

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 from 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 |



Factors Potentially Influencing Physiological Maturity

- Gender
- Sex Condition
- Breed Type
- Implant Program
- Diet



Maturity

● Lean

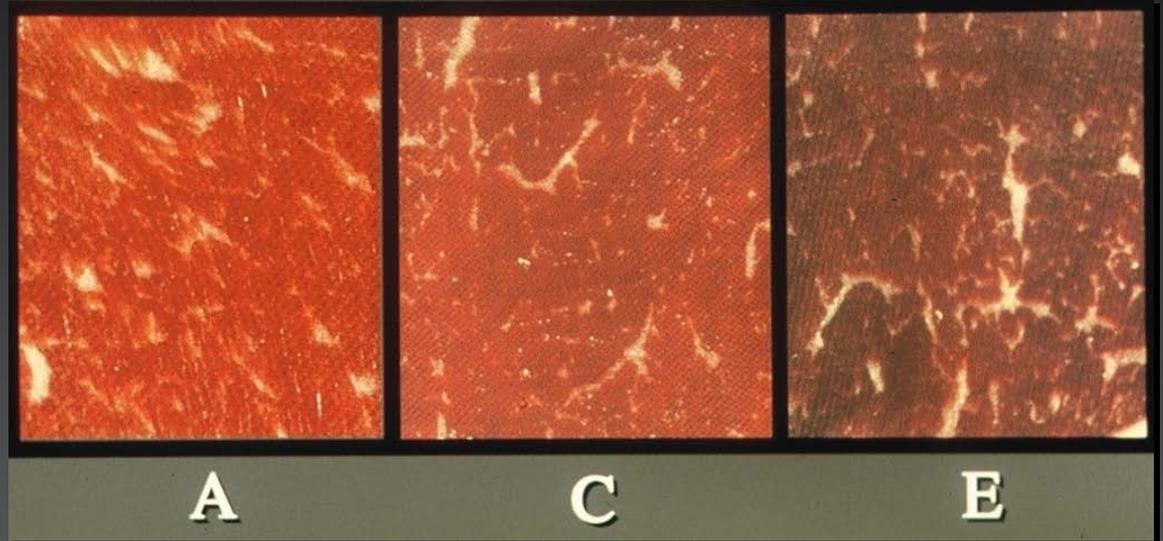
● Skeletal



Lean Maturity

● Color

● Texture



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



A²⁰



A⁵⁰



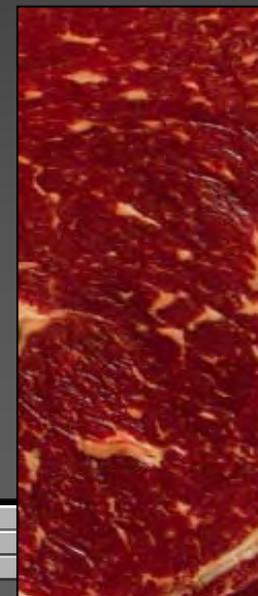
B⁰⁰



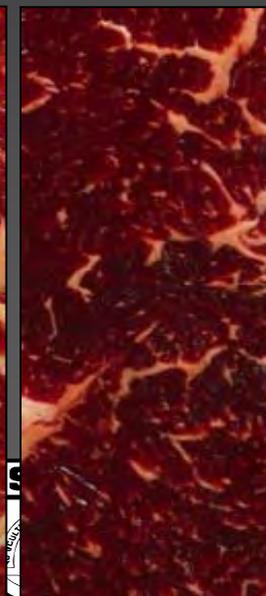
C⁰⁰



D⁰⁰



E⁰⁰



E¹⁰⁰

Marketing and Regulatory Programs

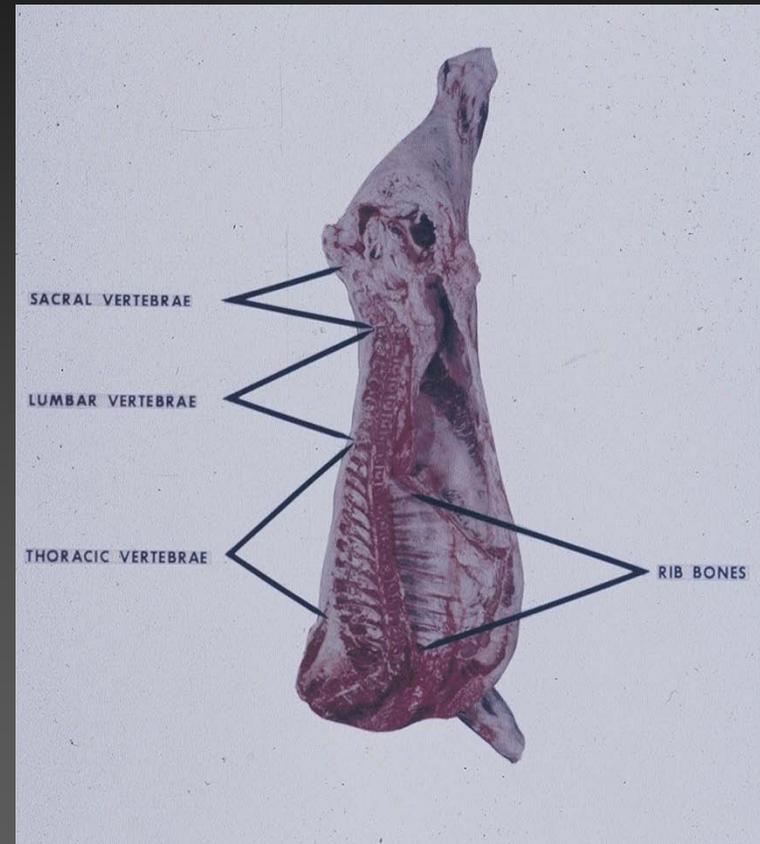
Texture

- 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



Progression of Skeletal Ossification



- Skeletal ossification occurs from the posterior end to the anterior end of the carcass



Progression of Skeletal Ossification



- Progressively more mature carcasses
 - Ossification changes
 - First
 - Bones and cartilages of the sacral vertebrae
 - Next
 - Lumbar vertebrae
 - Later
