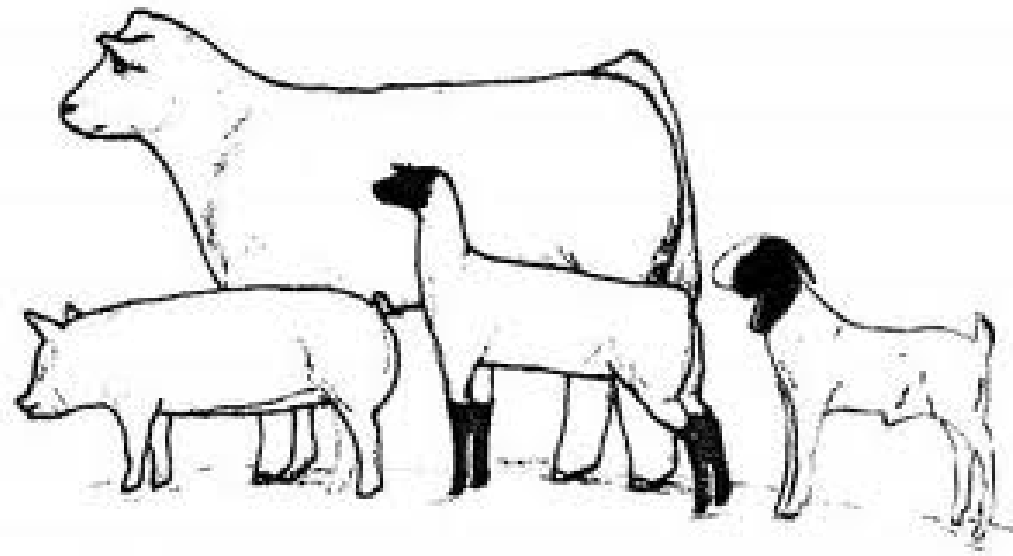


# MU Livestock Judging Manual

Y1000



UNIVERSITY OF MISSOURI  
**M**Extension

# Table of Contents

Introduction	2
Objectives	3
Scoring System	4
Effective Note Taking	6
Oral Reasons	9
Transitional Phrases	12
Reasons Format	13
General Carcass Parameters	17
Performance Data and Expected Progeny Differences	18
Sample Scenarios	20
Judging Cattle	23
Judging Swine	42
Judging Sheep	54
Judging Goats	64

## Introduction

Evaluation of livestock is an exciting and thought provoking experience. The ultimate goal of livestock judging is to compare your perception of an animal against the *IDEAL* and then to contrast your opinion with that of another individual or group of individuals. The idea of the perfect animal is constantly changing. The direction of animal agriculture is driven by a variety of factors. As such, this manual is not meant to cover all possible industry changes, but more importantly is designed to help you gain the knowledge and confidence to recognize and adapt to those changes.

At its basic level livestock judging consists of two primary components: 1) placing a group of animals and 2) orally justifying your decision (reasons). Within each of these areas there are many actions and processes that must happen for an individual to formulate their ideas. This manual is designed to address those steps and processes.

The placing of a class, or comparing the individuals within a class to the ideal, allows an evaluator to make decisions drawing upon their experiences. This portion of livestock judging is often seen as an enjoyable “matching of wits”. It allows a participant to establish priorities and to strategize as to the final placing. The second portion, oral reasons, often conjures up more anxiety. However, for those who are prepared, reasons present an exciting chance to share their thoughts and priorities with an expert, ultimately allowing the expert to evaluate the decision making process.

Beyond the act of competitive livestock judging, your involvement will provide additional benefits. It exposes you to team work, effective communication skills, analytical thinking and aides you in gaining the confidence to defend your decisions. Developing these skills will benefit you in almost every other area of your life, both now and in the future. In addition, you will have the opportunity to meet and interact with the industry leaders of today and those preparing for tomorrow.

It is important to note that the information in this manual is included to assist young livestock evaluators with learning the basics. However, your coach or advisor may prefer that you not utilize some portions of this manual or certain terminology. Livestock judging is driven by opinions and as a result some disagreement is inevitable. In such circumstances you should defer to your coach’s opinions to ensure team consistency and success.

## Objectives

- 1) Be able to understand the scoring system used in a livestock judging contest and to be able to tabulate your individual scores.
- 2) Learn to prepare a logical, coherent set of notes that allow you to present an effective set of oral reasons.
- 3) To present articulate, structured oral reasons.
- 4) Interpretation of individual performance data and EPD.
- 5) Recognition and the ability to identify various parts of a live animal and subsequent portions of a carcass.
- 6) To understand the mechanics of valuation of a market animal.
- 7) Develop the confidence to compete in a structured livestock contest.

## Scoring System

Understanding your placing scores, and how they are determined, is the first step in being able to appreciate how you performed in practice or in a contest. Calculating placing scores is often difficult for the inexperienced livestock judge. It often causes confusion and uncertainty. However, with a little practice and experience it can become second nature.

The first step in scoring a placing card is knowing the “official” placing. This is the ranking that is designated by the individual(s) that is deciding what the correct placing is on that day. In practice, it is usually your coach. There are 50 points available on each class, thus a perfect score (or a ranking that agrees with the official placing) equals 50 points. In addition to deciding the correct order, the officials also determine the “cuts” or the degree of difficulty within the class. A cut is placed between both animals within a pair. A low numerical cut (1 or 2) indicates that the officials thought that was a tough pair. A moderate numerical cut (3 or 4) indicates that the officials thought this was a logical decision. And finally, a large numerical cut (5 or higher) reflects what the officials viewed as a very easy decision. The total of the three cuts cannot exceed 15 points.

Example:	Official Placing	4 – 3 – 2 – 1
	Cuts	2 5 3
	Sample Placing	4 – 2 – 3 – 1

To calculate the score on the Sample Placing you need to use an organized method such as the following:

The sample placed 4 over 2.	This agrees with the official.	Deduct 0.
The sample placed 4 over 3.	This agrees with the official.	Deduct 0.
The sample placed 4 over 1.	This agrees with the official.	Deduct 0.
The sample placed 2 over 3.	This disagrees with the official.	Deduct 5.
The sample placed 2 over 1.	This agrees with the official.	Deduct 0.
The sample placed 3 over 1.	This agrees with the official.	Deduct 0.

The total deduct for this sample placing is 5 points (out of 50), so the placing receives 45 points as a score.

The previous situation reflects a pair switch (the middle pair in this case), which is easy to calculate. However, if the placing differs greatly from the official placing it can get more complicated.

Next is an example that is often referred to as a “simple bust”. This is a circumstance where the participant placed either the first or last animal in a class correctly, but rearranged the other three animals relative to the official placing.

Example:	Official Placing	1 – 2 – 3 – 4
	Cuts	4 2 3
	Sample Placing	1 – 4 – 3 – 2

To calculate the score use the same method as before.

The sample placed 1 over 4.	This agrees with the official.	Deduct 0.
The sample placed 1 over 3.	This agrees with the official.	Deduct 0.
The sample placed 1 over 2.	This agrees with the official.	Deduct 0.
The sample placed 4 over 3.	This disagrees with the official.	Deduct 3.
The sample placed 4 over 2.	This disagrees with the official.	Deduct 5.
The sample placed 3 over 2.	This disagrees with the official.	Deduct 2.

The total deduct for this sample placing is 10 points (out of 50), so the placing receives 40 points as a score.

The following is an example of a situation that is often referred to as a “bust”. This is when the participant’s placing and the official’s placing are in substantial disagreement.

Example:	Official Placing	2 – 3 – 1 – 4
	Cuts	4 2 3
	Sample Placing	4 – 1 – 3 – 2

The sample placed 4 over 1.	This disagrees with the official.	Deduct 3.
The sample placed 4 over 3.	This disagrees with the official.	Deduct 5.
The sample placed 4 over 2.	This disagrees with the official.	Deduct 9.
The sample placed 1 over 3.	This disagrees with the official.	Deduct 2.
The sample placed 1 over 2.	This disagrees with the official.	Deduct 6.
The sample placed 3 over 2.	This disagrees with the official.	Deduct 4.

The total deduct for this sample placing is 29 points (out of 50), so the placing receives 21 points as a score.

## Effective Note Taking

Competitive livestock judging consists of four major steps.

**Information:** Through preparation and practice you must develop a mental image of what is the “ideal” for a particular species, breed, and gender.

**Observation:** Judging requires a sharp mind and a good eye. As a livestock judge you must develop a greater sense of perception. The observations that you make must be accurate and thorough.

**Comparison:** Livestock evaluators must be able to weigh the good and the bad of a given animal and subsequently make decisions on these unbiased, analytical observations. The animal that will eventually work its way to the top of the class will be the one that is the most complete and is the best combination of the desired traits.

**Decision:** The final step involves the actually ranking of the animals within a given class. Many people may have the necessary background and information to compare animals. However, it not only takes the information but also the effort and time to hone and polish the necessary skills and to develop the confidence to make the correct decision and to stand by it.

These categories are primarily addressed with practice. As you practice with your team you begin to gain the information needed and to develop that image of the ideal animal that you are looking for. You also learn to pick up on those things that less trained individuals might overlook. Within the competitive environment of a contest it is important to concentrate on the comparison and decision making areas. To accurately evaluate an individual animal and then compare it to the class one needs to pay close attention to detail. Taking clear and concise notes helps not only in ranking a class, but especially when it is time for oral reasons.

It is important to be prepared to take useful notes. Unless you are gifted with an unusual memory, good note taking is a must on reasons classes. A small notebook is desirable. A stenographer spiral notebook (6” x 8”) is a good size to use. Remember that notes are used to help you visualize the animals in the class. Use your notes to refresh your memory of the animals. Avoid memorizing your notes; you should give reasons from a mental image of the animals rather than memorizing the notes.

The actual note taking style that you adopt is up to your coach. On the following page is an example of a popular style. At the top you should write the name of the class and the class number if provided. Once you decide upon a final placing you will also write this near the top of the page. Below the name of the class the number for each animal is listed and then identifiers (color, gender – if a mixed gender class such as market hogs, horned or polled, frame size, etc.) and primary observations of that individual (light muscled, lean, small framed, attractive, etc.)

Below the area used for identifiers you will divide the page into six boxes. Once you have decided upon a placing you will record the comparisons within each pair in the boxes. You will list the advantages for the higher placing animal on the left side of the page. You will include grants (good points) about the lower placing animal at the top of the box on the right side of the page and below your grants (within the same box) you will list the criticisms (the reasons why that animal places below the individual above it).

### **Note Taking Tips**

When you approach a class, stand far enough away from the animals for a general look. Try and maintain a minimum distance of 25 feet (except for when you are allowed in for close inspection). This will allow you a full unobstructed view of the class. If other students move in too close, just ask your group leader to please move everybody back.

Write down the big things that appear to you first: Size, thickness, volume, etc. Don't over think a class. In most cases keeping it simple will pay off.

Do not spend the entire class time writing. If you do, you will memorize your notes and be unable to recall the animals in the class when you get ready to give your reasons.

Your notes should be brief. Develop a method of shorthand to quicken the note-taking process. Above all, make sure your notes are readable.

Remember, these are your notes. Adapt them to fit your style.

Do not waste time. If you finish a class early, relax, look at the animals and try to remember them. This will enable you to more easily visualize the class for reasons.



Class 1: Market Hogs

1-2-4-3

- |                             |                          |
|-----------------------------|--------------------------|
| 1. Black-belted Gilt        | Lean, Heavy Muscled      |
| 2. White Barrow, erect ears | Large Framed, Big Boned  |
| 3. Red Gilt, down ears      | Light Muscled, Fat       |
| 4. White Barrow, down ears  | Small Framed, Fat, Sound |

1/2	leaner, trimmer middled fuller ham wider based carcass with more % lean	2/1	larger framed later maturing  - more excess trim lacks the cutability
2/4	bigger outlined pounds heavier more production oriented heavier carcass	4/2	soundest of 4  - early maturing 1 of 2 fattest pigs
4/3	heavier muscled structurally correct	3/4	larger framed  - lightest muscled 1 of 2 fattest poorest composition

## Oral Reasons

Presenting reasons is a rare opportunity in life when you have someone's undivided attention for two minutes. It is your task to present a logical, informative, exciting set of reasons that adequately explains your rationale for ranking the class in the manner that you chose.

To accomplish this you must *PRIORITIZE* and *STRATEGIZE* about what was important to you within this class. If a major muscling difference was the determining factor in placing one animal over another, then you wouldn't start that pair out by discussing foot size or length of front end. These may be mentioned within the pair if they apply, but they are secondary factors and thus you should prioritize them accordingly.

Prior to preparing a set of oral reasons there are "rules-of-thumb" that one should understand. Here is a list of these factors that impact your reasons.

### **Descriptive Factors**

Accuracy of statements.

Thoroughness of explanation.

Ability to bring out the important points between pairs of animals.

Diverse vocabulary of livestock terminology.

Use of animal identification, e.g., red barrow.

Use of carcass terms in market classes.

A logical order to your reasons.

Term variation.

Avoid mixing numbers.

# Oral Reasons

## Etiquette Factors

Be prompt. When it is your turn to give a set of reasons, do not keep the official waiting. If you find yourself being rushed, just ask the official to extend your time. He or she may or may not.

Never carry a notebook in your hands during your reasons.

Enter the reason room with an air of confidence but not cockiness.

Look the official squarely in the eye, or at least give that impression. Above all, do not let your eyes wander.

Never exceed two minutes on a set of reasons. This is a rule for most collegiate judging contests.

