

Beef Cattle Selection Handbook



A Basic Guide to Selecting Feeder Cattle, Breeding Heifers, and Bulls

Where to Begin...

What are your goals?

What type of animal will help you achieve these goals?

Age?

Sex?

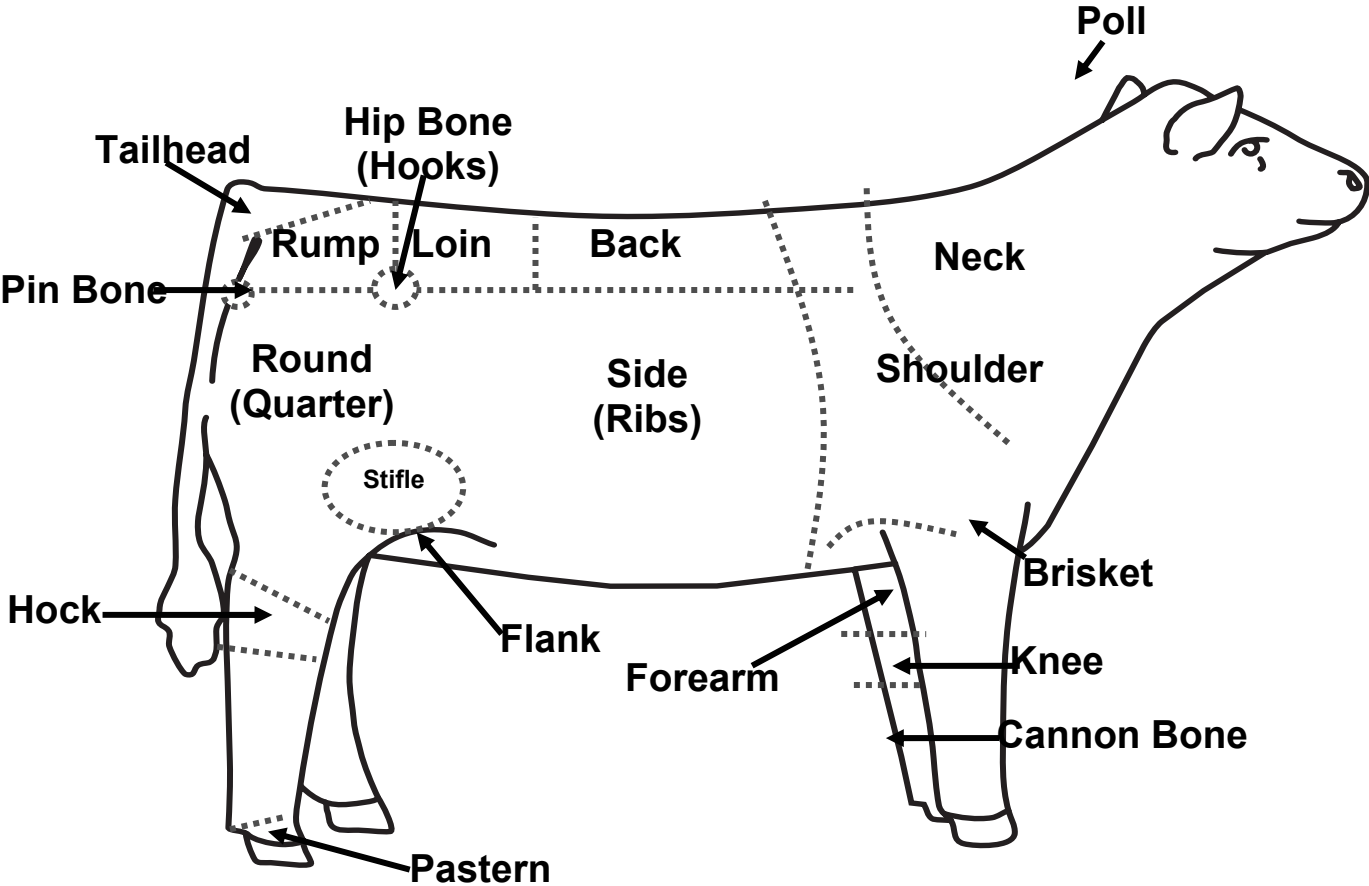
Weight?

