Bovineengineering & Consulting

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Standards for Reproduction in Herd bull

Reproduction-Herd-Bull

1. We have sold open cows all my life
2. Reproduction in cow herd should be 100%
3. We blame the cow if she comes up open
4. We have not considered semen quality or volume
5. We only consider the circumference of scrotal
6. We use inferior bulls on heifers, put them in herd
7. We have no standard for selection
8. We are against building paternal gene pools
9. We do not select for butterfat
10. We are victims of our lack of selection & knowledge

Bulls Responsibility

Bull must be recognized/documented as a safe or vault

1. He must possess paternal genetic traits you need in your herd
2. He makes a deposit of those genetics with each pregnancy he creates
3. Your bulls responsibility is to create his replacement from your best cow(s)
4. He creates great females = mitochondrial DNA improvement
5. Major responsibility, Get cows pregnant and put calves on the ground!!!

Researcher; R. G. Saacke, PhD

- Fertility increases with increasing numbers of quality sperm delivered up to a threshold @ conception,
- For each of these measurable parameters, the number of sperm inseminated with the trait, not the percentage having the trait,
  was related to fertility and in an asymptotic fashion.
- Research validated that most abnormal sperm do not access the ovum
- Also demonstrated that low fertility males (at any dosage) generally required more sperm to reach their maximum conception than did highly fertile males

Researcher; R. G. Saacke, PhD

- There is now good evidence that many sperm with normal motility and morphology that are present in abnormal ejaculates are able to access the egg, but not competent to complete fertilization or sustain embryogenesis once these events are initiated.
- While female sperm selection appears amazingly strong based upon sperm shape and motility, it is far from absolute in excluding incompetent sperm from accessing the egg
- Which sperm are competent and which are not is unclear; however, it is accepted that normal appearing sperm in abnormal ejaculates are most likely the cause of the early embryonic death **associated with the male**

Reproduction & Production

- Responsibility of the cow

1. Get pregnant
2. Give birth
3. Give a quality of milk for 300 days that produce a 7-900 pound calf
4. Breed back in 80-90 days post calving for next calf
5. She must have 4 functioning quarters
6. Her working TOOLS are her udder & BUTTERFAT

Do all this on forage that grows in your pastures

Accurately measure Scrotal for Fertility
Total Scrotal Dimensions' for Fertility

- 7.5 to 9 Months

Classification	Length (inches)	Circumference (cm)	Total Dimension = Fertility	Conception % 21 days	No Cow
Optimal	5 -5.5 (inches)	28-29	140 to 159.5	N/A	N/A
Tolerable	4,5	26 to 27.5	117 to 123.75	"	"
objectionable	4	24.5 to 25.5	98 to 102	"	"
		12 to 16 Mo			
Optimal	6 to 7 (inch)	38 to 40	228 to 280	80 to 90%	15 to 20
Tolerable	5.5 "	36 to 37	198 to 203.5	70 to 75	10 to 12
Objectionable	4.5 "	35	157.5	60 to 65	8 to 10
		16 to 24 Mo			
Optimal	7 to 8.5 (inch)	40 to 44 mo	280 to 374	80 to 90	30 to 40
Tolerable	6.5 "	37 to 39	240.5 to 253.5	70 to 75	25 to 35
Objectionable	6 "	36	216	60 to 65	15 to 20
		24 to 36 Mo			
Optimal	7 to 8.5 (inch)	43 to 45	301 to 382.5	80 to 90	65 to 75
Tolerable	6.5	39 to 42	253.5 to 273	70 to 75	45 to 55
Objectionable	6	37 to 38	222 to 228	60 to 65	20 to 25
		36 to 48 Mo			
Optimal	7 to 8.5 (inch)	43 to 46	301 to 391	80 to 90	70 to 90
Tolerable	6.5	40 to 42	260 to 273	70 to 75	45 to 60
Objectionable	6	38 to 39	228 to 234	60 to 65	20 to 25
		4 to 5 Years			
Optimal	7.5 to 8.5 (inch)	44 to 46.5	330 to 395.25	80 to 90	70 to 90
Tolerable	7	42 to 43	294 to 301	70 to 75	45 to 60
Objectionable	6.5	38 to 41	247 to 266.5	60 to 65	20 to 25
		5 to 7 Years			
Optimal	8 to 9 (inch)	46 to 48	360 to 432	80 to 90	70 to 90
Tolerable	7 to 7.5	42 to 45	294 to 337.5	70 to 75	45 to 60
Objectionable	6.5	39 to 41	253.5 to 266.5	60 to 65	20 to 25

