

# APPENDIX

## National Cattleman's Beef Association Beef Quality Assurance Guidelines

### **Feedstuffs:**

- Maintain records of any pesticide/herbicide use on pasture or crops that could potentially lead to violative residues in grazing cattle or feedlot cattle.
- Adequate quality control program(s) are in place for incoming feedstuffs. Program(s) should be designed to eliminate contamination from molds, mycotoxins or chemicals of incoming feed ingredients. Supplier assurance of feed ingredient quality is recommended.
- Suspect feedstuffs should be analyzed prior to use.
- Ruminant-derived protein sources cannot be fed per FDA regulations.
- Feeding by-product ingredients should be supported with sound science.

### **Feed Additives and Medications:**

- Only FDA approved medicated feed additives will be used in rations.
- Medicated feed additives will be used in accordance with the FDA Good Manufacturing Practices (GMP) regulation.
- Follow 'Judicious Antibiotic Use Guidelines'.
- Extra-label use of feed additives is illegal and strictly prohibited.
- To avoid violative residues: withdrawal times must be strictly adhered to.
- Where applicable, complete records must be kept when formulating or feeding medicated feed rations.
- Records are to be kept a minimum of two years.

- Operator will assure that all additives are withdrawn at the proper time to avoid violative residues.

### **Injectable Animal Health Products:**

- Products labeled for subcutaneous (SQ) administration should be administered SQ in the neck region (ahead of the shoulders).
- All products labeled for intra-muscular (IM) use shall be given in the neck region only (no exceptions, regardless of age).
- All products cause tissue damage when injected IM. Therefore all IM use should be avoided if possible.
- Products cleared for SQ, IV or oral administration are recommended.
- Products with low dosage rates are recommended and proper spacing should be followed.
- No more than 10 cc of product is administered per IM injection site.

### **Care and Husbandry Practices:**

- Follow the 'Quality Assurance Herd Health Plan' that conforms to good veterinary and husbandry practices.
- All cattle will be handled/transported in such a fashion to minimize stress, injury and/or bruising.
- Facilities (fences, corrals, load-outs, etc.) should be inspected regularly to ensure proper care and ease of handling.
- Strive to keep feed and water handling equipment clean.
- Provide appropriate nutritional and feedstuffs management.
- Strive to maintain an environment appropriate to the production setting.
- Bio-security should be evaluated.
- Records should be kept for a minimum of 2 years (3 for Restricted Use Pesticides)

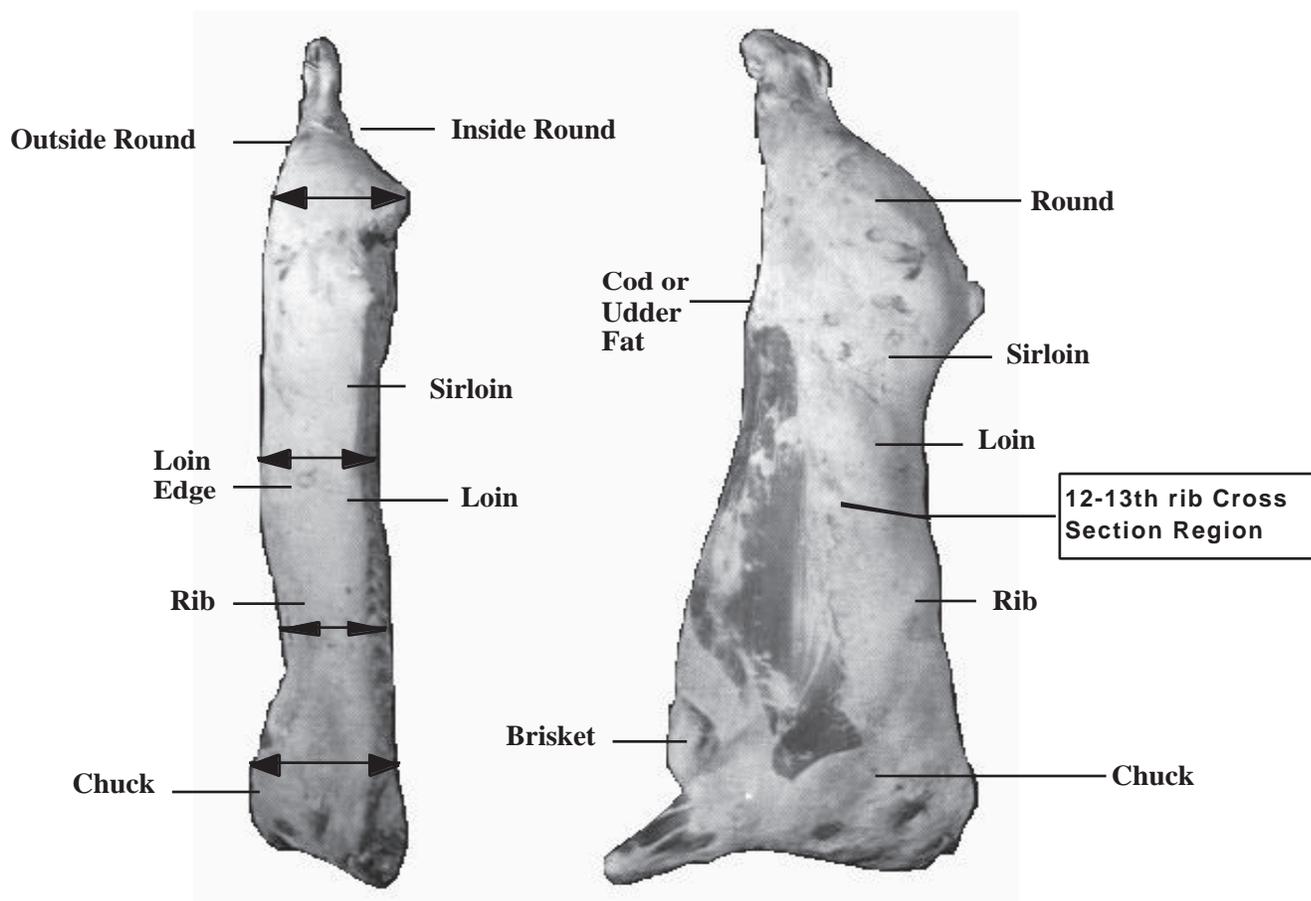
# Beef Quality Grades

A quality grade is a composite evaluation of factors that affect palatability of meat (tenderness, juiciness, and flavor). These factors include carcass maturity, firmness, texture, and color of lean, and the amount and distribution of marbling within the lean. Beef carcass quality grading is based on (1) degree of marbling and (2) degree of maturity.

## **MARBLING**

Marbling (intramuscular fat) is the intermingling or dispersion of fat within the lean. Graders evaluate the amount and distribution of marbling in the ribeye muscle at the cut surface after the carcass has been ribbed between the 12th and 13th ribs. Degree of marbling is the primary determination of quality grade.

## **Beef Quality and Yield Grading**



## Degrees of Marbling

Each degree of marbling is divided into 100 subunits. In general, however, marbling scores are discussed in tenths within each degree of marbling (e.g., Slight <sup>90</sup>, Small <sup>00</sup>, Small <sup>10</sup>).