 - Thoracic vertebrae

Skeletal Maturity

Sacral Vertebrae



Skeletal Maturity

Lumbar Vertebrae



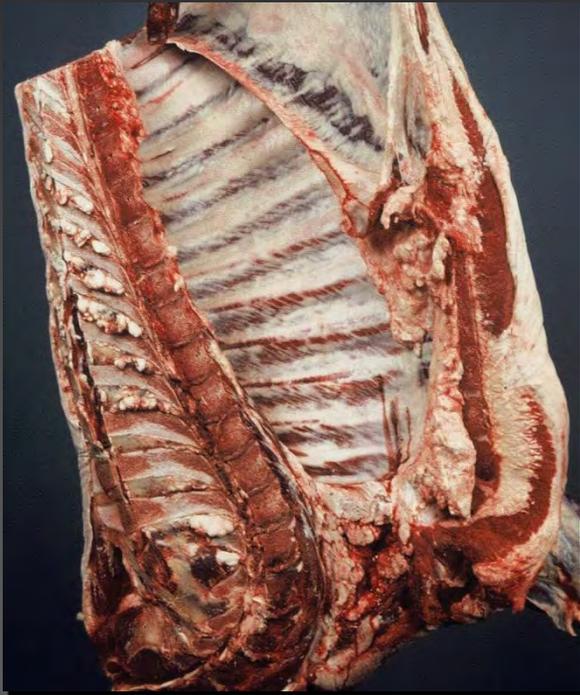
Skeletal Maturity

Thoracic Vertebrae



Skeletal Maturity

Rib Bones



Balancing Lean and Skeletal Maturities

- When skeletal maturity differs from lean maturity, slightly more emphasis is placed on the skeletal evidences.
- In no case can the overall maturity be more than one full maturity group different than indicated by the skeletal differences.



Balancing Lean and Skeletal Maturities

- When bullock carcasses have a darker color of lean than specified for the quality levels for which they would otherwise qualify for, the overall maturity will be based on skeletal maturity only and the final grade will be determined in accordance with the procedures for dark cutters.



Balancing Lean and Skeletal Maturities

- When bone maturity is between C^0 – C^{15} , the lean must be A^{100} or younger to adjust back to B^{100} .
- Same principle in reverse