Dimensional Scrotal Measurements

Classification	Length (inches)	Circumference (cm)	Sperm Count per cc (range) x10⁶	Approx. % Live	Approx. % Conception
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
Unacceptabe	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

Standards for Semen Testing

Standards You Should Demand for semen testing of your herd bull{s}

Complete count of all sperm cells
Accurate count of all live cells
Accurate count of all abnormal, primary & secondary
Accurate count of motile cells

High quality semen will be in this range
Billion+ cells per cc/seminal fluid
80-90% of those cells live
No less than 75% of those cells motel
Anything less than this leaves cows open Above 8% abnormal leaves cows open

Percent Optimal Breeding Bulls

Age Category	% of Bulls
7.5 to 9 mos	1.5%
9 to 12 mos	0%
12 to 16 mos	18.4%
16 to 14 mos	17.8%
2 to 3 yrs	24.3%
3 to 4 yrs	14.1%
4 to 5 yrs	8.8%
5 to 6 yrs	3.8%
6 to 7 yrs	4.4%
7 to 14 yrs	6.9%

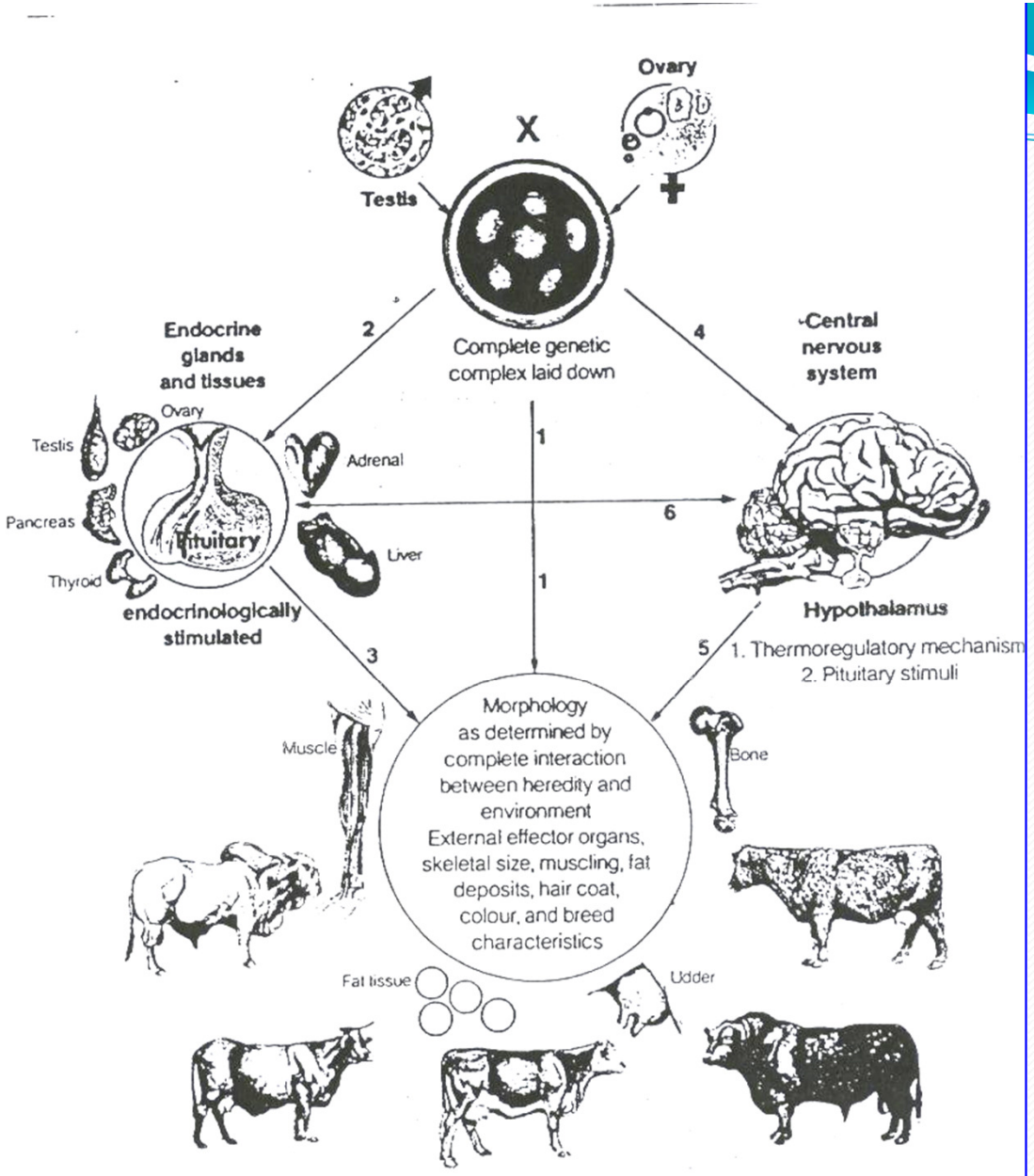
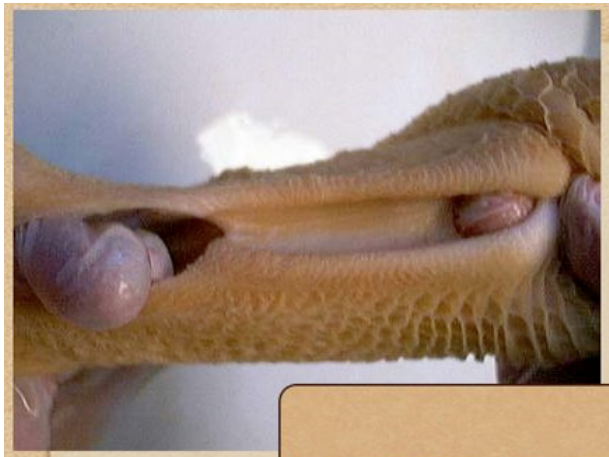


