

Fundamental Concepts

“The judging of merit in livestock is as fundamental to selection as selection is fundamental to improvement.” - R.E. Hunsley

Introductory (200)

Meat Science & Animal
Products (250, 305,
355.01 & .02, 555.02)

Species Production
(542, 543, 544)

Function of Livestock

The basic function of livestock is simple; efficiently convert energy sources into protein for human consumption. To put it another way, to grow efficiently and become a high quality, harvestable protein source for people. The value of the animal at time of harvest is the true value of that animal (as far as the last owner is concerned at least), so we must make sure that our animals can provide a wholesome product that results in a high quality eating experience. Unlike many parts of the world, Americans are spoiled when it comes to eating choices. In fact, we have so many options that we can pick and choose what types of meat we wish to consume.

This is why the poultry industry has been able to capitalize on a product that really doesn't possess much natural flavor. There is very little variation in serving size and cook time, and when someone would like a different flavor a new sauce is added to the product. Bacon is used in much the same way. In many cases, bacon is actually added like a condiment (salads, baked potatoes, bacon wrapped steaks) because of its distinct and consistent flavor. This is all because of consistency amongst product. As evaluators of livestock, we must have a thorough understanding of what determines a high quality eating experience from lamb, goat, beef, or pork (other than bacon), because that is primarily what we are selling.

Sheep

Let's first take a look at the dual-purpose species we will be evaluating, sheep. Sheep are unique animals in many ways when compared to cattle and swine. Like goats, they are considerably smaller than the other species when harvested (~70 lbs.), and can be raised in areas where other species cannot. For instance, many sheep (and goats) are raised in the mountainous areas of the western states, and in arid climates with little forage like West Texas. Products from sheep (and goats) are often marketed to ethnic groups around the time of Easter because of their portion size and acceptance in the Jewish and Islamic religions.



Rack of Lamb

The other product of sheep that we will not discuss much in this class is wool. Wool is the name of external fiber that grows on most breeds of sheep. Due to this, a majority of commercial sheep producers have incorporated Rambouillet into their bloodlines. Rambouillet sheep are a breed derived from the Spanish, Delaine Merino breed of sheep

that has very high quality wool. Since the phasing out of the National Wool Act began in 1993 (ended December 31, 1995), there has been a significant decrease in the pounds of lamb graded per year each year, with the lowest being in 2009 (USDA, 2010). Accordingly, emphasis in the lamb industry has moved away from selecting sheep with high quality wool, and more directly on carcass value. Rambouillet sheep have remained popular, however, because they are highly adaptable, have acceptable carcasses, and the wool still captures a premium in some markets.

When a sheep is harvested, the carcass is assigned two grades, a yield grade (YG) and a quality grade (QG). Since 1998, all lamb (carcasses < 1 year of age, characterized by the presence of break joints) carcasses in the U.S. have graded choice or better. Therefore,

Measurement	Range	Acceptable for Judging
12 th rib fat thickness, in ²	0.10-0.36	0.18-0.25
Ribeye area, in ²	1.4-4.0	≥ 2.5 depending on LW
Live weight, lbs	110-140	Dependant upon class
Carcass weight, lbs	45-80	N/A
Dressing percent, %	51-56	54

from an evaluation standpoint, our primary concern is with YG. The YG formula has only one factor: 12th rib fat thickness (FT). When lamb and beef carcasses are ribbed (lamb only on occasion), to gather carcass measurements, they are ribbed between their final two ribs (12th and 13th), and FT and ribeye area (REA) measures are obtained. Table 1.1 lists the basic information you will need to know in relation to lamb carcass information.

Beef Cattle

Beef Cattle are without question the livestock with the most variation in type and kind. Not only are there two separate species of beef cattle, *Bos taurus* (European breeds) and *Bos indicus* (Indian and American breeds), but due to the land area required to sufficiently raise cattle, their production environments differ greatly across the U.S. In addition, the beef cattle industry has not experienced the vertical integration witnessed in the swine industry. Approximately 97% (USDA, 2010) of all cattle raised in the U.S. are classified as family owned. With this, there are diverse marketing options and niches specific only to the beef industry.