Do not repeat the placing of the class at the conclusion of your reasons. If you drew an adequate mental image the reasons taker will know the placing.

Do not say "kind of", "better", "animal", "number 1 is" – instead say "1 is".

Do not use "it;" every animal has a gender.

Beware of words ending with "ing." These words tend to be weak: placing, criticizing, faulting. Instead, say "I placed, I fault, I criticized," etc.

# Oral Reasons

## Voice and Presentation Factors

A sincere, emphatic and precise presentation.

An appropriate voice level, which depends on the size of the room.

Clear enunciation.

Voice inflection.

Correct grammar.

Talk in a strong voice, slightly louder than a conversational voice, but do not shout.

Speak with the utmost conviction and sincerity.

Do not let yourself talk too rapidly as the official may not catch everything you say.

Vary your delivery - make your main points impressive and emphatic.

Proper presence, e.g., eye contact, correct posture, no distracting mannerisms.

Do not stand too close to the official; 6 to 9 feet is about right depending on your size and your voice strength.

Stand with your feet spread to about the width of your shoulders. Keep your hands together.

Stand erect. Avoid leaning over too far.

You may gesture slightly with your head; any other body gestures are too distracting to the listener.

## Transitions

There are many words and phrases to use as transitions from one pair to another or one topic to another. Below is a short list to get you started.

When compared to her (his) contemporaries ...

I do not deny

In addition to

Not only

Granted

Shifting focus to

Moving on

I concede

True

Yes

Admittedly

I recognize

Now I realize

But, nonetheless

However

Nevertheless

But even so

## Reasons Format

The ability to give effective reasons is an important quality for a good livestock judge. Many factors influence the effectiveness of your reasons. However, unless reasons are presented in a manner that is pleasant to hear and clear and easy to follow, the value of accuracy is largely lost because much that is said does not "get through" to the listener.

By following the format presented in this manual you can organize your reasons to cover all the points that were found in the class as well as keep the reasons short enough to remain in the two-minute time limit.

The reasons format coincides with the note taking style discussed earlier. Each pair is broken into 4 parts: 1) the general or transitional statement that lays forth the logic within the pair, 2) the reinforcements, or positives about the pair winner, that back up the general statement, 3) grants, or the positive points, associated with the lower placing animal, and 4) the criticisms and justifications for placing that animal in that position. This format allows you to talk about the pairs in a logical order, which makes giving the reasons easier as well as making them more enjoyable to listen to.

The following two pages present a basic outline for a sample set of market steer reasons. You will also notice sample sets of reasons later in this manual. Some of them follow this format closely, whereas, others are modified versions of this format. These are advanced sets of reasons that are included as aides for you. Do not allow the complexity to overwhelm you. With practice and persistence you can give reasons at a similar level.

# Sample Market Steer Reasons

## Introduction

**Class name and placing:** (Example: "I placed the market steers 1234.")

**Opening statement:** Analyze the class, top or bottom individual, or the top pair. (Example: "The 1 steer separates himself from the rest of the class, as he is the most complete, most market ready steer of the four.")

**Criticism of top individual:** Depends upon relevance - may be omitted. (Example: "Admittedly, if I could improve my class winner I would make him a longer patterned, more extended steer, however he still dominates this class.")

## Top pair

**General statement:** The most important factors for placing the pair this way. (Example: "In my top pair of heavier muscled, red steers, I placed 1 over 2 because he is thicker made and more adequate in his finish.")

**Reinforcements:** Go into more detail to back up the general statement. (Example: "1 is a wider chested, stouter topped steer that is more expressive through his quarter. In addition, he is more optimum in his degree of finish over both his fore and rear rib and down into his flank. He should go to the rail with the heaviest muscled carcass most apt to grade choice.")

**Grants:** Grant the biggest assets first. (Example: "I realize that 2 is a trimmer steer and should display a carcass with a superior numerical yield grade.")

**Criticisms:** List the primary reasons for the 2<sup>nd</sup> place individual to be in that position. (Example: "However, his cutability works to his disadvantage as he is less likely to receive a choice stamp.")

## Middle pair

**General statement:** "Even so, in a logical intermediate pair, I placed the Charolais appearing steer over 3 as he is a more desirable combination of muscling and growth performance."

**Reinforcements:** "2 is a wider based steer that shows more natural muscle volume down his top, is fuller in his stifle and carries his muscling lower into his quarter. In addition, he is a pounds heavier steer that should go to the rail with more total pounds of product."

**Grants:** "True 3 is more structurally correct than 2. He shows more flex to his hock and strides out longer off both ends."

**Criticisms:** "But, he is one of the pair of greener, lower performing steers and I liked him third."

## Bottom pair

**General statement:** "Now, in a tight final pair of steers who both need additional time on feed, I opted for the skeletal integrity and correctness of 3 over 4."

**Reinforcements:** "3 is a more angular, freer moving steer that better fills his track. He is more correct in his lines and is the nicest balanced, most attractive steer of the four. In addition, he is a more powerfully constructed, bigger footed, more production oriented steer."

**Grants:** "I concede that the baldy is a larger framed steer."

**Criticisms:** "However, this coupled with the fact that he is the lightest muscled, narrowest chested, greenest steer leads me to view him as the least marketable of the class and I placed him last."



## Introductory Guide to Reasons Format

I placed the       (class name)             (the placing order)      .

I chose to start the class with the pair of       (positives about top pair)      , however, the       (positive about top individual)       of       (# of class winner)       lead me to place him/her over       (second animal)       in my top pair.

      (class winner)       is a       (positive terms about top individual)      . In addition, he/she is       (positives comparing class winner to second place animal)       than       (second animal)      . I admit that       (second animal)       is       (grants for second over class winner)      , but he/she is       (negatives about second animal)       and I left him/her second.

However, in my intermediate pair the       (advantages of second animal)       of       (second animal)       left him/her over       (third animal)      . He/She is       (positives over the third place animal)       than       (third animal)      . Furthermore, he/she is       (positives of second animal)      . True,       (third animal)       is       (grants of third animal)      , but nonetheless he/she is       (negatives of third animal)       and I liked him/her third.

Even so, in my final pair I chose to place       (third animal)       over       (fourth animal)      . He/she is       (positives of third animal)      . At the same time he/she is       (more positives about third animal)      . I concede that       (fourth animal)       is       (grants for fourth animal)      , but this does not compensate for the fact that he/she is       (negatives of fourth animal)       and he/she goes last.

## **Carcass Parameters**

### **Contemporary Steer Ranges**

Live Weight	1100 – 1350 lbs.
Dressing Percentage	60 – 65%
Carcass Weight	650 – 850 lbs.
Ribeye Area	11.0 – 15.0 sq. in.
12 <sup>th</sup> Rib Backfat	0.20 – 0.60 in.

### **Contemporary Market Hog Ranges**

Live Weight	240 – 290 lbs.
Dressing Percentage	70 – 75%
Carcass Weight	175 – 217 lbs.
Loin Eye Area	5.75 – 9.0 sq. in.
10 <sup>th</sup> Rib Backfat	0.50 – 1.0 in.
Percent Muscle (Lean)	50 – 57%

### **Contemporary Market Lamb Ranges**

Live Weight	110 – 150 lbs.
Dressing Percentage	50 – 55%
Carcass Weight	55 – 80 lbs.
Loin Eye Area	2.0 – 4.0 sq. in.
12 <sup>th</sup> Rib Backfat	0.10 – 0.25 in.

### **Contemporary Market Goat Ranges (exhibition caliber goats)**

Live Weight	65 - 100 lbs.
Dressing Percentage	45 – 55%
Carcass Weight	35 – 60 lbs.
Loin Eye Area	1.5 – 3.0 sq. in.
12 <sup>th</sup> Rib Backfat	0.05 - 0.30 in.

## Performance Data and Expected Progeny Differences

It is becoming quite common to be presented actual performance data or Expected Progeny Differences (EPD) on contest classes. Performance data can consist of anything that can actually be measured or recorded about an individual animal, however, it typically refers to ages, actual weights, ultrasound measurements, etc. EPD are a more complex manner which to understand the genetic makeup of an animal and thus what they may pass on to their offspring.

EPD are a more useful tool than actual data and are very popular in industry. It is important to remember that EPD are used for within breed comparisons (Example: EPD for an Angus female cannot be compared to EPD on a Hereford female). In sheep, you will note that EPD are often referred to as Flock Expected Progeny Differences (FEPD). They are used for within flock comparisons only. These genetic indicators are becoming more and more prevalent. To measure the reliability of EPD, values referred to as *Accuracies* are used to indicate the level of certainty with a given EPD. Accuracies range from zero to one. The closer the accuracy is to one the more reliable the EPD. While the study of genetics is an exciting, rapidly changing field, this manual is not designed to teach genetics, and as such, you will require additional instruction from other sources to help you develop sufficient understanding.

The use of data and/or EPD, which livestock evaluators commonly refer to as “*numbers*”, more accurately reflects the selection process that takes place in a production setting. In conjunction with this information it is also important to note that you will typically receive a scenario describing the management environment and the goals of the operation. The scenario will help guide your selection preferences and help you determine your priorities for the class.

On the following pages you will find a list of commonly used EPD and types of Performance Data that you may want to learn more about from other sources. In addition, a few sample scenarios with “*numbers*” are presented so that you can become acquainted with this format.

## Sample EPD and Data

### Beef

Birth Weight

Calving Ease

Weaning Weight

Milk

Total Maternal

Yearling Weight

Scrotal Circumference

Gestation Length

Stayability

Docility

Ribeye Area

12<sup>th</sup> Rib Backfat Thickness

Marbling or Intramuscular Fat %

Percent Retail Product

Carcass Weight

Numerous Indexes that vary by breed

### Swine

Number Born Alive

Litter Weight

Number Weaned

Pounds Weaned

Days to 250 lbs.

10<sup>th</sup> Rib Backfat

Loin Eye Area

Sow Productivity Index

Maternal Line Index

Terminal Line Index

### Sheep

Birth Type

Rearing Type

Percent Lamb Crop

60 Day Weight

120 Day Weight

## Sample Class Scenarios and EPD/Data

### Sample 1: Performance Yorkshire Gilts

These gilts are being selected as replacements for an operation in which they will be mated to heavy muscled, compositionally superior Hampshire boars. The upper end of the resulting blue butt progeny will be marketed as club pigs and replacement females to youth exhibitors throughout Missouri. The remaining offspring will be fed to market weight and sold on a value based grid.

ID	BF EPD	Days EPD	NBA EPD	LWT EPD	TLI	MLI
1	+ .01	+ 3.0	+ .10	+ 1.1	103	104
2	- .03	- 4.2	+ .20	+ 4.9	123	115
3	- .02	- 3.1	+ .30	+ 5.0	119	117
4	- .01	- 3.8	+ .22	+ 4.4	118	114

### Discussion of Sample 1

This scenario gives you a variety of information. You are first told that the gilts will be mated to boars that will provide substantial muscle and growth. It also informs you that exhibition pigs are extremely important in this operation. Thus, you hope to find a gilt that possesses the desired pattern and eye appeal that is currently popular in the showing. You may even give up a little muscle and growth to get this kind of female since the boars will offer that. However, we seldom intentionally select animals that go backward in terms of performance or composition. The scenario also tells you that you need pigs that can perform efficiently. Since you will market replacement females skeletal durability and longevity as a brood sow are a must. With terminal progeny being sold on a grid you can infer that percent lean and meat quality are prominent concerns as well. Overall, the scenario for the Yorkshire gilts calls for a very complete, fault free gilt.

When viewing the EPD and the two Indexes you see numerous differences. *Remember, you can't judge just off of the paper.* You have to balance physical characteristics and the numbers to decide which individual will best fill the needs. Another important point to make is that TLI (Terminal Line Index) and MLI (Maternal Line Index) already take into account the EPD information. As a result TLI and MLI are the most important columns in this set of data.

## Sample Class Scenarios and EPD/Data

### Sample 2: Performance Simmental Heifers

These heifers are being considered as replacements for a highly regarded seedstock operation that markets breeding cattle throughout the country. The program's primary objective is to produce cattle with cutting edge genetics while still maintaining fleshing ability, moderation of frame, and skeletal correctness. The primary marketing avenues are national and regional shows and sales along with select performance testing programs. Feed resources and labor are moderate.

ID	Birthdate	BW EPD	WW EPD	YW EPD	Milk EPD
1	3-12-2010	2.1	28.0	54.4	6.3
2	4-13-2010	2.7	43.4	67.2	7.8
3	4-29-2010	0.2	33.0	60.0	5.1
4	5-12-2010	1.1	50.8	73.1	7.1
	Breed Avg.	0.9	32.2	58.2	3.8

### Discussion of Sample 2

This scenario states that you are working with an elite seedstock producer. That should tell you that the operation is looking for high quality cattle. They want superior numbers without giving up maternal traits. They market cattle through both upper level shows and sales (need eye appealing, attractive heifers) and through performance programs (need very good numbers.) The scenario also informs you that the producer has feed and labor that are likely adequate except in extreme circumstances.

Along with the EPD you are presented with, the birth date of the individual heifers is presented. This means you can't automatically assume that the youngest heifer has performed the worst if she is the littlest or vice versa for the oldest, biggest heifer. Also you are presented with breed averages. This allows you to not only compare the four heifers, but to also compare them to the average Simmental female.