Figure 3.1 The interaction between genes and the phenotype. At the moment of conception the complete genetic potential of the animal is laid down. This determines irrevocably the potential boundaries within which the individual can function, perform or produce during its entire lifetime.

First 3 months of pregnancy seven (7) major glands are developed to the point they dictate how the remainder of the body is formed

Genetics, selection & nutritional & management are the dominating factors in developments of glands & profitability



RUMEN INTERIOR FROM CALF 1115- SHOWS THE ESOPHOGEAL GROOVE THAT BYPASSES

THE RUMEN WHEN A CALF IS FED MILK. THE MILK GOES DIRECTLY TO THE OMASUM FOR

DIGESTION. THE CALF DEVELOPS WELL BUT, IF EXTENDED TOO LONG, THE RUMEN NEVER FULLY DEVELOPS.

RUMEN #1105 INTERIOR EXCELLENT PAPILLI DEVELOPMENT AND HEALTHY DARK COLOR ASSOCIATED WITH PROPER

FEEDING FROM BIRTH TO 12 WEEKS OF AGE. THE DARK COLOR IS FROM INCREASED BLOOD SUPPLY. THIS CALF WILL GROW TO BE PRODUCTIVE IN LATER LIFE.

RUMEN INTERIOR FROM CALF #1112- LITTLE PAPILLI DEVELOPMENT AND

A LACK OF HEALTHY DARK COLORATION. ASSOCIATED FROM LIMITED

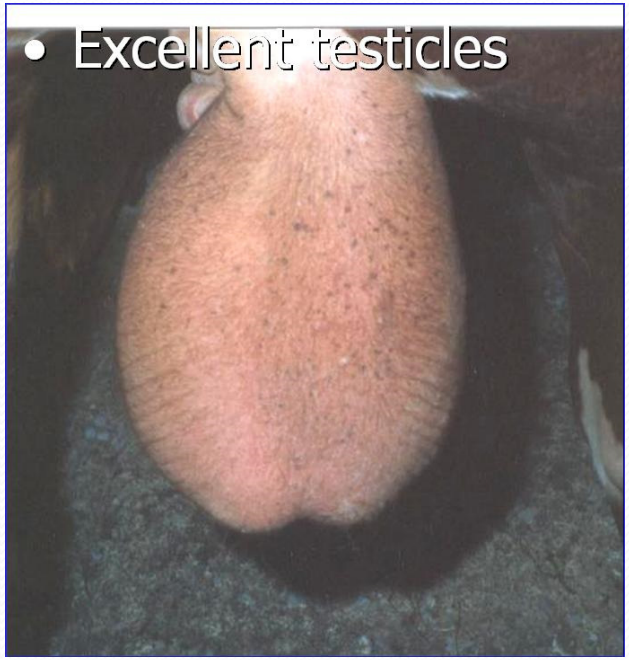
FORAGE AND FEEDING MILK ONLY PAST THE CORRECT AGE.