Quality Grade	Marbling Score
Prime <sup>+</sup>	Abundant <sup>00-100</sup>
Prime <sup>o</sup>	Moderately Abundant <sup>00-100</sup>
Prime <sup>-</sup>	Slightly Abundant <sup>00-100</sup>
Choice <sup>+</sup>	Moderate <sup>00-100</sup>
Choice <sup>o</sup>	Modest <sup>00-100</sup>
Choice <sup>-</sup>	Small <sup>00-100</sup>
Select <sup>+</sup>	Slight <sup>50-100</sup>
Select <sup>-</sup>	Slight <sup>00-49</sup>
Standard <sup>+</sup>	Traces <sup>34-100</sup>
Standard <sup>o</sup>	Practically Devoid <sup>67-100</sup> to Traces <sup>00-33</sup>
Standard <sup>-</sup>	Practically Devoid <sup>00-66</sup>

In addition to marbling, there are other ways to evaluate muscle for quality. Firmness of muscle is desirable, as is proper color and texture. Desirable ribeyes will exhibit an adequate amount of finely dispersed marbling in a firm, fine textured, bright, cherry-red colored lean. As an animal matures, the characteristics of muscle change, and muscle color becomes darker and muscle texture becomes coarser.

## MATURITY

Maturity refers to the physiological age of the animal rather than the chronological age. Because the chronological age is virtually never known, physiological maturity is used; and the indicators are bone characteristics, ossification of cartilage, color and texture of ribeye muscle. Cartilage becomes bone, lean color darkens and texture becomes coarser with increasing age. Cartilage and bone maturity receives more emphasis because lean color and texture can be affected by other postmortem factors.

Cartilage evaluated in determining beef carcass physiological maturity are those associated with the vertebrae of the backbone, except the cervical (neck). Thus the cartilage between and on the dorsal edges of the individual sacral and lumbar vertebrae as well as the cartilage located on the dorsal surface of the spinous processes of the thoracic vertebrae (buttons). Cartilage in all these areas are considered in arriving at the maturity group. The buttons are the most prominent, softest and least ossified in the younger carcasses. As maturity proceeds from A to E, progressively more and more ossification becomes evident. Ribs are quite round and red in A maturity carcasses, whereas E maturity carcasses have wide and flat ribs. Redness of the ribs gradually decreases with advancing age in C maturity, and they generally become white in color because they no longer manufacture red blood cells and remain white thereafter. Color and texture of the longissimus muscle are used to determine carcass maturity when these characteristics differ sufficiently from normal.

There is a posterior-anterior progression in maturity. Thus, ossification begins in the sacral

region and with advancing age proceeds to the lumbar region and then even later it begins in the thoracic region (buttons) of the carcass. Because of this posterior-anterior progression of ossification, even young A maturity carcasses will have some ossification in the sacral cartilage.

In terms of chronological age, the buttons begin to ossify at 30 months of age. Determine age using thoracic buttons. When the percentage ossification of the cartilage reaches 10, 35, 70, and 90 percent, the maturity is B, C, D, and E, respectively.

Carcasses are stratified into five maturity groups, based on the estimated age of the live animal:

<b>Carcass maturity</b>	<b>Approximate live age</b>
A	9 - 30 mos.
B	30 - 42 mos.
C	42 - 72 mos.
D	72 - 96 mos.
E	> 96 mos.

### **Skeletal Ossification**

- Sacral vertebrae (first to ossify)
- Lumbar vertebrae
- Thoracic vertebrae (buttons - last to ossify)
- Size and shape of the rib bones
- Condition of bones

### **Ossification of the vertebral column:**

Vertebrae	MATURITY GROUP				
	A	B	C	D	E
Sacral	Distinct separation	Completely fused	Completely fused	Completely fused	Completely fused
Lumbar	No ossification	Nearly completely ossified	Completely ossified	Completely ossified	Completely ossified
Thoracic	No ossification	Some ossification	Partially ossified	Considerable ossification (outlines of buttons are still visible)	Extensive ossification (outlines of buttons are barely visible)
Thoracic buttons	0-10%	10-35%	35-70%	70-90%	>90%

### Condition of the bodies of the split chine bones:

- A- Red, porous and soft
- B- Slightly red and slightly soft
- C- Tinged with red, slightly hard
- D- Rather white, moderately hard
- E- White, nonporous, extremely hard

### Appearance of the ribs:

- A- Narrow and oval
- B- Slightly wide and slightly flat
- C- Slightly wide and moderately flat
- D- Moderately wide and flat
- E- Wide and flat

### Lean Maturity:

Color and Texture - As maturity increases, lean becomes darker in color and coarser in texture

### Lean Maturity Descriptions

Maturity	Lean Color	Lean Texture
A <sup>0</sup>	light cherry-red	very fine
B <sup>0</sup>	light cherry-red to slightly dark red	fine
C <sup>0</sup>	moderately light red to moderately dark red	moderately fine
D <sup>0</sup>	moderately dark red to dark red	slightly coarse
E <sup>0</sup>	dark red to very dark red	coarse

### Balancing lean maturity and bone maturity:

1. Use a simple average when bone and lean maturities are within 40 units of each other.
2. When there is more than 40 units difference in lean and bone maturity, average the two maturities and adjust the average 10% toward the bone except when:

### Crossing the B/C line

- If the average of the lean and bone maturities doesn't move across the B/C line from the bone maturity side (e.g., Bone = B and Lean = C with the average being B or Bone = C and Lean = B with the average being C); average the two maturities and adjust the average to the nearest 10% toward the bone.
- If the bone and lean maturities are not considerably different, but one is in B maturity and the other in C maturity and the average of the two moves across the B/C line from the bone maturity side, the overall maturity will be on the side of bone

maturity -- it will be either B-100 or C-00.

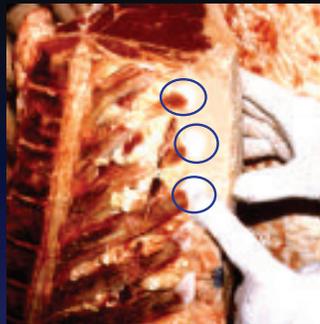
- In no case may overall maturity be more than one full maturity group different than bone maturity. A80 lean + D20 skeletal = C20 overall.

#### Determination of Final Quality Grade:

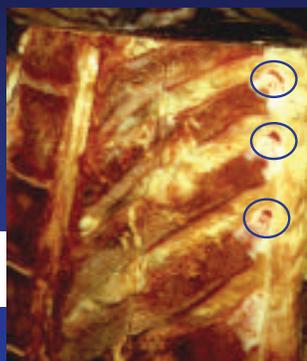
After the degree of maturity and marbling has been determined, these two factors are combined to arrive at the Final Quality Grade. The fundamentals involved in applying quality grades are learning the degrees of marbling in order from lowest to highest and minimum marbling degrees for each maturity group and understanding the relationship between marbling and maturity in each quality grade.



### **"A" and "B" Maturity Carcass Thoracic Chine Buttons**



**"A" Maturity**



**"B" Maturity**

## Relationship Between Marbling, Maturity, and Carcass Quality Grade\*

Degrees of Marbling		Maturity**					Degrees of Marbling	
		A***	B	C	D	E		
Abundant								Abundant
Moderately Abundant	<b>Prime</b>							Moderately Abundant
Slightly Abundant								Slightly Abundant
Moderate			<b>Commercial</b>					Moderate
Modest	<b>Choice</b>							Modest
Small								Small
Slight	<b>Select</b>				<b>Utility</b>			Slight
Traces							<b>Cutter</b>	Traces
Practically Devoid	<b>Standard</b>							Practically Devoid

\* Assumes that firmness of lean is comparably developed with the degree of marbling and that the carcass is not a "dark cutter."