## Sample Class Scenarios and EPD/Data

### Sample 3: Dorset Yearling Ewes

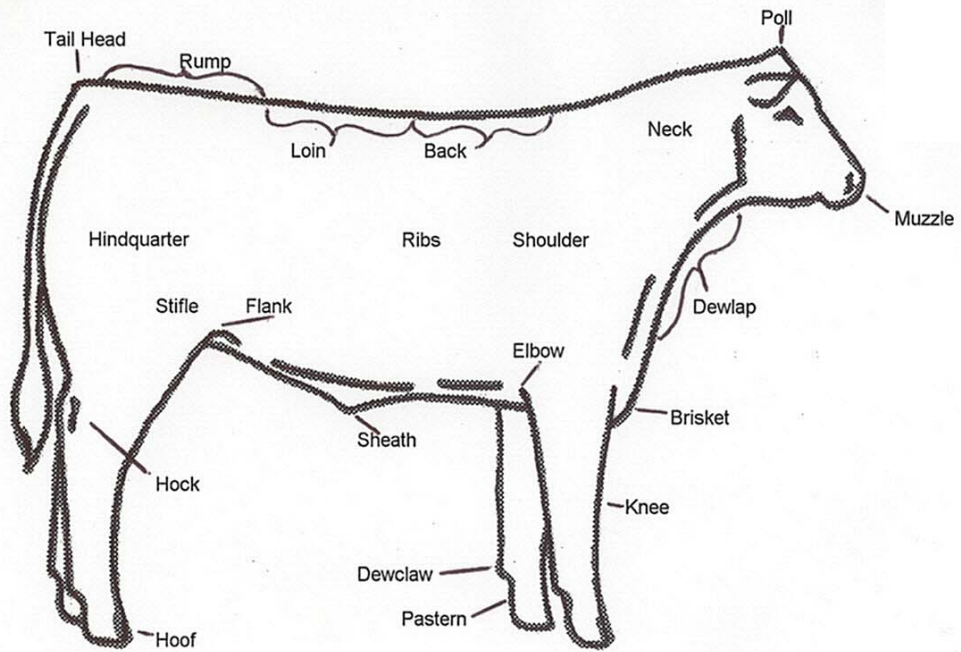
These ewes are being selected as replacement females for a purebred flock that emphasizes structural correctness, eye appeal and longevity. Rank these females as you would select them as replacements for this operation.

ID	Birth Date	Birth Type	Rearing Type
1	2/01/02	Single	Single
2	2/15/02	Twin	Twin
3	2/07/02	Twin	Single
4	2/15/02	Twin	Twin

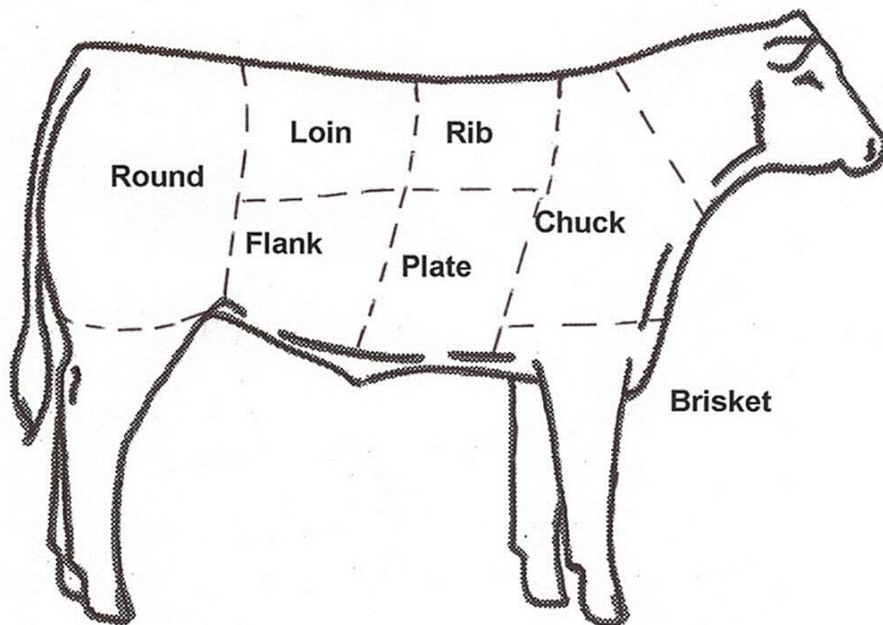
### Discussion of Sample 3

Often times performance classes provide minimal additional information. Even so, this data can be just as important. This scenario tells you that you want well rounded, complete brood ewe prospects. The performance data provided indicates that the ewes are close in terms of age, but there are differences in the maternal characteristics of the mothers of the ewes. Most flocks strive for ewes that produce twins, thus there is an advantage for the individuals that were both born and raised as twins. Note that ewes 2 and 4 have the same birth dates, birth types, and rearing types. This doesn't necessarily mean they are siblings, but it is a possibility and a reasons taker may ask you a question about that.

**Figure 1**



**Body Parts of a Beef Animal**



**Carcass Components of a Market Steer**



## Figure 2: Leg Positions

### Front View



Correct



Bowlegged



Knock-kneed



Splayfooted  
(toed out)



Pigeon-toed  
(toed in)

### Rear View



Correct



Bowlegged



Cow-hocked

### Side View Front Legs



Correct



Buck-kneed



Calf-kneed

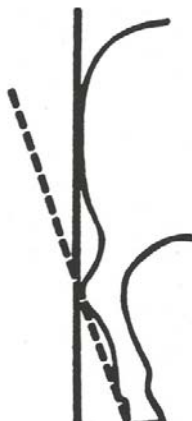


Weak pasterns

### Side View Rear Legs



Correct



Sickle-hocked



Post-legged

# Cattle

## Overview

The initial step in appreciating beef cattle is familiarizing yourself with the major body parts. It is also important to have an understanding of the primary carcass components of terminal cattle (market steers and market heifers). Once you know the regions of the body you can begin to develop a mental picture of the ideal beef animal. It is important to realize that there is no single “ideal” animal. Different production practices and different marketing goals call for varying types of cattle, thus what may be the ideal fit in one operation may not work in another.

Cattle are selected on a variety of traits. Structural soundness is a fundamentally important trait. Market cattle require a far greater number of days to harvest than either market swine or market lambs. As a result of this additional time, soundness concerns have the potential to become a greater problem if they arise. Breeding cattle also travel longer distances than their counterparts in the other two species and they tend to remain in the herd longer as well. Again, because of the amount of movement and the time they are in operation, skeletal correctness is a must. Since they are produced to efficiently produce food, it is apparent that compositional traits (muscle and fat) are quite important. And because of the duration that cows are in the herd, those factors that affect a cow’s longevity become primary concerns.

Frame sizes, and the resulting implications, are often difficult for novice judges to understand. It is easy enough to see which animal is bigger and which is smaller, it is more challenging to determine which animal is apt to be larger or smaller when reaching maturity. Age is very important when trying to interpret frame size. Unless age is given, in a contest setting you are to consider each animal the same age. You must also consider the animal’s potential for future growth by looking at the length of the cannon bone, the length of the face, and the length of the tail. Environment plays a large role in the importance of frame size. If feed resources are plentiful and there is sufficient labor to monitor the herd then large framed cattle may have an advantage over smaller cattle because of their perceived ability to gain. However, if feed resources are moderate or limited, then cattle that require less supplementation are needed. Thus, smaller or moderate sized cattle are often more desirable.

## Bulls

No animal has a greater impact on a beef herd than the sire. Whether using Artificial Insemination or natural service, the decision to select a bull is never made lightly. Understanding the selection process for a sire is of the utmost importance for a livestock evaluator. No single bull fits all operations. The type of sire necessary is determined by many factors; amount of feed resources, makeup of the cow herd, marketing strategies for the offspring, etc. As a result, different priorities rise to the top, however, the following factors are typically considered when evaluating bulls.

As in most cases, structural correctness is a primary concern. If a bull is physically unable to service cows then any benefits he offers become worthless because he cannot pass them along to his offspring. Skeletal soundness is not the same as balance and eye appeal. These often get confused. While straightness of lines and being correctly proportioned are often associated with soundness, they do not always go together. All too often, cattle that are very straight lined and attractive are stiff jointed and as a result are not as flexible and mobile as would be ideal. So it is important to be able to separate the things we want (eye appeal and balance) with what we must have (soundness). A bull needs to have slight angle to his hock and pastern (refer to picture on page 24) to allow sound movement. The shoulder should also have the necessary slope and flexibility to facilitate mobility. The ability of a beef animal to “fill its track” is often used as a means to determine the flexibility of the animal. If a bull is able to set his rear foot in the track made by his front foot then he is viewed as quite flexible and mobile.

Not only does a bull have to be skeletally capable of doing his work he has to be reproductively sound. Semen quantity and quality can be measured and are the best indicators, however, in most settings this isn't immediately available and a livestock evaluator must use others means to predict his ability to reproduce. Scrotal circumference is easy to view and is the most common manner of estimating reproductive maturity. A bull should have a minimum scrotal circumference of 32 cm at a year of age. Different breeds mature at different rates so there will be some slight variation in this minimum between British, Continental, and Brahman breeds.

## **Bulls, continued**

After you have established the apparent ability of a bull to successfully breed females, different factors take precedence, depending upon the operation. If you are hoping to produce replacement females you will be looking for sires that will pass along greater durability and longevity. This would cause you to emphasize fleshing ability, volume, and genetics for milk production. However, if the production situation is totally terminal (all offspring will be harvested) then the primary concerns are muscle and growth performance.

Frame size is also very dependant on the environment and management program. Frame size is measured at the hip and is then adjusted for the age of the individual. In the majority of today's production systems frame scores ranging from 6 to 7 are preferred.

EPD are extremely important when evaluating a potential herd bull. Your emphasis depends upon the scenario given with the class, but generally, you will look for the most "balanced, complete" bull. Typically, that is the bull that doesn't have a major problem associated with his EPD; however, it may not always be the bull with the most outstanding numbers in a particular area.

## **Bull Terminology**

### **Muscle & Volume – positive**

- Wider chested, wider based, wider tracking
- More massive, More masculine, more functional,
- Powerfully constructed, rugged designed
- Heavier Muscled, stouter hipped
- More natural thickness down his top and through his hip and quarter
- Wider from stifle to stifle, more width through the center of his quarter
- Bigger volumed, boulder sprung, bigger ribbed
- Deeper bodied, deeper chested
- More uniform in his body depth from rib to flank

### **Muscle & Volume – negative**

- Narrow chested, narrow based, narrow tracking
- Light muscled, flat quartered
- Flat ribbed, tight flanked, shallow bodied
- Frail made, frail constructed

### **Balance & Correctness – positive**

- Straighter lined, nicer balanced
- Leveler designed, leveler hipped, leveler from hooks to pins
- Stronger topped
- Deeper heeled, bigger footed
- Nicer profiling, more attractive
- Longer striding, more fluid on the move, better fills his track
- More flexibility, more ground consuming stride, truer moving
- More correct angle to his shoulder, correct slope to his shoulder
- Freer moving, sounder structured

### **Balance & Correctness – negative**

- Easy topped, weak topped, breaks behind his shoulders
- Steep hipped
- Short bodied, short coupled
- Shallow heeled, fine boned
- Straight hocked, short striding, restricted in his movement
- Straight shoulder, straight fronted
- Cow hocked, sickled hocked
- Poorly balanced, shallow flanked
- Short necked, course shouldered, open shouldered, bold shouldered
- Splayed footed, turned out on front feet
- Ill structured

## **Bull Terminology, continued**

### **Scrotal Development – positive**

- Larger testicles
- Greater scrotal development
- More distended scrotum
- Straighter, more symmetrical

### **Scrotal Development – negative**

- Smaller testicles
- Less testicular development
- Less distended scrotum
- Twisted scrotum, asymmetrical scrotum

### **Condition – positive**

- More functional
- Greater longevity, easier keeping, easier fleshing
- Less nutritionally demanding
- Cleaner fronted, smoother shoulder, tighter shoulder

### **Condition – negative**

- Frail made, Hard to do
- More nutritionally demanding
- Extreme design, Extreme frame size
- Excessive condition, overly conditioned

## **Bull Performance and Transitional Phrases**

His unique combination of a low BW EPD and high growth numbers make him a logical choice for the given scenario.

He is the curve bender of the group as he possesses both the lowest BW EPD and a YW EPD well above the breed average.

He possesses the greatest spread in EPD from birth to yearling.

... and thus his terminal offspring provide greater versatility from a merchandising perspective.

He presents the most unique maturity pattern of the four, as he has the highest growth EPD but is also more moderate in his overall frame size than his counterparts.

Given his spread between weaning and yearling, he is apt to sire the fastest gaining terminal progeny.

He is a more maternally patterned bull that should sire daughters that .....

His scrotal advantage coupled with his fleshing ability and a more moderate milk EPD lead me to believe that he will sire more fertile daughters that will have greater durability.

He is more progressive in his genetic profile.

A more balanced genetic profile.

He is more practical in his frame size.

Taking into consideration the heifer component of the scenario, the tremendous advantage that 1 possesses in YW EPD simply cannot compensate for a BW EPD well above breed average. This coupled with the fact that he is ..... leads me to place him last.

Due to his superior scrotal development he should produce F1 females that reach estrus at an earlier age.

## Heifers

There are similarities between selecting for replacement females and bulls. Skeletal soundness is still the first factor evaluated. Females tend to spend many more years in the herd than do bulls, thus structure is a major concern. There is not a single external factor that can be evaluated to predict reproductive maturity, as in bulls; rather you have to take into consideration the whole package. Older, heavier females tend to reach reproductive maturity earlier. But, you have to be cautious not to purely selected the largest framed females because that would tend to increase the frame size of the herd over time and would result in the need for greater supplementation.