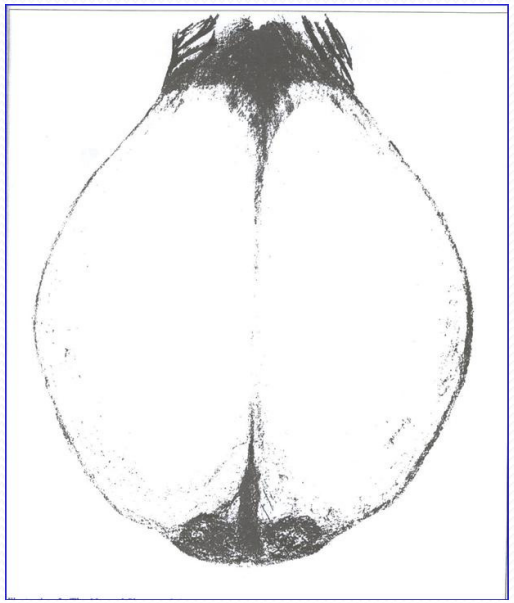
RUMEN FROM CALF #1106 INTERIOR SHOWS VIRTUALLY NO PAPILLI DEVELOPMENT. THE LIGHT COLOR SHOWS

LACK OF VASCULARIZATION. THIS RUMEN WILL BE INEFFICIENT LATER IN LIFE.

Low Quality Semen is Responsible for Most Open Cows

These types of testis & pizzel opening are necessary for reproductive soundness/efficiency {semen quality}, udder development, & herd improvement





