

Whorls, Swirls and Curls: What the outside of a cow is telling you about the inside of that cow.

What do the following tell us...?

Changing hair patterns throughout the year?

Size and shape of bones?

Location of certain hair whorls?

Hair pattern on the back end of a cow?

“It’s amazing what you can see
Just by looking” Yogi Berra



**"This means something
but I can't remember what!"**

“One can only see what one observes and one only observes things which are already in the mind”

Bertillon-French Detective



*“You can
educate a
man – but
you can’t
MAKE
him think.”*

*Kind of like the
horse/water thing*

The value of knowing what you are looking at.

1. FERTILITY (COW *rump width*, **BULL** *Shoulder*)
2. PREGNANCY (*adrenal/pancreatic, tail/poll hairs*)
3. BUTTERFAT PRODUCTION (*Eschutcheon, udderhide folds, adrenal, bone size and shape*)
4. INTRAMUSCULAR FAT % (*Esch, hide folds, loose hide over the hooks, adrenal*)
5. MEAT TENDERNESS (*bone, hide, hock*)
6. PREGNANCY (*Adrenal, pancreatic*)
8. HORMONAL FUNCTION (*hair coat, thymus, overall height and weight, early shedding*)
9. # OF COWS A PARTICULAR BULL CAN SERVICE IN 45 DAYS (**LENGTH** *and circumference of testicles, Dark hair pattern, base or soprano voice*)

Ground rules

- Everything else being equal.
- Natural. It works. Doesn't cost a lot of money!!!
- Every zip code is different
- “IT DEPENDS”
- Understanding nature can't be ignored, replaced or explained technically
- **EPI-GENETICS** -- more minerals and fewer toxins makes everything work better and more readable
- Three things I want you to go home with. What can you determine when looking at....

1) Hide 2) Hair patterns 3) Bone

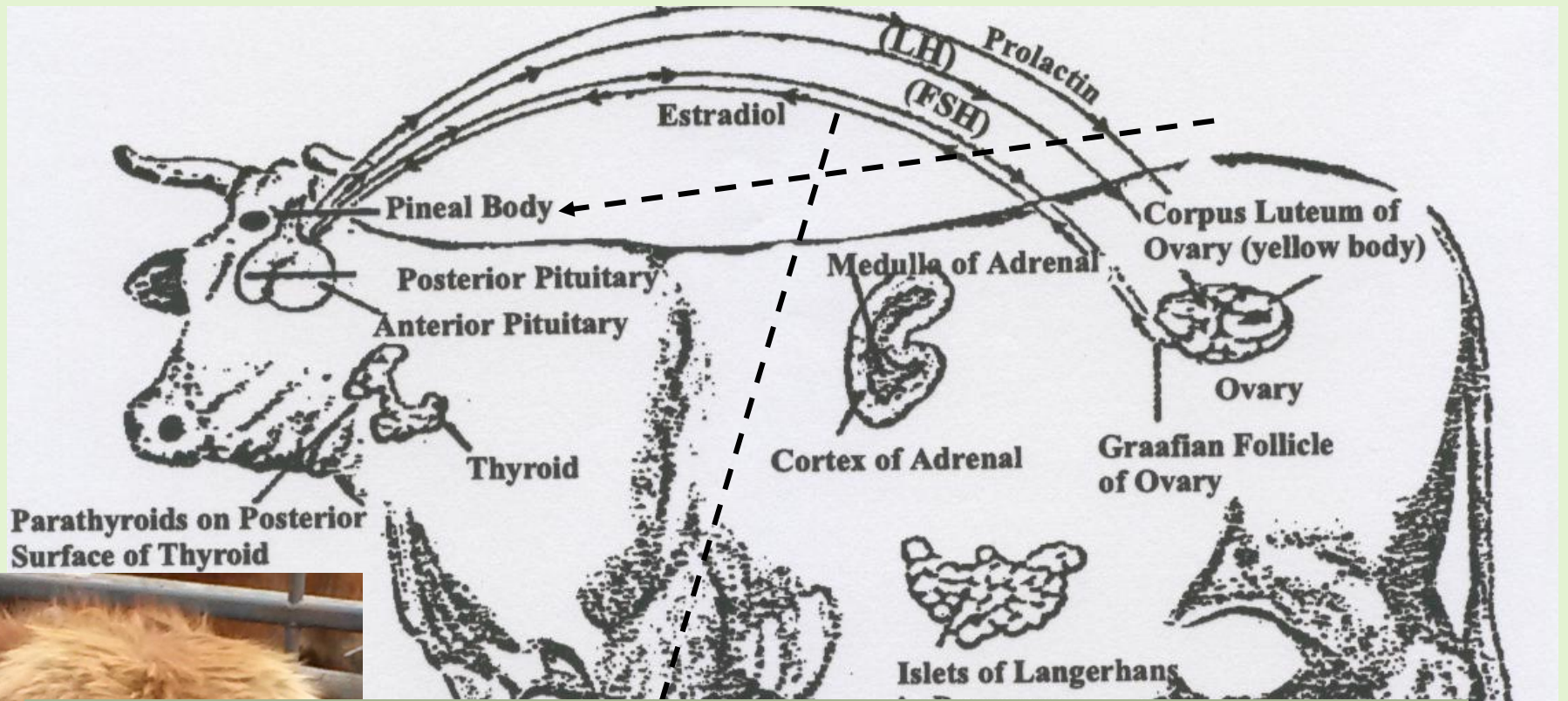
December 6-8, 2007

- Sorted 1400 cows visually using some of the criteria included in this presentation.
- Linear measure and ultra sound “best” 275
- Rejected 50 head
- Did not worm or feed hay to 225 “keepers
- **... AND ...**
- 3 ½ months later the rancher sold 900 of the cows from the other bunch **(3/4 of this group)**
- The “Easy Keeping Cows” were thriving on his ranch in the Nebraska sand hills over the winter **without wormer and hay**



How to know sex of calf
Tail and Poll hair during 8th month
Open cows in winter...other pregnant
cows that ride them probably have a
bull calf on board.





You will know if a heifer or a cow is/has produced a lot of estrogen because she will be shorter on the front end. Estrogen shuts off long bone growth in the front long bones first. Cows should **“Walk Downhill”**

Man Must Measure Dr. Jan Bonsma

Starting with Genetics and Epigenetics

Kentucky Coal Miner

- We need to select and/or breed animals with fertility, adaptability and maintenance costs in mind.
- The majority of the quality is going to come from the female side of the breeding equation
- The bull (in a majority of cases) can help you make a dramatic improvement
- Soil and plant health (epi-genetics) will lead to higher glandular and immune function and expression which improves genetic expression.

Outside indicators are a window to knowing if the quality is inside



- Hair whorls
- Bone structure
- Bone shape
- Disposition
- Hide and hair
- Butterfat indicators
- Docility

The hair coat itself is the first indicator of overall health of the animal

The influence of color affects heat reflection.

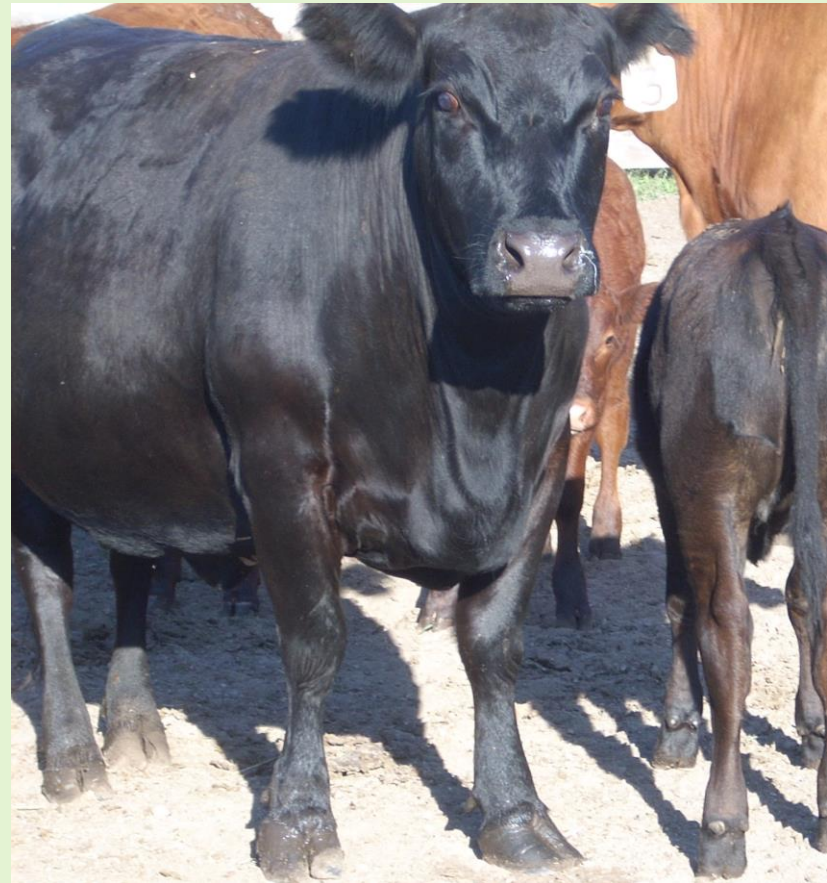
At 90 degrees in the direct sun, the temperature on the back of a black cow is 140 deg

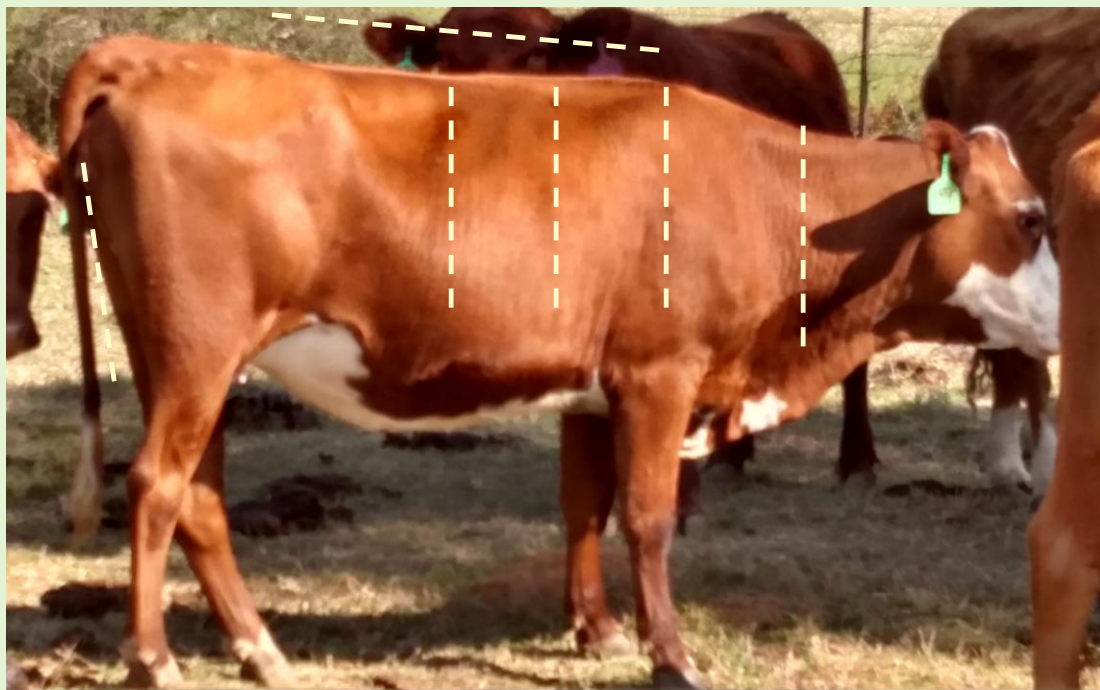
Temperature on the back of a red cow is 118 degrees

The temperature on the back of a white cow is 112 degrees.