For instance, Certified Angus Beef, which is headquartered in Wooster, OH, was the first branded beef program (1978), and as the name suggests, is focused around marketing beef from the Angus breed. Ohio Signature Beef, on the other hand, is centered around how the beef is raised. In this program, all of the beef is "All-Natural", corn fed, and raised in Ohio. Laura's Lean Beef, however, is a program that markets cattle with low QG and YG, focusing on a fat conscious diet. Nolan Ryan's Guaranteed Tender All-Natural Beef is

a program for Brahman (*Bos indicus*) influenced cattle, where the beef is electrostimulated and aged for improved tenderness. With all of these different markets available, a sufficient understanding of production environments, breed effects, and management practices is essential for a proficient livestock judge.



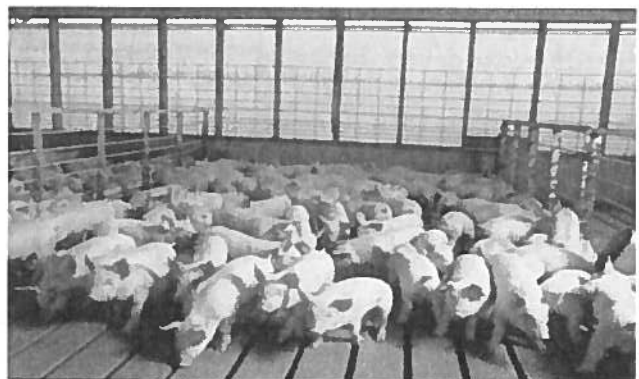
Similar to sheep, cattle are assigned a QG and YG following harvest. Unlike sheep, however, QG can vary considerably across individual animals. Yield grade, also varies, but primarily due to differences in the way cattle are raised and fed because of their numerous production environments.

The most recent National Beef Quality Audit (2005), indicates that 92.1% of all cattle grade either Choice (51.9%) or Select (40.2%). This is certainly a large percentage, but that still leaves quite a bit of variance from a carcass standpoint. The most challenging part about this, is that there really is no way of accurately predicting QG when evaluating a steer live.

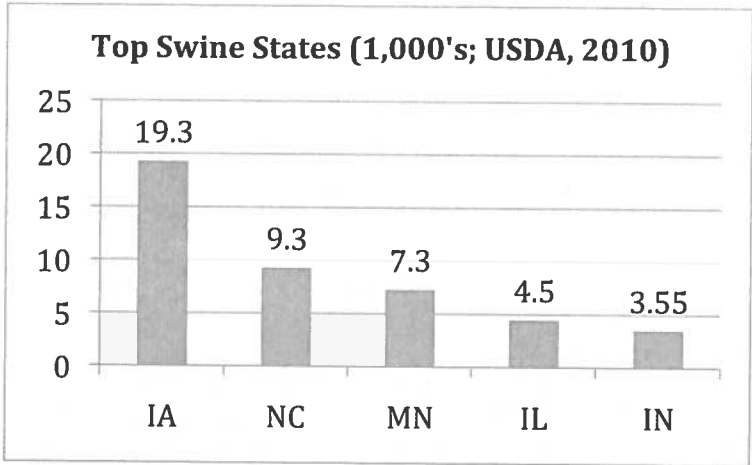
We are fortunate though, because cattle with a YG of 3 or better averaged grading Choice, and a majority of cattle fall within the YG 2 (36.3%) and YG 3 (33.1%) range. Of those in the YG 2 category 20.9% were in the upper YG 2 sector, whereas, 19.8 % of those in the YG 3 group were in the lower range. We can therefore conclude that since 40.7% of all cattle fall in the upper YG 2 or lower YG 3 range, and that as cattle approach a YG 3 they become more likely to grade choice, then all we really need to do is master YG estimates to understand live carcass value. Therefore, we will be looking to find upper YG 2 and lower YG 3 cattle because they should have high opportunity of grading choice, and have an acceptable YG.