Reproduction
Testicle Shape = Testosterone

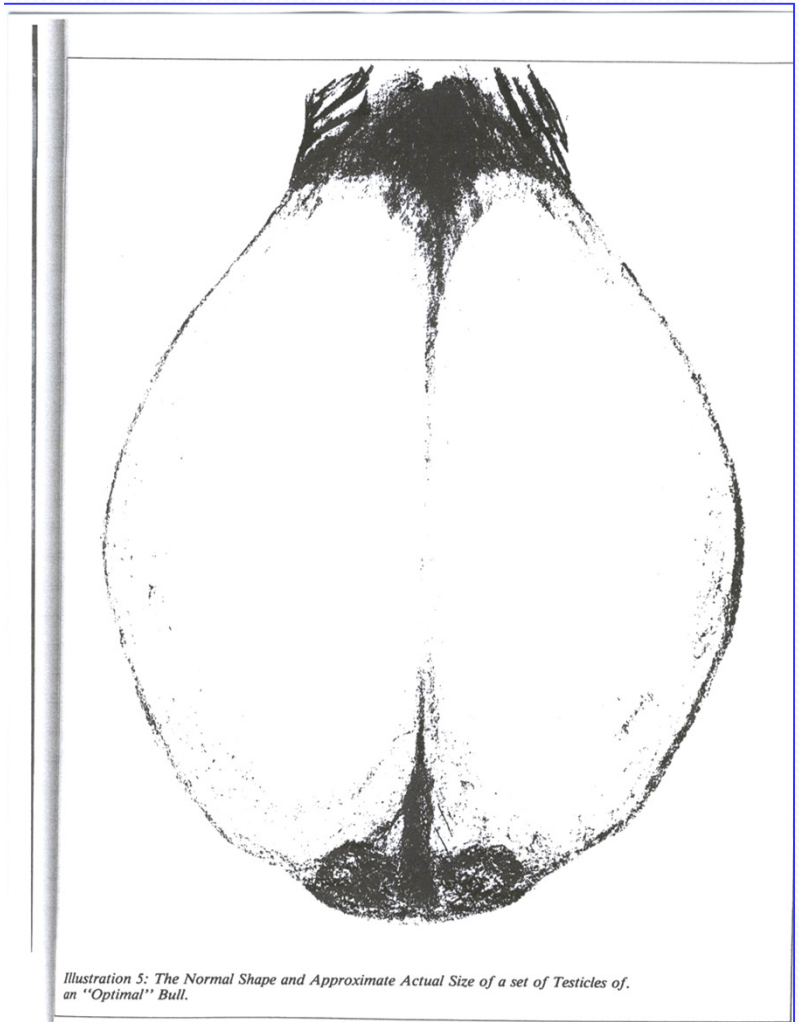
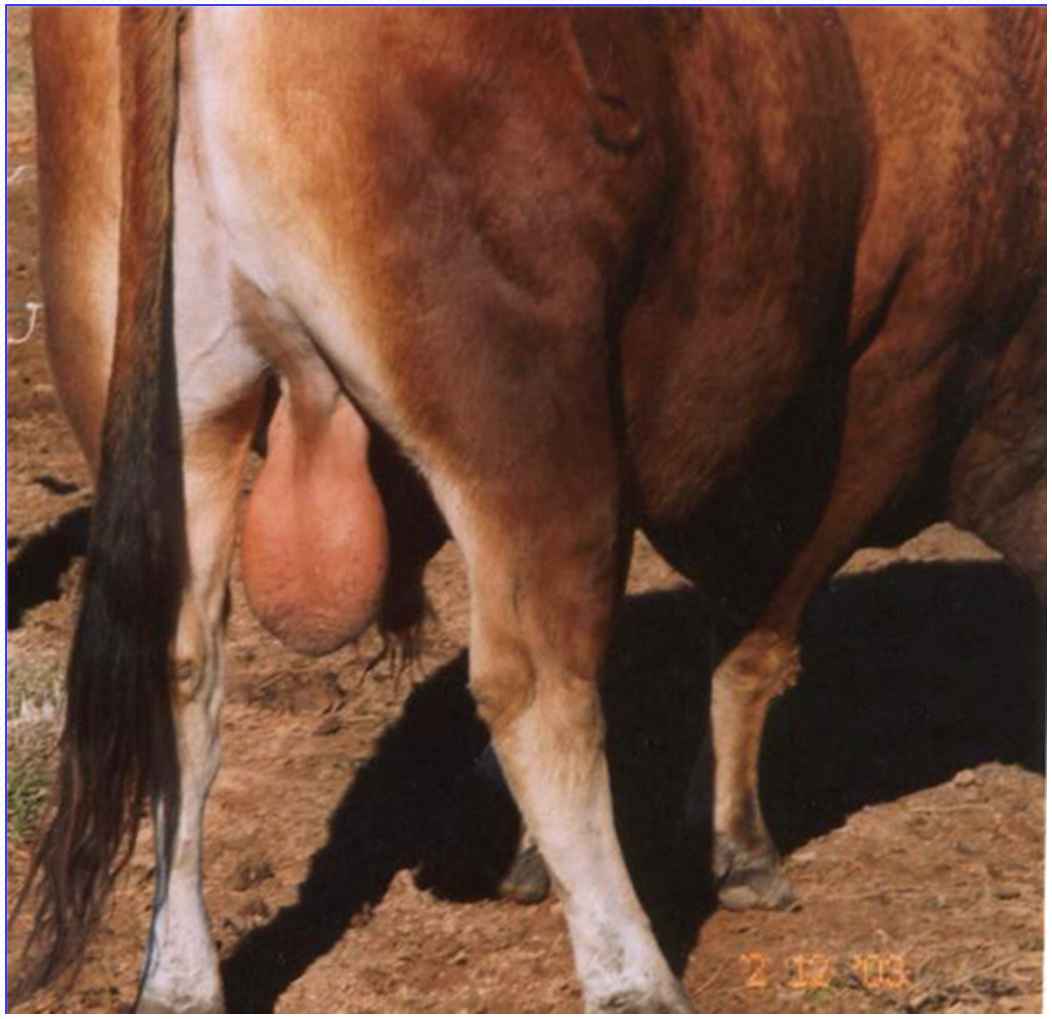
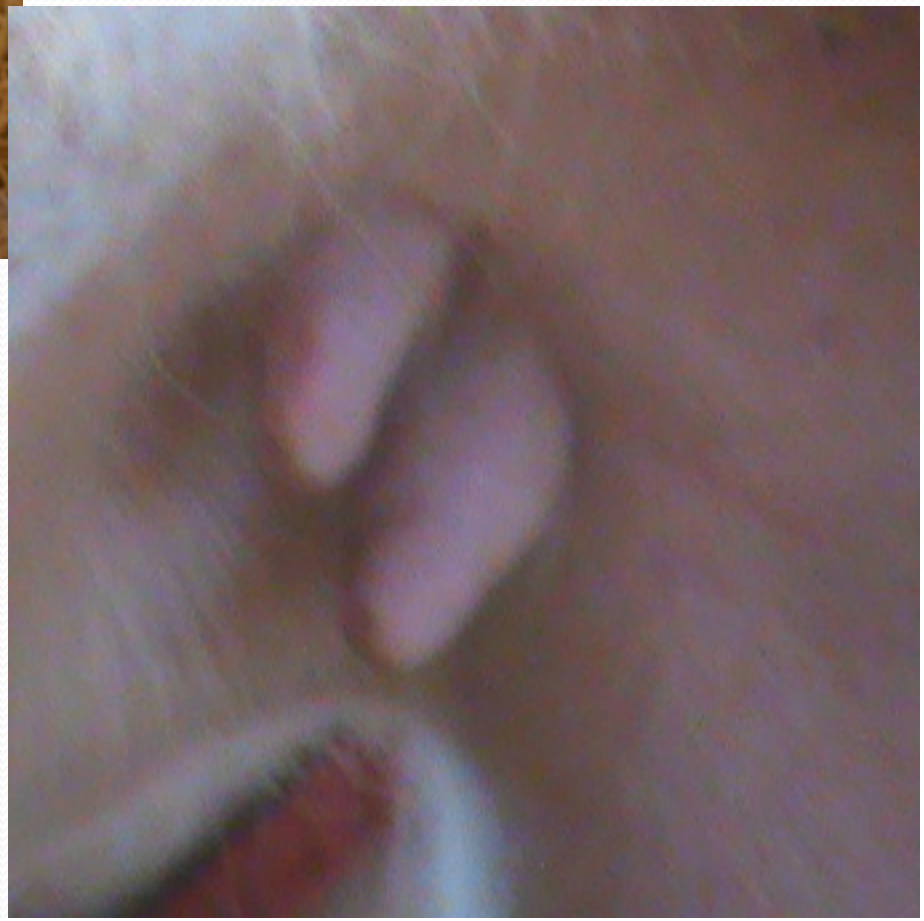