The primary difference in selecting heifers and bulls is that muscle doesn't play as significant a role in females. While muscle is still important it isn't as heavily weighted in your decision making process.

Replacement heifers should still be maternal in their appearance. That is to say that they need volume, fleshing ability, and an overall appearance that suggests longevity and durability. In addition, heifers should maintain some femininity; being smooth shouldered and clean necked. However, femininity is the last area to sort heifers on and it takes a back seat to selecting durable, maternal females, even if that means accepting more shoulder and front end than one would like.

EPD are also regularly used in evaluation of heifers as potential brood cows. Again, balanced numbers that fit the given scenario are preferable.



## Heifer Terminology

### Muscle & Volume – positive

- Wider chested, wider based, wider tracking
- More massive, broodier, more functional, more brood cow potential
- Powerfully constructed, rugged designed
- Heavier Muscled, stouter hipped
- More natural thickness down her top through her hip and quarter
- Wider and squarer in her pins, functionally wider at her pins
- Wider from stifle to stifle, wider through the center of her quarter
- Bigger volumed, boulder sprung, bigger ribbed, boulder ribbed
- Deeper bodied, deeper chested, deeper hearted, deeper flanked
- More uniform in her body depth from rib to flank

### Muscle & Volume – negative

- Narrow chested, narrow based, narrow tracking
- Light muscled, flat quartered
- Flat ribbed, tight flanked, shallow bodied, tight hearted
- Frail made, frail constructed

### Balance & Correctness – positive

- Straighter lined, nicer balanced
- Leveler designed, leveler hipped, leveler from hooks to pins
- Stronger topped
- Deeper heeled, bigger footed
- Nicer profiling, more attractive
- More upheaded, flashier
- Longer striding, more fluid on the move, better fills her track
- More flexibility, more ground consuming stride
- More correct angle to her shoulder, correct slope to her shoulder
- Freer moving, sounder structured
- ... and due to the slope of her shoulder and additional flexibility she takes a longer reaching stride.

### Balance & Correctness – negative

- Easy topped, weak topped, breaks behind her shoulders
- Steep hipped, low in her pins
- Short bodied, short coupled
- Shallow heeled, fine boned
- Straight hocked, short striding, restricted in her movement
- Straight shoulder, straight fronted
- Cow hocked, sickled hocked
- Poorly balanced, shallow flanked
- Short necked, course shouldered, bold shouldered, open shouldered
- Splayed footed, turned out on front feet, ill structured

## Heifer Terminology, continued

### Femininity & Condition – positive

- Broodier, more maternal
- More functional
- Brood cow prospect
- Greater longevity, easier keeping, easier fleshing
- Less nutritionally demanding
- Cleaner and more refined about her front one third
- Cleaner fronted, smoother shoulder, tighter shoulder
- More feminine

### Femininity & Condition – negative

- Frail made, Harder doing
- More nutritionally demanding
- Extreme design, Extreme frame size
- Excessive condition
- Short fronted, coarse shouldered
- Admittedly, she is the largest framed, most upstanding heifer in the class. However, this works to her disadvantage, as her frame coupled with the fact that she is the hardest doing, flattest ribbed heifer of the four makes her the least viable brood cow prospect and I left her last.

## Steers

The driving force in each of the three species covered in this manual is the production of market progeny. There are definitely similarities between evaluating terminal offspring and breeding stock, however, your priorities are apt to change between the two groups. In the beef industry the pricing of market steers and market heifers has a major impact on the value of breeding cattle. Market heifers are seldom part of a livestock contest, though they are evaluated just as market steers. As a result, for the rest of this section, the discussion will revolve around steers.

Before you can judge a group of steers, you must first recognize how they are valued from a carcass standpoint. A steer carcass will be viewed by trained USDA personnel and assigned a **Yield Grade** and a **Quality Grade**. These two grades work together to give customers an idea of leanness and eating quality.

Yield grades segment carcasses by cutability or what is often referred to as boneless, closely trimmed, retail cuts (BCTRC) from the four major portions of a beef carcass; the round, the loin, the rib, and the chuck. This equation, and the four factors included in it, determines the actual yield grade:

$$\begin{aligned} \text{Yield Grade} = & 2.5 + (\text{Adjusted Fat Thickness} \times 2.5) \\ & + (\% \text{ KPH Fat} \times 0.2) \\ & + (\text{Hot Carcass Weight} \times 0.0038) \\ & - (\text{Ribeye Area (sq. in.)} \times 0.32) \end{aligned}$$

Adjusted fat thickness is a measurement of external fat depth in inches. It is measured between the 12<sup>th</sup> and 13<sup>th</sup> ribs, approximately three quarters of the length of the ribeye away from the midline of the carcass. The measurement can be adjusted if necessary.

The percentage of kidney, pelvic, and heart fat (KPH) allows a USDA grader to account for different levels of internal fat. KPH is expressed as a percentage of total carcass weight.

The hot carcass weight is the weight taken directly after harvest before the carcass is chilled.

Ribeye area is a measurement of the exposed ribeye surface when the carcass is split between the 12<sup>th</sup> and 13<sup>th</sup> ribs. It is expressed in square inches and can be determined with the use of a grid.

## Steers, continued

Yield grades range from 1 to 5, with 1 being the highest cutability (the most lean product) to 5 which is the poorest in terms of lean to fat ratio. When using the formula, you disregard any number beyond the decimal point, except for when it calculates below zero (round to a yield grade of 1) and when it calculates above a 5 (round down to a yield grade of 5). Below is a breakdown of the approximate percentages of lean product (or BCTRC) of a carcass corresponding to each yield grade category.

Yield Grade 1	52.3% or higher
Yield Grade 2	50.0 – 52.2%
Yield Grade 3	47.7 – 49.9%
Yield Grade 4	45.5 – 47.6%
Yield Grade 5	45.4% or below

Quality grades attempt to determine the palatability, or eating quality, of the meat resulting from a carcass. Level of *Maturity* and *Marbling* determine quality grade. It takes substantial training to become proficient at quality grading. The main thing to remember is that there are very different prices paid for carcasses (and thus live cattle) of different quality grades. The quality grades are listed below, with the superior grades at the top and then working towards the inferior. The major price break is between Choice and Select and this is why producers discuss this issue to the extent that they do. Commercial and below are typically used for older cattle such as cull cows.

Prime  
Choice  
Select  
Standard  
Commercial  
Utility  
Cutter/Canner

When attempting to estimate quality grade on a live steer the main things to evaluate are apparent maturity level and degree of finish. Older cattle have a more difficult time reaching the Choice quality grade. Fortunately, in judging contests you will see steers that are similar in age and are typically young enough that maturity isn't a factor. As a result, trying to estimate the level of marbling becomes the major factor. Trying to predict marbling is challenging to say the least. There are individuals that spend many years attempting to perfect this skill and they are still often incorrect. You should concentrate on degree of finish and breed makeup.

## Steers, continued

Degree of finish is somewhat correlated to marbling, though the relationship is not strong. But, the level of external fat is one of the few predictors available. A typical range of desirable fat cover is .3 to .6 inches of external fat cover at the 12<sup>th</sup> rib. If you are allowed to handle steers in a contest the external fat should be uniform and smooth over the top line and over the ribs.

There is a large breed effect on marbling, and thus quality grade, as well. Certain breeds have been selected for efficient, lean beef production and have often not placed the same level of emphasis on the ability of an animal to marble. On the hand, some breeds have concentrated on marbling and quality grade, but some have suffered with poorer yield grades.

Most steers are harvested between a year and a year and a half of age. The optimum market weights range from 1150 to 1350 pounds. At this weight, a steer is apt to produce a carcass that is viewed favorably by packers.

A very important part of judging steers is evaluating muscle. A steer needs to be naturally thick with substantial muscling throughout. Width of base, outward bulge to the hindquarter (or round), and a powerful topline are all indicators of good muscling.

While the most important factors in steers are muscling, finish, and appropriate weight and frame size, balance and correctness are apt to play a role in a judging contest. As in breeding cattle, you would like a steer to be structurally correct and nicely balanced.

## Steer Terminology

### Muscle & Volume – positive

- Wider chested, wider based, wider tracking
- More massive, More masculine, more functional
- Powerfully constructed, rugged designed
- Heavier Muscled, stouter hipped,
- More expressively muscled (region of body)
- More shape, more dimension, greater spread of muscle through his ...
- More natural thickness down his top and through his hip and quarter
- Wider from stifle to stifle, more width through the center of his quarter
- More volume of muscle through his ..., More shape down his top
- Boulder sprung, bigger ribbed
- Deeper bodied, deeper chested
- More uniform in his body depth from rib to flank

### Muscle & Volume – negative

- Narrow chested, narrow based, narrow tracking
- Light muscled, flat quartered
- Flat ribbed, tight flanked, shallow bodied
- Frail made, frail constructed

### Balance & Correctness – positive

- Straighter lined, nicer balanced
- Leveler designed, leveler hipped, leveler from hooks to pins
- Stronger topped
- Bigger footed
- Nicer profiling, more attractive
- Longer striding, more fluid on the move, better fills his track
- More flexibility, more ground consuming stride
- More correct angle to his shoulder, correct slope to his shoulder
- Freer moving, sounder structured
- Cleaner fronted, smoother shoulder, tighter shoulder

## Steer Terminology, continued

### Balance & Correctness – negative

- Easy topped, weak topped, breaks behind his shoulders, easy loined
- Steep hipped
- Short bodied, short coupled
- Shallow heeled, fine boned
- Straight hocked, stiff hocked, short striding, restricted in his movement
- Straight shoulder, straight fronted
- Cow hocked, sickled hocked
- Poorly balanced, shallow flanked
- Short necked, course shouldered
- Splayed footed, turned out on front feet
- Ill structured
- Extreme design, extreme frame size

### Carcass and Compositional Terms – positive

- More market ready, more packer acceptable
  - More uniform in his finish, fuller through his fat indicators
  - Handles (when appropriate) with more cover over both his fore and rear rib and down into his flank
  - Given his greater evidence of finish he should go to the rail with a carcass more apt to reach the choice grade
  - More apt to roll choice
  - Trimmer, leaner, higher cutability
  - ...thus, should produce a carcass with a lower numerical yield grade
  - ... as a result should yield a carcass with less trimmable waste
  - Should produce a heavier muscled carcass that will open up a larger eye
  - Produce a carcass with more total pounds of product
  - ... and he should generate a carcass that is more optimal in it's degree of finish and is apt to open up a larger ribeye
  - Should go to the rail and ...
  - Should produce a carcass that ...
  - Apt to rail a carcass that ...
- Feel free to combine carcass terms and make sure you qualify carcass terms with specific information

## Steer Terminology, continued

### Carcass Terms – negative

- Greener, harder handling (when applicable), bare
- Overconditioned, excessively conditioned, wasty
- Poorest numerical yield grade
- Less apt to reach the choice grade
- Least market ready
- Requires the greatest days on feed to comfortably reach the choice grade
- Yield a carcass with the least total pounds of product
- I recognize that 2 is a trimmer, higher cutability steer, however, this works to his disadvantage as he is one of the pair of greener handling steers that are less apt to reach the choice grade and I left him third.

### Steer Transitions, etc.

- Given the (double digit) price break between choice and select, economics dictate that the red steer has to beat 2.
- However, in my final pair, the industry dictates that the higher cutability, leaner steer beats out his over finished, over conditioned counterpart and as such I left 1 over 2.
- His combined advantages in muscle and degree of finish, would lead me to believe that he would generate more revenue when hung on the rail.



## Sample Market Steer Reasons

I placed the market steers 1234. In my top pair of heavier muscled, red steers, I placed 1 over 2 because he is thicker made and more adequate in his finish. 1 is a wider chested, stouter topped steer that is more expressive through his quarter. In addition, he is more optimum in his degree of finish over both his fore and rear rib and down into his flank. He should go to the rail with the heaviest muscled carcass most apt to grade choice. Simply stated – here is the complete steer in class. I realize that 2 is a trimmer steer and should display a carcass with a superior yield grade. But at the same time, he becomes somewhat awkward in his structure. He is course and in at his knee, lower in his pins, and swollen and out in his hocks. I like the poorer designed steer second.

Even so, in a logical intermediate pair, I placed the white switched steer over 3 as he is a more desirable combination of composition and growth. 2 is a wider based steer that shows more turn down his top and carries his muscling lower into his quarter. In addition, he is a pounds heavier steer that should go to the rail with more total pounds of rib and loin. True, 3 is a cleaner jointed, more structurally correct steer that shows more flex to his hock and strides out longer off both ends. But he is one of the pair of green, low performing steers and I marked him third.

Now, in a tight final pair of steers, who both need additional time on feed, I opted for the skeletal integrity and correctness of the black steer over 4. 3 is a more angular, freer moving steer that better fills his track. He is more correct in his lines and is the nicest balanced, most attractive steer of the four. In addition, he is a slightly more productive, soggier centered steer. I concede that the baldy is a larger framed steer. However, he is a light muscled, narrow chested, hard made steer. Little question, he goes last.