Swine

Swine production environments are the least variable of all the species we will discuss. Since the 1970's nearly all commercial swine have been raised in virtually the same types of environments. Prior to vertical integration of the swine industry, most livestock farmers were



diversified producers that had a few sows, raised their pigs until they reached an acceptable market weight, and then sold them for a profit (farrow to finish). Back then it would have been uncommon for any swine producer to have more than 200 sows at any one time. Now, the industry has been combined into large cooperations, and each individual



With the exception of North Carolina, the top swine states are in the Midwest Corn Belt, due to feedstuff availability.

farm concentrates on one specific sector of swine production. For instance, it would now be unlikely for a farrowing barn to house less than a 1000 sows. There are other niche markets we will discuss later that have a direct effect on competitive livestock judging.

The function of swine is pretty simple, to grow fast and produce uniform, acceptable carcasses. Measurements for

swine are obtained from a different location than for the other species. Most swine are not ribbed, however, when they are, they are ribbed between the 10th and 11th ribs. Fat thickness is referred to as 10th rib FT, and measurement for muscle is referred to as loin eye area (LEA) rather than rib eye area. The measurements for 10th rib FT and LEA, in addition to LW are used to determine percent fat free lean (FFL). This measurement is the equivalent of YG in lamb and beef carcasses. There is no QG in swine carcasses, however, they are evaluated for color, firmness, and water retention. You may have heard of a carcass being PSE (pale, soft, and exudative), that is when a carcass has poor color, firmness, and water retention qualities. The LW of market hogs has continued to increase, but the acceptable range is typically between 250-300 lbs., with the average being 270 lbs. At 270 lbs., the average 10th rib FT is near 0.78", and the average LEA is 7.3 in².

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Evaluating Livestock

There are many approaches to evaluating livestock that are effective at producing a competitive placing score in a judging contest. I briefly discussed my approach to evaluating animals in the first section of this chapter, and we will delve into more detail in this section. Many times, students are taught to compare the animals to determine their final placing, and in the system we will be working with there is very little need for comparison (to be honest, students that only compare the animals and never evaluate them as individuals are typically not very consistent placers). The process of strictly comparing animals is the easiest to teach and understand at first, however, it often leads students to comparing animals that are of vastly different quality which is what causes poor placings.

In addition to being able to align four animals at a judging contest, I would prefer that my students be able to select livestock regardless of how many head they are looking

at. Its not uncommon to hear this complaint about a judge fresh out of college, "They may know how to judge four animals, but they can't judge them in a show ring". From my observations, I feel that when this occurs, it is usually because the judge has been trained to compare all of the animals rather than to judge and rank them on their individual merit. Accordingly, we will follow a system for judging that has been proven to work time and time again. In fact, this past year at NAILE only one of our students admitted to using this system for all 12 classes, and that resulted in them being 14th (150 total) overall in placings for the contest (only 9 points away from 1st). If we could have all five of our students in the top 10% of the event in placings our team will have no option but be highly competitive.

I call this system the *Elimination Approach to Livestock Judging*. It is the exact same system I use any time I look at animals (shows, sales, contests). It's adaptability is why it is so effective, and those that commit to using it when evaluating anything will have success not only in the judging arena, but also in life. Here is how it works:

1. **First Impressions** - Make the first impression count! The first time you look at an animal, even before you thoroughly evaluate them, determine if they are in one of three categories; Good (always top pair unless there are more than two good ones), Average (typically middle pair, occasionally top pair if there are no good animals), or Bad (always bottom pair unless there are more than three bad animals). Write this first impression down in your notes, and always check your first impressions before you turn in your card. When I'm judging a show, I always have them grouped, and often times have all of the animals placed as they walk into the ring.
2. **Evaluate Individuals** - Each animal must be evaluated individually to determine what their strenghts and weaknesses are. This step is the most crucial for the system to work. Not only must you be confident that your evaluations are accurate, but you must stay committed to evaluating the animals independently of one another.
3. **Eliminate** - Stay committed to eliminating the animals based on when they should be "sorted" from the other animals. We work off of "sorts", they are similar to priorities in that we will have in our mind which are more imporant than others. Unique to priorities, we will not be ranking the animals out, but rather answering "Yes or No" questions about them.
4. **Compare** - If by this point, you need more criteria to come up with a placing, compare only the animals that have not been sorted off for some reason. Trying to compare the others will only result in a poor placing.
5. **Final Rank** - Come to a final ranking decsion and stick to it! I can't tell you how important sticking to your initial ranking is. Not only will it build confidence for reasons, but most often you are more correct than any second thought might be.