Breed(s)?

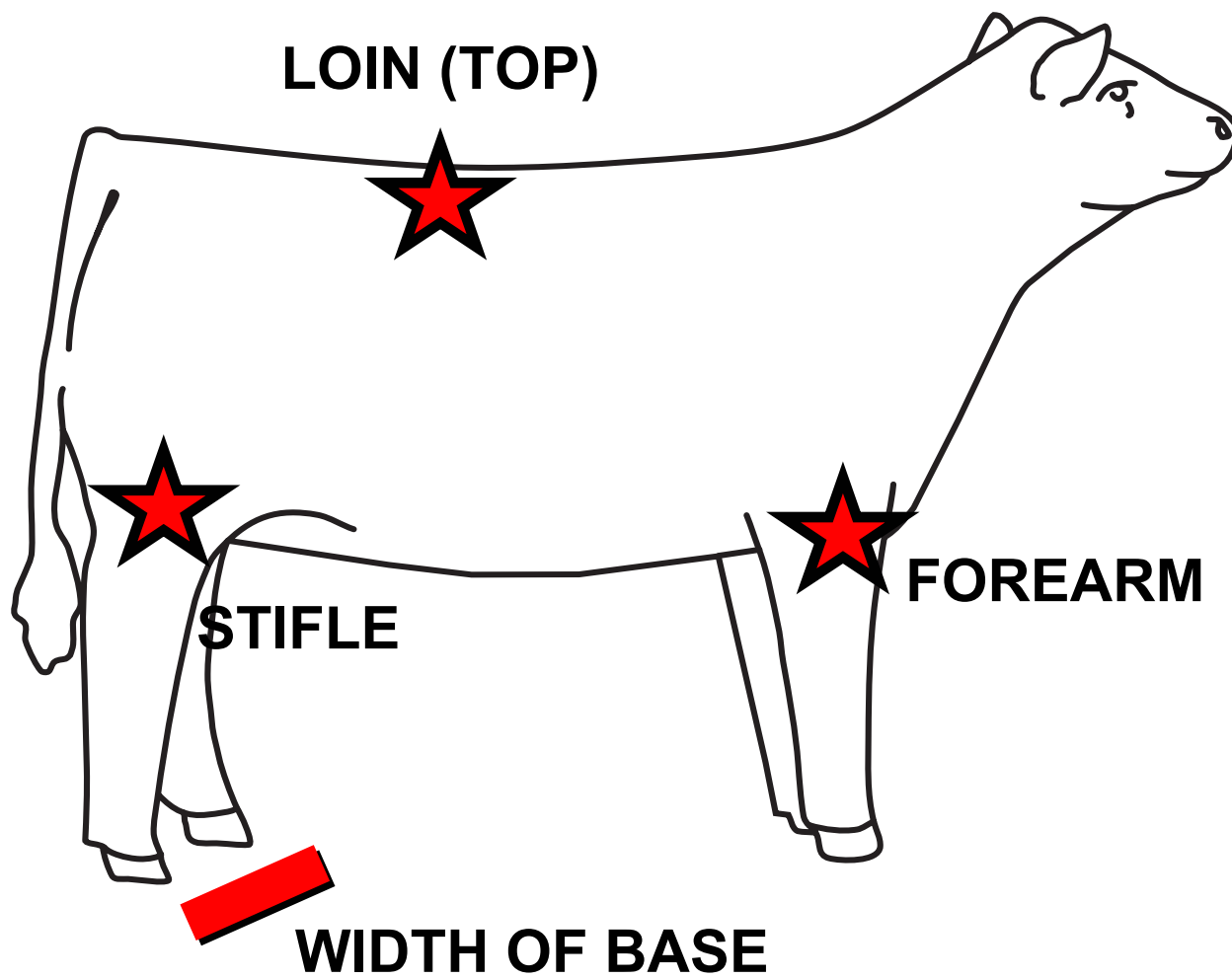
What limitations do you face?