## Sample Performance Bull Reasons

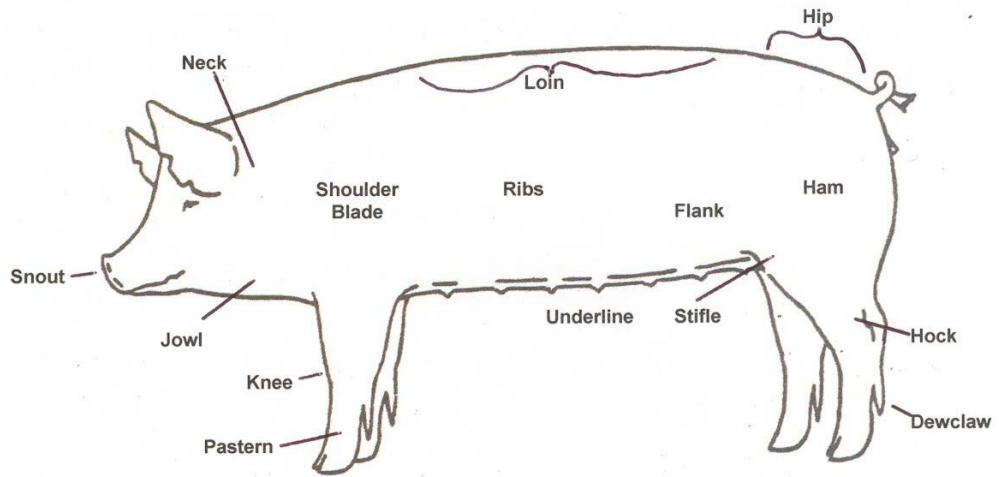
I placed the Performance Hereford Bulls 4312. As I approached the class, two bulls readily grabbed my attention. 4 and 3 are stout, high performing bulls that better fit the retained ownership portion of the scenario.

All the same, I like 4 over 3 in my initial pair. His black baldy progeny should be more efficient in the feedlot and be more profitable when hung on the rail. Admittedly, if I could improve my class winner, I would make him longer fronted and smoother about his shoulder, but he is still the most complete bull of the four. He is the widest based, deepest chested, biggest footed bull in the class. Not only will he generate valuable terminal offspring, but his daughters are apt to best fit the nutritional demands of the Texas Panhandle. He should sire replacement females that have the fleshing ability to handle the above average milk production. True, given the appropriate scenario I could see 3 placing over 4. He is the most structurally correct, nicest balanced, most attractive bull in the class; however, he's a tighter ribbed, shallower flanked bull and I liked him second.

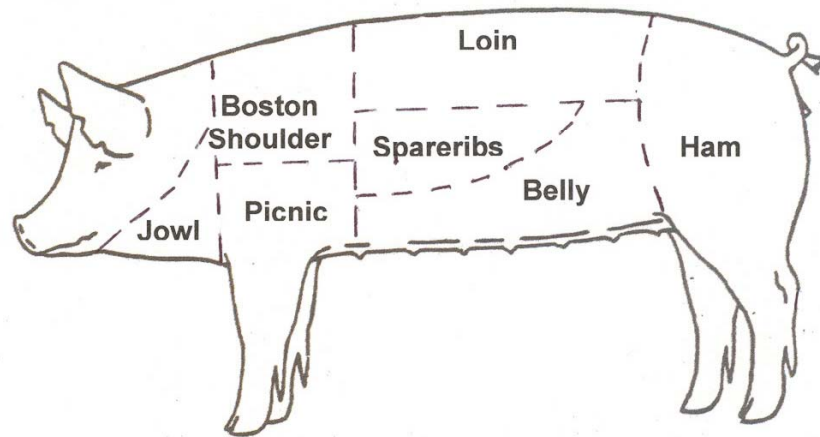
Now, in a very straight forward intermediate pair 3 has to beat the bottom pair of bulls. While 3 gives up a slight advantage in growth EPD to 1, he is a more massive, more ruggedly designed bull that showed more shape down his top and is wider through the center of his quarter. To complement this he is the straightest lined, flashiest bull in the class.

In a tight concluding pair, I chose to go with the superior growth genetics and left 1 over 2. I concede that the dark red bull possesses the highest birth weight EPD of the class, however he is also one of the pair of higher growth bulls. He has a higher weaning weight and yearling weight EPD than 2. He is also a more attractive, heavier muscled bull. I recognize that 2 is a deeper flanked, bigger ribbed bull, but he is the lowest performing, lightest muscled bull that had the poorest growth numbers in the class and I liked him fourth.

**Figure 3**



**Body Parts of a Pig**



**Carcass Components of a Market Hog**

# Swine

## Overview

Once you have familiarized yourself with the physical makeup of swine (Figure 3) and have an understanding of the carcass you can begin to develop a vision of the “ideal”. Over the last few decades the ideal hog has definitely changed more drastically than that of the other species. Because of the widespread transition to confinement operations, to help with food safety, environment, and efficiency issues, the phenotype of today’s hog is quite different than the pigs from 25 years ago.

As meat animals, composition is always important, however, because of confinement structural soundness is still crucial. The use of Figure 2 applies to structure in swine as well. While brood sows are not typically asked to provide as many parities (litters) as they were some number of years ago, they are still in the herd for multiple years and any soundness issues will undoubtedly become concerns.

The marketing avenues and strategies have greatly changed as well. Most pigs are currently marketed using lean grids. The grids that packing companies use, while each different, are similar in that they pay based on carcass weight and percentage of lean cuts from the carcass. This has also affected the design of the pigs used. Lateness of maturity and the potential to reach the desired size (while still maintaining leanness) has become more important as packers continue to desire heavier carcasses. Additionally, meat quality has become a bigger factor in determining carcass value. Often pigs with additional fat content provide a higher quality end product. Contemporary market hogs tend to be moderate in terms of leanness so that they can still reach acceptable quality levels. Additionally, these animals tend to be easier to raise and more efficient while in production. As such, even though they may give up a slight bit of cutability they often offset that by being more cost effective on the live side.

## **Gilts and Boars**

Boars are not often evaluated in a livestock contest, however, they are judged in the same fashion as gilts, except that they should be more massive and it is important to gauge testicular development. Because they are less often seen in a contest setting we will spend the rest of this section discussing gilts. The terminology that follows on the next page can easily be adapted for boars.

A replacement gilt must be mobile and of the appropriate design to allow her to thrive in a crate. This requires flexibility on both ends of her skeleton and adequate rib shape. A “broody” female (one that is maternal and functional) needs convex shape to her rib. This, when combined with soundness, allows her to easily get up and down in a crate.

Because a gilt’s ultimate role is to produce market offspring, she must be adequate compositionally. Muscling and leanness are important. While the boar is usually designed to provide a large dose of growth and carcass merit, the female needs to be adequate in these areas. She should show width of chest, be wide from shoulder blade to shoulder blade, be strong and expressive through the loin, and possess sufficient muscling through the hip and ham. In addition, a replacement gilt needs to be trim through the lower portions of her body and over her top.

In a judging contest you will normally be told to judge the underlines and vulvas as sound, however, these are important points to bring up in the reasons room. A gilt needs to possess six or more evenly spaced, prominent nipples on both sides. The vulva needs to appear as normal in size. An infantile vulva (one that is quite small) is a sign of reproductive immaturity and a potential problem at breeding.

Ideally, a gilt possessing all of the traits listed above would also be feminine and attractive. That is to say that she should be long and extended throughout. She should be long necked and possess the necessary overall skeletal extension to make her eye appealing and balanced.

Performance data and EPD are often used in judging breeding swine.

## Gilt Terminology

### Scale – positive

- Bigger outlined; larger scaled; larger framed; pounds heavier; growthier; more weight per day of age; pounds heavier gilt
- Longer patterned; longer spined; longer bodied; longer designed; more extended; showed more distance from blade to hip
- Later maturing; more youthful appearing
- More upstanding; taller fronted; taller at the point of the shoulder
- More contemporary in her design; more correct in her maturity pattern; more correct in her growth curve

### Scale – negative

- Smaller scaled; smaller framed; poorer growing
- Shorter patterned; shorter bodied
- Earlier maturing; quicker maturing; quicker patterned

### Structure and Skeleton – positive

- Softer skeletoned; freer moving; longer striding; more mobile; freer off her hind rear wheels
- Exhibited more flex through the ..... ; more rugged; more durable; more pliable; looser hipped; more flexibility; more athletic when set in motion
- Moved with more authority off of both ends of her skeleton
- Moved with a wider range of motion of both ends
- Worked with more strength and stability out of her hip
- Steps down on a bigger foot
- Bigger boned; bigger footed; stands on more substance of bone
- Straighter lined; stronger topped; leveler hipped; nicer balanced
- More production oriented; more functionally designed
- Longer fronted, more extended about her front one third

### Structure and Skeleton – negative

- Straight fronted; short striding; rigid structured; tight hipped
- High topped; broken topped
- Over in her knees
- Steep out of her hip; stiff through her hock; restricted in her movement
- Ill structured; poorly balanced; frail; lacks confinement adaptability

## **Gilt Terminology, continued**

### **Muscle – positive**

- Heavier muscled
- More powerfully constructed; wider based; wider chested; wider tracking; bolder bladed; more pulled apart at the blades
- More compositionally correct
- More defined in her muscle shape
- She is bolder and more powerful from blade to hip
- More honest turn of muscle down her top; more dimension of muscle down her top; more turn to her loin
- More expressively muscled; more shape and dimension down her top
- More flare through the ham / loin junction; more shape and dimension to her ham; more powerful hipped
- Is built wider from the ground up
- More maternal in her muscle pattern, longer muscled
- More practical and durable in her muscle design

### **Muscle – negative**

- Lighter muscled; narrower based; narrower chested, narrower tracking
- More common about her shape
- Flat through the center of her ham
- Less flare and expression down her top
- Too extreme in her muscle; too terminal

### **Leanness – positive**

- Leaner; cleaner; trimmer designed
- Firmer through her lower one third; firmer through the base of her body; cleaner through the jowl
- Leaner and more expressive from blade to hip
- Fresher; more appropriate in her condition

### **Leanness – negative**

- Fat, fatter, fattest, heavier conditioned; excess in her condition
- She reads to be heavier conditioned through her lower one third
- Harsh; extreme; hard made; terminally designed

## **Gilt Terminology, continued**

### **Volume – positive**

- Bolder sprung; more convex rib shape
- She comes out of her shoulder with more shape & dimension to her rib
- More center body shape, bolder in her mid rib
- Bigger volume, higher capacity, softer/deeper flanked
- Drops out of her spine with more shape and turn to her rib
- More uniform in her body depth

### **Volume – negative**

- Narrow chested, narrow made
- Flat sided, flat ribbed
- Tight flanked

### **Maternal Characteristics – positive**

- Higher quality underline, more uniform in her teat placement
- More appropriate in her teat count; more refined teat structure
- More forward reaching in her underline; leaner through rear portions of her underline; freer of pin nipples
- More desirable in the shape and size of her vulva
- More feminine; more refined
- Exhibited more extension and cleanliness about her front one third
- Broodier; more maternal
- More functional; more production oriented; more confinement adaptable
- Her combination of volume, muscle mass, and soundness leads me to believe she is apt to possess greater longevity in a confinement situation

### **Maternal Characteristics – negative**

- Courser about her teat texture; starts her underline too far back
- Infantile vulva; upturned vulva
- Less reproductive viable
- Blunt underline

### **Performance**

- The most balanced in her performance profile
- The best combination of phenotype and paper
- I would expect her to generate faster gaining progeny
- Due to her combination of superior composition and growth EPD I would expect her to produce offspring that would be quicker to the rail with greater cutability



## Market Swine

Before you begin to judge market hogs you must first become familiar with the manner in which market hogs are bought and sold. This will allow you to have a better appreciation for the live animal.

At present, most market hogs are sold on a grid which emphasizes leanness (% lean or % muscle) and carcass weight.

$$\begin{aligned} \text{Percent Muscle Formula} &= 7.231 + (.437 \times \text{Hot Carcass Weight}) \\ &+ (3.877 \times \text{Loin Eye Area}) \\ &- (18.746 \times \text{Backfat}) \\ &\frac{\hspace{10em}}{\text{Hot Carcass Weight}} \times 100 \end{aligned}$$

An adjustment factor is given by the grid and then, after dividing the factor by 100, the factor is multiplied by the current market price. Below is an example.

HCW, lb	% Muscle in Carcass							
	54.0 +	52 - 54	50 - 52	48 - 50	46 -48	44 - 46	42 - 44	< 42.0
< 146	65	65	65	65	65	65	65	65
146 - 152	101	97	94	90	86	82	75	66
153 - 159	111	108	105	102	98	94	87	78
160 - 166	112	109	106	103	100	96	89	80
167 - 173	113	110	107	104	101	97	90	81
174 - 180	114	111	108	105	102	98	91	82
181 - 187	114	111	108	105	102	98	91	82
188 - 194	114	111	108	105	102	98	91	82
195 - 201	114	111	108	105	102	98	91	82
202 - 208	113	110	107	104	101	97	90	81
209 - 215	112	109	106	103	99	95	88	79
216 - 222	109	106	103	100	96	92	85	76
223 - 244	105	102	99	96	92	88	81	72
> 244	100	97	94	91	87	83	76	67

You can see that using this grid a carcass that is 47% lean and weighs 165 pounds receives no premium or no discount because it is 1.00 times the current market price. However, those that have an adjustment factor above 100 receive a premium and those below 100 receive a discount. You can see that on this grid those carcasses that are 54% or better and weight between 174 and 201 receive the largest premium. Since market hogs have a dressing percentage around 72% you can determine that to fall in that area a hog needs to weigh from roughly 240 to 280 pounds.

## Market Swine, continued

The previous example allows you to see that market hogs need to be lean and heavy muscled as well as large enough to receive the maximum return. However, with leanness there is often a trade-off with durability and confinement adaptability. Contemporary market hogs need to be suitably lean without being so raw and hard as to pose production problems. So when you are evaluating market hogs it is important to look for pigs that combine composition with the necessary growth performance and adequate soundness.