Example: Although this system may be new for some you as far as livestock judging is concerned, it is not unlike any other decision you may have to make. In fact, tt's like buying

a new vehicle. If I needed a 4-wheel drive pick-up, and would like to have one with 4 doors what would I do first? First, I would scan the lot and see how many trucks I like at first glance (**First Impression**), let's say there were 15 that caught my eye.

Since I know I need a 4-wheel drive, I would sort off all of the 2-wheel drive pick-ups and eliminate them from consideration (**Eliminate**). Then, if I had two left and only one had 4 doors my decision would be made (**Eliminate**).

If both had 4 doors, I would need additional criteria to make my decision, and would then start comparing them (**Compare**). If both had 2 doors and I had to buy one from that lot, I would gather the same information I would if both had 4 doors (**Compare**).

In a short period of time I could have determined which truck out of 15 worked best for me, whereas many people could spend all day combing the lot and never purchase anything (**Final Rank**). Because of the nature of the *Elimination Approach*, explaining how decisions are made becomes much easier as well. If the process is followed, each time a decision is made, the person making the decision should know exactly why, and can easily explain

Elimination Approach Tips

- ◆ Believe in your ability to accurately evaluate
- ◆ Stay committed to first evaluating animals on individual merit
- ◆ Compare only those animals that are of similar quality
- ◆ Know why you are eliminating an animal

their decision.

Sorts

On the next page is a sample walkthrough that has the sorts we will be using to evaluate market animals on an individual basis. There is a line at the top for *First Impressions*, and the sorts are listed below. Notice, there are three groupings; *Market Fundamentals*, *Practicality*, and *Balance and Quality*.

Market Fundamentals are the key components needed for an animal's carcass to be useful. In almost every grouping of market animals there is at least one animal that can be eliminated because they don't have the fundamentals for an animal to complete its function. The big question we should first be asking ourselves is, "Can this animal perform its function?". For market animals, the function is having an acceptable carcass. There will be times that the animal we predict to have the best carcass will be 1st in class, and also times when they may be 3rd in class. This is why we must establish a baseline for when enough carcass value has been obtained.

**The Ohio State University Livestock
Judging Team**

*Market Animal Evaluation Walkthrough
First Impression: Good, Bad, or Average*

<u>Market Fundamentals</u>	
1. Heavy Muscled.....	Y or N
2. Acceptable Leanness.....	Y or N
3. Growth	Y or N
<u>Practicality</u>	
1. Body Volume and Genuine Width	Y or N
2. Acceptable Soundness.....	Y or N
<u>Balance and Quality</u>	
1. Attractive	Y or N
2. Youthful	Y or N

Practicality is the middle section of our sorts for market animals. This section basically refers to the question, "If I had to make a living raising commercial animals, would this kind be able to perform efficiently?". Many of us that have been around the show ring understand that often times some animals wouldn't have made it to the show without significant assistance from their owners. If we are truly going to evaluate livestock we have to understand which type are effective producers. Generally speaking, we think that wide skeleton animals with sufficient body volume, that can move can survive and produce in a typical production environment.

The third section, *Balance and Quality*, is typically the most fun to judge. If an animal has not been sorted by this point, we have free reign to use the ones that are put together attractively. Keep in mind, real evaluators answer the first two sorting questions first before asking, "Would this one take a pretty picture?". This is the decision many of you get to see when you watch the Grand Champion Drive a show.

Below right is the sample breeding animal walkthrough that will be used to guide us through our decision making process. It is design with the same layout as the market animal walkthrough, but you can see there are some differences. First, the three sections are labled *Functionality*, *Power*, and *Balance and Quality*.