Cattle Evaluation in General

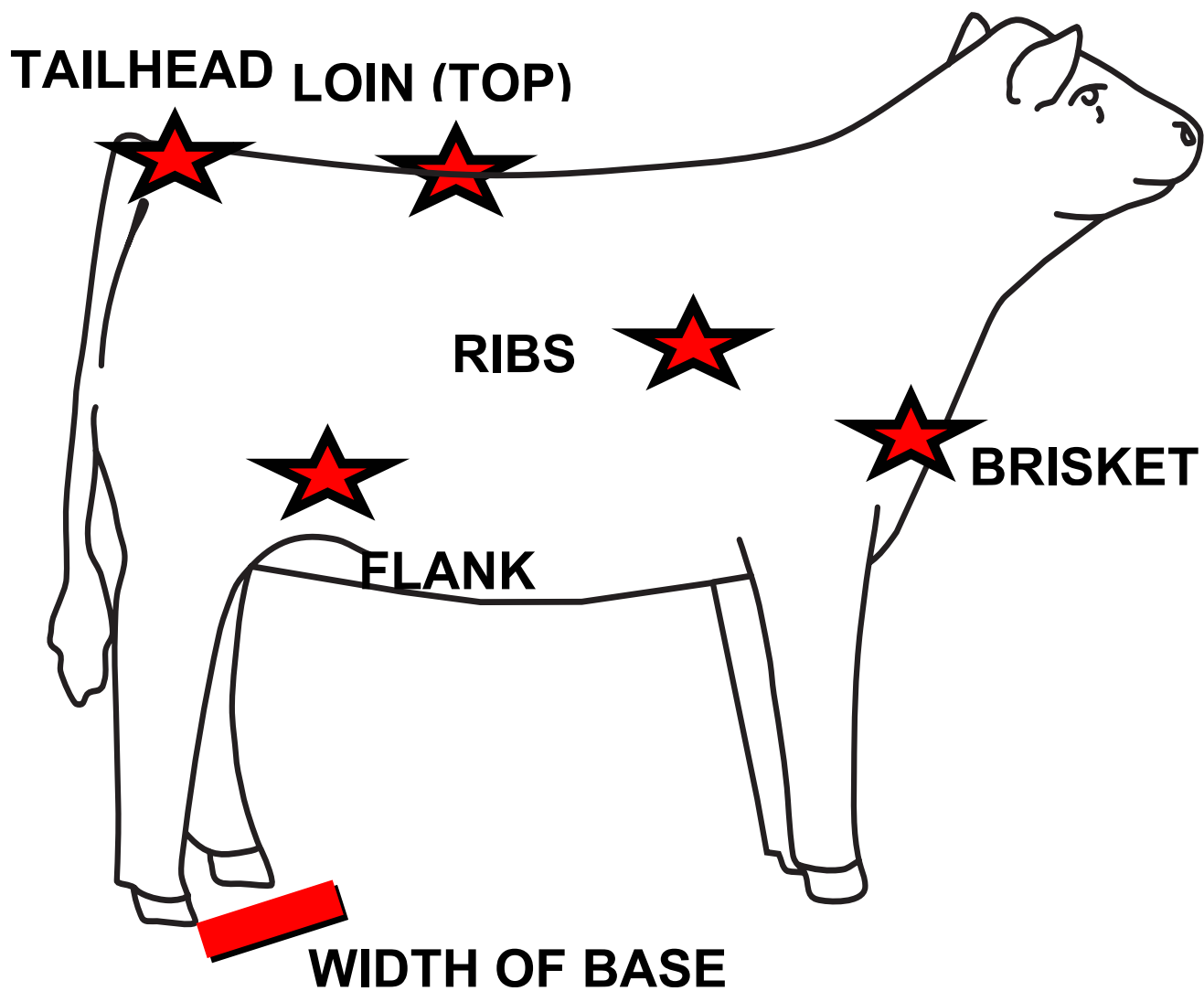
Parts:



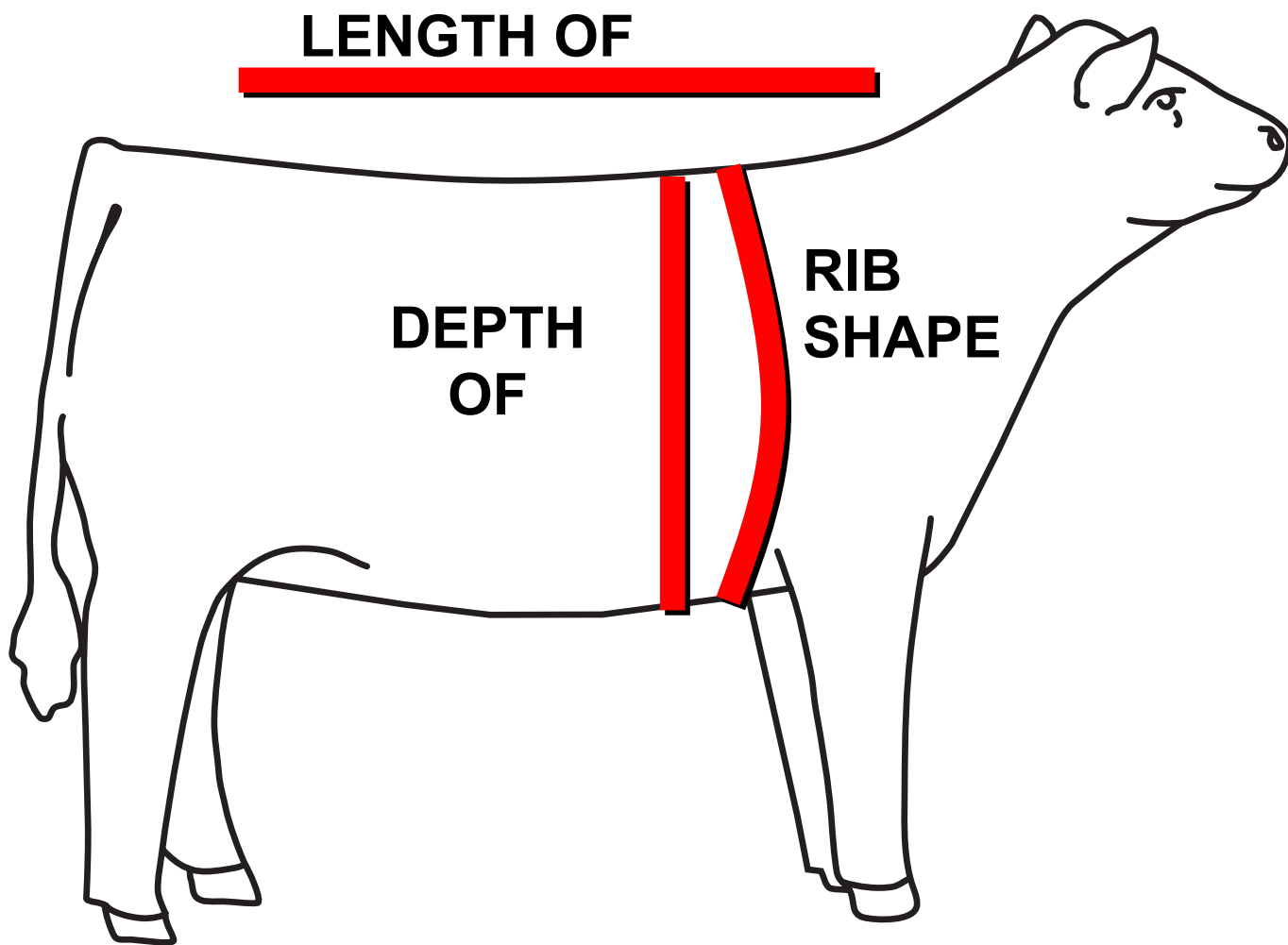
Muscle