It is also important to note that, as in beef, meat quality in pork has become a greater concern. Genetics and stress are the primary factors effecting pork quality. The industry is working to remove genetic lines that are prone to stress easily, however, this task is far from complete. In a desire to be competitive in the showing, some producers have continued to include these lines. When evaluating market hogs, those that appear to be heavily stressed (rapidly twitching tail, visibly excited and nervous, etc.) may pose a quality concern. Typically, in a contest setting you will not place a class based on potential pork quality, however, presenting observations about “stressed” pigs in your reasons may be relevant.

When analyzing leanness look for a gilt or barrow that is trim through the lower portions of their body (jowl, middle, seam of the ham), lean and clean around the shoulder blade, possesses a groove down the top and has a dimple in front of the tail. Muscle is viewed as in breeding swine; width of base, a shapely top, and bulge and dimension to the ham. Again, a pig can be both too fat and too lean. With time you will train her eye to appreciate the subtle differences.

Structural correctness is again important, however, there is often some give and take between composition, growth, and soundness. Balance is evaluated as levelness, straightness of lines, and overall proper proportion.

Remember, a market hog class may consist of any combination of gilts and barrows. You may hear evaluators refer to the “gender advantage” or “sex advantage” that gilts have over barrows. This means that when a gilt and a barrow are at the same place in their development the gilt will most often be leaner and produce a higher cutability carcass compared to the barrow.

## Market Hog Terminology

### Muscle – positive

- Heavier muscled
- More powerfully constructed; wider based; wider chested; wider tracking; bolder bladed; more pulled apart at the blades
- More compositionally correct
- More defined in his/her muscle shape
- Works a greater volume of muscle down his top
- More honest turn of muscle down his/her top; more dimension of muscle down his/her top; more turn and shape from blade to hip
- More expressively muscled; more shape & dimension down his/her top
- More flare through the ham / loin junction; more shape and dimension to his/her ham; more powerful hipped; fuller through his stifle

### Muscle – negative

- Lighter muscled; narrower based; narrower chested, narrower tracking
- More common about his/her shape; plain muscled
- Flat through the center of his/her ham
- Less descript down his/her top

### Leanness – positive

- Clean blade; more blade action on the move
- Leaner; cleaner; trimmer designed
- Firmer through his/her lower one third; firmer through the base of his/her body; cleaner through the jowl; pushes less grease in the elbow pocket; less waste through the seam of his ham
- Leaner and more expressive from blade to hip
- Highest cutability; higher percent lean

### Leanness – negative

- Fat, fatter, fattest, heavier conditioned; excess in his/her condition
- She/he reads to be heavier conditioned through her/his lower one third
- Poorest cutability
- Hard, harsh, extreme

## Market Hog Terminology, continued

### Carcass Terms

- ...and thus should go to the rail and open the larger eye
- ...and is apt to rail a heavier muscled carcass with more total pounds of product
- ...and this advantage in cutability should allow her/him to generate a higher percent lean
- ...and should rail the highest cutability carcass
- ...and would potentially go to the rail with the least trimmable waste
- ...and as such should yield a carcass with a higher percentage of loin and ham
- ...should generate a pounds heavier carcass
- ...should bust open the larger eye
- ... and may go to the rail with more acceptable meat quality (normal pig versus an obvious stressor)

### Scale – positive

- Bigger outlined; larger scaled; larger framed; pounds heavier; growthier
- Longer patterned; longer spined; longer bodied; longer designed
- Later maturing
- More upstanding; taller fronted; taller at the point of the shoulder
- More contemporary in his/her design; bigger bodied
- Softer made, easier feeding

### Scale – negative

- Smaller scaled; smaller framed; poorer growing; shorter bodied
- Earlier maturing; quicker maturing; quicker patterned
- Narrow; hard

### Structure and Skeleton

- Softer skeletoned; freer moving; longer striding; longer stepping
- Exhibited more flex through the ..... ; more rugged; more durable; more pliable
- Bigger boned; bigger footed; stands on more substance of bone
- Straighter lined; stronger topped; leveler hipped; nicer balanced
- More production oriented
- Longer fronted, more extended about his/her front one third
- Here is the bigger bodied, more productive barrow/gilt
- Soft made; more practical; fresher; more durably designed
- Higher at the base of his tail
- Bold bladed, big bodied

## Sample Market Hogs Reasons

I like the Market Hogs 1342. In a top pair of bigger bodied, easier feeding barrows I chose the added chest floor and power in 1 over 3. Here is the bolder bladed barrow who is squarer in the base of his rib cage and more opened up in the center third of his body. As a result he is able to work a greater volume of muscle down his top and into his hip. What's more, he is more appropriate and relaxed in the set to his knee and as a result is more flexible and longer reaching out of his front end. Admittedly, the litter 17 barrow is the bigger boned, bigger footed hog who is slightly wider at the ground from behind. But at the same time he is the lower fronted barrow who is too straight in his blade and knee and becomes more jammed up through his front end. I like him second.

All the same, there is little question in my intermediate decision. The belted barrow is simply the more contemporary, fresher made, more massive barrow and as a result readily beats 4. He travels wider and more genuine off both ends of his skeleton, and despite the fact that he is plainer through his front third, he is still stronger down his top and higher at the base of his tail. He is likely to go to the rail and bust open the larger eye. True, the blue eyed barrow is taller fronted and trimmer throughout, in particular through the seam of his ham. However, he is by some margin the narrower chested, flatter ribbed hog who is pinched in his ham/loin junction and rounder out of his hip.

For me he falls into a more challenging bottom pair where I give him the nod over the more productive appearing gilt. He reads leaner and more expressive over his loin edge and carries his muscle lower into his hip. Additionally, he is a bigger boned, stouter footed barrow who has a distinct weight advantage. Absolutely, some will prefer the bolder ribbed, softer centered, sounder Duroc appearing gilt. She is more practical in her look and hinges a looser hip and is cleaner in her joints. Unfortunately, she becomes the plainest muscled, heaviest conditioned, lowest cutability hog in class. I left her a close fourth.

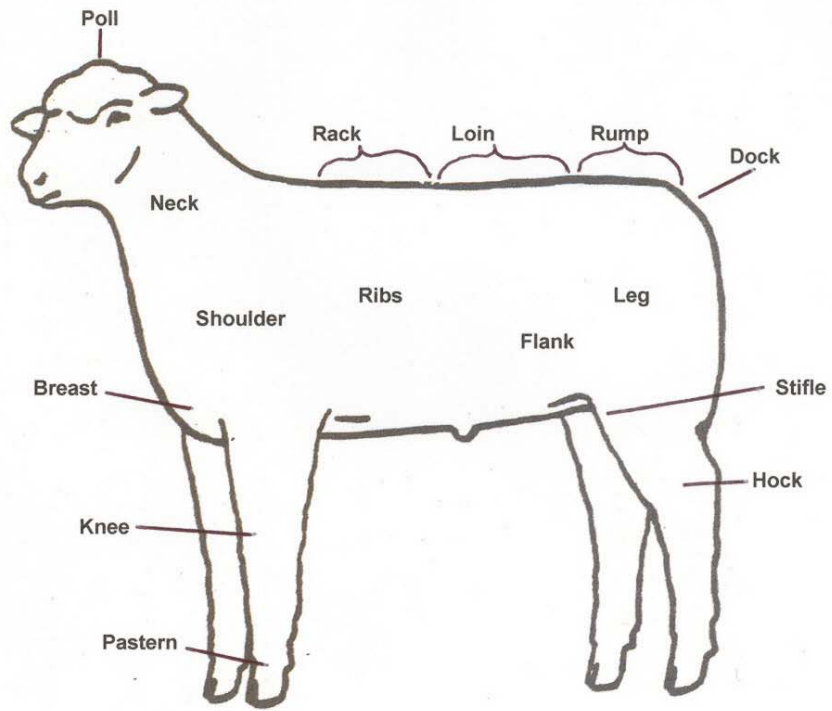
## Sample Performance Gilt Reasons

I like the Performance Crossbred Gilts 3421. I started the class with the notch 4, July gilt. It's the productive, maternal look of a brood sow that I prefer. She is the larger outlined, higher performing gilt. She is wider chested, longer from blade to hip and more open underneath allowing her to work more muscle shape down her top into a massive hip and ham. Her added look on the profile suggests that her female progeny will grab more attention ring side. Now, she gets lower fronted and weaker on her front pasterns, but this is where I like the blue eyed gilt as she is more elevated in her chest floor and stronger on her front pasterns while being leaner in her design. But for me, she is the shorter coupled gilt that's more terminal in her look.

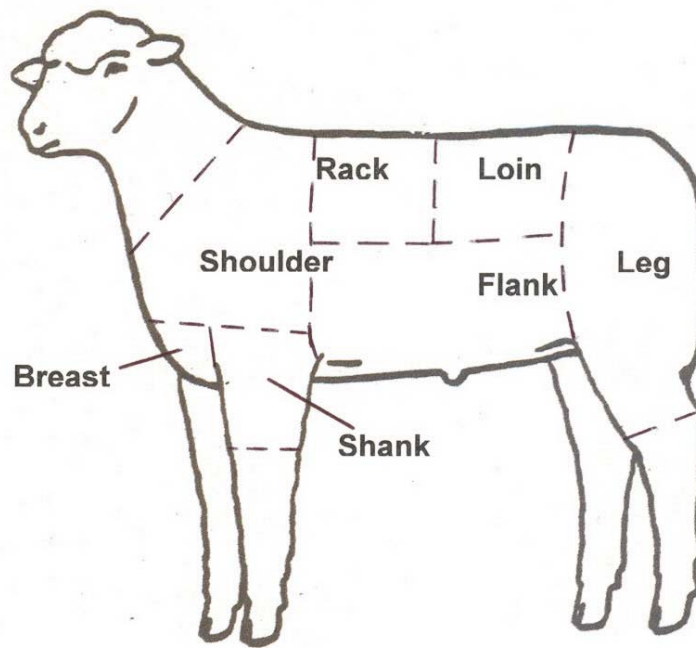
Moving into a more challenging intermediate decision of the barrow makers, I like the gilt that's leveler and leaner in her design. She is more elevated in her chest floor and is taller at the base of her tail. In addition to this her data suggests her progeny will take fewer days to reach 250 with less added backfat. Now the other litter 4 gilt is the wider topped hog who's numbers suggest her progeny will bust open the larger eye but, she gets too forward in the set to her blade, up in her top and off in her hip.

Now, in a bottom pair of August gilts I like 2 to beat 1. Simply stated she comes out of her spine with more arc and curvature to her rib while being squarer in her lower ribcage with a bigger hip and being fuller at the base of her ham. Now, sure 1 is a long sided gilt, but this comes of little value as she is the big, lanky, light muscled, hard doing gilt who's too flat in her rib, flat out of her hip and narrow based - she goes last.

**Figure 4**



**Body Parts of a Sheep**



**Carcass Components of a Market Lamb**

# Sheep

## Overview

The sheep industry has tended to separate itself into two parts. There are those producers who focus primarily on the production of commercial market lambs and those who focus on exhibition sheep (both purebred seedstock and market lambs). While there are similarities between these two groups, there are also some major differences.

In commercial market lamb production the objective is to produce pounds of lamb. There is little market incentive based on quality of product. Certainly, soundness and reproductive efficiency are the most important criteria.

Most often in a livestock judging contest you will view animals that have been part of an operation that is geared more towards the showing or seedstock production. Soundness is still very important, however there are other factors that play a major role in your decision making process. Frame size and growth performance are major contributors as are muscle mass and eye appeal. Muscle is evaluated by leg dimension and top shape. Attractive sheep need to be level and nicely balanced with length and extension.



## Ewes and Rams

Structural correctness is the first priority in ranking ewes. Mobility and eye appeal are closely related when placing breeding sheep. Not only must a ewe be flexible and free moving, she should also be level, straight in her lines, and nicely balanced. Overall size and scale are also evaluated. Frame size and extension are desired. Big, bad sheep are not desirable, but large scaled, growthy, late maturing sheep that have additional attributes (muscle, eye appeal, soundness, etc.) are sought after. In addition, you need to select for females that have rib shape and natural thickness and an overall maternal look. In wool breeds, wool quality and quantity are important, however, wool is only evaluated in a handful of contests. Also, it is necessary to be familiar with the breed character of the major breeds.

For those occasions that you may be asked to view breeds that emphasize wool production, you first evaluate the above criteria. Then, handle and view the fleece. Fleece should be free of debris (white to creamy in color), dense with a tight, uniform crimp, and have a long staple length (fiber length).

Rams and ewes are evaluated in much the same manner. The main difference is that one should expect more masculinity and muscle in a ram. In addition, testicular development is assessed and, despite the great difference in body weight between the two species, scrotal circumference in sheep should be on par with that of cattle.

The terminology on the following pages is devoted to ewes but can easily be adapted to work for rams.