Similar to the market animal walkthrough, the first section relates directly to the function of the animal, and we will call it *Functionality*. If the animal is not able to survive in the herd for an extended period of time (longevity), then there is no need to invest in

**The Ohio State University Livestock
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*Breeding Animal Evaluation Walkthrough
First Impression: Good, Bad, or Average*

<u>Functionality</u>	
1. Body Volume & Genuine Width.....	Y or N
2. Acceptable Soundness.....	Y or N
3. Growth.....	Y or N
<u>Power</u>	
1. Adequate Muscularity.....	Y or N
2. Adequate Bone & Foot Size	Y or N
<u>Balance and Quality</u>	
1. Attractive Fronted.....	Y or N
2. Youthful	Y or N

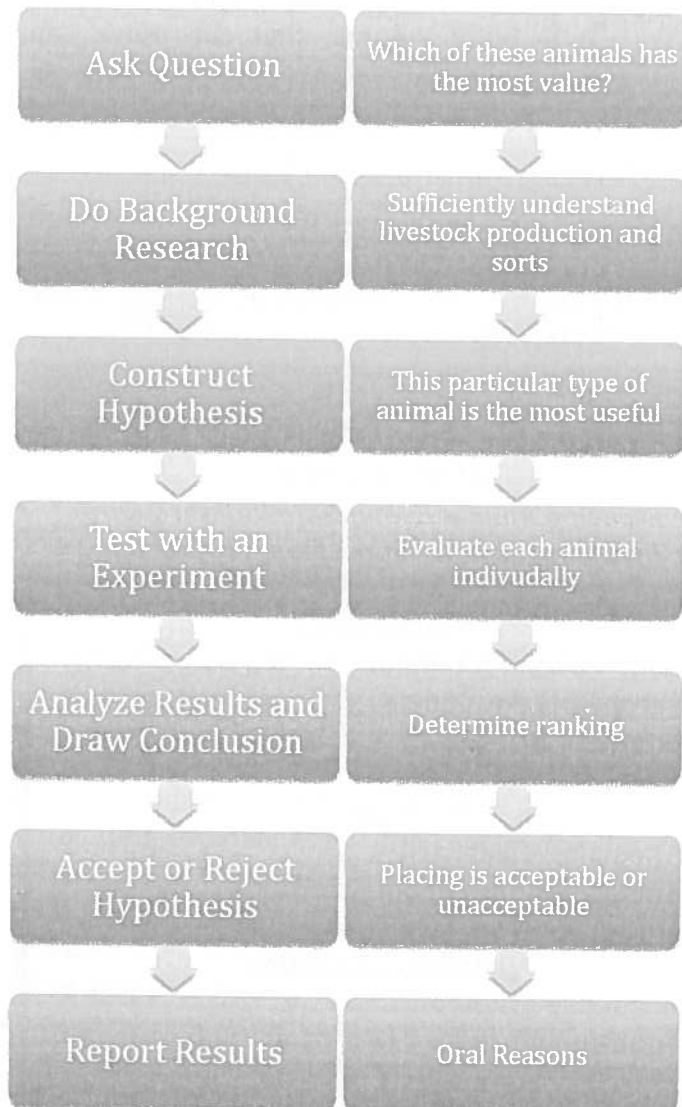
keeping the animal. Animals that cannot perform their function do not have value.

The second section is termed *Power*. This area relates to the animals ability to add mass to it's offspring. How much value does an animal have if they are unable to produce market animals? After all, aren't all animals eventually sold to market? The degree of power needed by males and females varies however. Male animals are used to add the terminal value in offspring, whereas, females are the workhorses that produce the progeny. Accordingly, males need substantially more power than females do to be termed acceptable.

Just like the other card, the final evaluation criteria is the fun one. When we find the animals that can function, and can add mass to their offspring, let's then use *Balance and Quality* to sort.

Scientific Method

For those of you that may be questioning whether judging has value for you in the future I want to address just exactly what judging is. It's an applied version of the scientific method. A person doing any kind of



research, whether it be in a scientific research laboratory, which retirement fund to invest in, or who to spend the rest of their life with goes through a very similar process. The first step is asking a question.

In livestock judging, the question is always "Which of these animals has the most value?". In order to answer this question effectively, we must first understand how livestock are produced, and what determines merit (sorts). Once we have that accomplished, we can establish, in our own minds what the most valueable type is. As an instructor and coach, I will teach you what I believe is the ideal type, and my hope is that over time you will accept that ideal. Our experiments are classes of livestock, and we must evaluate each animal individually just as each animal is an experiemental unit in animal sciences research. We will then draw a conclusion by determining a final ranking of the animals. This final ranking is a representative of what you believe to be the ideal type is. The

ranking will either be acceptable (small pair switch or 50), or unacceptable (bust) and then you will be asked to report your results with oral reasons. Up to this point, you have only been exposed to introductory information needed to initiate the process of evaluation. Before we discuss live evaluation in too much depth, we must first understand how we will be evaluated, and how we should take notes effectively for oral reasons.