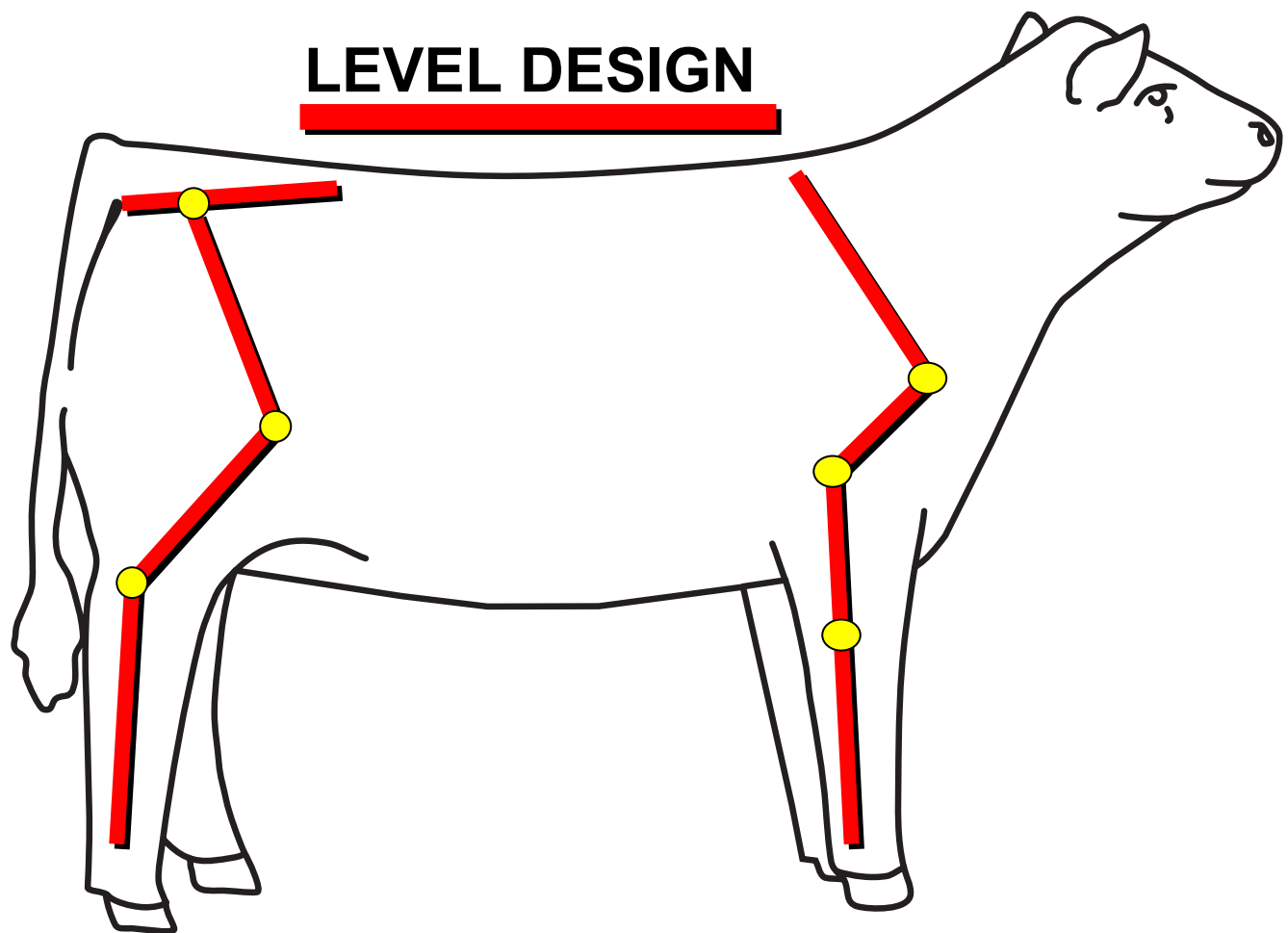
Fat (Condition)