Glandular function controls butterfat, marbling, tender meat and FERTILITY

- Disposition
- **Small Dense Bone**
- **Knee joints are small**
- Pointed Poll
- Vertical folds in the hide = Soft hide
- **Silky Hair**
- Hocks~clean
- **Glandular expressions**
- Escutcheon Mirror
- Butterfat/marbling

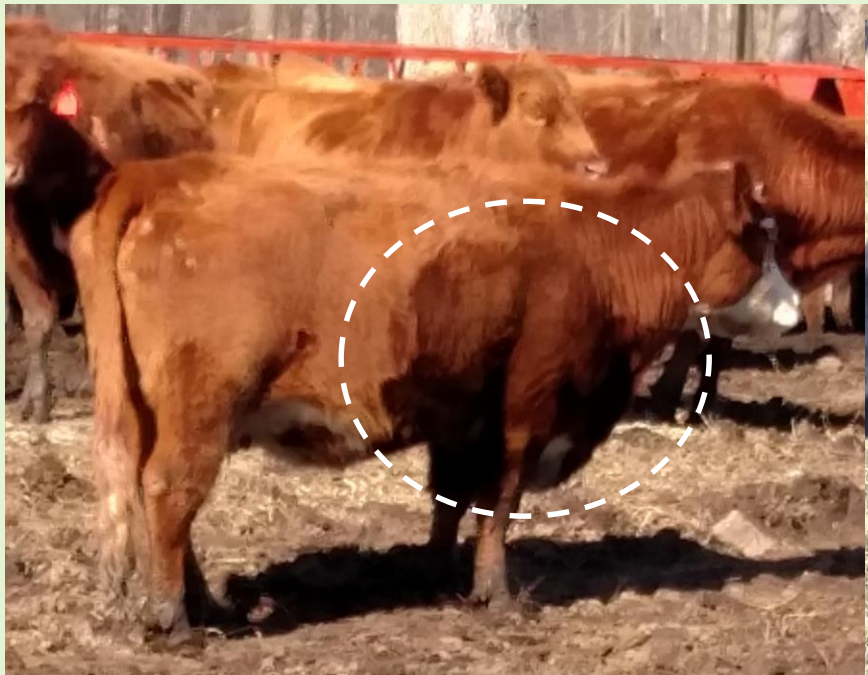
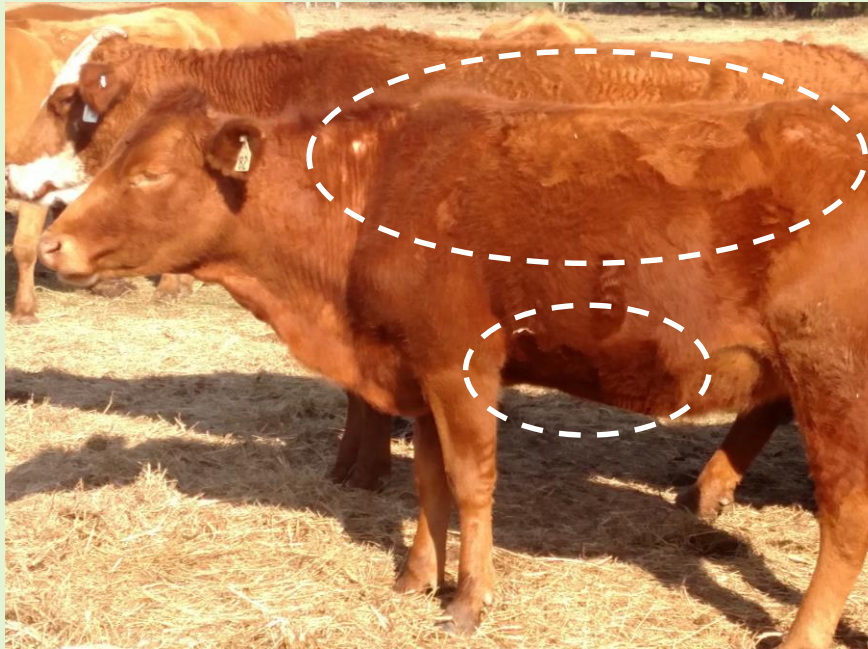




system, hide
coat



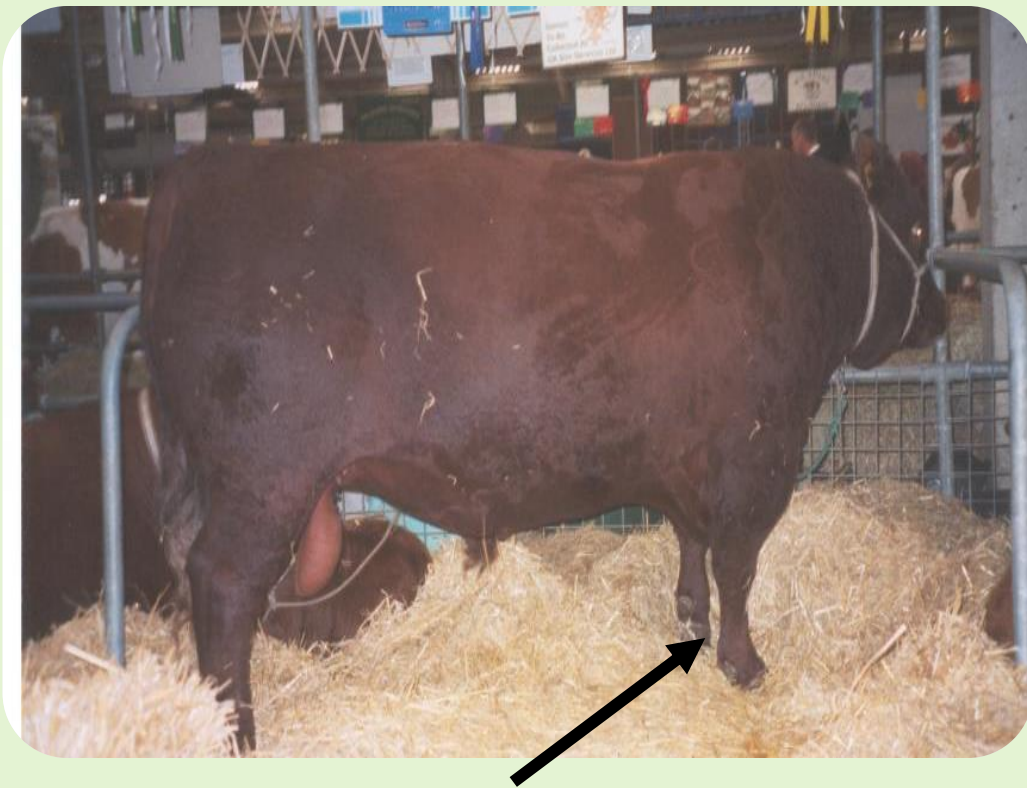
EARLY SHEDDING Dr. Bonsma's one thing



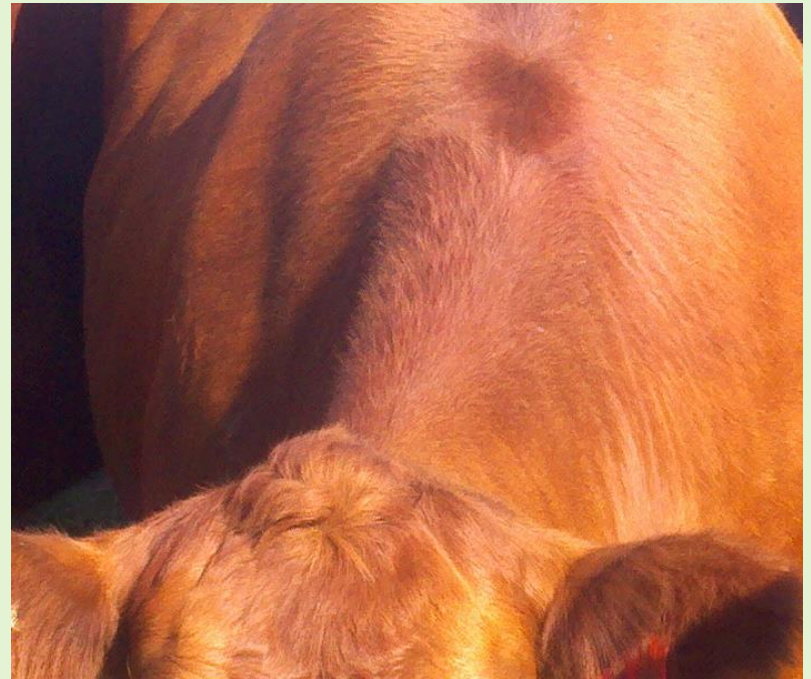
Butterfat, Marbling, Tender Beef and Glandular Function are all linked together



Bone structure and tender beef



Unusually small bones

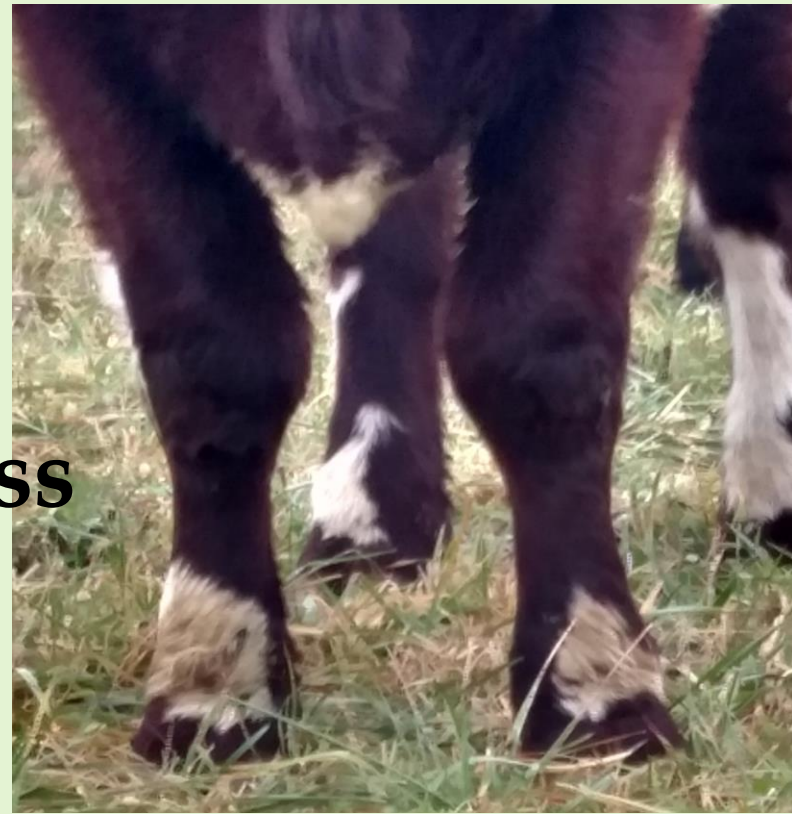


Pointed Poll



#1

Tenderness



- **Tender** OK Tough
- () **knee** () **Knee** (---) **Knee**
- /\ **Cannon** | | **Cannon**) (**Cannon**
- (ll) **Hoof** (ll) **hoof** (()) **hoof**
- Tender beef and butterfat in milk are closely associated

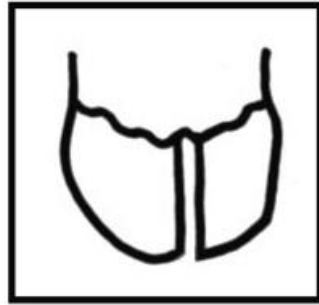
(Reference: Shape (primarily curl) and evenness of the claw set.)