## Ewe Terminology

### Scale – positive

- Bigger outlined; larger scaled; larger framed; pounds heavier; growthier; more weight per day of age; pounds heavier; higher performing
- Longer patterned; longer bodied; longer designed; more extended; longer and leveler out her dock
- Later maturing; more youthful appearing
- More upstanding; taller fronted; taller at the point of the shoulder
- More contemporary in her design; more correct in her maturity pattern; more correct in her growth curve

### Scale – negative

- Smaller scaled; smaller framed; poorer growing
- Shorter patterned; shorter bodied; short coupled
- Earlier maturing; quicker maturing; quicker patterned

### Structure and Skeleton – positive

- Freer moving; longer striding; more mobile
- More rugged; more durable
- Bigger boned; bigger footed; stands on more substance of bone
- Straighter lined; stronger topped; leveler docked; nicer balanced; stronger through her rack and loin
- Stands squarer on her feet and legs, stronger pasterned
- Bolder ribbed, deeper hearted, bigger bodied
- More production oriented; more functionally designed
- Longer fronted; more extended about her head and neck
- Nicer profiling; more attractive; more eye appealing

### Structure and Skeleton – negative

- Straight fronted
- Broken topped; weak topped; easy topped
- Over in her knees, weak pasterned
- Steep out of her dock; stiff through her hock; restricted in her movement
- Ill structured; poorly balanced; frail
- Flat rib, tight hearted, tight hearted, hard made, hard middled

## **Ewe Terminology, continued**

### **Muscle – positive**

- Heavier muscled
- More powerfully constructed; wider based; wider chested
- She is bolder and more powerful from shoulder to dock
- More expressively muscled; more shape and dimension down her top
- More shape and dimension to her leg
- More three dimensional muscle shape through the shoulder and leg
- Carried her muscle lower down into her stifle
- More volume of muscle through her leg and loin
- More fullness to her leg

### **Muscle – negative**

- Lighter muscled; narrower based; narrower chested, narrower tracking
- Flat through the center portion of her leg

### **Condition – positive**

- Easier keeping
- Cleaner; trimmer designed
- Trimmer through her lower one third

### **Condition – negative**

- Fat, fatter, fattest, heavier conditioned; excess in her condition
- Harsh, high maintenance, hard doing, hard, green

### **Volume – positive**

- Bolder sprung; more convex rib shape
- She comes out of her shoulder with more shape & dimension to her rib
- She exhibited more width through her chest floor
- More center body shape; more spring to both her fore and rear rib
- Bigger volume, higher capacity
- Deeper flanked; deeper bodied
- More uniform in her body depth from front to rear

### **Volume – negative**

- Narrow chested, narrow made
- Flat sided, flat ribbed; pinched behind the shoulders; pinched in her heart
- Tight flanked

## **Ewe Terminology, continued**

### **Maternal Characteristics – positive**

- More feminine; more refined
- Smoother shoulder, tied in smoother about her shoulder; tighter shouldered
- Exhibited more extension and cleanliness about her front one third
- Longer, cleaner fronted
- Broodier; more maternal
- More functional; more production oriented; more durable
- Her combination of volume, muscle mass, and soundness lead me to believe she is apt to possess greater longevity

### **Maternal Characteristics – negative**

- Short necked; short fronted
- Coarser headed; more masculine
- Open shouldered

### **Fleece – positive**

- A longer, denser fleece
- A more uniform fleece freer of black fibers
- A cleaner fleece that is freer of foreign matter
- Should yield a higher quality fleece
- Tighter crimp
- Longer staple length
- Shear off more total pounds of high quality fleece

### **Fleece – negative**

- A shorter, more open fleece
- Excessive black fibers
- Duller, dirtier fleece
- Shorter staple length

### **Performance**

- The most balanced in her performance profile
- The best combination of phenotype and paper
- Her superior genetic merit for number born and growth performance should allow her to produce more total pounds of lambs per year

## Market Lambs

When placing market lambs you may see any combination of ewes or wethers within a given class. You are looking for heavier, growthier lambs that have the best combination of muscle and leanness. You desire a heavy muscled, thick made lamb that has acceptable trimness. Frame size and overall skeletal extension are strongly preferred. Eye appeal is very important in market lambs. Levelness, straightness of lines, and balance are desired. Additionally, judging a market lamb class means that you are almost always offered the opportunity to “handle” the sheep. This means that during the class you will use your hands to confirm or change what you see.

Using the tips of your fingers you will feel for fat cover down the length of the backbone and over the ribs. Your desire is to find a lamb that is between 0.1 and 0.25 inch. In a lamb with this level of finish it should be easy to locate the ribs and backbone, but they shouldn't be prominent or bare.

In an overly conditioned, fat lamb (greater than 0.25 inch) the lamb will have a soft, smooth appearance and feel. The ribs may not be easily visible and when handled they will be more difficult to palpate.

In an under finished, green lamb (less than 0.1 inch) the ribs and backbone will be quite evident and will be harsh to the touch.

When handling to estimate muscling you will run your hand down the rack and loin edge to gauge depth and width. To measure the plumpness of the leg you will take both hands, and placing your index fingers together on the interior of one of the legs, you will raise your hands as high as you can (without causing discomfort to the lamb) and then see how far your thumbs are apart on the outer leg. This takes practice and your coach will prove very valuable as you learn this technique.

In addition, you want to measure the length of the loin and the length of the entire hindsaddle (the rear portion of the lamb from the last rib back). You measure the loin by placing the tips of your fingers at the last rib and reaching to the hook bone. You estimate the entire hindsaddle simply by viewing from the last rib back, however, some prefer to measure the length of the rump and then combine that with the length of the loin to gain a full measurement.

## **Market Lamb Terminology**

### **Scale – positive**

- Bigger outlined; larger scaled; larger framed; pounds heavier; growthier; more weight per day of age; pounds heavier; higher performing
- Longer patterned; longer bodied; longer designed; more extended; longer and leveler out her dock
- Longer from the last rib back; more length of hindsaddle
- Later maturing; more youthful appearing
- More upstanding; taller fronted; taller at the point of the shoulder
- More contemporary in his/her design; more correct in his/her maturity pattern; more correct in his/her growth curve

### **Scale – negative**

- Smaller scaled; smaller framed; poorer growing
- Shorter patterned; shorter bodied; short coupled
- Earlier maturing; quicker maturing; quicker patterned

### **Structure and Skeleton – positive**

- Bigger boned; bigger footed; stands on more substance of bone
- Straighter lined; stronger topped; leveler docked; nicer balanced; stronger through his/her rack and loin
- Stands squarer on his/her feet and legs, stronger in his pasterns
- Bolder ribbed, bigger bodied
- More production oriented; more functionally designed
- Longer fronted; more extended about his/her head and neck
- Nicer profiling; more attractive or eye appealing; profiles with more balance

### **Structure and Skeleton – negative**

- Straight fronted
- Broken topped; weak topped; easy topped
- Over in his/her knees, weak pasterned
- Steep out of his/her dock
- Ill structured; poorly balanced; frail
- Flat ribbed, shallow bodied, hard made

### **Muscle – positive**

- Heavier muscled; greater volume of muscle from front to rear
- More powerfully constructed; wider based; wider chested
- Bolder and more powerful from shoulder to dock
- More expressively muscled; more shape and dimension down the top
- More shape and dimension to his/her leg
- More three dimensional muscle shape through the shoulder and leg

## Market Lamb Terminology, continued

### Muscle – positive (cont.)

- Carried his/her muscle lower down into his/her stifle
- More volume of muscle through his/her leg and loin
- More fullness to his/her leg, wraps with a fuller leg
- Fuller through the rack, more pop to his/her rack
- Handled with more depth and width to the loin edge
- More muscular topped lamb, handled with a fleshier loin
- Handles with more three dimensional shape from rack to leg
- Firmer, harder handling lamb, fresher handling

### Muscle – negative

- Lighter muscled; narrower based; narrower chested
- Flat through the center portion of the leg
- Failed to fill my hand
- Handled with less dimension

### Leanness – positive

- Leaner; cleaner; trimmer designed
- Trimmer through his/her lower one third
- Leaner and more expressive from shoulder to dock
- Highest cutability
- Firmer handling, fresher handling

### Leanness – negative

- Fat, fatter, fattest, heavier conditioned; excess in his/her condition
- She/he reads to be heavier conditioned through her/his lower one third
- Poorest cutability, softest handling, spongy to the touch
- Bare, harsh handling, green

### Carcass Terms

- ...and thus should go to the rail and bust open the larger eye
- ...and is apt to rail a heavier muscled carcass with more total pounds of product
- ...and this advantage in leanness should allow her/him to produce a carcass with a lower numerical yield grade
- ...and should rail the highest cutability carcass
- ...and would potentially go to the rail with the least trimmable waste
- ...and as such should yield a carcass with a higher percentage of leg and loin
- ...and thus should yield a carcass with more total pounds of hindsaddle
- His/her advantage in trimness and muscle should result in a carcass with greater dollar value

## Sample Market Lamb Reasons

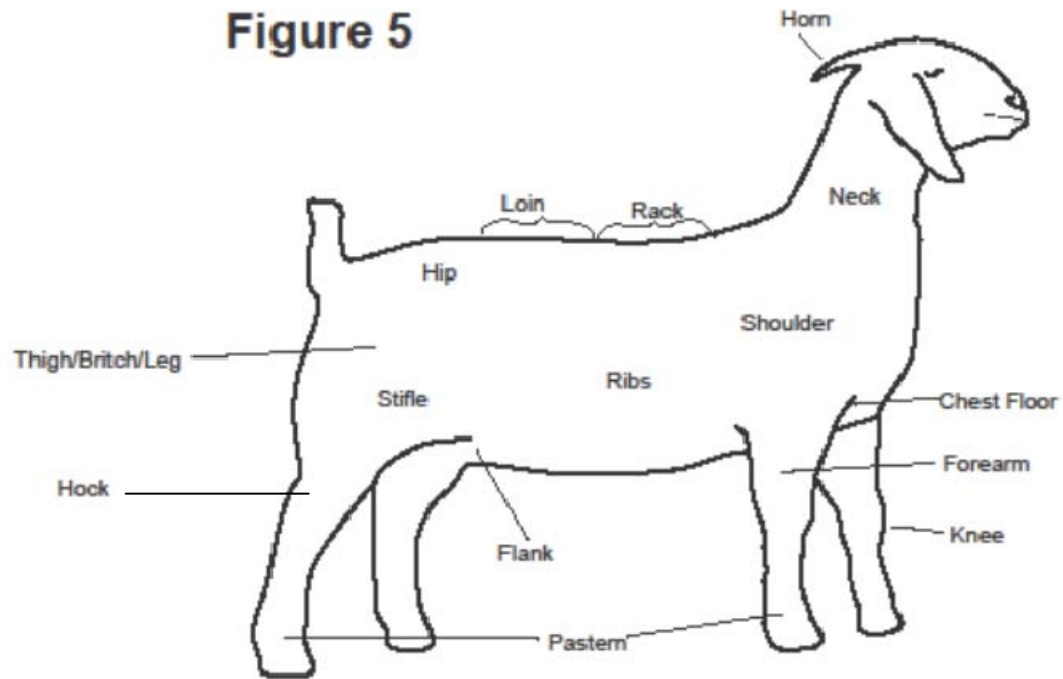
I like the mixed market lambs 4321. In a top pair of contrasting, yet high quality, exciting wethers – I prefer 4 to beat 3. 4 is the widest based, strongest topped lamb that handled with the most depth to his loin and filled my hand with the most inner and outer leg. In addition, he is a more upstanding, later maturing, leveler designed lamb than 3. He should rail the carcass with the most total pounds of leg and loin. True, 3 is a flatter shouldered, cleaner necked, flashier fronted wether, but he is narrower made, frail boned, and is easy in his top - I like him second.

Despite these concerns, I opted for the design and cutability of 3 over 2 in my intermediate pair. 3 is a longer patterned, straighter lined lamb that is leveler out his dock and stronger on his pasterns. Furthermore, he handled firmer and fresher through his rack and loin and is leaner over his ribs. He should yield a trimmer carcass with a higher percentage of retail cuts. I recognize that 2 is a more production oriented, more powerfully made ewe, however, she is one of the pair of excessively finished lambs and I left her third.

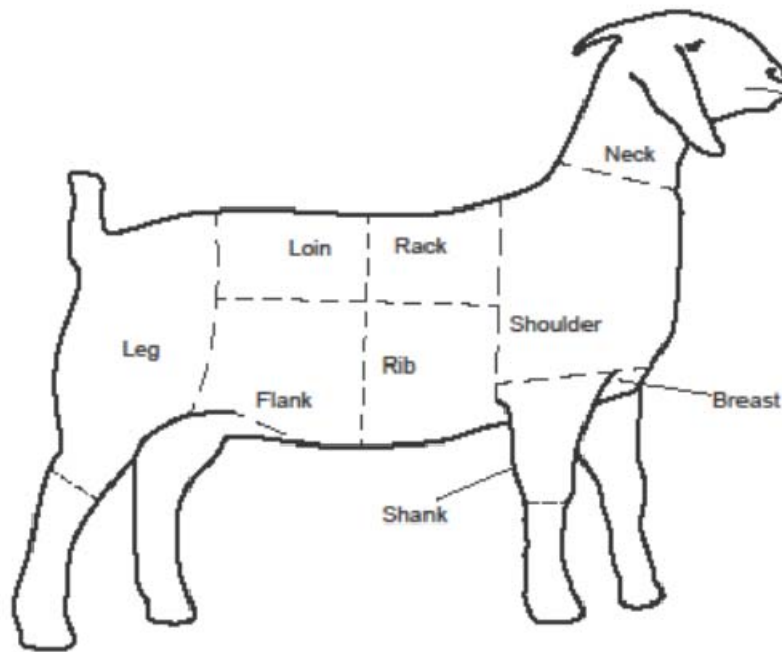
Now, in a final pair of lambs that need to be leaner, I chose the performance and ruggedness of 2 over 1. The speckled face ewe is a wider based, bigger loined lamb that is wider in her pin set and showed more shape to her lower leg. In addition, she is a larger framed, bigger footed lamb that should produce a heavier muscled carcass that will open up with a larger eye. I concede that 1 is better balanced and more attractive, but he is the lightest muscled, heaviest conditioned, poorest cutability lamb of the four and he goes last.