Volume and Capacity



Structural Correctness



- Desirable slope to shoulder and pasterns
- All four legs set “at the corners”
- Toes are pointed forward, hocks are square, not in or bowed out
- The stride is long, smooth, and the front track should be filled by the back track

Evaluating Feeder Cattle

Phenotypic Priorities

Muscle

Condition (fatness vs. trimness)

Capacity and Frame Size

Structural Correctness

Performance Traits

Weight per Day of Age

Feed Efficiency

Evaluating Breeding Heifers

Structural Correctness

Volume and Capacity

Balance and Femininity

Condition and Udder Development

Muscle

EPDs



Evaluating Bulls

Structural Correctness

Muscle

Balance

Capacity and Condition

Testicular Size and Masculinity

EPDs

Expected Progeny Differences

Definition: “the differences in performance expected from the offspring of one individual compared to the offspring of another individual, within the same breed”

Ensminger and Perry, 1997

- Prediction of how the offspring will perform, NOT the individual
- Largest values are not always best: environment and goals determine desirable trait values
- Accuracy is important; heritability is a factor
- Not comparable between breeds, conversions are available
- Utilize breed averages to determine if individual sires are acceptable, or to compare sires of the same breed

Common traits

- BW=Birth Weight
- WW=Weaning Weight
- YW=Yearling Weight
- MA, MM=Milking Ability, Maternal Milk
- TM=Total Maternal
- SC=Scrotal Circumference

Others (not all breeds)

- CE=Calving ease
- GL=Gestation length
- STAY=Stayability
- DOC=Docility
- REA=Rib eye area
- MS, MARB, IMF=Marbling Score, Marbling, Intramuscular fat
- BF, BFT=Backfat, backfat thickness
- HCW=Hot carcass weight

Breed Averages

Current Sires

Angus

EPDs:

BW	WW	YW	MA	SC
2.7	34	64	17	0.14

Red Angus

EPDs:

BW	WW	YW	MA	SC
0.7	28	49	14	

Charolais

EPDs:

BW	WW	YW	MA	SC
1.7	15	25	9	

Gelbvieh

EPDs:

BW	WW	YW	MA	SC
2.0	37	67	19	0.3

Hereford

EPDs:

BW	WW	YW	MA	SC
3.9	35	60	13	0.5

Limousin

EPDs:

BW	WW	YW	MA	SC
1.5	12.8	24	4	0.1

Simmental

EPDs:

BW	WW	YW	MA	SC
2.8	34.3	57.1	5.9	

Practice Evaluations

Angus Heifers with Performance Data

Rank these heifers as replacements in a purebred Angus herd which primarily sells maternally oriented sires to commercial cattlemen as well as other seedstock producer's. Feed and labor are limiting factors on your operation as well as your customer's ranches.



BEPD: +1.3
WEPD: +25.0
YEPD: +40.0
MEPD: +10.1



BEPD: +0.3
WEPD: +19.0
YEPD: +28.0
MEPD: +5.2



BEPD: +3.2
WEPD: +27.0
YEPD: +48.0
MEPD: +7.1



BEPD: +2.6
WEPD: +23.0
YEPD: +38.7
MEPD: +11

Feeder Steers

Your job is to give advice to a local feedlot owner who has just started his business. He has four steers for you to look at, and he has some questions once you have seen the cattle. His goal is to market steers at 1250-1350 pounds, have the steers grade at least high Select, and yield grades 3 or lower. These steers will be sent to slaughter in 70 days. Please answer his questions.