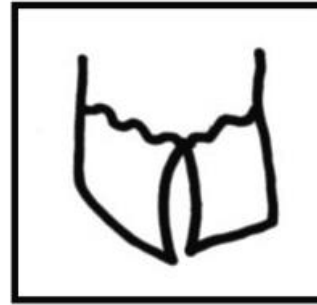
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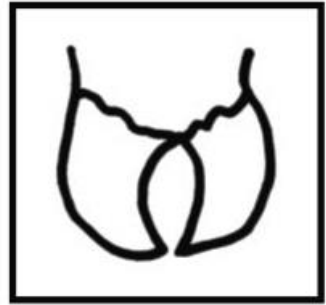
4



5



6



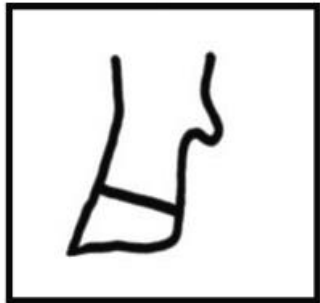
7

extreme scissor claw

d rear feet angle (Reference: Strength of pastern, depth of heel and length c



3



4



5



6



7

od; 9 – shallow heel

Selection for Meat Quality



- Small pointed ears
- Fine tail bone
- **Flat Ribs Bones**
- **Flat jaw bone**
- Pointed Poll
- Unusually small legs for the size of the body
- Large Thymus

Rib and jaw bones ... Flat or concave



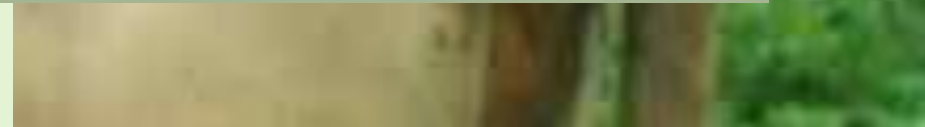
Flat Tail
More butterfat

Round Tail
Less butterfat



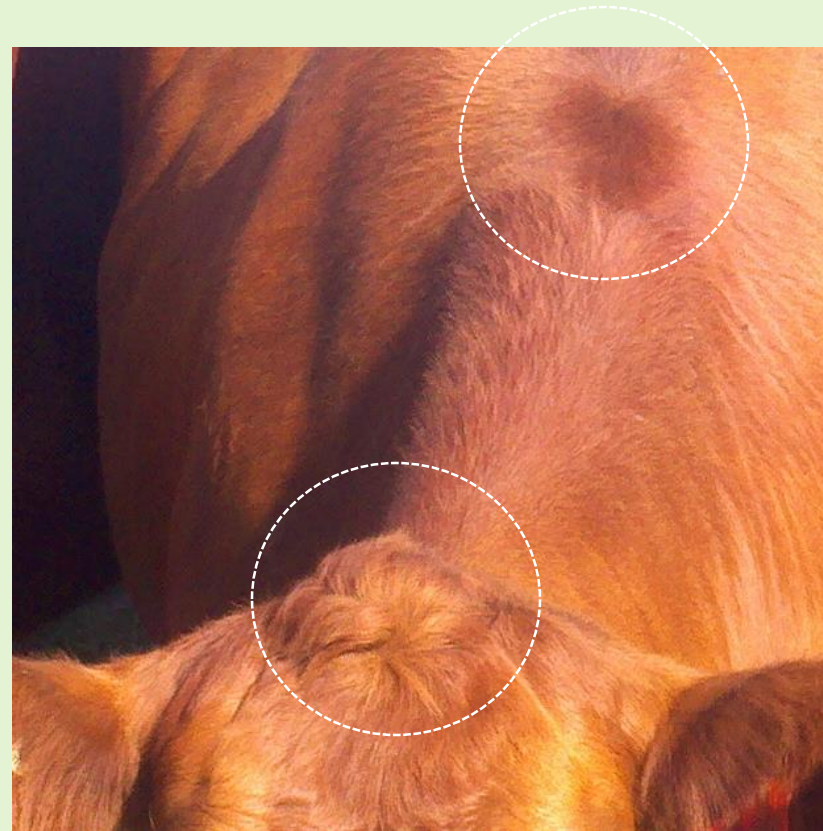
A cow with a “broom-tail” (big switch) is more fertile than that same cow with a small switch on her tail.

Same with bulls. Looking for a smaller-in-diameter tail bone and a bigger switch

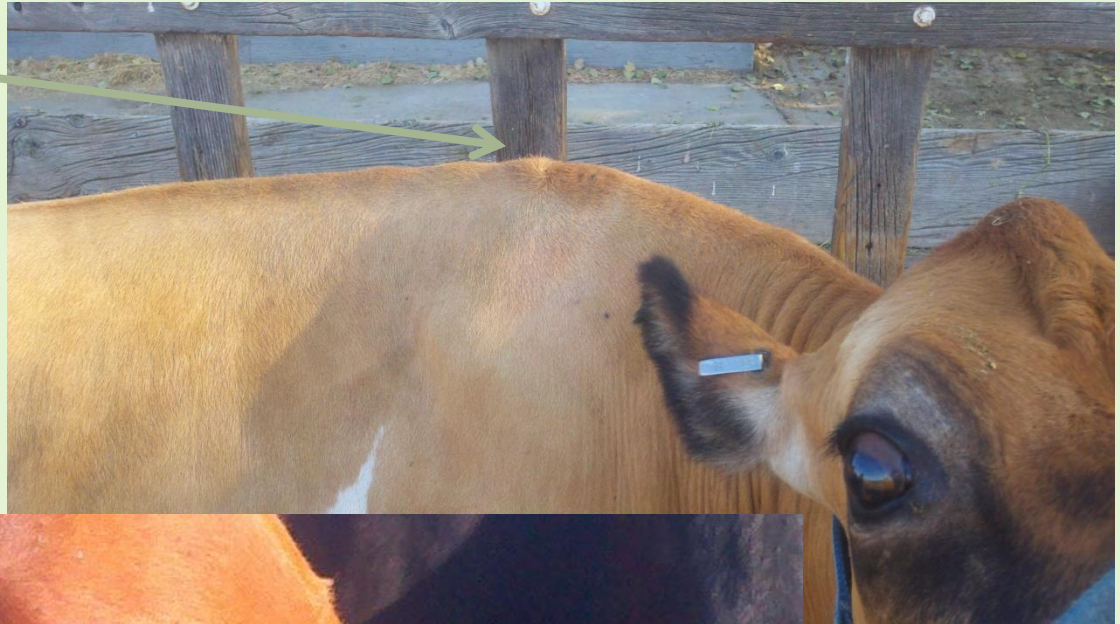


Butterfat, Marbling, Glandular Function and Tender Beef are all linked together

- Disposition
- Small Dense Bone
- Knee joints are small
- **Pointed Poll**
- Vertical folds in the hide = Soft hide
- Silky Hair
- Hocks~clean
- **Adrenal Whorl**
- Escutcheon Mirror
- Butterfat/marbling



Adrenal



Pointed
Polls

Butterfat, Marbling, Glandular Function and Tender Beef all come in a loose hided animal

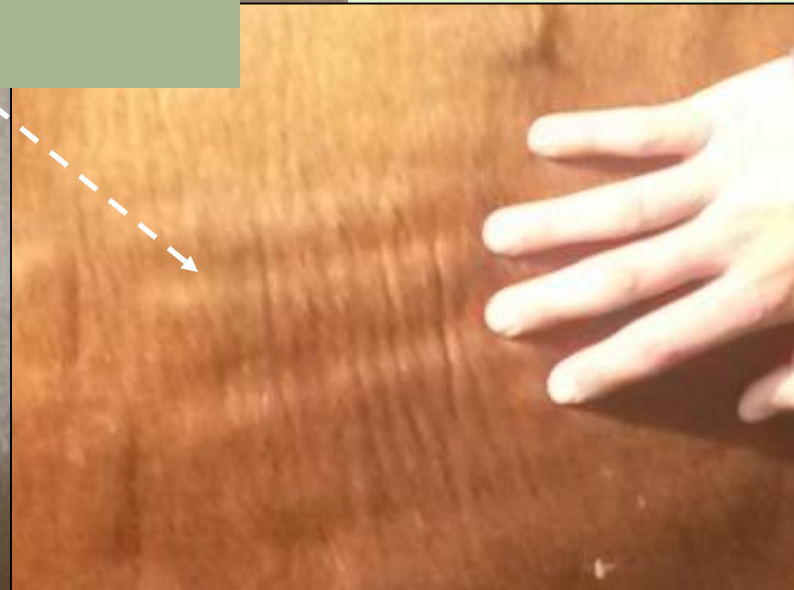
- **Vertical folds in the hide = Soft/loose hide**



Vertical folds depicts a loose hide
Tender meat-butterfat-marbling

“Happy Lines” are the animal’s way
of telling us that he/she does NOT
carry the toxin load that most
CAFO animals have

#2 Both
Meat and
Butterfat



The looser the hide
is over the hooks
The more marbling
potential in the meat

**Loose hide
equals
butterfat and
marbling in
the meat**



Butterfat, Marbling and Tender Beef are all linked together

- Disposition
- Small Dense Bone
- Knee joints are small
- Pointed Poll
- Vertical folds in the hide
= Soft hide
- Silky Hair
- **Hocks~clean**
- Glandular expressions
- Escutcheon Mirror
- Butterfat/marbling



Butterfat, Marbling and Tender Beef are all linked together

- Disposition
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- Silky Hair
- Hocks~clean
- Glandular expressions
- **Escutcheon Mirror**
- Butterfat/marbling



The Milch Cow

“(B)y following the directions of M. Guenon, as laid down in the treatise, anyone can tell with certainty whether a cow is a good milker, or whether a heifer will become one, so that there need be no doubt as to the profit of raising an animal, and no chance of being taken in the purchase of one.”

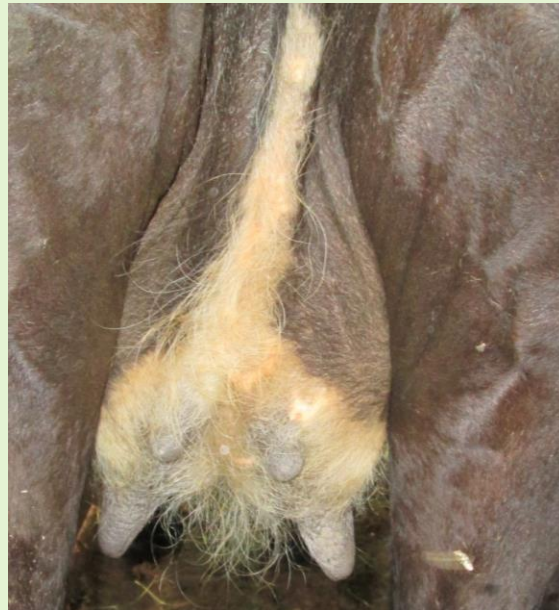
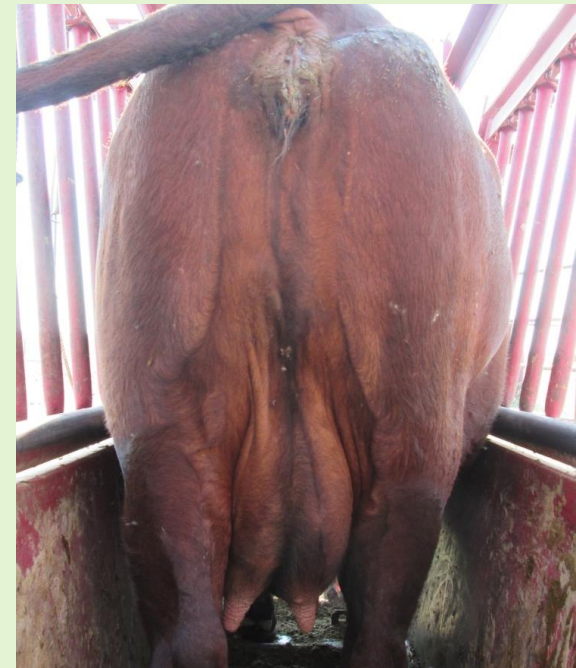
National tribute of the French Government

Paris, September 17, 1848



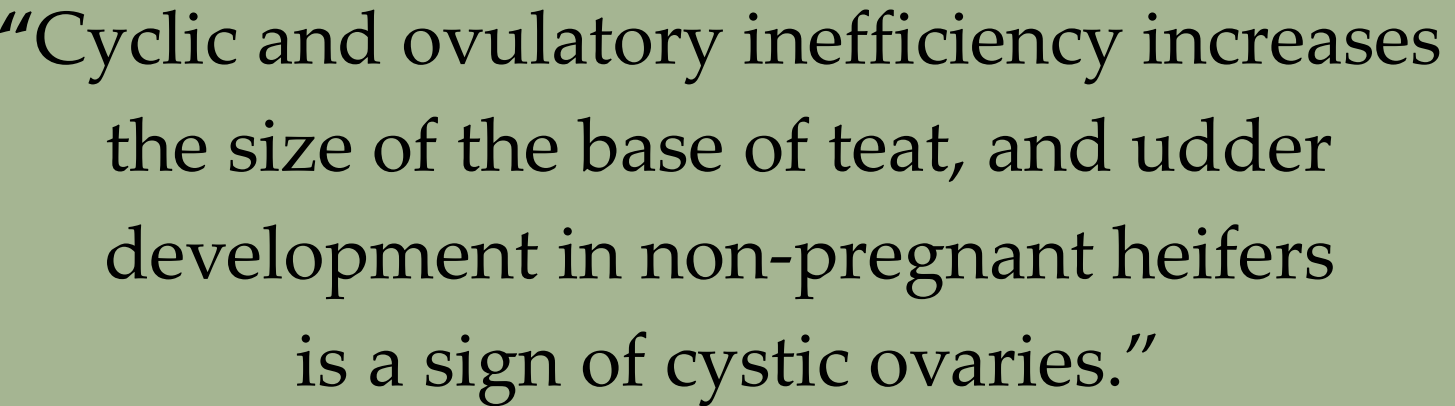
Bald udder and extra teats

Average milker with ABUNDANT amount of
Butter-fat @ 16 ounces a day (300#/fat/year)
protein @ 12 oz/day = 200# protein
= 750-800# Calf