\*\* Maturity increases from left to right (A through E).

\*\*\* The A maturity portion of the Figure is the only portion applicable to bullock carcasses.

USDA (1996) Standards for Grades of Slaughter Cattle and Standards for Grades of Carcass Beef.

### Step-Wise Procedure for Quality Grading Beef Carcasses

- Determine carcass skeletal maturity by evaluating the degree of skeletal ossification in the top three thoracic vertebra (buttons), and the sacral and lumbar vertebra. Also evaluate the color and shape of the ribs. Determine lean maturity by evaluating the color and texture of the lean in the ribeye exposed between the 12th and 13th ribs.

Skeletal Maturity + Lean Maturity = Overall Maturity

$$\begin{array}{rclcl}
 A^{60} & + & A^{40} & = & A^{50} & \text{(SimpleAverage)} \\
 B^{60} & + & A^{80} & = & B^{30} & (>40; 10\% \text{ to bone}) \\
 C^{60} & + & B^{10} & = & C^{00} & \text{(B/C line)} \\
 D^{60} & + & B^{20} & = & C^{60} & (\leq 100\% \text{ from bone})
 \end{array}$$

- Evaluate the marbling in the ribeye and determine the marbling score.

Overall Maturity + Marbling Score = USDA Quality Grade

$$\begin{array}{rclcl}
 A^{70} & + & Sm^{40} & = & Ch \\
 B^{60} & + & Md^{40} & = & Ch^{\circ}
 \end{array}$$

- Determine lean firmness to ensure that the minimum degree of firmness specified for each maturity group is met.

**Table illustrating the minimum marbling score requirements for USDA quality grades within each final maturity group**

USDA QUALITY GRADE	FINAL MATURITY SCORE				
	A <sup>00</sup>	B <sup>00</sup>	C <sup>00</sup>	D <sup>00</sup>	E <sup>00</sup>
PRIME+	AB <sup>00</sup>	AB <sup>00</sup>	----	----	----
PRIME°	MAB <sup>00</sup>	MAB <sup>00</sup>	----	----	----
PRIME-	SLAB <sup>00</sup>	SLAB <sup>00</sup>	----	----	----
CHOICE+	MD <sup>00</sup>	MD <sup>00</sup>	----	----	----
CHOICE°	MT <sup>00</sup>	MT <sup>00</sup>	----	----	----
CHOICE-	SM <sup>00</sup>	----	----	----	----
SELECT+	SL <sup>50</sup>	----	----	----	----
SELECT-	SL <sup>00</sup>	----	----	----	----
STANDARD+	TR <sup>00</sup>	TR <sup>00</sup>	----	----	----
STANDARD-	PD <sup>00</sup>	PD <sup>00</sup>	----	----	----
COMMERCIAL+	----	----	MD <sup>00</sup>	SLAB <sup>00</sup>	AB <sup>00</sup>
COMMERCIAL°	----	----	MT <sup>00</sup>	MD <sup>00</sup>	SLAB <sup>00</sup>
COMMERCIAL-	----	----	SM <sup>00</sup>	MT <sup>00</sup>	MD <sup>00</sup>
UTILITY+	----	----	SL <sup>00</sup>	SM <sup>00</sup>	MT <sup>00</sup>
UTILITY°	----	----	TR <sup>00</sup>	SL <sup>00</sup>	SM <sup>00</sup>
UTILITY-	----	----	PD <sup>00</sup>	TR <sup>00</sup>	SL <sup>00</sup>

\* AB = Abundant; MAB = Moderately Abundant; SLAB = Slightly Abundant; MD = Moderate; MT = Modest; SM = Small; SL = Slight; TR = Traces; PD = Practically Devoid.

\* Carcasses with B, C, D, or E final maturity scores require an increasing amount of marbling as maturity increases to remain in the same quality grade.

\* Carcasses having B final maturity scores with Small and Slight marbling must grade U.S. Standard. There is no U.S. Select grade for B maturity carcasses.

# BEEF YIELD GRADES

In beef, yield grades estimate the amount of boneless, closely trimmed retail cuts from the high-value parts of the carcass — the round, loin, rib, and chuck. However, they also show differences in the total yield of retail cuts. We expect a YG 1 carcass to have the highest percentage of boneless, closely trimmed retail cuts, or higher cutability, while a YG 5 carcass would have the lowest percentage of boneless, closely trimmed retail cuts, or the lowest cutability. The USDA Yield Grades are rated numerically and are 1, 2, 3, 4, and 5. Yield Grade 1 denotes the highest yielding carcass and Yield Grade 5, the lowest.

The USDA prediction equation for percent boneless, closely trimmed retail cuts (% BCTRC) of beef carcasses is as follows:

$$\begin{aligned} \% \text{ BCTRC} = & 51.34 \text{ Minus } 5.78 \quad (\text{Fat opposite the ribeye, in.}) \\ & \text{Minus } 0.46 \quad (\text{Percentage KPH fat}) \\ & \text{Minus } 0.0093 \quad (\text{Carcass weight, pounds}) \\ & \text{Plus } 0.74 \quad (\text{Ribeye area, in.}^2) \end{aligned}$$

Expected percentage of boneless, closely trimmed retail cuts from beef carcasses within the **various yield grades**

YIELD GRADE	% BCTRC
1	≥ 52.3
2	52.3 - 50.0
3	50.0 - 47.7
4	47.7 - 45.4
5	< 45.5

Meat graders assign a yield grade to a carcass by evaluating:

- (1) the amount of external fat;
- (2) the hot carcass weight;
- (3) the amount of kidney, pelvic, and heart fat; and
- (4) the area of the ribeye muscle.

Graders evaluate the amount of external fat at the 12th rib by measuring the thickness of fat three-fourths the length of the ribeye from the chine. They adjust this measurement to reflect unusual amounts of fat in other areas of the carcass. Only graders highly skilled in evaluating cutability of beef carcasses make these adjustments according to whether the measured fat thickness is representative of the fat coverage over the rest of the carcass.

Carcass weight is the “hot” or unchilled weight in pounds (taken on the slaughter-dressing floor shortly after slaughter). The grader usually writes this weight on a tag or stamps it on the carcass. The amount of kidney, pelvic, and heart (KPH) fat is evaluated subjectively and is expressed as a percentage of the carcass weight (this usually will be from 2 to 4 percent of carcass weight). The area of the ribeye is determined by measuring the size (in inches, using a

dot-grid) of the ribeye muscle at the 12th rib.

The following descriptions will help you understand the differences between carcasses from the five yield grades:

**Yield Grade 1** - The carcass is covered with a thin layer of external fat over the loin and rib; there are slight deposits of fat in the flank, cod or udder, kidney, pelvic and heart regions. Usually, there is a very thin layer of fat over the outside of the round and over the chuck.

**Yield Grade 2** - The carcass is almost completely covered with external fat, but lean is very visible through the fat over the outside of the round, chuck, and neck. Usually, there is a slightly thin layer of fat over the inside round, loin, and rib, with a slightly thick layer of fat over the rump and sirloin.

**Yield Grade 3** - The carcass is usually completely covered with external fat; lean is plainly visible through the fat only on the lower part of the outside of the round and neck. Usually, there is a slightly thick layer of fat over the rump and sirloin. Also, there are usually slightly larger deposits of fat in the flank, cod or udder, kidney, pelvic and heart regions.