Oral Reasons

Scoring oral reasons is highly subjective, and the point values for certain criteria are different for each reasons listener. The following rubric is very basic, and is the one that I will be using to evaluate each of you throughout your livestock judging experience. Because each person is different, some of the items described in the rubric will be easier for some people to master than for others. If we are going to succeed as a team, we must understand each person can help the other team members to improve their oral reasons ability, and be willing to do so. For people with very little livestock experience, the top portion of the rubric is often the most difficult to master due to their unfamiliarity with livestock.

ID's - Correct identification of each animal. This includes physical identification, and keeping numbers assigned to the correct animal during the entire set.

Accuracy - How accurately the person describes each animal. This section tends to improve with the more people become familiar with evaluating livestock. To maintain accuracy, only discuss differences that are obviously different. There is no need to try and describe subtle differences that could be interpreted differently by the listener. Instead, describe subtle differences between animals together. For instance, two steers that are both heavy muscled could be described as the pair of heavy muscled cattle.

Logical Descriptions - How effectively your descriptions logically describe the animals and are easy to follow. We will operate on a priority based system where our reasons will describe the same details that affect a larger picture. For example, when describing a steer's carcass value it makes sense to describe all of the muscle features and all of the finish features at the same time. It does not make sense to describe muscle, then balance, and then come back to finish.

Logical Argument - Reasons are nothing more than building an argument for defending your placing. The argument needs to be logical to be effective. In order to be truly logical, we need to begin each description of the animal with "BIG Things", the attributes that are the main reasons for the placing. In addition, the reasons listener needs to know why an animal being heavier muscled than another has value. That is why we will describe the reasons that place the class, and then elaborate on why those reasons matter from a placing standpoint.

Industry Application - does what you are saying mean anything in the livestock industry? If you are saying something that is unique, but doesn't hold any value to livestock production, or the livestock industry then you are just saying something flowery that actually makes you sound like a poser and unintelligent. We want to sound like we understand the livestock industry, and that is why our decision makes sense, not like some idiot that is only saying something unique because someone told them it was "cool".

Note Taking

Organizing Your Notebook

Like many things, one of the keys to presenting successful oral reasons is preparation. As livestock judges, taking the time to set up your notebook in an organized fashion in preparation for judging classes will boost your effectiveness not only when its time to give reasons, but also as you judge each class. Some people have slightly different variations of setting up their notebook, but for our format of reasons I'm going to insist on a few standards.

First, you will be required to use a steno book (pictured below, right). I've found that these books are quite useful as they not only allow us enough room to take notes on one sheet of paper per class, but also the back side of each sheet can be used for writing down phrases or scenarios and data.



Secondly, each set of class notes we take must include areas for the following information:

- Class Name
- Location
- Individual Animal Descriptions
- Opening Statement
- Placing
- Discussion for each pair
- Grant(s) for each pair
- Criticism(s) for each pair

On the next page, you will see an example of how to organize your steno book.

Notebook Definitions

Class Name – The name and number of the class being judged.

Location – Where the practice or contest is taking place. This will help you immensely after practice to remember the classes.

Individual Animal Descriptions – This is where you can ID's and what resources each animal or does not have.

Placing – Your final ranking of the class

Discussion – Comparison of the two animals in that pair. This should only include the reasons for placing the "upper" animal over the "lower" animal. (comparative statements)

Grant – Admission of where the "lower" animal excels the "upper" animal, or all animals in the class. (comparative, superlative, and descriptive statements)

Criticism – Area(s) where the “lower” animal has faults. Comparative statements should be used minimally, instead use superlatives and descriptions.

Class Name		Location	
1.			
2.			
3.			
4.			
Opening Statement		Placing	
Discussion		Grant	Criticism
Discussion		Grant	Criticism
Discussion		Grant	Criticism