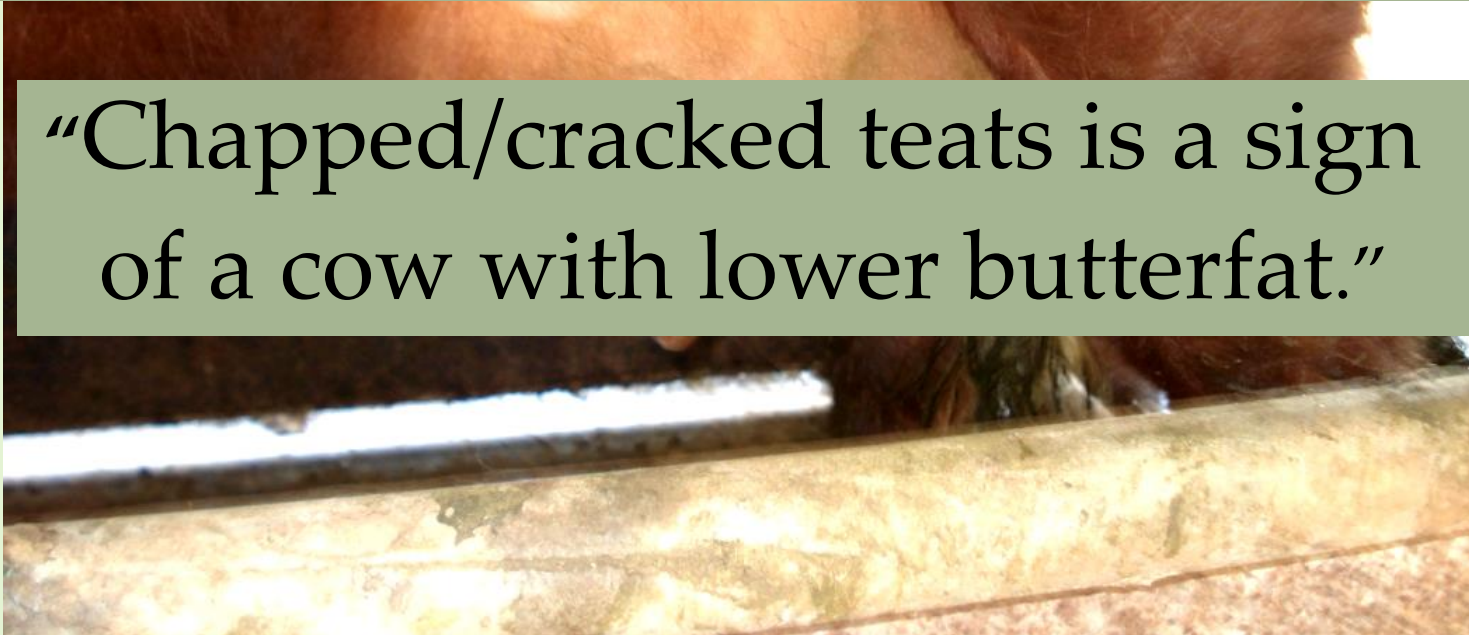


Bald udder & nipples

Teat size and shape are determined by glandular Function



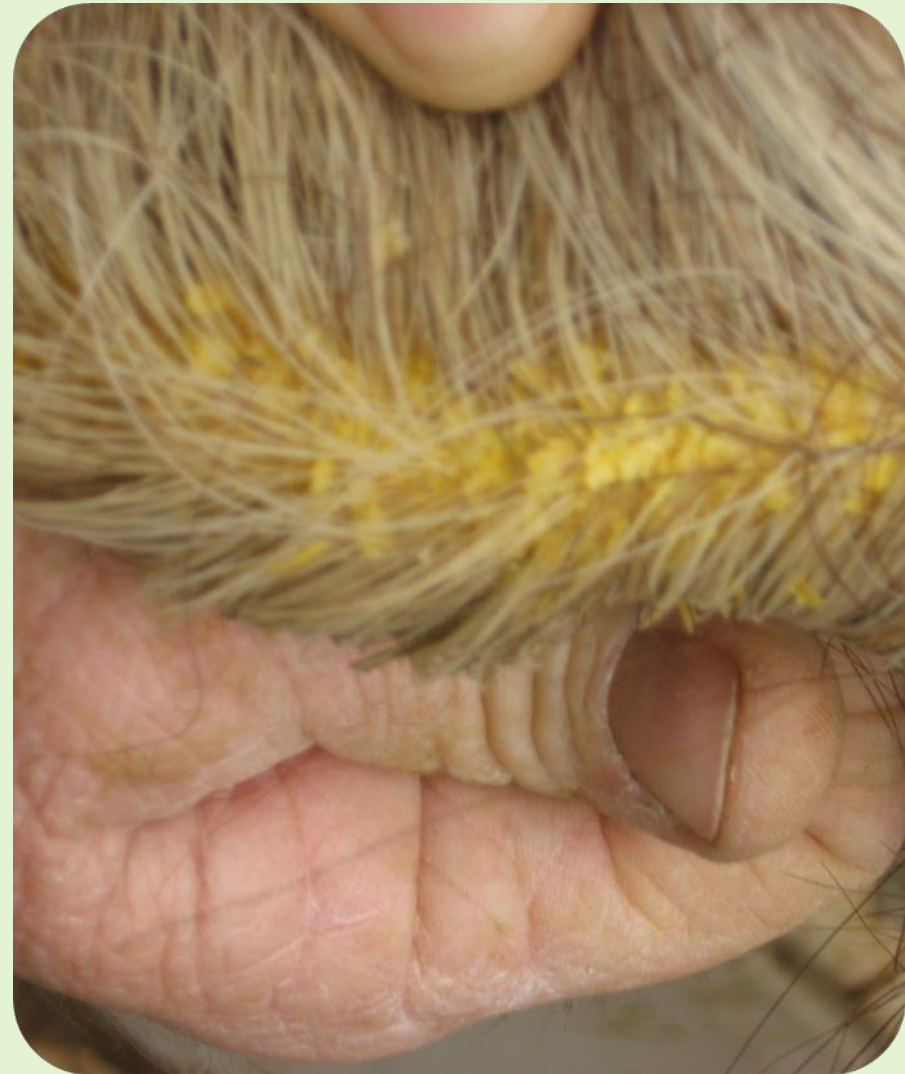
“Cyclic and ovulatory inefficiency increases the size of the base of teat, and udder development in non-pregnant heifers is a sign of cystic ovaries.”



“Chapped/cracked teats is a sign of a cow with lower butterfat.”

Butterfat, Marbling and Tender Beef are all linked together

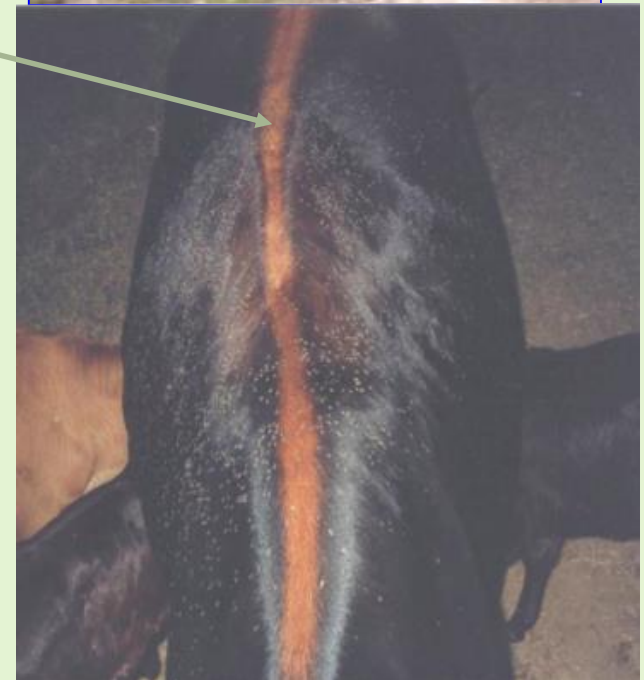
- Disposition
- Small Dense Bone
- Knee joints are small
- Pointed Poll
- Vertical folds in the hide = Soft hide
- Silky Hair
- Hocks~clean
- Glandular expressions
- Escutcheon Mirror
- **Butterfat/marbling**





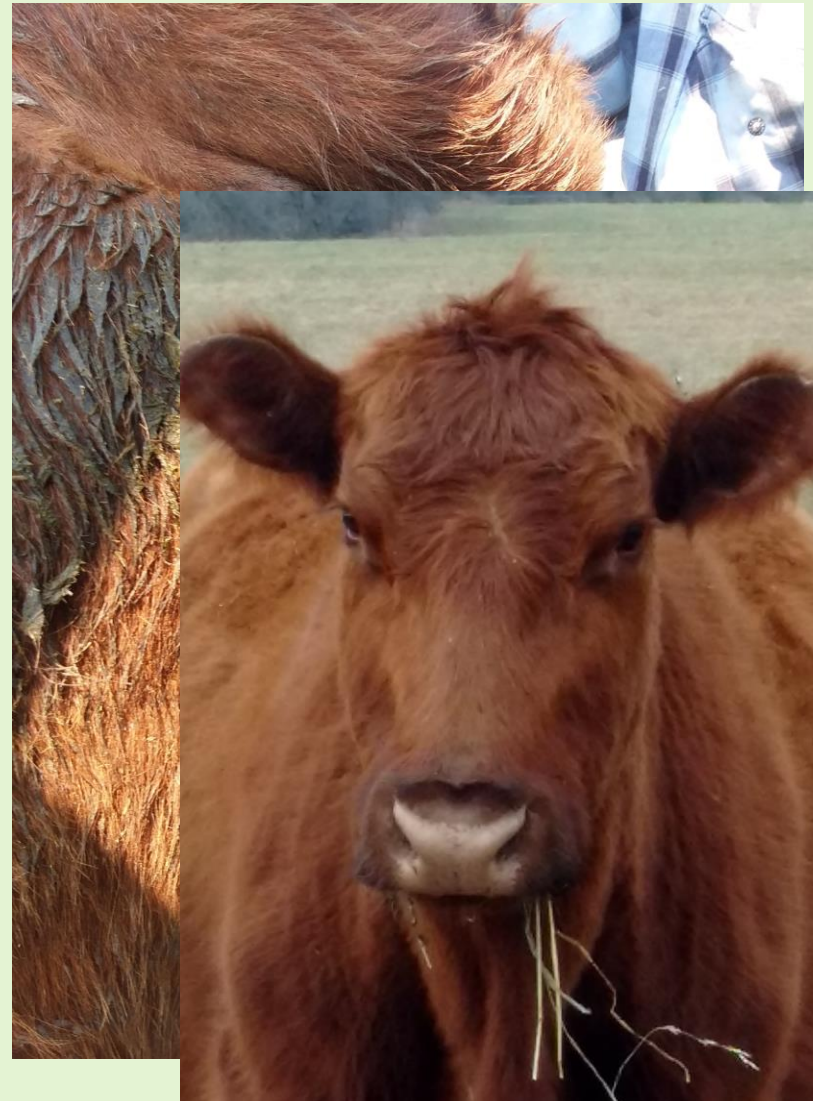


- Dark/oily streak down back
- Hormonal Activity
- Glandular Activity
(*Bonsma and early shedding*)
- Healthy sebaceous fluid
(*fly control*)
- Dappled looking haircoat

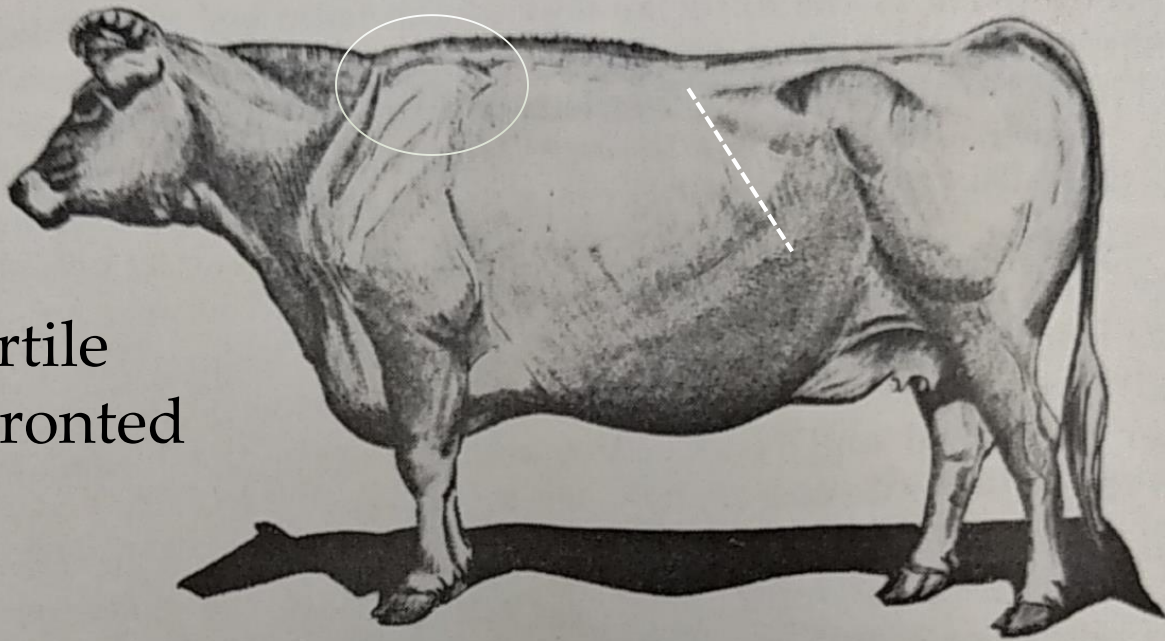


Butterfat, Marbling, Tender Beef and fertility are all linked to **GLANDULAR FUNCTION**