**Yield Grade 4** - The carcass is usually completely covered with external fat, except that muscle is visible in the shank, outside of the flank and plate regions. Usually, there is a moderately thick layer of external fat over the inside of the round, loin, and rib, along with a thick layer of fat over the rump and sirloin. There are usually large deposits of fat in the flank, cod or udder, kidney, pelvic and heart regions.

**Yield Grade 5** - Generally, the carcass is covered with a thick layer of fat on all external surfaces. Extensive fat is found in the brisket, cod or udder, kidney, pelvic and heart regions.

### Step-Wise Procedure for Yield Grading Beef Carcasses

#### 1. Determine the preliminary yield grade (PYG).

Measure the amount of external fat opposite the ribeye. This measurement should be made at a point three-fourths of the way up the length of the ribeye from the split chine bone. Based on this fat thickness, a preliminary yield grade (PYG) can be established. The base PYG is 2.00. The more fat opposite the ribeye, the higher the numerical value of the PYG.

- A carcass with no fat opposite to ribeye has a PYG of 2.00
- For each .1 inch of fat add .25 to the PYG

Fat opposite ribeye	PYG
0	2.00
.2	2.50
.4	3.00
.6	3.50
.8	4.00
1.0	4.50

## 2. Adjust for carcass weight deviations from 600 pounds.

The base weight in the yield grade equation is 600 pounds. If a carcass weighs more than 600 pounds, then we increase the PYG, and if a carcass weighs less than 600, then we decrease the PYG.

- For each 25 pounds over 600 pounds, add .10 to the PYG
- For each 25 pounds under 600 pounds, subtract .10 from the PYG

Carcass weight (lbs)	Adjustment to the PYG
500	- .40
550	- .20
600	No adjustment
650	+ .20
700	+ .40
750	+ .60

## 3. Adjust for percentage KPH deviations from 3.5 percent.

It has been determined that the average carcass has 3.5% KPH. If a carcass has more than 3.5% KPH, then the carcass is fatter than the average and the PYG should be adjusted up, raising the numerical yield grade. If a carcass has less than 3.5% KPH, then the carcass is leaner than average and the PYG should be adjusted down, thus lowering the yield grade.

- For each 1%KPH over 3.5%, add .20 to the PYG
- For each 1%KPH under 3.5%, subtract .20 from the PYG

%KPH	Adjustment to the PYG
1.5	- .40
2.0	- .30
2.5	- .20
3.0	- .10
3.5	No adjustment
4.0	+ .10

## 4. Adjust for ribeye area (REA) deviations from 11.0 sq. in.

The average carcass has a ribeye area of 11 sq. in. If a carcass has a ribeye area greater than 11.0 in., then it is probably more muscular than average, and the PYG should be adjusted down to lower the numerical value of the yield grade. If the ribeye area is less than 11.0 in., then the carcass is probably less muscular than average and the PYG should be adjusted up.

- For each 1.0 sq. in. over 11.0 sq. in., subtract .33 from the PYG
- For each 1.0 sq. in. under 11.0 sq. in., add .33 to the PYG

Ribeye area (sq. in.)	Adjustment to the PYG
9.5	+ .49
10.0	+ .33
10.5	+ .16
11.0	No adjustment
11.5	- .16
12.0	- .33
12.5	- .49
13.0	- .66

Example yield grade problem using the short cut method:

Fat thickness: 0.5 in. Carcass weight: 750 lbs. %KPH: 2.0 REA: 14.0 sq. in.

a. 0.5 in. = 3.25

b. 750 minus 600 = 150 / 25 = 6 \* .1 = .6 (add)

c. 3.5 minus 2.0 = 1.5 \* .2 = .30 (subtract)

d. 14.0 minus 11.0 = 3 \* .33 = .99 (subtract)

	3.25	PYG
plus	.60	Weight
minus	.30	KPH
minus	.99	REA
	<hr/> 2.56	Final YG

# Classification of Drugs

The final products of animal agriculture are meat, milk, and fiber for human consumption. It is extremely important to understand regulations concerning drugs administered to food animals.

The Food and Drug Administration (FDA) broadly categorizes veterinary drugs as Over the Counter (OTC) or Prescription Drugs. Purchase of OTC drugs does not require the involvement of a licensed veterinarian. Use of OTC drugs in any manner that deviates from the label is illegal, unless a veterinarian prescribes the deviation. For example, the OTC label for penicillin G procaine in cattle specifies 1 ml/cwt given IM (in the muscle) and treatment should not exceed four consecutive days. Producers should not administer 2 ml/cwt, continue for five consecutive days, or administer the product SQ (under the skin), because any of these practices constitutes extra-label drug use. If you deviate from label instructions then the treatment effectively becomes extra-label drug use, reclassifying the drug as a prescription product. Prescription products require involvement of a licensed veterinarian and the establishment of a veterinary client patient relationship.

## **A Veterinary Client Patient Relationship requires the establishment of the following three criteria:**

a. A veterinarian has assumed the responsibility

for making clinical judgments regarding the health of the animal(s) and the need for medical treatment, and the client has agreed to follow the veterinarian's instructions.

b. The veterinarian has sufficient knowledge of the animal(s) to initiate at least a general or preliminary diagnosis of the medical condition of the animal(s). This means that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal(s) by virtue of an examination of the animal(s) or by medically appropriate and timely visits to the premises where the animal(s) are kept.

c. The veterinarian is readily available for follow-up evaluation, or has arranged for emergency coverage, in the event of adverse reactions, or failure of the treatment regimen.

Prescription drugs bear the statement "*Caution: Federal law restricts this drug to use by or on the order of a licensed veterinarian*" on their label. A veterinarian cannot, under the law, dispense or prescribe prescription drugs in the absence of a valid veterinary/client patient relationship.

## **Compounding**

Compounding from FDA-approved drugs is considered extra-label drug use under FDA rules. According to the American Veterinary Medical Association, "compounding is the customized manipulation of an approved drug(s) by either a veterinarian, or by a

pharmacist upon the prescription of a veterinarian, to meet the needs of a particular patient." Mixing two injectable products would be an example of compounding.

*Compounding of bulk drugs for food animals is prohibited, except under special circumstances such as antidotes or large-volume electrolytes, and the FDA states that investigations into violations will be given high regulatory priority.*

Extra-label drug use includes any deviation from label instructions in OTC drugs, the use of any prescription drug in a manner not on the label, and the use of compounded drugs that are FDA approved. Extra-label drug use is only allowed if the animal(s) is suffering or death would result from failure to treat the affected animal(s). Otherwise, extra-label use of drugs is not condoned by FDA under any other circumstances, such as compounding hormones or using FDA approved drugs for estrus synchronization when they are not labeled for such use.

**All veterinary prescription drugs, OTC drugs used extra label, and FDA approved compounded drugs require veterinary involvement and the establishment of a veterinary client patient relationship.**

The list of prohibited drugs may be amended by the FDA , therefore the list is accurate as of publication of this document.