Steer 1 940 pounds



Steer 2 975 pounds



Steer 3 910 pounds



Steer 4 990 pounds

Questions:

Which steer will likely have the largest rib eye area?

Which steer will have the highest numerical yield grade?

Which steer will be the highest cutability?

Which steer is the poorest balanced, least structurally correct?

Which steer do you think will make the most money?

AI Bulls

You currently own 5 purebred Charolais heifers. You now must choose a bull to breed your heifers to, and you've narrowed it down to five. It is up to you to pick out one bull for all heifers that will produce the kind of calves you want. You can use any breed, and you have searched the resources given to you at the end of this packet to find out how to compare across breeds. Your heifers are muscular and structurally correct, but don't have as much capacity as you would like. You've decided to sell the bull calves as show steers in the fall, and the heifers will be kept as replacements. Select the AI bull that you would like to use. All semen units cost the same.

Your average heifer EPDs

BW	WW	YW	MA	SC
3.4	15	30	5	.11



Red Angus

EPDs:

BW	WW	YW	MA	SC
1.2	30	55	10	.01



Simmental

EPDs:

BW	WW	YW	MA	SC
3.7	38	65	7.0	.06



Gelbvieh

EPDs:

BW	WW	YW	MA	SC
1.9	34	55	18	.3



Polled Hereford

EPDs:

BW	WW	YW	MA	SC
5.0	45	78	13	0.5



Angus

EPDs:

BW	WW	YW	MA	SC
1.9	39	81	31	0.39

Keep/Cull Limousin Heifers

You are a rancher in eastern Colorado looking to purchase four replacement females from a purebred limousin operation. These heifers will be bred to an Angus bull. You have had problems with your purebred Angus cattle not being muscular enough, so this is why you chose to bring in a continental breed. All male progeny will be castrated, fed out, and ownership will be retained through the feedlot. These cattle will be sold on a grid that pays a premium for Low Choice or better, YG 1 & 2 carcasses. The top 1/3 of the F1 female progeny will be kept as replacements, the rest will be fed out like the steers. Where you are located, the pastures and feed availability are good, but some years vary, and you predict that you can maintain 1200-pound cows with the feed resources. Labor is adequate at calving. Your goals as a producer are structurally correct, muscular cattle that feed easy and maintain their condition, as well as meeting the target for the carcass grid. Please select four heifers that you feel will meet your goals most adequately.

Note what traits you think are important:

#1



EPDs:

BW	WW	YW	MA	SC
0.3	14	30	8	.2

#2



EPDs:

BW	WW	YW	MA	SC
3.4	25	40	6	.12

#3



EPDs:

BW	WW	YW	MA	SC
2.5	28	49	12	.33

#4



EPDs:

BW	WW	YW	MA	SC
1.2	14	26	6	.2

#5



EPDs:

BW	WW	YW	MA	SC
2.5	18	32	12	.22

#6



EPDs:

BW	WW	YW	MA	SC
1.0	12	22	6	.4

#7



EPDs:

BW	WW	YW	MA	SC
2.0	17	30	3	.2

#8



EPDs:

BW	WW	YW	MA	SC
3.1	22	43	7	.2

Limousin Female Breed Averages

EPDs:

BW	WW	YW	MA	SC
1.2	14	26	6	.2

Keep: ____ - ____ - ____ - ____

Cull: ____ - ____ - ____ - ____

Useful Web Resources

www.beefimprovement.org

www.ca.uky.edu/agripedia/agmania/livestock

www.marc.usda.gov

www.ansci.okstate.edu/breeds/cattle

www.animal.ufl.edu/youth/resources/Evaluation/Teaching/index.htm

www.absglobal.com