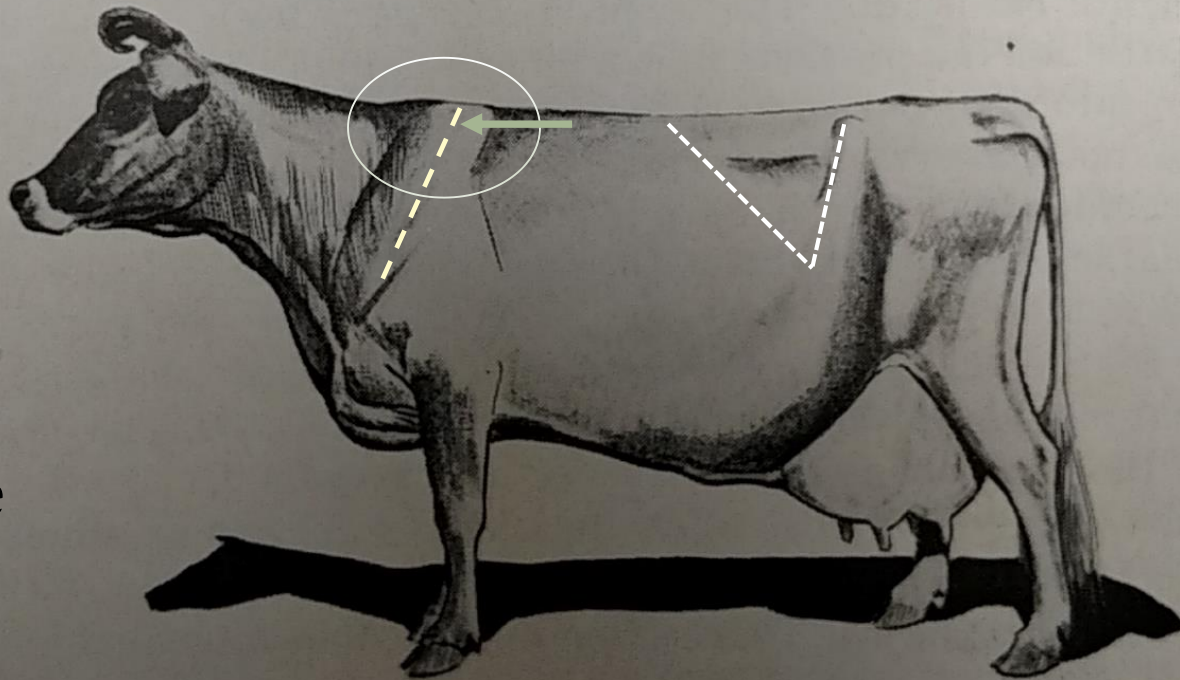
- Small Dense Bone (and length)
- Flat jaw and rib bone
- Knee joints are small
- Pointed Poll
- Vertical folds in the hide = Soft/loose hide
- Silky, uniform Hair
- Hocks~clean
- Glandular expressions
- Escutcheon Mirror
- Butterfat/marbling
- **Vertical Vulva**



Less fertile
"Chug" Fronted



More fertile





Angle of rib bones

Jan Bonsma



Linear Measurement – Fertile Female

The “wedge” look

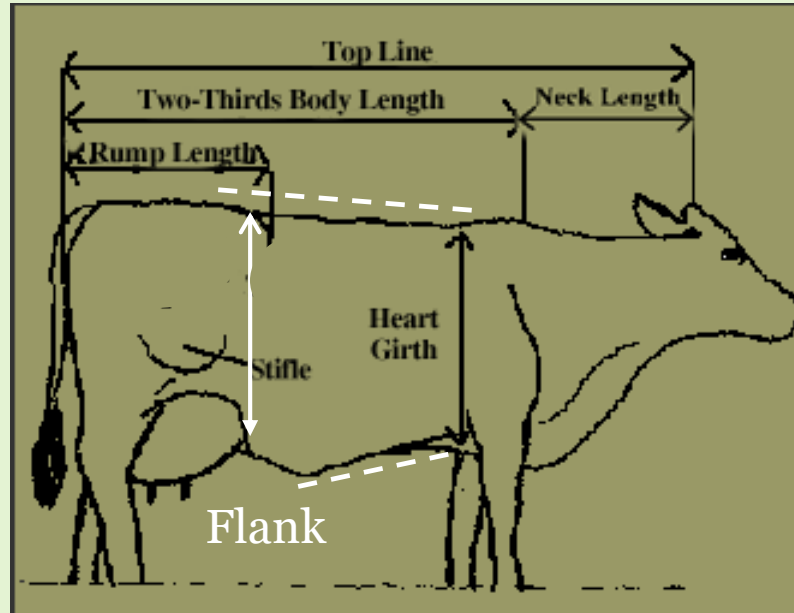


Figure 1

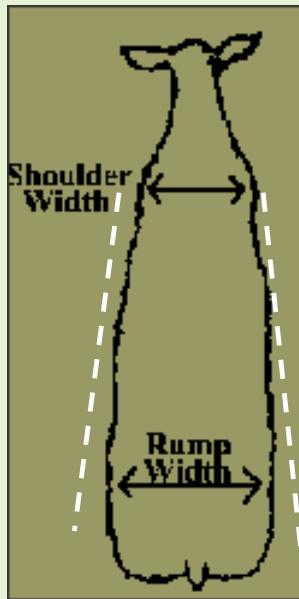


Figure 2

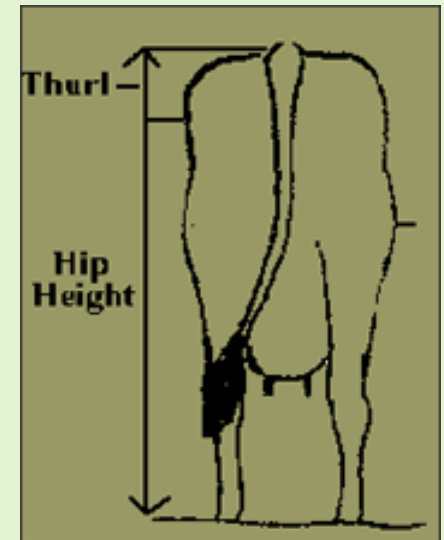
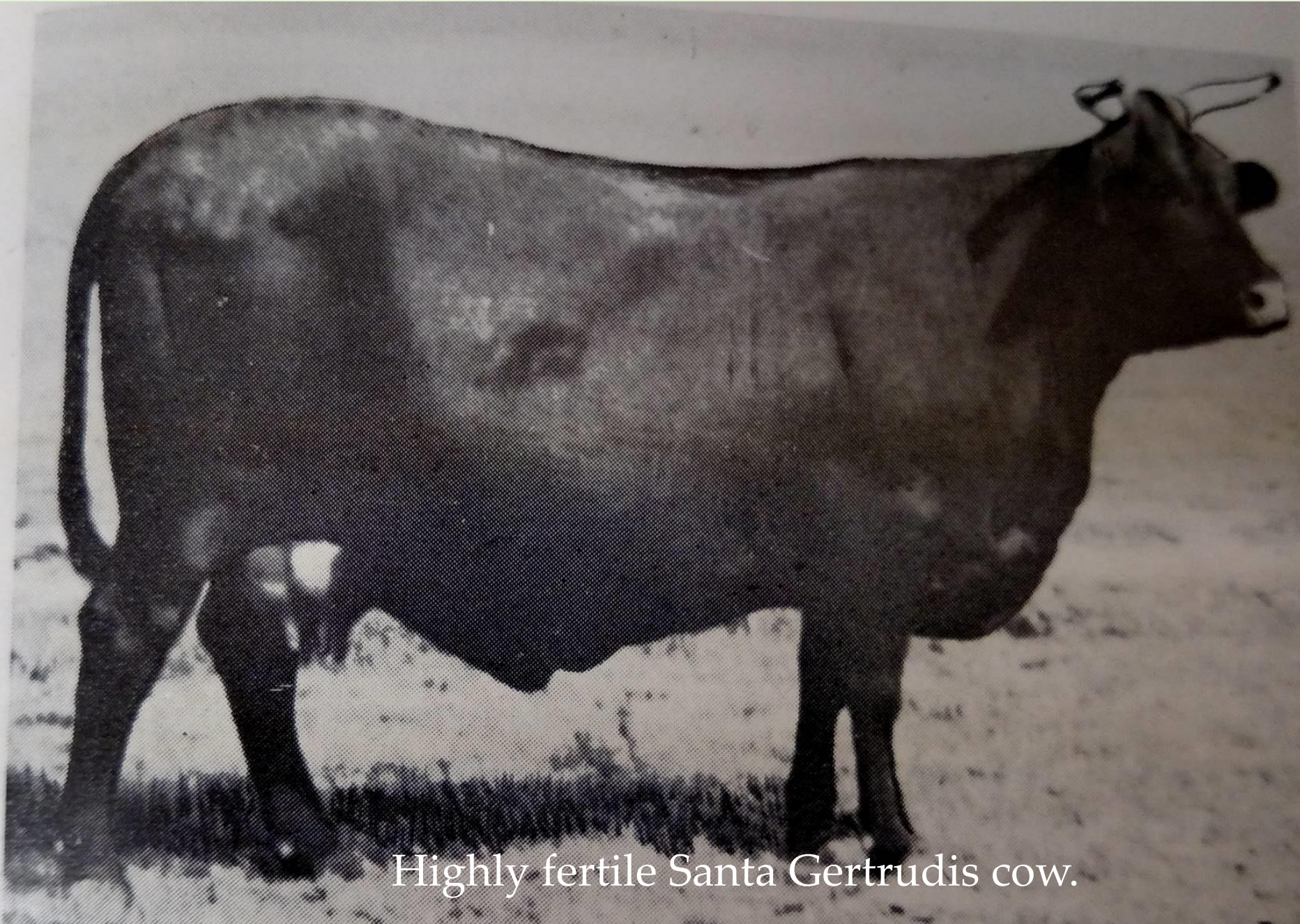


Figure 3

9 Measurements



Highly fertile Santa Gertrudis cow.

Dr. Michael McDonald - *Value of L/M*

40% of difference in profit is
fertility on a cow = RL/RW

Only 42 day breeding season...a heifer born in the third cycle of the calving season will rarely calve in the first cycle if retained as a cow.