Prohibited in Food Producing Animals:

Chloramphenicol

Clenbuterol

Diethylstilbestrol

Dimetridazole, Iprnidazole, or other Nitromidazoles

Nitrofurazone, Furazolidone in any manner to include topical treatments

Glycopeptides (Vancomycin)

Fluoroquinolones in any extra-label manner. (Example Baytril 100 is indicated for the treatment of bovine respiratory disease associated with *Mannheimia haemolytica*, *Pasteurella multocida* and *Histophilus somni*. It is illegal to use Baytril 100 to treat any other condition in cattle such as foot rot or diarrhea.)

Dipyrrone

**Prohibited therapy in lactating dairy cows:**

Any sulfonamide except for approved uses of sulfadimethoxine, sulfabromothiazine, and sulfaethoxyypyridazine.

**Prohibited therapy in female dairy cattle 20 months of age or older:**

Phenylbutazone

# Ruminant Ban Fact Sheet

Purpose and Scope of Regulation: The Food and Drug Administration (FDA) adopted the “Animal Proteins Prohibited from Ruminant Feed” regulation to prevent the establishment of bovine spongiform encephalopathy (BSE) in the United States through feed and, thereby, minimize any risk to animals and humans.

The regulation prohibits the use of protein derived from mammals in ruminant animal feed. However, there are certain exceptions to the rule. For current information on BSE and regulations on the use of mammalian-derived proteins in ruminant feed, please visit the FDA website at [www.fda.gov](http://www.fda.gov).

# Glossary of Terms

**Abscess:** A swollen, inflamed area in body tissue in which pus gathers.

**Accuracy:** A measure of reliability associated with an Expected Progeny Difference (EPD). The measure ranges from 0 to 1, with values closer to 1 indicating greater reliability because of the inclusion of more information.

**Active ingredient:** The specific drug component part of a chemical compound.

**Additive:** An ingredient or substance added to a basic feed mix, usually in small quantities for the purpose of fortifying it with certain nutrients, stimulants and/or medications.

**Animal unit:** Common animal denominator based on feed/forage consumption.

**Anthelmintic:** A drug or chemical that kills or expels worms.

**Antibiotic:** A class of drugs, such as penicillin, used to control or cure disease. Antibiotics are used to treat both human and animal disease caused by bacteria.

**Antiseptic:** A substance that reduces or stops growth of organisms in or on living tissue.

**Artificial insemination (AI):** The technique of placing semen from the male into the reproductive tract of the female by means other than natural service.

**Average daily gain:** Measurement of an animal's daily body weight change.

**Backcross:** The mating of a crossbred (F1) animal back to one of its parental breeds (for example, a Hereford-Angus crossbred mated to an Angus bull).

**Beef Quality Assurance (BQA):** Begun in 1987, the beef industry's BQA program includes training for cattle producers aimed at ensuring beef safety from conception to the consumer's dinner plate. It includes instruction on everything from proper vaccination procedures and withdrawal

times to monitoring feed ingredients for potential chemical contaminants.

**Bloat:** A digestive disorder of ruminants usually characterized by an abnormal accumulation of gas in the rumen. Usually seen on the animal's upper left side.

**Body Condition Score:** A score on a scale of 1 to 9, reflecting the amount of fat reserves in a cow's body, where 1 = very thin and 9 = extremely fat.

***Bos indicus:*** These are Zebu (humped) cattle that originated in India. Includes breeds like the Brahman breed in the United States.

***Bos taurus:*** British and European/Continental breeds are derived from this species.

**Bovine Spongiform Encephalopathy (BSE):** It is an extremely rare, chronic degenerative disease affecting the central nervous system of cattle. It was first identified in Great Britain in 1986. Based upon USDA surveillance efforts, there are no documented cases of BSE in the United States.

**Breed:** Animals with a common origin and common characteristics that distinguish them from other groups of animals within that same species.

**Breeding program goals:** The objective or "direction" of breeders' selection programs. Goals are basic decisions breeders must make to give "direction" to their breeding programs. Goals should vary among breeders due to relative genetic merit of their cattle, their resources and their markets.

**Breeding soundness examination:** Inspection of a bull involving evaluation of physical conformation and soundness through genital palpation, scrotal circumference and testing semen for mobility and morphology.

**Breed type:** The combination of characteristics that makes an animal better suited for a specific purpose.

**British breeds:** Breeds of cattle originating in Great Britain, such as Angus, Hereford and Shorthorn.

**Calving difficulty (Dystocia):** Abnormal or difficult labor, causing difficulty in delivering a fetus and/or placenta.

**Carcass evaluation:** Techniques of measuring components of quality and quantity in carcasses.

**Carcass merit:** Desirability of a carcass relative to quantity of components (muscle, fat and bone), USDA Quality Grade and potential eating qualities.

**Carcass yield:** The carcass weight as a percentage of the liveweight.

**Carrier:** A heterozygous individual having one recessive gene and one dominant gene for a given pair of genes (alleles). For example, an animal with a dominant gene for polledness and a recessive gene for horns will be polled, but can produce horned offspring when mated to another animal carrying the gene for horns.

**Clinical disease:** Visible signs of poor health due to the presence of invading organisms.

**Colostrum:** The milk secreted by mammalian females for the first few days before and following parturition, which is high in antibodies and laxative.

**Compensatory gain:** Gain from cattle that have been nutritionally deprived for part or all of their lives. When fed feedlot rations, they compensate for the earlier restriction of feed by gaining very rapidly and efficiently.

**Composite or Combination breed:** A breed formed from a combination of two or more breeds.

**Concentrate:** A broad classification of feedstuffs that are high in energy and low in crude fiber (less than 18%).

**Conformation:** The shape and arrangement of the different body parts of an animal.

**Congenital:** Acquired during prenatal life. Condition exists at or dates from birth. Often used in the context of congenital (birth) defects.

**Contemporary group:** A group of cattle that are of the same breed and sex and have been raised in the same management group (same location

on the same feed and pasture). Contemporary groups should include as many cattle as can be accurately compared.

**Continental breeds:** Breeds that originate from Europe (other than British Isles).

**Correlation:** A measure of how two traits vary together. A correlation of +1.00 means that as one trait increases, the other also increases — a perfect positive relationship. A correlation of -1.00 means that as one trait increases, the other decreases — a perfect negative, or inverse, relationship. A correlation of 0.00 means that as one trait increases, the other may increase or decrease — no consistent relationship. Correlation coefficients may vary between +1.00 to -1.00.

**Creutzfeldt-Jakob Disease (CJD):** It is a human disease of a class of rare degenerative brain diseases called Transmissible Spongiform Encephalopathies (TSE), some of which affect humans and some of which affect animals. While the agents which cause CJD are poorly understood, CJD occurs spontaneously at a consistent rate worldwide of one case per million persons per year. (Also see new variant CJD.)

**Crossbreeding:** The mating of animals of one breed or breed combination to dams of another breed or breed combination. Crossbreeding usually results in positive heterosis (hybrid vigor).

**Culling:** The process of eliminating cattle from a herd, especially because of low productivity or less desirability.

**Cutability:** An estimate of the percentage of salable meat (muscle closely trimmed of external fat) from the high-valued cuts (round, loin, rib and chuck) vs. percentage of waste fat. Percentage of retail yield of carcass weight can be estimated by a USDA prediction equation that includes hot carcass weight, ribeye area, fat thickness and estimated percent of kidney, pelvic and heart fat. Also estimated by USDA Yield Grade.

**Dark cutter:** Refers to the dark appearance of the lean muscle tissue in a carcass and is usually caused by stress (excitement) of the animal prior to harvest.