Illustration 5: The Normal Shape and Approximate Actual Size of a set of Testicles of. an "Optimal" Bull.





Reproduction & Production

- Responsibility of the bull

1. Bull responsible for impregnating 95% of 70 cow, 45 day breeding season or 67 pregnancies = he must have **perfect working tools**
2. This requires the bull to have BILLIONS of sperm cells, 90% live & minimum of 80% motle, no more than 5% abnormal cells
3. This bull has shoulders 7-8 inches wider than rump length = Linear measuring
4. These bulls will copulate 12-14 times in 24 hours & each cow will maintain that pregnancy

Ultimate & Average Bull Semen Production

- 1.5 to 3 billion cells first ejaculation
  - 10 billion each 24 hours
- Copulates 12-14 times each 24 hours
- 60 to 75 cows with 90-95% preg rate

Average bull in use today

- 800 to 900 million cells first ejaculation
  - 5 billion each 24 hours
- Copulates 6 to 8 times each 24 hours
- 25 cow bull, runs out of testosterone & cells with a 65 to 75% preg rate

5 % of Your Cows are as Good as Any Cows, How can His Bull be Better than Yours

Sound udders & Good Milkers,

Abundant amount of Butter-fat @ 16 ounces a day (16 oz X 300 days = 300#/fat) +protein @ 12 oz/ X 300 days = 200# protein 300 days develops a 800-900# Calf)