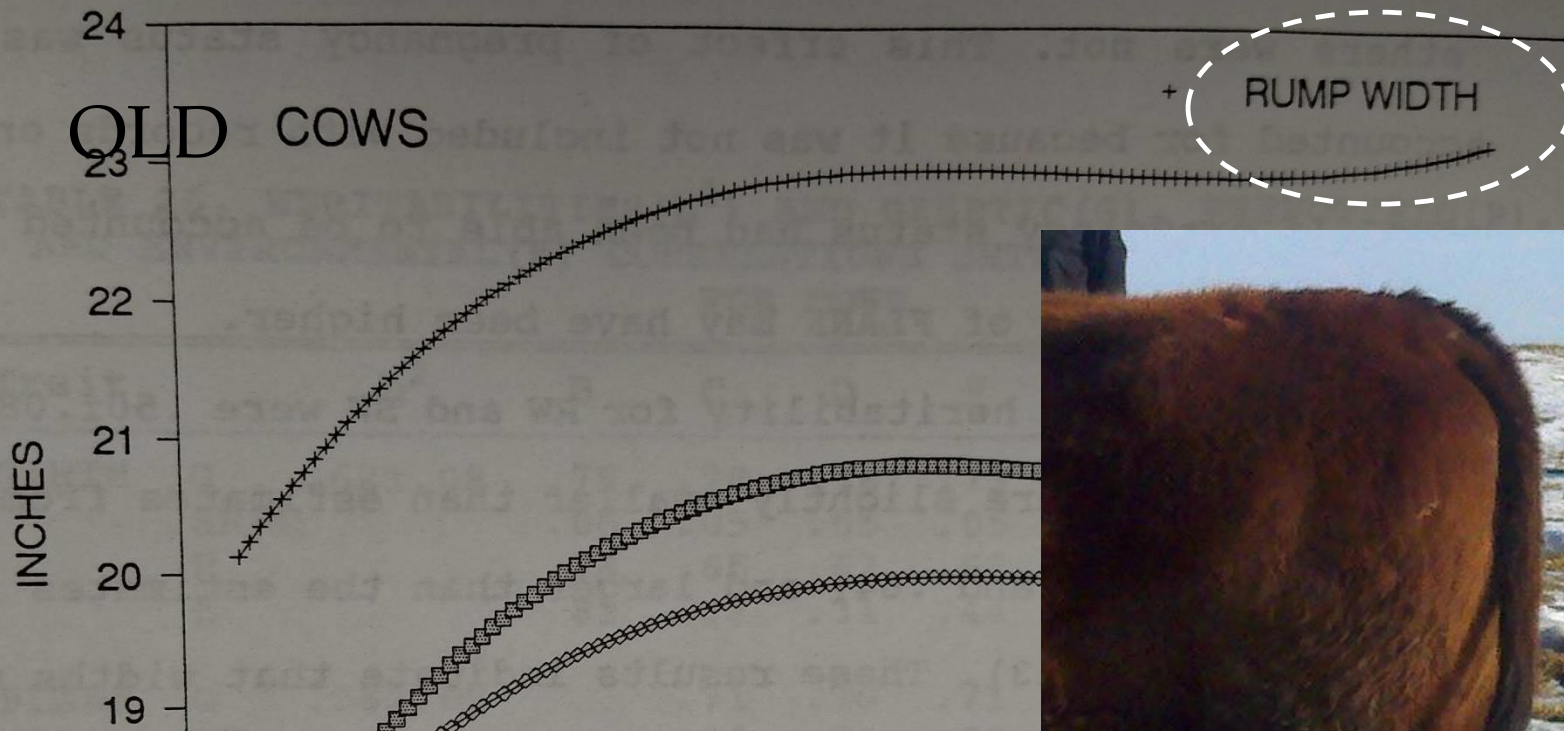
30% of difference in profit is in
maintenance costs FLANK-vs-TL

*"The key to conception is BCS at the time of calving."
HG/Flank-vs-TL Dick Diven*

20% of difference in profit is in **growth**

10% of difference in profit is **carcass** traits

Industry pushes growth and carcass because that is where
THEIR money comes from!!!!



Dr. Michael McDonald - Value of
 Linear Measurement
 40% of difference in profit is
 fertility in a cow = RW-RL

Figure

COW wide rump



Right rear hoof outside

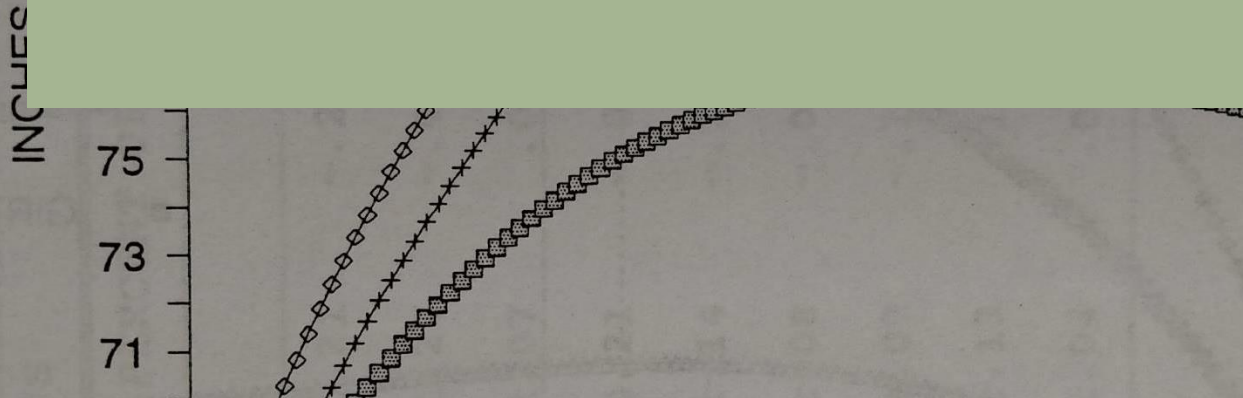
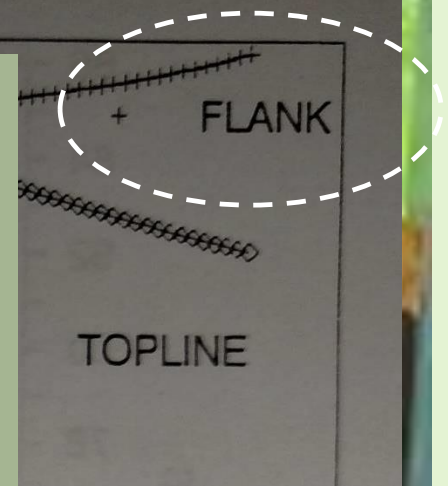
BULL wide shoulders



Right rear hoof inside

Dr. Michael McDonald - Value of Linear Measurement

30% of difference in profit is Keeping cost of a cow



A flank (2-8") larger than the girth equals lower feed costs ... for the next TEN-FIFTEEN years
Minus girth and flank equals higher feed costs ...for the next TWO-SEVEN years

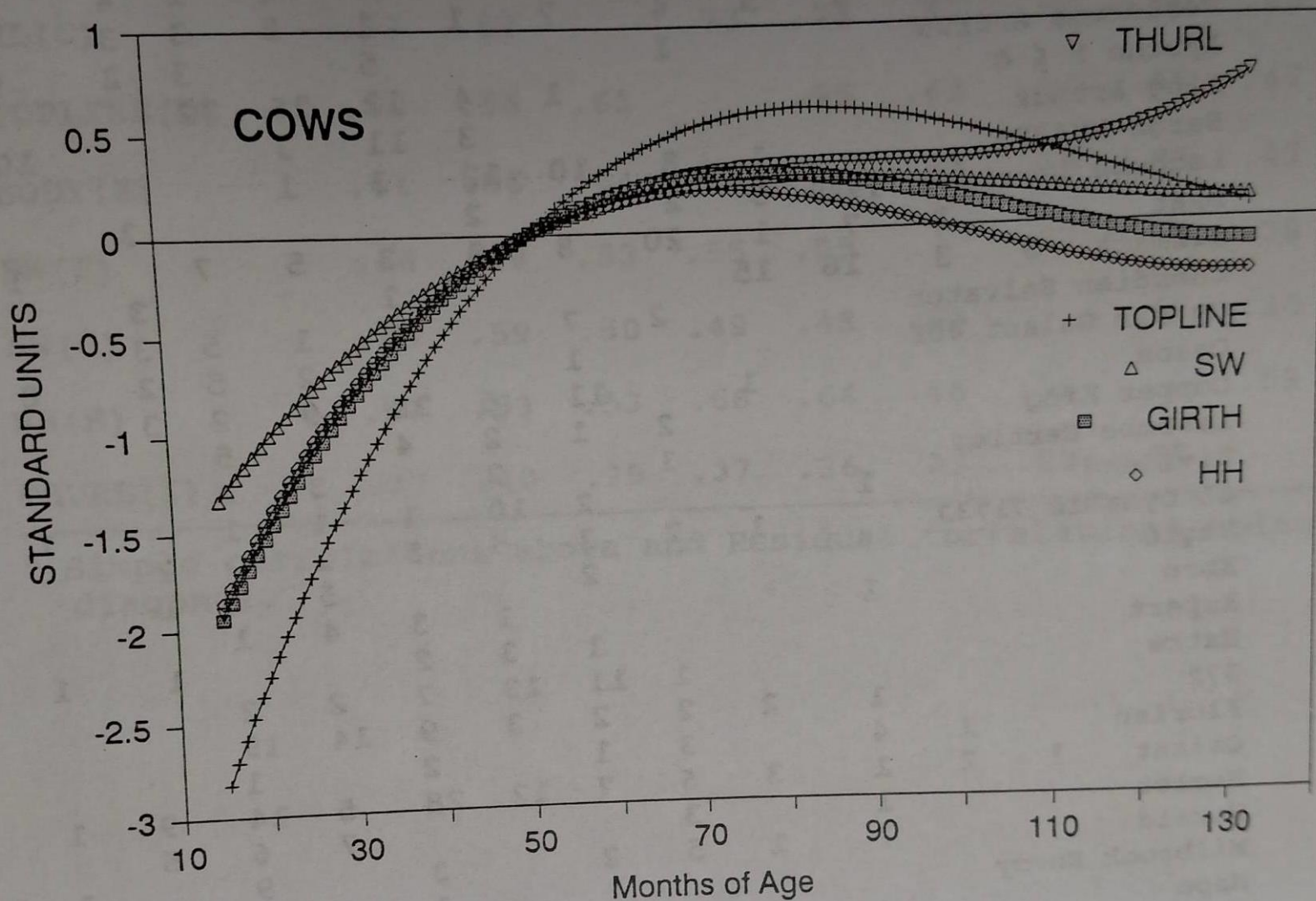
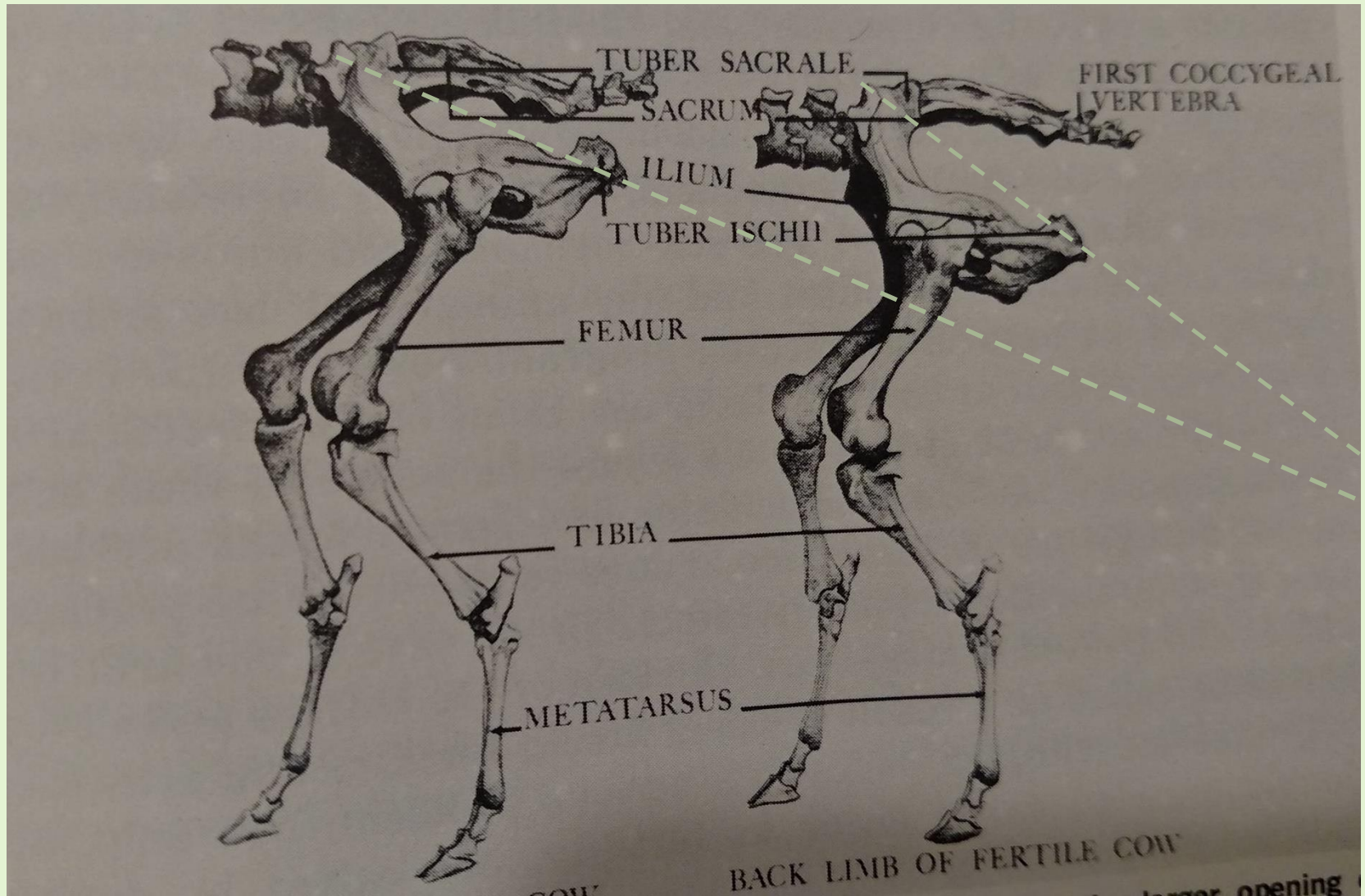


Figure 16. Regression of GIRTH, TOPLINE, SW, HH and THURL on AGE in standard measure for cows.