**Dioxin:** An organic compound found throughout

the world in air, soil, water and food. It is the by-product of natural events like forest fires and man-made processes, such as manufacturing and vehicle exhaust. Humans are exposed to dioxins through the air they breathe and the water they drink. Humans can also be exposed to dioxins in the food they eat. Due to the efforts of many industries, including beef, human dioxin levels have declined more than 72% during the past 20 years.

**Disinfectant:** A chemical capable of destroying disease-causing microorganisms or which inactivates viruses.

**Dressing percent:** (Hot carcass weight divided by liveweight) x 100.

**Dry matter basis:** A method of expressing the level of a nutrient contained in a feed on the basis that the material contains no moisture.

**Dystocia (calving difficulty):** Abnormal or difficult labor causing difficulty in delivering the fetus and/or placenta.

**Ear notching:** Making slits or perforations in an animal's ears for identification purposes.

***E.coli* 0157:H7:** A class of bacteria commonly found in the environment. *E.coli* 0157:H7 is a virulent strain of this bacteria found in the intestinal tract and feces in animals and humans. While *E.coli* 0157:H7 can cause food poisoning, thorough cooking destroys the bacteria. The beef industry continues to develop new technologies and procedures aimed at reducing the risk of *E.coli* 0157:H7.

**Energy feeds:** Feeds that are high in energy and low in fiber (less than 18%), and that generally contain less than 20% protein.

**Environment:** All external (non-genetic) conditions, not just climate, that influence the reproduction, production and carcass merit of cattle.

**Established safe level:** Concentration of drug metabolite in tissue considered to be without hazard to consumers and below which the FDA normally will not take regulatory action.

**Estrous:** The female reproductive cycle, averaging 21 days in cattle.

**Estrus:** Regularly recurrent state of sexual excitability during which the female (cow or heifer) will accept the male (bull). Also called heat.

**Estrus synchronization:** Causing a group of cows or heifers to exhibit estrus together at one time by artificial manipulation of the estrous cycle.

**European Hormone Ban:** A ban instituted in 1989 by the European Community (now called the EU) on imported meat and meat products treated with hormones. While the EU continues to argue the ban is based on health risk, there is no scientific evidence to support their claims. The United States views the ban as an artificial trade barrier erected by the EU to keep imported meat from competing with EU member countries who had created huge surpluses of domestic meat when the ban was initiated.

**Expected Progeny Difference (EPD):** The difference in performance to be expected from future progeny of an individual, compared with that expected from future progeny of another individual. EPD is an estimate of one-half of the transmittable breeding value of an animal.

**Extra-label usage:** Administering a drug or other substance in a manner not specified on the label. Can be performed or authorized only by a licensed veterinarian.

**F1:** Offspring resulting from the mating of a purebred (straightbred) bull to purebred (straightbred) females of another breed.

**Fat thickness:** Depth of fat in tenths of inches over the ribeye muscle between the 12th and 13th rib interface. It consists of a single measurement at a point 3/4 of the lateral length of the ribeye muscle from the split chine bone.

**FDA:** The Food and Drug Administration is part of the U.S. Department of Health, Education and Human Services. It is charged with the responsibility of safeguarding American consumers against injury, unsanitary food and fraud.

**Feed conversion (feed efficiency):** Units of feed consumed per unit of weight gained. Also the production (meat, milk) per unit of feed consumed.

**Fed cattle:** Steers and heifers that have been fed

concentrates prior to harvest.

**Feeder cattle:** Young, underfinished animals that will be placed on feed for slaughter.

**Frame Score:** An estimate of relative skeletal size based on height measured over the hips.

**Frame Size:** A subjective evaluation of differences in skeletal size, related to estimated slaughter weight at 0.5 inches external fat over the ribeye (predicted to result in low-Choice quality grade).

**Freemartin:** Female twin born with a male twin calf. Approximately 9.8 out of 10 of these female twins will not be fertile.

**Genes:** The basic units of heredity that occur in pairs and have their effect in pairs in the individual, but which are transmitted singly (one or the other gene at random of each pair) from each parent to offspring.

**Genetic correlations:** Correlations between two traits that arise because some of the same genes affect both traits. When two traits (i.e., weaning and yearling weight) are positively and highly correlated to one another, successful selection for one trait will result in an increase in the other trait. When two traits are negatively and highly correlated (i.e., birth weight and calving ease) to one another, successful selection for one trait will result in a decrease in the other trait.

**Genotype:** Actual genetic makeup (constitution) of an individual determined by its genes or germ plasm. For example, there are two genotypes for the polled phenotype PP (homozygous dominant) and Pp (heterozygote).

**Genotype x environment interaction:** Variation in the relative performance of different genotypes from one environment to another. For example, the "best" cattle (genotypes) for one environment may not be the "best" for another environment.

**Gestation:** The period of pregnancy or the period of time from conception until birth.

**Hazard Analysis and Critical Control Points (HACCP):** A systematic, science-based approach to assuring the production of safe food. The USDA Food Safety and Inspection Service requires all U.S. meat and poultry processing facilities

to implement the system.

**Heredity:** The transmission of genetic factors from parent to offspring.

**Heritability:** The proportion of the difference among cattle, measured or observed, that is transmitted to the offspring. Heritability varies from 0 to 1. The higher the heritability of a trait, the more accurately does the individual performance predict breeding value and the more rapid should be the response due to selection for that trait.

**Heritability estimate:** An estimate of the proportion of the total phenotypic variation between individuals for a certain trait that is due to heredity. More specifically, hereditary variation due to additive gene action.

**Heterosis (hybrid vigor):** Amount by which measured traits of the crossbreds exceed the average of the purebreds mated to produce the crossbreds.

**Heterozygous:** Genes of a specific pair (alleles) are different in an individual.

**Homozygous:** Genes of a specific pair (alleles) are alike in an individual.

**Hormones:** Naturally occurring chemical substances in all animals that affect such things as growth and development. Hormones are present naturally in virtually all foods of plant or animal origin. Growth-promoting hormones utilized by the U.S. beef industry to produce leaner beef more efficiently have the same effect as naturally occurring hormones. Neither naturally occurring hormones nor growth-promoting hormones used in beef production pose any sort of health risk to consumers.

**Hot carcass weight:** Weight of a carcass before chilling.

**Immunity:** The ability of an animal to resist or overcome an infection to which most members of its species are susceptible.

**Immunization:** The process and procedures involved in creating immunity (resistance to disease) in an animal. Vaccination is a form of immunization.

**Implants:** All growth-promoting hormone products used in the U.S. beef industry are manufactured as implants, which are placed beneath the skin on the back side of an animal's ear.

**Intramuscular fat:** Fat within the muscle, or marbling.

**Intramammary:** Placement of drugs and other substances directly into the udder, usually through the teat opening.

**Intramuscular injection (IM):** An injection into the muscle.

**Intrauterine:** Placement of drugs and other substances directly into the uterus.

**Intravenous injection (IV):** Injection of a drug or other substance directly into a vein.

**Irradiation:** The non-injurious exposure of food to low levels of radiation to eliminate harmful microbes. It destroys fungi, parasites and insects in and on food.

**Kidney, pelvic and heart fat (KPH):** Internal carcass fat associated with the kidney, pelvic cavity and heart expressed as percentage of chilled carcass weight. The kidney is included in the estimate of kidney fat.