Reproduction-Herd-Bull

Profitable Genetics

Femininity is in Rump Area

Breeding, Birthing & Nurturing

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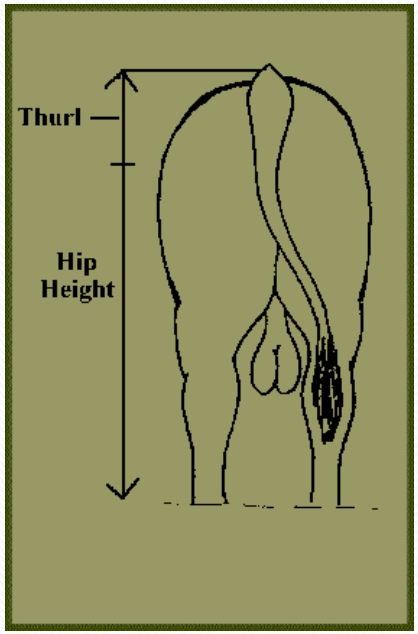
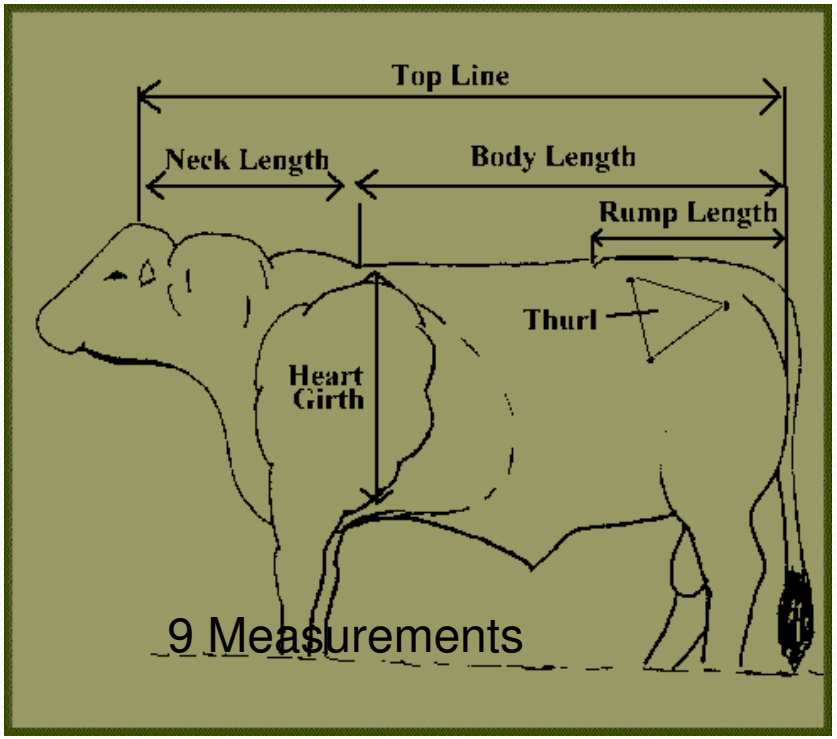
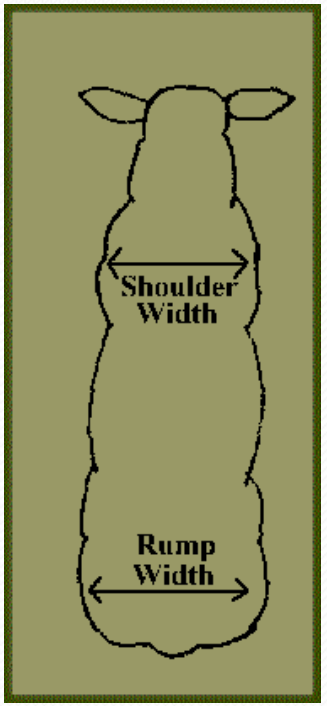
Linear Measurement - Male