Calving Ease...from the heifer side



Linear Measuring the Bull & Cow For a SHAPE for Grass & Reproductive Efficiency



Linear Measurement accurately and objectively evaluates what the animals is.

A tool to know what animals will work in our environment and how to use the ratios to select for them.

Dimensional Scrotal Measurements

Classification	Length (inches)	Circumference (cm)	Sperm Count per cc (range) $\times 10^6$	Approx. % Live	Approx. % Conception
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Age: 7 1/2-9 months

Optimal	5, 5 1/2	28, 29	N/A	N/A	N/A
Tolerable	4 1/2	26, 26 1/2, 27, 27 1/2	"	"	"
Objectionable	4	24 1/2, 25, 25 1/2	"	"	"
Undesirable	3 1/2	23, 24	"	"	"
Unacceptable	3	20-22	"	"	"

Age: 12-16 months

Optimal	6, 6 1/2, 7	38, 39, 40	980-1379	75-90	80-90
Tolerable	5 1/2	36, 37	672-1076	65-70	70-75
Objectionable	5	35	527-707	55-60	60-65
Undesirable	4 1/2	34	362-538	50-55	45-55
Unacceptable	4	30-33	40-372	10-45	5-40

Age: 16-24 months

Optimal	7, 7 1/2, 8, 8 1/2	40, 41, 42, 43, 44	1093-1790	75-90	80-90
Tolerable	6 1/2	37, 38, 39	1043-1592	65-70	70-75
Objectionable	6	36	796-1541	55-60	60-65
Undesirable	5 1/2	35	381-1093	50-55	45-55
Unacceptable	4 1/2, 5	30-34	309-783	10-45	5-40

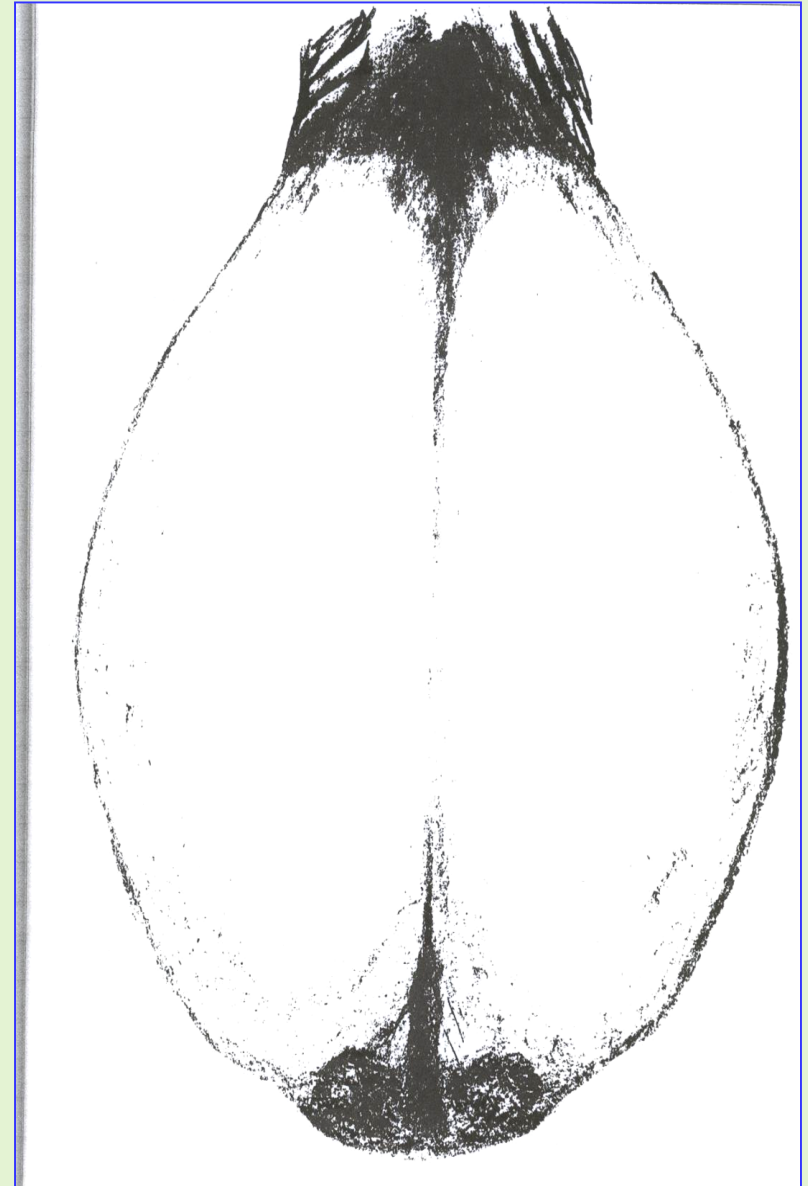
Age: 24-36 months

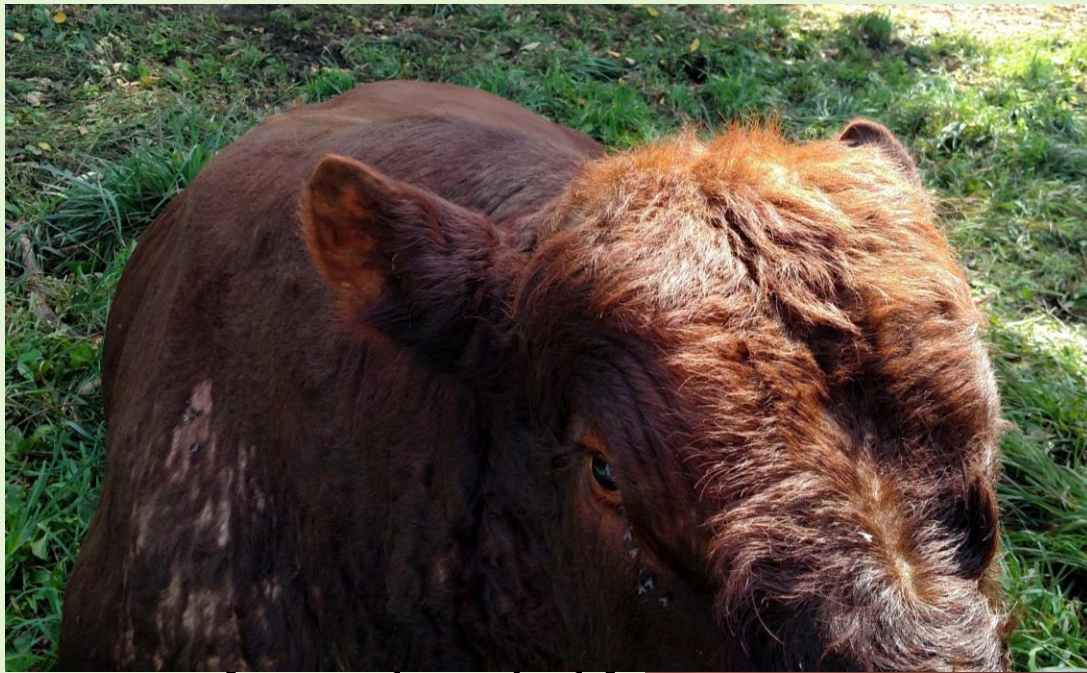
Optimal	7, 7 1/2, 8, 8 1/2	43, 44, 45, 45 1/2	1379-1853	75-90	80-90
Tolerable	6 1/2	39, 40, 41, 42	920-1469	65-70	70-75
Objectionable	6	37, 38	732-1181	55-60	60-65
Undesirable	5 1/2	35, 36	517-1011	50-55	45-55
Unacceptable	4 1/2, 5	30-34	68-548	10-45	5-40

Age: 36-48 months

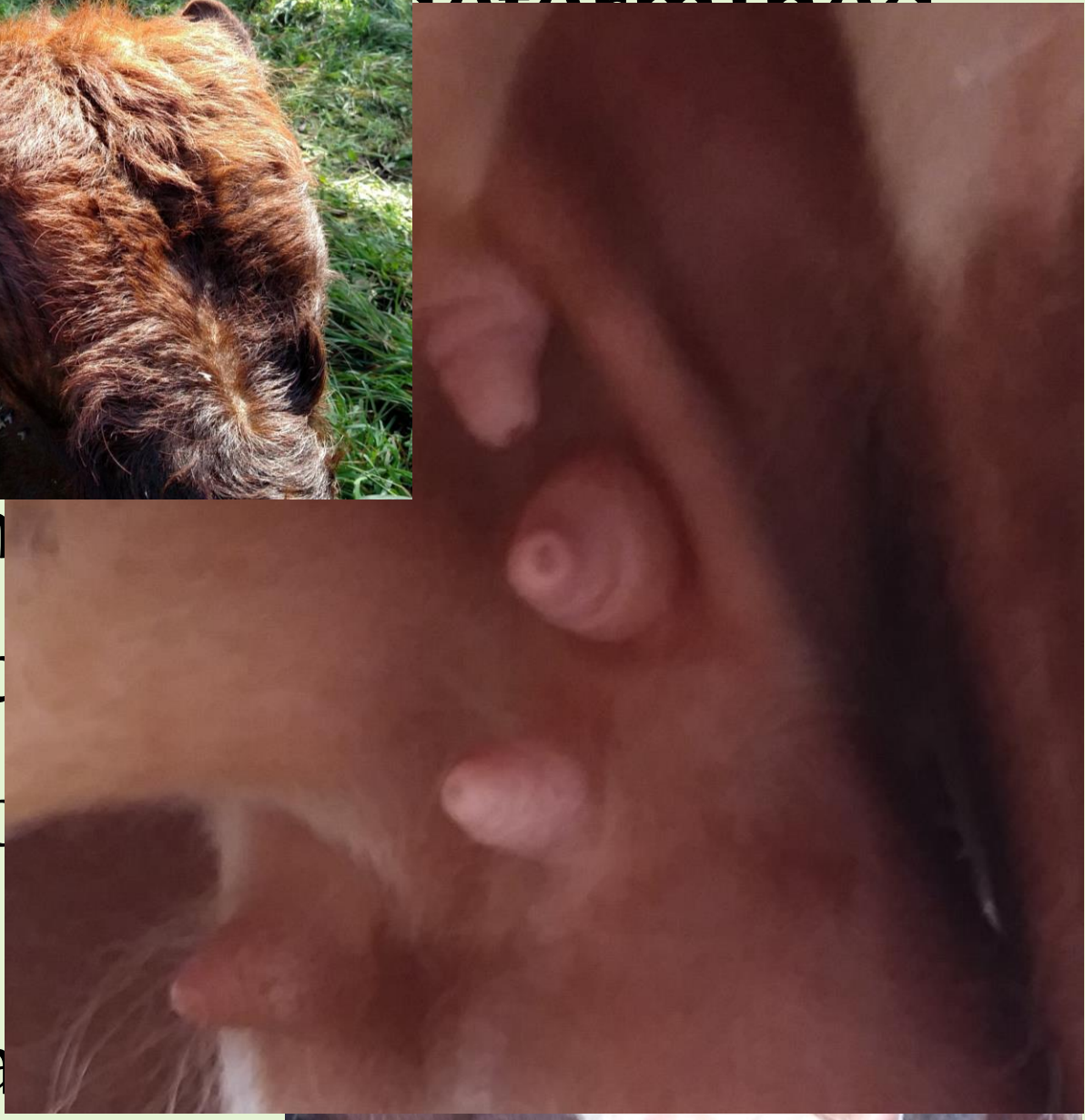
Optimal	7, 7 1/2, 8, 8 1/2	43, 44, 45, 46	1218-1990	75-90	80-90
Tolerable	6 1/2	40, 41, 42	965-1790	65-70	70-75

