Breeding Heifer Selection Criteria

- Interpret “Form to Function”
- Two general priorities
  - Brood Cow Potential
  - Balance

Priority Traits in Evaluating Brood Cow Potential
Remember their job!!

- Soundness
  - Structural
  - Reproductive
- Volume and Capacity
- Muscle and Growth
- Frame size
- Body Condition
- Sexual Characteristics
  - Femininity

Indicators of their ability to “do their job”

Ideal Beef Heifer

Structural Correctness

- Single most important characteristic in the evaluation of breeding cattle
- Critical for proper growth, reproductive performance, and animal longevity
Structural Correctness

- Includes observation of:
  - Correct joint angles
    - Shoulder, knee, hock and pastern
  - Strong/level top
  - Level rump structure
    - Hooks to pins
  - Large, square foot
  - Adequate bone

Correct Structure: Rear view

- Pin Bone
- Stifle
- Hock
- Pastern

Straight Structured
Incorrect Hip and Hind Leg Structure
- Low Pin Set
- Too Much Set to Hock

Volume and Capacity
- Most critical in beef production
- Used to describe the three dimensional shape to the rib cage
  - Spring of rib
  - Depth of rib
  - Length
- "Fleshing Ability"
  - The ability for a mature female to maintain body condition while in lactation

High Volume Heifer

Muscle & Performance
- Regardless of sex or classification, all animals should have some degree of muscling
- Though it is not as important, females should:
  - Have adequate base width
  - Have a thick, square hip with a wide pin bone placement
- Apparent performance (weight per day of age) is also important to transmit sufficient growth to their offspring

Frame Size & Body Condition
- Both traits require an optimum level for sufficient productivity
- Frame size is the least important characteristic in breeding cattle
  - Most important trait 15 years ago
- Production environment generally dictates proper frame size
- Moderation of mature size to ensure optimum mature cow weight

Frame Size & Body Condition
- Body condition is closely related to frame size and volume
- Adequate body condition (flesh) is imperative for proper reproductive performance
- Excessive condition can drastically decrease productivity
Balance

- How well the pieces fit together
- Overall eye appeal
- Can be most difficult trait to evaluate
- Many of the traits previously discussed are needed for an animal to balance, such as structural correctness, adequate volume, and sufficient musculature
- However, the evaluation of balance also includes:
  - Femininity
  - Profile

Balance

- Differences in Femininity and Profile

Femininity

- Feminine, angular appearance
- Females need to be refined through their shoulder, neck, and head
- Vulvas need to be developed with correct udder structure

Femininity

Presenting a maternal, cow-like look

Quality
Selection Criteria for Breeding Bulls

- Functionality
- Growth Performance
- Muscle
- Masculinity/Ruggedness
- Balance

Functionality

- Combination of structural correctness and volume and rib design
- Proper structural width and ribcage construction
  - Bulls should plant surface with natural width
  - Wide and productive chest
  - Expanded and deep in fore-rib
  - Bold rib design and depth of flank
  - All equate to fleshing ease

Functionality

More productive thru his chest and rib, offers more depth and dimension to his center body, easier fleshing

Harder appearing, narrower based, tight ribbed, shallow bodied, high flanked

Growth Performance

- Ability to add pay-weight to calf crop
  - Weight is the important factor not necessarily frame size
  - Growth indicators are important in regards to maturity patterns and future progeny mature weight
  - Ideal frame size for market cattle: 5-6

Growth Performance

More Growth Oriented,
Longer Patterned, Longer
face and cannon

Early Maturing, Short coupled, shorter face and cannon

Muscle

- Bulls should possess a great deal of muscle to ensure progeny yield grade merit and red meat
- Muscle should be laid on the skeleton in a long, functional manner to not impede movement
Masculinity & Testicular Development

- Stout appearance
- Minimum scrotal circumference
  - Maternal size: 34 cm
  - Terminal size: 33 cm
  - Related to slaughter onset of puberty
- Well-developed testicles that are even in size

Masculinity

- Masculine head and neck
- Stout skulled and powerful jaw
- Evidence of crest and neck
- Clean and compact sheath
  - Close to body
  - Forward angle
  - Not pendulous
Ideal Heifer

feminine head
angular through neck & shoulders
strong topline
long, level rump
neat tailhead
deep, long muscled rear quarter
long stifle
correct set of hocks
strong pasterns

neat throat, dewlap, & brisket
bold spring of rib
long bodied
productive appearing udder

deep ribbed

long bodied
well balanced

natural thickness down back & loin

clean fronted
smooth shoulder
deep, wide chest floor

deep bodied

long, smooth-muscled rear quarter
correct set of hocks

legs set wide apart
correct set of feet & legs
**Ideal Bull**

- Strong masculine head
- Bold spring of rib
- Strong back
- Long, level rump
- Neat tailhead
- Deep, muscular bulging quarter
- Thick muscular loin
- Smooth shoulder
- Long bodied
- Long, muscular stifle
- Correct set of hocks
- Rugged bone
- Strong pasterns
- Long bodied
- Well balanced
- Natural thickness down back & loin
- Wide through center & lower portion of quarter
- Smooth shoulder
- Deep, wide chest floor
- Deep bodied
- Correct set of hocks
- Correct set of front legs
- Legs set wide apart
Structural Differences

Splayfooted and knock kneed - When viewed from the front, the front knees are close together and the feet toe out away from each other. This problem is often seen in extremely light-muscled, narrow-chested cattle where the legs are naturally set too close together.

Pigeon toed and bowlegged - When viewed from the front or rear, the knees set too far out, causing the toes to turn in toward each other in a pigeon-toed manner.

Cow hocked - When viewing the rear legs from the rear, the hocks are turned in or placed too close together.

Buck kneed - When the calf is “over at the knees,” or buck kneed, full extension of the knee cannot occur when observed from the side. This is usually seen in cattle that are also too straight in their shoulder.

Calf kneed - This is the other extreme where the calf stands “back at the knees” when viewed from the side.

Sickle hocked - When viewing the rear legs from the side, the hock has too much angle or set, causing the steer to stand too far underneath himself. Often these calves also will droop excessively from hooks to pins.

Postlegged - The hock has too little angle or set. The calf is too straight through the joint, resulting in very stiff, constricted movement because of the lack of flexibility. More cattle become unsound because of being postlegged than sickle hocked.