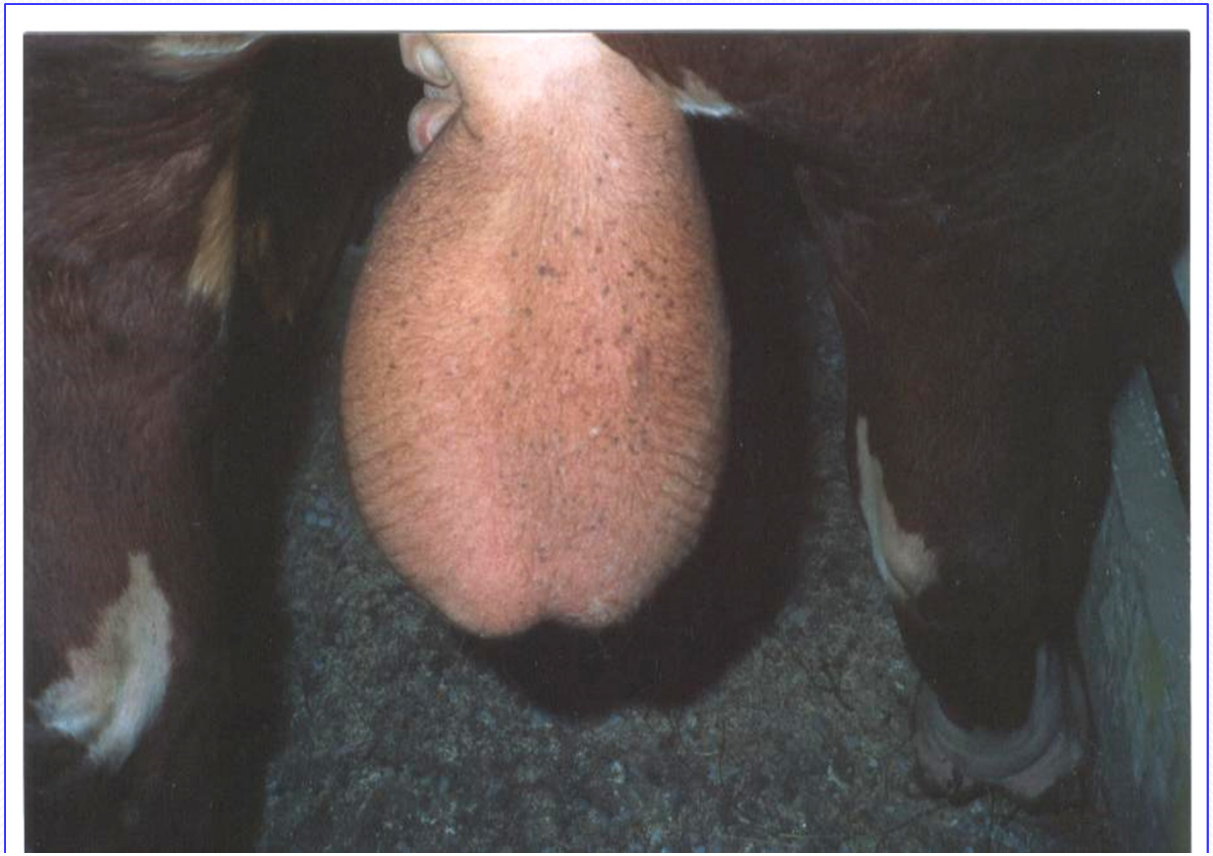
- Measure for accuracy





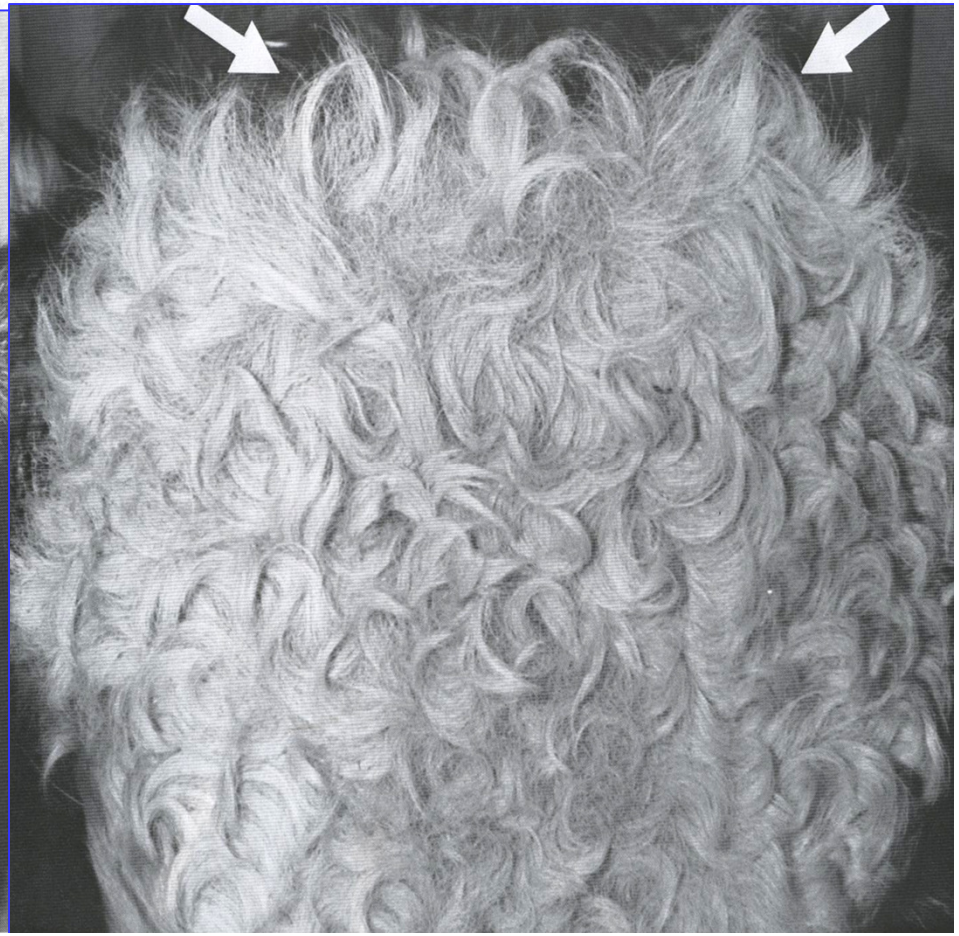


Reproduction Dependant on Shape, Circumference, Length, Volume of Cells



Reproduction-Herd-Bull
Low Testosterone

Reproduction-Herd-Bull
These Bulls are Telling a Story



Reproduction-Herd-Bull
These Bulls are Telling a Story


COME HERE KID, AND I'LL FEED YOUR FLESH TO DA DAWGS!!
WOW, WHAT A TARGET! THERE'S NO WAY I CAN MISS THAT SUCKER!!