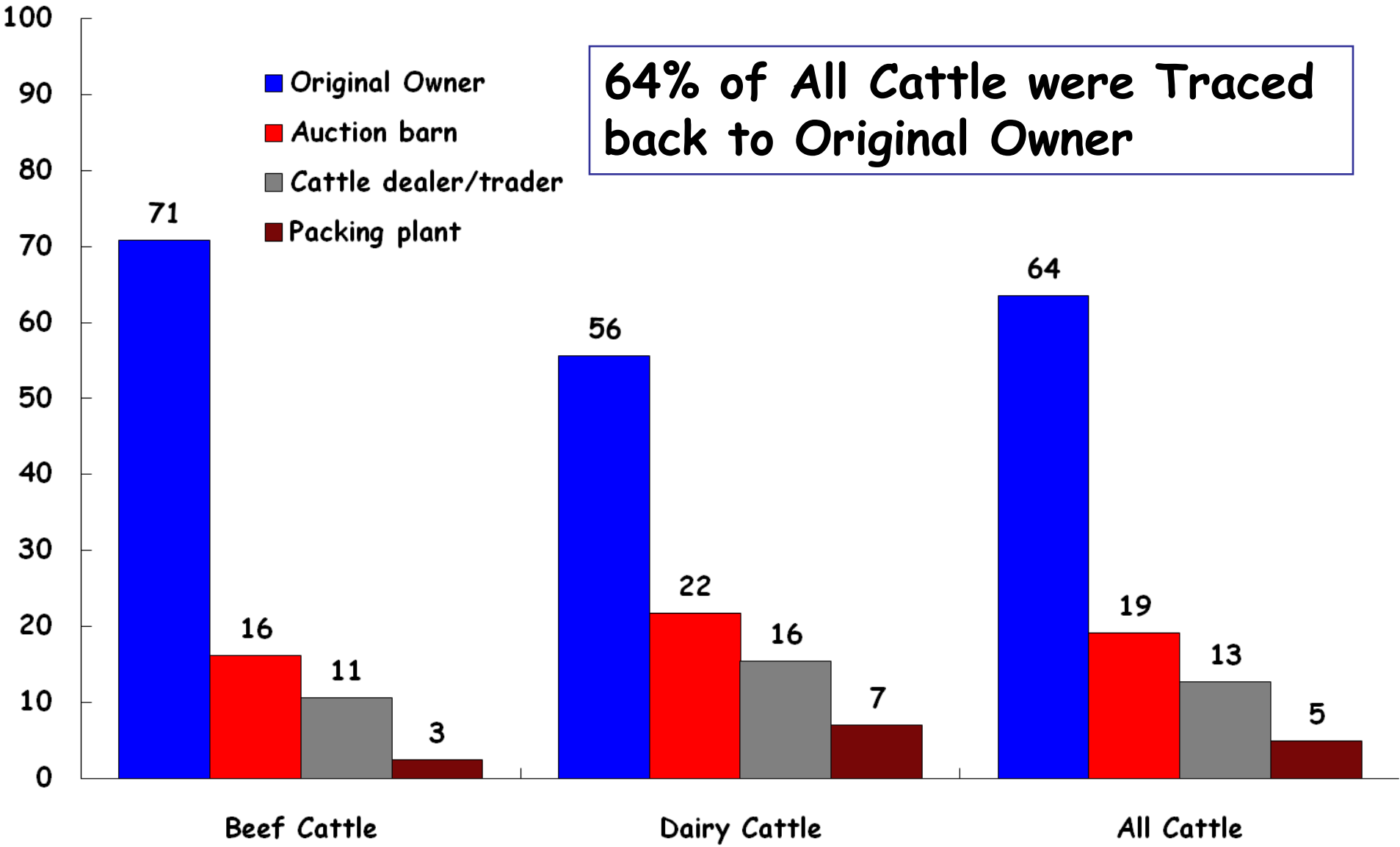
Traceability - Meat Processor to Farm

-2% of Carcasses were selected randomly to determine whether this animal could be traced back to the ranch/farm

-Plant information such as Back Tags, Bangs Tags, Owner Information were used for this process

-Auction Barns, USDA Offices, and Actual Owner were Contacted to Identify the Point of Origin for Each Animal

Traceback Extent for Cattle



64% of All Cattle were Traced back to Original Owner

Top quality challenges facing the market cow and bull beef industry

	1999 Quality Challenge		2007 Quality challenges
1	Bruises	1	Food safety
2	Antibiotic Residues	2	Market availability/Economic issues
3	Birdshot/Buckshot	3	Animal welfare and handling issues
4	Arthritic Joints	4	Poor conditioning/nutrition
5	Yield	5	Antibiotic residues
6	Condition/Leanness	6	Bruises
7	Condemnation Rate	7	Hide damage
		8	Lameness/soundness
		9	Condemnation rates/downers
		10	Injection site prevalence and location

**Highlighted = Present in 1999 and 2007 Interviews

Impact of Market Cow and Bull Defects

Quality Defect	Incidence rate	# hd affected
Cancer eye score 4	0.2 %	12,000
Cancer eye score 5	0.3 %	18,000
Large horns	7.1 %	426,000
Rib brands	4.8 %	288,000
Lame beef cow	1.1 %	36,960
Lame beef bull	6.3 %	39,690
Lame dairy cow	8.1 %	136,080

Impact of Market Cow and Bull Defects

Quality Defect	Incidence rate	# hd affected
Arthritic joint (one)	5.2 %	312,000
Arthritic joint (two)	1.0 %	60,000
Too thin beef cows (1-2)	10 %	336,000
Too thin dairy cows (1-2)	22.2 %	372,960
Too fat beef cows (1-2)	4.2%	141,120
Too fat dairy cows (1-2)	2.6 %	43,680
Extreme bruises (15lbs)	5.6 %	336,000

Impact of Market Cow and Bull Defects

Quality Defect	Incidence rate	# hd affected
Whole carcass condemned prior to slaughter	0.25 %	15,000
Whole carcass condemned after slaughter	0.83 %	49,800
Liver condemned	45.3 %	2,718,000
Beef cow carcasses under 500 lb	29.2 %	1,016,160
Beef cow carcasses under 400 lb	9.8 %	341,040
Beef cow carcasses under 300 lb	1.2 %	41,760

If you wouldn't
want your kids or
grandkids to eat it,
don't sell it!