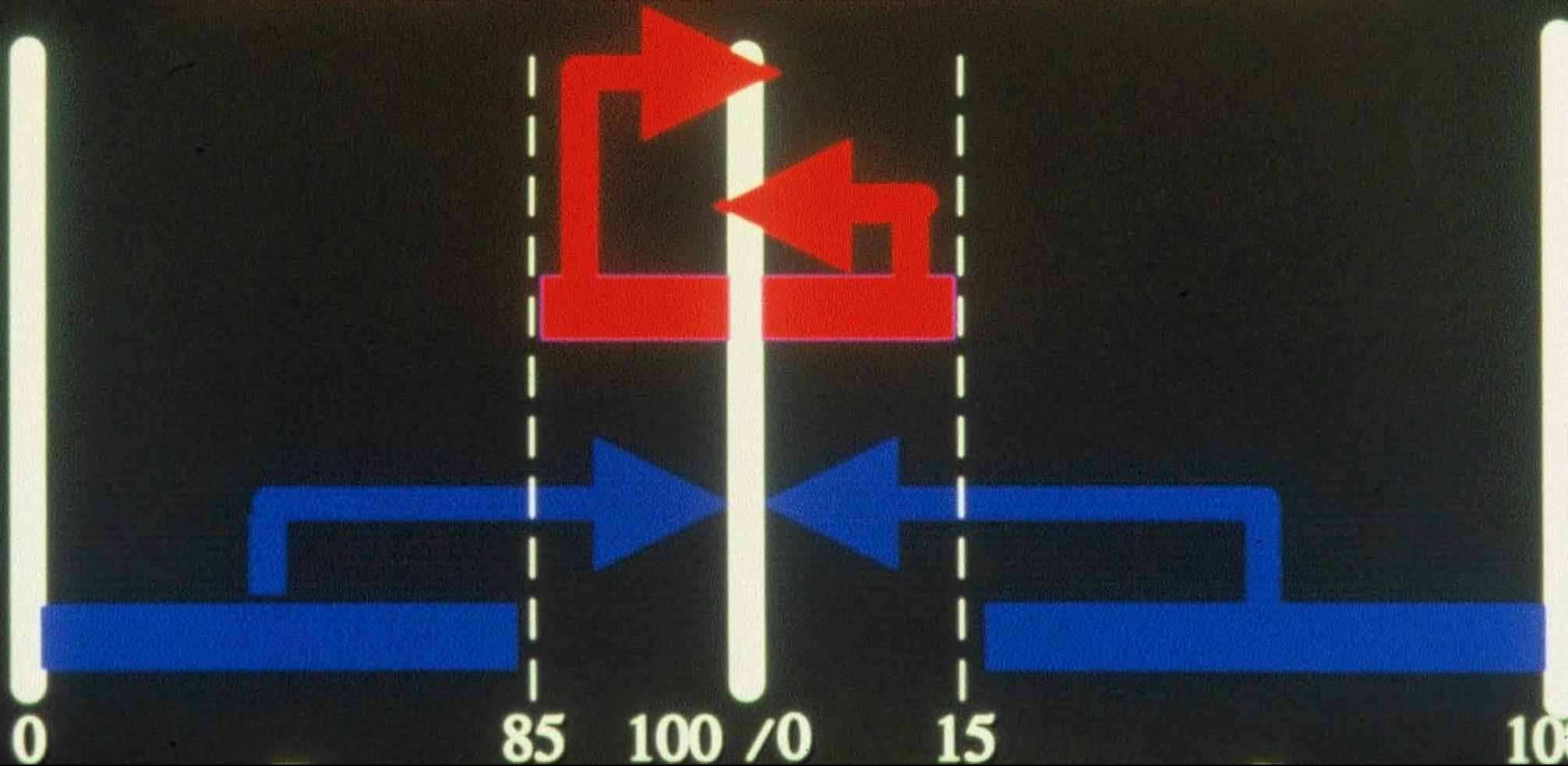
Balancing Lean and Skeletal Maturities

- When bone maturity is between $B^{85} - B^{100}$ and the lean maturity is between $C^0 - C^{100}$, the max the carcass may be adjusted to is B^{100} .
- When bone maturity is between $B^{85} - B^{100}$ and the lean is D^0 or older, the carcass is adjusted to C^0 .



B/C RULE

WHEN LEAN MATURITY IS CONSIDERABLY
DIFFERENT THAN SKELETAL MATURITY



Examples for Balancing Maturity

- Use a simple average when lean and bone are within 40 percent of each other. Round to nearest tenth of bone maturity.
 - B 10 (bone), A 70 (lean) = A 90
 - A 50 (bone), A 80 (lean) = A 65 = A 60 (adjust to bone)



Examples for Balancing Maturity

- When there is more than 40 percent difference, average the two and adjust the average to the nearest tenth towards the bone.
 - A 70 (bone), B 40 (lean) = B 05 = A 100 (adjust to bone, max younger group)
 - B 70 (bone), A 90 (lean) = B 30 = B 40 (adjust to bone)
 - B 30 (bone), C 20 (lean) = B 75 = B 70 (adjust to bone)



Examples for Balancing Maturity

Crossing the B/C line, when bone is **younger**

- Average the two maturities and adjust to the nearest 10% towards the bone.
 - B 70 (bone), C 30 (lean) = B 100 (average) = B 90 (adjust to bone)
 - A 80 (bone), C 60 (lean) = B 70 (average) = B 60 (adjust to bone)



Examples for Balancing Maturity

Crossing the B/C line, when bone is **older**

- If bone maturity is between C 0 and C 15 and lean maturity is considerably younger (A 100 or less), the carcass maturity is adjusted to B 100.
- If bone maturity is older than C 15, final maturity will remain in the older group. The adjustment is limited to C 0.
 - C 20 (bone), A 70 (lean) = B 45 (average) = C 0
 - C 15 (bone), A 70 (lean) = B 40 (average) = B 100



Examples for Balancing Maturity

- If bone and lean maturities are not considerably different and the average of the two moves across the B/C line from the bone maturity, the overall will be on the side of the bone
 - B 60 (bone), C 10 (lean) = B 85 (average) = B 80
 - C 10 (bone), B 60 (lean) = B 85 (average) = C 0