**Labeling:** Written information detailing the content, intended use, instructions for use, withholding times and other specifics attached to the drug container and/or on a separate sheet accompanying the container.

**Lactation:** The period following calving during which milk is formed in the udder.

**Lesion:** The change in the structure or form of an animal's body caused by disease or an injury.

**Marbling:** The specks of fat (intramuscular fat) distributed in muscular tissue. Marbling is usually evaluated in the ribeye between the 12th and 13th rib.

**Maturity:** An estimation of the chronological age of an animal or carcass by assessing the physiological stages of maturity of bone and muscle characteristics.

**Medicated feed:** Any feed which contains drug

ingredients intended or represented for the cure, mitigation, treatment or prevention of diseases of animals.

**Metritis:** Inflammation of the uterus.

**Microorganism:** A living creature, such as a virus or bacterium, capable of being seen only under a microscope.

**Microflora:** Microbial life characteristic of a region, such as the bacteria and protozoa populating the rumen.

**Morbidity:** A state of sickness or the rate of sickness.

**Mortality:** Death or death rate.

**Mycotoxins:** Toxic metabolites produced by molds during growth, sometimes present in feed materials.

**National Cattle Evaluation:** Program of cattle evaluation conducted by breed associations to genetically compare animals. Carefully conducted national cattle evaluation programs give unbiased estimates of expected progeny differences (EPDs). Cattle evaluations are based on field data and rely on information from the individual animal, relatives and progeny to calculate EPDs.

**Natural beef:** A USDA label used by some beef purveyors. By definition (minimally processed and without food additives), all beef produced in the United States qualifies for the natural label.

**New variant CJD (nvCJD):** A new form of Creutzfeldt-Jakob Disease (CJD) identified in Great Britain. Some scientists believe it is related to Bovine Spongiform Encephalopathies (BSE), but it is clearly different from normal CJD. There are no documented cases of nvCJD in the United States.

**Non-fed cattle:** Animals slaughtered without a finishing period, usually cull cows and bulls sold for slaughter.

**Number of contemporaries:** The number of animals of similar breed, sex and age against which an animal is compared in performance tests. The greater the number of contemporaries, the greater the accuracy of comparisons.

**Offal:** All organs or tissues removed from the carcass.

**Optimum level of performance:** The most profitable or favorable ranges in levels of performance for the economically important traits in a given environment and management system. For example, although some cows may produce too little milk, in every management system there is a point beyond which higher levels of milk production may reduce fertility and decrease profit.

**Oral:** Placement of a drug or other substance into an animal through its mouth.

**OTC:** Drugs and other substances that can be bought by anyone over the counter because adequate instructions for safe and effective use by laymen can be printed on the label.

**Outcrossing:** Mating of individuals that are less closely related than the average of the breed. Commercial breeders and most purebred breeders should be outcrossing by periodically adding new sires that are unrelated to their cow herd. This outcrossing should reduce the possibility of loss of vigor due to inbreeding.

**Pathogen:** A type of bacteria, such as *Salmonella* or *E.coli* 0157:H7, that causes foodborne illnesses.

**Palatability:** Overall eating satisfaction to be sufficiently agreeable in tenderness, texture and taste.

**Parturition:** The act of giving birth or calving.

**Pedigree:** A tabulation of names of ancestors, usually only those of the three to five closest generations.

**Percent calf crop:** The percentage of calves weaned within a herd in a given year relative to the number of cows and heifers exposed to breeding.

**Performance data:** Records of individual animals for reproduction, production and carcass merit. Traits include things like birth, weaning and yearling weights, calving ease, milk production, marbling, etc.

**Pesticide:** A broad class of crop protection

compounds used to combat insects, fungus and rodents.

**Phenotype:** The visible or measurable expression of a character; for example, weaning weight, post-weaning gain, reproduction, etc. Genotype and environment influence phenotype.

**Phenotypic correlations:** Correlations between two traits caused by both genetic and environmental factors influencing both traits.

**Polled:** Naturally hornless cattle.

**ppb:** Parts per billion.

**ppm:** Parts per million.

**Postpartum:** After the birth of an individual.

**Preconditioning:** A way of preparing the calf to withstand the stress and rigors of leaving its mother, learning to eat new feeds and being shipped to a stocker or feedyard operation.

**Preweaning gain:** Weight gained between birth and weaning.

**Prion:** A protein molecule found in the membrane of brain cells. Prions are hypothesized by some researchers as the responsible agents for rare degenerative neurological diseases called Transmissible Spongiform Encephalopathies.

**Progeny:** The offspring of the parents.

**Progeny records:** Lifetime performance records of progeny of sires and dams.

**Progeny testing:** Comparison, under the same conditions, of progeny of more than one parent for purposes of estimating relative breeding value.

**Protein supplements:** Products that contain more than 20% protein or protein equivalent.

**Puberty:** The age at which reproductive organs become functionally operating and secondary sex characteristics begin to develop.

**Purebred:** An animal of known ancestry within a recognized breed that is eligible for registry in the official herd book of that breed.

**Qualitative traits:** Traits in which there is a sharp

distinction between phenotypes, such as black and white or polled and horned. Usually, only one or a few pairs of genes are involved in the expression of qualitative traits.

**Quality Grade:** An estimate of palatability based primarily on marbling and maturity, and to a lesser extent on color, texture and firmness of lean.

**Quantitative traits:** Traits in which there is no sharp distinction between phenotypes, with a gradual variation from one phenotype to another, such as weaning weight. Usually, many gene pairs are involved, as well as environmental influences.

**Rate of genetic improvement:** Rate of improvement per unit of time (year). The rate of improvement is dependent on: (1) heritability of traits considered, (2) selection differentials, (3) genetic correlations among traits considered, (4) generation interval in the herd and (5) the number of traits for which selections are made.

**Recessive gene:** Recessive genes affect the phenotype only when present in a homozygous condition. Recessive genes must be received from both parents before the phenotype caused by the recessive genes occurs.

**Replacement females:** Females entered into a herd to replace loss of numbers from culling or death. May be heifers produced in the herd or animals brought in from outside.

**Residues:** Remnants of the compounds in drugs and other substances found in fluid, tissues and feeds.

**Retained ownership:** Refers to cow-calf producers maintaining ownership of their cattle beyond weaning for growing and/or finishing.

**Ribeye area (REA):** Area of the longissimus muscle measured in square inches at the 12th rib interface on the beef forequarter.

**Rotational crossbreeding:** A system of crossing two or more breeds where the crossbred females are bred to bulls of the breed contributing the least genes to that female's genotype. Rotation systems maintain relatively high levels of heterosis and produce replacement heifers from within the system. Opportunity to select replacement heifers is greater for rotation systems than for

other crossbreeding systems.

**Route of administration (ROA):** The method by which a drug or other substance is given to an animal (oral, subcutaneous, intramuscular, topical, etc).

**Rx (prescription drugs):** Drugs that must be prescribed by a licensed veterinarian.

**Salmonella:** A family of bacteria that includes more than 2,000 strains, 10 of which are responsible for most cases of reported illness associated with the bacteria. *Salmonella* can be found on any raw food of animal origin. Thorough cooking destroys the bacteria.