Necessary measurements for an optimal bull





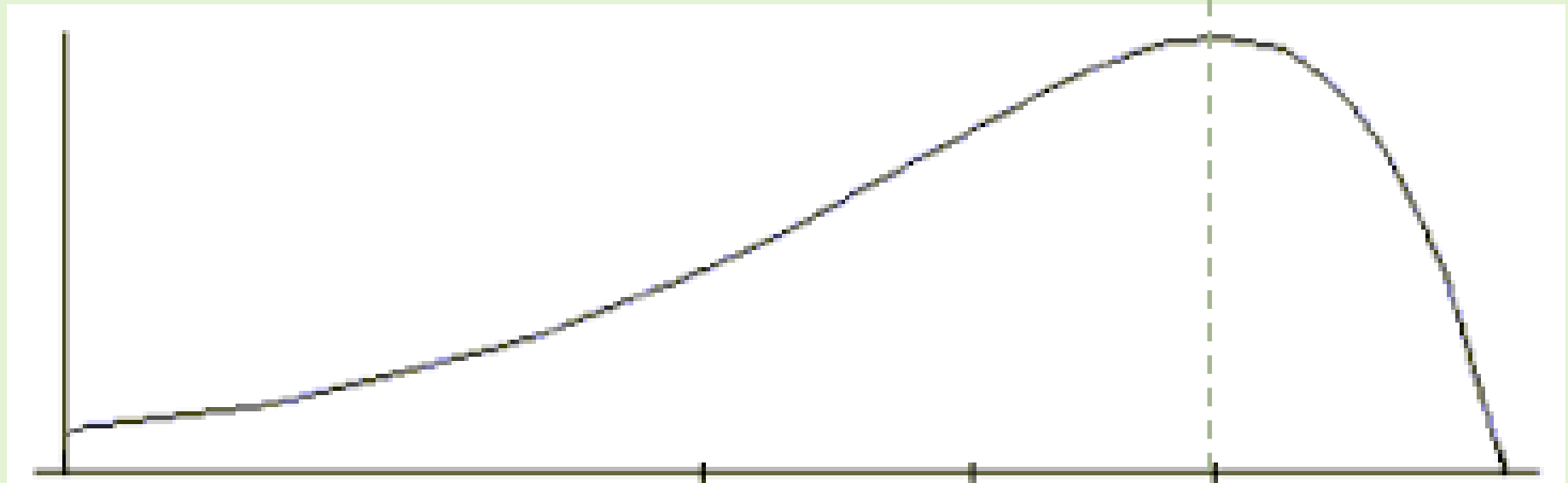
Determined



- short of the
- ~Tilted udder
- ~Saggy, drooping udders
- ~Teat size and

A tipping point in fat level

Percentage getting pregnant



Low G/F, B/F, poor

Cow fertility

too fat to breed

Phenotype

high toxins

Low minerals High toxins

Fat attracts bad stuff

How to know when you know what Bonsma knew about glandular function

- Breed your replacement heifers for 30 days
- **Choose which heifers you think are best at this time**
- Of those that have their first calf unassisted next year rebreed them for 45 day period
- Make note of those that have their second calf in the first 21 days of the calving season next year.
- **When all of your ten favorite yearling heifers are in this group...you understand Bonsama and glandular function**

Reading Assignment

- **Man Must Measure** **Jan Bonsma**
- **Bonsma Lectures**
- **The Milch Cow** **Francois Guenon**
- **The Milch Cow in England** **E. R. Cochrane**
- **Man, Cattle and Veld** **Johann Zeitsman**
- **Reproduction and Animal Health** **Gearld Fry**
- **Factors Affecting Calf Crop** **Koger** (*91 or earlier version*)
- **Time to Change** **Chip Heins**

Look at your cows and bulls when you get home...what do you like...what do you want to change?

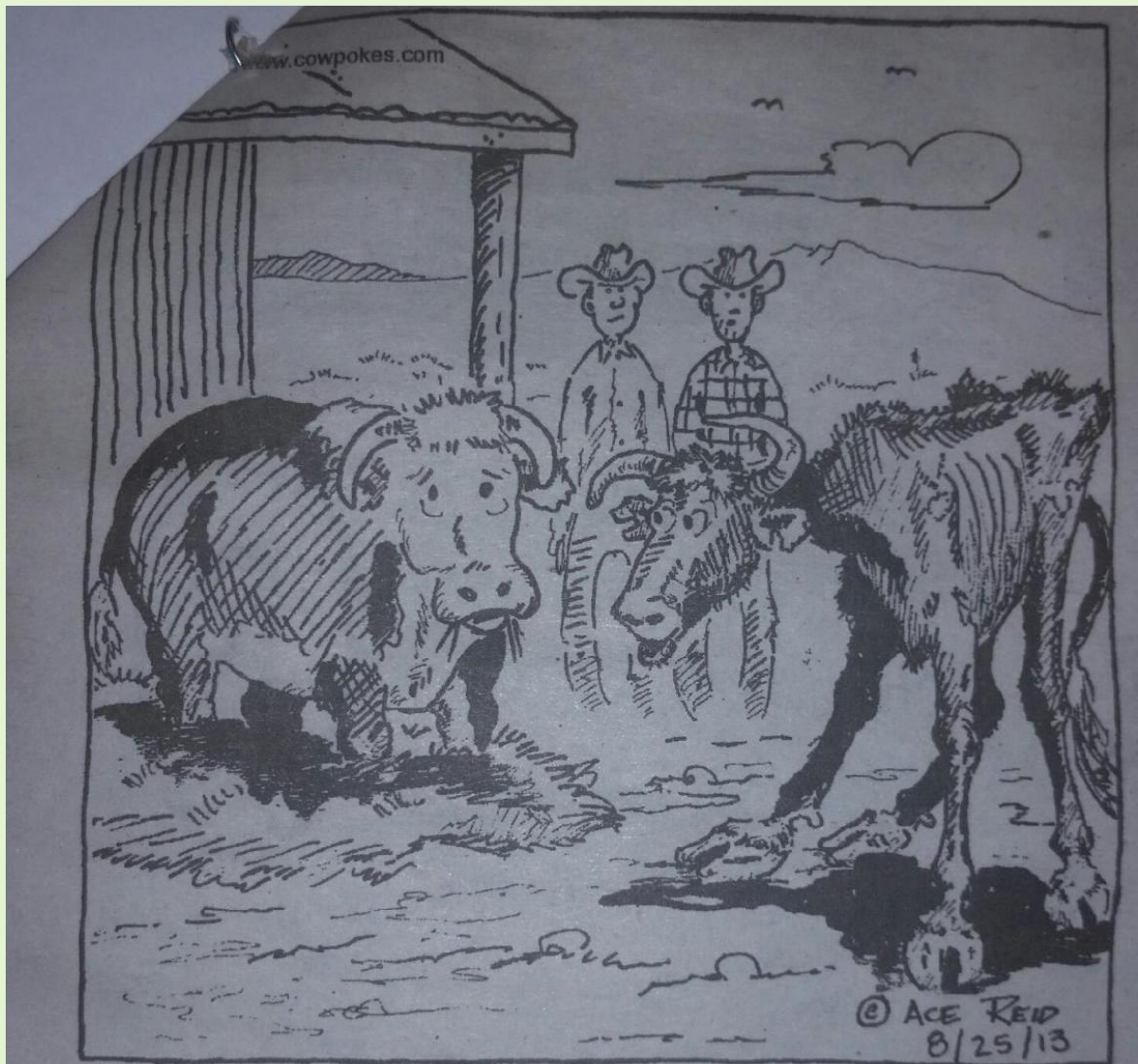
“Skepticism is the Chastity of the intellect, to be preserved through a long youth and exchanged only for Truth and Fidelity.” *anon*



"... some are consuming half as much as others!"

"Some digest 70% of what they ingest."

*Cartoon by
Ace Reed*

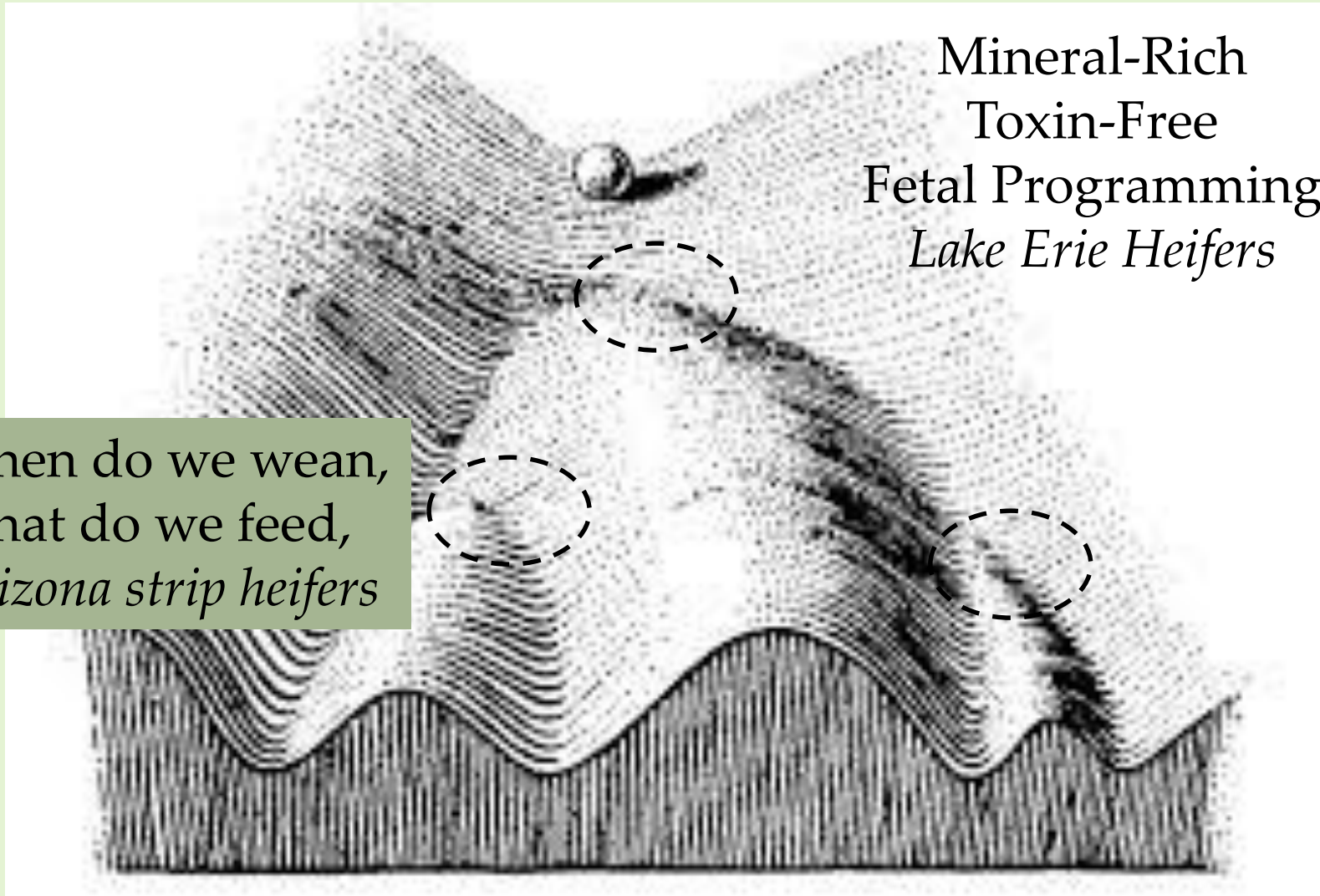


"Wul we got two breeds on this place. One that can winter herself, do without grass and water all summer and make money. The other one we tip our hat to, and lose our shirts."

G/F, B/F and Fertility

- Our Fathers did not have any of the modern gadgets, ultrasound, DNA, EPDs DHIA, for knowing how to select for these things
- A great need to revert back to the artisan gifting of observation and husbandry, that comes only with Knowledge, Understanding and Wisdom.
- God gave us all a brain with knowledge for our own good and the good of our fellow man
- **cow** (broom tail, Large gut/wide butt-no fatty deposits in neck/lower jaw, pregnancy and sex of calf and shorter on the front end
- **Bull** (darker, coarse, curly hair. Wide shoulders)

Waddington's Epigenetic Landscape



Take home

- Early shedding is paramount
 - Wedge shape
 - Vertical folds

Tailor Made Cattle:

Have tape... Will Travel



Steve Campbell Cell: 208-315-4726

2365 Echo Avenue Email: trianglec3@gmail.com

Parma, Idaho 83660 Web: tailormadecattle.com