**Figure 5**



**Body Parts of a Meat Goat**



**Carcass Components of Market Goat**

# Meat Goats

## Overview

The goat industry has taken off with unprecedented growth in recent years. This manual is designed as a tool to assist in selection of those animals intended as a protein source. As such, dairy goats are excluded and for the balance of this section the term “goat” can be interpreted as meaning those breeds intended for meat production. There are a variety of breeds that are involved within this industry, including Spanish goats, Kikos, Myotonic (or Fainting Goats), and many others. But far and away the most influential breed within the United States is the Boer Goat and Boer crosses (often with Dairy breeds to add size).

Much like within sheep, the goat industry has tended to separate itself into two parts. There are those producers who focus primarily on the production of commercial market goats and those who focus on exhibition goats (both seedstock and market goats). While there are obvious similarities between these two groups, there are also some major differences.

In commercial market goat production the objective is to produce pounds of goat meat – often referred to as “Cabrito” or “Chevon”. There are very diverse marketing schemes within the industry. Direct marketing to consumers of goats of various weights makes it challenging to build a consistent infrastructure within the industry. What infrastructure is in place surrounds sending market weight goats to a very small number of larger packing plants along with sales to numerous small and medium sized local lockers. Production efficiency is obviously important in this model and as a result soundness, reproductive efficiency, and high cutability carcasses are demanded.

Most often in a livestock judging contest you will view animals that have been part of an operation that is geared more towards the showing or seedstock production. Soundness is still very important, however there are other factors that play a major role in your decision making process. Appropriate maturity pattern and growth performance are contributors as are muscle mass and eye appeal.

## Does and Bucks

Bucks will be less often judged in competition, though they are eligible, so most of this discussion will surround females. Structural correctness is the first priority in ranking does. As with breeding animals of all species, skeletal flexibility and eye appeal, while not exactly the same thing, are closely linked with ranking goats. Not only must a doe be free moving, she should also be relatively level, straight in her lines, and nicely balanced. It is important to note a fundamental difference in goats from the other ruminants. Goats are browsers (meaning they love to eat vegetation that is above ground level) whereas sheep and cattle are foragers (meaning they prefer grass). As a result, goats will typically have a greater slope to their hip. This is necessary to allow enough range of motion within the pelvis to allow them to stand on their back legs as they browse in brush and trees. Extreme slope is undesirable, but a mild angle is not only acceptable it is often expected. Additionally, overly weak or soft pasterns are harshly viewed and thus are selected against.

Overall size and scale are also evaluated. A frame size and maturity pattern that fits the long term goals of the given operation is desired. This is to say that frame size, as with all species, is dependent upon how the animals will be used and the marketing plan for offspring. In addition, you need to select for females that have rib shape and natural thickness and an overall maternal look.

The primary reason that Boers dominate the American goat landscape is that they are by some margin the heaviest muscled of the prominent breeds. Muscle is of fundamental importance. Goat carcasses are predominantly valued by cutability - so more muscle and less fat are desirable. As a result, it is necessary to have breeding stock that can pass along these traits. However, it is necessary to maintain durability and longevity as well. As with most anything in livestock evaluation – extremes can cause problems.

In the current climate it is common place and preferred that breeding stock have their horns left intact. The horns are a great indicator of skeletal mass and purebred breeders and judges will often discount those that have horns removed. This differs from the market side of the showing. For market wethers and does they will nearly always be “disbudded”, meaning the horns have been removed.

## **Does and Bucks – continued**

As a point of information, purebred breeders emphasize a number of areas on the animal that, while relevant, may not be offered for evaluation in a youth judging contest. Teeth/palate structure and teat design are the two most significant additional concerns along with certain levels of skin pigmentation on areas that are free from hair.

Bucks and does are evaluated in much the same manner. The main difference is that one should expect more masculinity and muscle in a buck. In addition, testicular development is assessed and scrotal circumference in goats should be roughly similar to sheep and cattle.

The terminology on the following pages is devoted to does but can easily be adapted to work for bucks.

## **Doe Terminology**

### **Scale – positive**

- Bigger outlined; larger scaled; larger framed; pounds heavier; growthier; more weight per day of age; pounds heavier; higher performing
- Longer patterned; longer bodied; longer designed; more extended; longer and leveler out her dock
- Later maturing; more youthful appearing
- More upstanding; taller fronted; taller at the point of the shoulder
- More contemporary in her design; more correct in her maturity pattern; more correct in her growth curve

### **Scale – negative**

- Smaller scaled; smaller framed; poorer growing
- Shorter patterned; shorter bodied; short coupled
- Earlier maturing; quicker maturing; quicker patterned

### **Structure and Skeleton – positive**

- Freer moving; longer striding; more mobile
- More rugged; more durable
- Bigger boned; bigger footed; stands on more substance of bone
- Stoutier at the base of her horns
- Straighter lined; stronger topped; leveler hiped; nicer balanced; stronger out of the backside of her shoulder
- Stands squarer on her feet and legs, stronger pasterned
- Bolder ribbed, deeper hearted, bigger bodied
- More production oriented; more functionally designed
- Longer fronted; more extended about her head and neck
- Nicer profiling; more attractive; more eye appealing

### **Structure and Skeleton – negative**

- Straight fronted
- Weak topped; easy topped
- Over in her knees, weak pasterned
- Steep out of her hip; stiff through her hock; restricted in her movement
- Ill structured; poorly balanced; frail boned, frail horned
- Flat rib, tight hearted, tight hearted, hard made, hard middled

## **Doe Terminology, continued**

### **Muscle – positive**

- Heavier muscled
- More powerfully constructed; wider based; wider chested
- She is bolder and more powerful from shoulder to britch
- More expressively muscled; more shape and dimension down her top
- Fuller in her stifle
- Carried her muscle lower towards a squarer hock and wider base
- More massive hip
- Longer and more maternal in her muscle pattern

### **Muscle – negative**

- Lighter muscled; narrower based; narrower chested, narrower tracking
- Flatter hiped
- Course made, masculine appearing, too terminal

### **Condition – positive**

- Easier keeping, fresher
- Cleaner; trimmer designed
- Trimmer through her lower one third

### **Condition – negative**

- Fat, fatter, fattest, heavier conditioned; excess in her condition
- Harsh, high maintenance, hard doing, hard, green

### **Volume – positive**

- Bolder sprung; more outward arc to her rib
- She comes out of her shoulder with more shape & dimension to her rib
- She exhibited more width through her chest floor
- More center body shape; more spring to both her fore and rear rib
- Bigger volume, higher capacity
- Deeper flanked; deeper bodied
- More uniform in her body depth from front to rear

### **Volume – negative**

- Narrow chested, narrow made
- Flat sided, flat ribbed; pinched behind the shoulders; pinched in her heart
- Tight flanked

## **Doe Terminology, continued**

### **Maternal Characteristics – positive**

- More feminine; more refined
- Smoother shoulder, tied in smoother about her shoulder; tighter shouldered
- Exhibited more extension and cleanliness about her front one third
- Longer, cleaner fronted
- Broodier; more maternal
- More functional; more production oriented; more durable
- Her combination of volume, muscle mass, and soundness lead me to believe she is apt to possess greater longevity

### **Maternal Characteristics – negative**

- Short necked; short fronted
- Coarser headed; more masculine
- Open shouldered

## Market Goats

When placing market goats you may see any combination of does or wethers within a given class. You are looking for goats that best combine muscle and leanness. Visual appraisal along with handling (similar to lambs) are both critical in determining composition. You desire a heavy muscled, thick made goat that has acceptable trimness. Appropriate frame size and overall skeletal extension are preferred, but big framed, light muscled market goats are not likely to win many classes. As with any species, eye appeal is important in market goats. Levelness, straightness of lines, and balance are desired.

Using the tips of your fingers you will feel for fat cover down the length of the backbone and over the ribs. Your desire is to find a goat that is quite firm and lean without coming across as harsh and too green. In a goat with this level of appropriate finish it should be easy to locate the ribs and backbone, but they shouldn't be prominent or bare.

In an overly conditioned, fat market goat the individual will have a soft, smooth appearance and feel. The ribs will not be easily visible and when handled they will be more difficult to palpate.

In an under finished, green market goat the ribs and backbone will be quite evident and will be harsh to the touch.

When handling to estimate muscling you will run your hand down the topline and loin edge to gauge depth and width. Unlike in lambs, you do not attempt to wrap the leg in goats. If you try this they will consistently want to "sit down" and will give a distorted impression. Your eyes handle this portion. If you choose to gauge fullness in the hip a quick feel from the backside of the leg will suffice. As with most every component of livestock judging, a coach's perspective can help you better appreciate handling of a market goat.



## **Market Goat Terminology**

### **Scale – positive**

- Bigger outlined; larger scaled; larger framed; pounds heavier; growthier; more weight per day of age; pounds heavier; higher performing
- Longer patterned; longer bodied; longer designed; more extended; longer and leveler out his hip
- Longer from the last rib back
- Later maturing; more youthful appearing
- More upstanding; taller fronted; taller at the point of the shoulder
- More contemporary in his/her design; more correct in his/her maturity pattern; more correct in his/her growth curve

### **Scale – negative**

- Smaller scaled; smaller framed; poorer growing
- Shorter patterned; shorter bodied; short coupled
- Earlier maturing; quicker maturing; quicker patterned

### **Structure and Skeleton – positive**

- Bigger boned; bigger footed; stands on more substance of bone
- Straighter lined; stronger topped; leveler hiped; nicer balanced; stronger through his/her rack and loin
- Stands squarer on his/her feet and legs, stronger in his pasterns
- Bolder ribbed, bigger bodied
- More production oriented; more functionally designed
- Longer fronted; more extended about his/her head and neck
- Nicer profiling; more attractive or eye appealing; profiles with more balance

### **Structure and Skeleton – negative**

- Straight fronted
- Broken topped; weak topped; easy topped
- Over in her knees, weak pasterned
- Steep out of his hip
- Ill structured; poorly balanced; frail
- Flat ribbed, shallow bodied, hard made

### **Muscle – positive**

- Heavier muscled; greater volume of muscle from front to rear
- More powerfully constructed; wider based; wider chested
- Bolder and more powerful from shoulder to dock
- More expressively muscled; more shape and dimension down the top
- More shape to his leg; more expressive through his forearm
- Squarer out of the backside of his shoulder, squarer in his loin edge

## Market Goat Terminology, continued

### Muscle – positive (cont.)

- Carried his/her muscle lower down into her stifle; deeper in twist
- More volume of muscle through his leg and loin
- More fullness to his britch
- Fuller through the rack, more pop and expression to his rack
- Handled with more depth and width to the loin edge
- More muscular topped wether
- Handles with more three dimensional shape from rack to leg
- Firmer, harder handling wether, fresher handling
- He works a greater volume of muscle from shoulder to britch

### Muscle – negative

- Lighter muscled; narrower based; narrower chested
- Flat through the center portion of the leg
- More angular in his rack; washed out in his loin; tapers to his loin edge
- Disappointed to the handle; plainer handling

### Leanness – positive

- Leaner; cleaner; trimmer designed
- Trimmer through his/her lower one third
- Leaner and more expressive from shoulder to dock
- Highest cutability; reads leaner from shoulder to britch
- Firmer handling, fresher handling; more appropriate in his finish

### Leanness – negative

- Fat, fatter, fattest, heavier conditioned; excess in his/her condition
- He reads to be heavier conditioned through his lower one third
- Poorest cutability, softest handling, spongy to the touch
- Bare, harsh handling, green

### Carcass Terms

- ...and thus should go to the rail and bust open the larger eye
- ...and is apt to rail a heavier muscled carcass with more total pounds of product
- ...and should rail the highest cutability carcass
- ...and would potentially go to the rail with the least trimmable waste
-

## Sample Market Goat Reasons

I like the market goats 2314. The traditionally marked wether separates himself from the rest of the class. He is the growthiest, heaviest muscled, most complete goat in the class and he dominates 3 in my initial pair.

2 is a wide chested wether who is the most expressive in his forearm and comes the squarest and strongest out of the backside of his shoulder. He spans the widest over his loin edge and is the most impressive when viewed from behind – being the widest in his pins and the deepest in his twist. As a bonus he's the firmest and freshest to the touch. True - 3 is a sleeker shouldered, cleaner necked wether. But this comes with the fact that he is a narrower chested, frailer boned wether who is less exciting to the handle – he goes second.

Still, there is little doubt that 3 beats the lone female in my intermediate pair. Cutability and eye appeal sort this decision. From his shoulder forward the red wether is taller at the point of his shoulder and more striking through his head and neck. But even more importantly, from his shoulder back he is considerable leaner and firmer to the touch and works a greater volume of muscle from shoulder to britch. Additionally, he is more rugged in his skeleton and squarer in his lower joints. There is little doubt that 1 is the boldest ribbed, biggest bodied goat of the four, but she is also the heaviest conditioned – being the softest to the touch and likely to rail to lowest cutability carcass.

She belongs in a more challenging pair of poor quality goats where I still like her performance to beat 4. Simply stated, she is heavier, wider based, fresher and likely to generate more pounds of product. No question 4 is more massive in his bone work, stronger down his top, and trimmer throughout. But unfortunately this comes with the fact that he is a course jointed, poor performing, harsh made wether. I liked him last.