**Sanitary:** Clean. Absence of organisms that can cause disease or ill health.

**Scurs:** Horny tissue or rudimentary horns attached to the skin rather than the bony parts of the head.

**Seedstock:** Breeding animals.

**Seedstock breeders:** Producers whose primary role is to produce breeding animals for other producers.

**Selection:** Causing or allowing certain individuals in a population to produce offspring in the next generation.

**Sibs:** Brothers and sisters of an individual.

**Sire summary:** Published comparative results of sires from a breed's national cattle evaluation programs.

**Stockers:** Calves and yearlings, both steers and heifers, intended for eventual finishing and harvesting, which are being fed and cared for in such a manner to produce growth, rather than finishing. Stockers are generally younger than feeder cattle.

**Stress:** Any physical or emotional factor to which an animal fails to make a satisfactory adaptation. May be caused by excitement, temperament, fatigue, shipping, disease, hot or cold weather, nervous strain, number of animals together, previous nutrition, breed, age or management. The greater the stress, the more exacting the nutritional requirements.

**Subcutaneous (SQ):** An injection under the skin.

**Systems approach:** An approach to evaluating alternative individuals, breeding programs and selection schemes that involves assessment of these alternatives in terms of their net impact on all inputs and output in the production system. This approach specifically recognizes that intermediate optimum levels of performance in several traits may be more economically advantageous than maximum performance for any single trait.

**Terminal sires:** Sires used in a breeding system where all their progeny, both male and female, are marketed. For example, F1 crossbred dams could be bred to sires of a third breed and all calves marketed. This system allows maximum heterosis and breed complementary but replacement females must come from outside the herd.

**Therapy:** Treatment of disease or health disorders.

**Tolerance:** Maximum legally allowable level or concentration of a drug or chemical in a food product at the time the milk is marketed or the animal is slaughtered.

**Topical:** Application of a drug or other substance to the skin surface or an external membrane, usually concentrated in a small area.

**Transmissible Spongiform Encephalopathies (TSE):** A class of rare, degenerative brain diseases that affect both animals and humans. Human TSEs include Creutzfeldt-Jakob Disease and Fatal Familial Insomnia. Animal TSEs include Bovine Spongiform Encephalopathy in cattle and scrapie in sheep.

**Ultrasonic measurements:** Used to estimate carcass and reproductive characteristics. Operates off the principle that sound waves echo differently with different densities of tissue.

**Yield Grade:** Estimate of carcass cutability categorized into numerical categories with 1 being the highest in lean-to-fat ratio and 5 being the lowest.

**Vaccination:** An injection of vaccine, bacterin, antiserum or antitoxin to produce immunity or tolerance to disease.

**Vaccine:** A preparation containing microorganisms controlled in such a way as to create a response by the recipient animal's body that results in increased protective immunity.

**VCPR:** Valid veterinarian/client/patient relationship, generally meaning that the veterinarian knows and regularly sees the animals and the individual responsible for authorizing medical treatment for those animals agrees to follow the veterinarian's instructions.

**Variance:** Variance is a statistic that describes the variation we see in a trait. Without variation, no genetic change is possible.

**Weaning rate:** Number of calves weaned divided by number of cows exposed to a bull.

**Weight per day of age (WDA):** Weight of an individual divided by days of age.

**Withdrawal time:** The time required between the application or feeding of a drug or additive and the harvest of the animal to prevent any residue of the drug from remaining in the carcass. Withdrawal times are legally specified by the FDA.

**Zero-Tolerance:** The standard to which U.S. beef processors must adhere when it comes to fecal and ingesta carcass contamination. In layman's terms, no visible contamination is allowed on beef carcasses. (*Executive Summary of the National Non-Fed Beef Quality Audit, 1994. National Cattlemen's Beef Association. Englewood, CO.*)





# GROUP PROCESSING / TREATMENT MAP

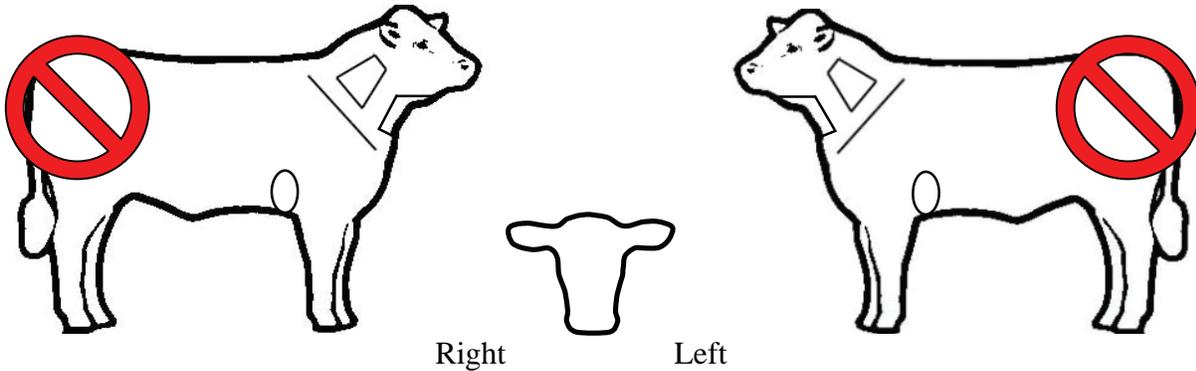
Select SQ products when possible.  
Never give an injection in the rear leg or top butt.

Group: \_\_\_\_\_ Date: \_\_\_\_\_ ID: Rt. Ear/ Lft Ear: \_\_\_\_\_

Booster/Reprocess Date: \_\_\_\_\_ Pen/Pasture #: \_\_\_\_\_

Class: S / H / Bulls / Cows Age: \_\_\_\_\_ Weight: \_\_\_\_\_ Hd. Processed \_\_\_\_\_

Other Management (√): Castrate \_\_\_ Dehorn \_\_\_ Other \_\_\_\_\_ Crew \_\_\_\_\_



Product and Company	Lot or Serial #	Exp. Date	ROA*	Dose	Booster Date	Withdrawal Date
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

\*ROA – Route of Administration

Comments:

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## Mass Medication Pen Record (Example)

**Group / Pen:** \_\_\_\_\_

Diagnosis	Date(s)	Severity	Product #1	Product #2	Comment	WD
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						

**WD = Withdrawal time**

Signatures: 1. \_\_\_\_\_ **Date** \_\_\_\_\_

2. \_\_\_\_\_ **Date** \_\_\_\_\_

3. \_\_\_\_\_ **Date** \_\_\_\_\_

4. \_\_\_\_\_ **Date** \_\_\_\_\_

5. \_\_\_\_\_ **Date** \_\_\_\_\_

6. \_\_\_\_\_ **Date** \_\_\_\_\_

7. \_\_\_\_\_ **Date** \_\_\_\_\_

8. \_\_\_\_\_ **Date** \_\_\_\_\_







## Pesticide Use Record

Date	Product	Location	Withdrawal Time	Comments
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

Signatures: 1. \_\_\_\_\_ Date \_\_\_\_\_

2. \_\_\_\_\_ Date \_\_\_\_\_

3. \_\_\_\_\_ Date \_\_\_\_\_

4. \_\_\_\_\_ Date \_\_\_\_\_

5. \_\_\_\_\_ Date \_\_\_\_\_

6. \_\_\_\_\_ Date \_\_\_\_\_

7. \_\_\_\_\_ Date \_\_\_\_\_

8. \_\_\_\_\_ Date \_\_\_\_\_

9. \_\_\_\_\_ Date \_\_\_\_\_

10. \_\_\_\_\_ Date \_\_\_\_\_



