Youth Beef Quality Assurance Program

Oklahoma Cooperative Extension Service
Division of Agricultural Sciences and Natural Resources
Oklahoma State University

Oklahoma Beef Council
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Youth Beef Quality Assurance (YBQA) Program

The care you give cattle on your farm or ranch, during transport and at the show, will affect the end products available to consumers. Approximately 25.6 billion pounds of beef is consumed in the United States each year and consumers are concerned about the safety of the food they eat. Food safety begins on the farm or ranch, and we must do all we can to ensure the safety and quality of the food we produce. This program is designed to help educate producers on their responsibility and commitment to producing the very best beef possible.

**What Is Youth Beef Quality Assurance (YBQA)?**

Youth Beef Quality Assurance (YBQA) is a voluntary program, funded by the Beef Checkoff. This program will aid in improving your animal care and management practices. By following good health, nutrition and management procedures outlined in the YBQA program, you can make sure your cattle perform at their highest level and result in a safe, wholesome beef product for consumers.

**How is YBQA different than Beef Quality Assurance (BQA)?**

Just like the YBQA program, BQA is a voluntary program, funded by the Beef Checkoff. BQA is designed to help adult producers better their beef herd’s health and management practices. Producers become BQA certified after going through a course much like this one. Many of the same topics and materials are covered in both the YBQA and BQA programs; however, the BQA program is much more in depth than the YBQA program.

**How did BQA get started and why is it a voluntary program?**

In 1982, U.S. beef producers started the BQA program. The purpose of the program is to eliminate drug residues in beef products. Since that time, the BQA program has grown to include other factors that influence overall beef quality.

Consumers want food that is safe to eat. If consumers think that beef is unsafe they are less likely to buy it. Consumers and those not familiar with beef production practices can be easily misled by incorrect information. The misinformation can lead to the idea that some beef cattle production practices are neither safe nor ethical. Because of these concerns and additional government regulations, cattle producers began finding ways to ensure that their production practices were safe and accepted by consumers.

The BQA program is voluntary because producers wanted to focus on education instead of regulation. Every state has its own BQA program to fit their needs and production practices. However, all programs across the nation follow a set of national guidelines. The BQA program has clearly been successful in its role to educate producers. BQA practices have helped to nearly eliminate any problems associated with drug residues.
residues and has lowered the number of injection site lesions, which can affect the tenderness of beef products in finished cattle.

**The Goals of BQA:**
- To ensure the consumer that all cattle produced are healthy, wholesome and safe.
- Cattle meet quality requirements throughout the production system.
- Cattle are produced with environmentally-sound production practices.

Beef products sold to consumers must meet the above goals for both food safety and eating satisfaction. BQA goals are reached by determining what could go wrong, planning to avoid it, keeping accurate records, and monitoring success.

**Why Youth Beef Quality Assurance and how can it help?**

You may be asking yourself, “Why should I go through the Oklahoma Youth Beef Quality Assurance Program?” The answer is simple. By following a YBQA program, you are improving your animal care, enhancing your management practices, expanding your knowledge, and ensuring the production of a healthy, safe, and wholesome beef product for consumers.

- YBQA focuses on avoiding harmful or illegal drug residues through a close working relationship with your veterinarian. When you know about medication usage, withdrawal times and administration, you can produce a safer product for consumers.
- YBQA improves carcass quality. We want all beef produced to not only be safe, but to taste great too.
- YBQA also increases awareness of animal welfare. The care you give your cattle on your farm or ranch, during transport and at the show will affect the products consumers can buy.
- YBQA will help you learn how to follow label directions for feed additives, medications, and vaccines that may be used.
- YBQA can help ensure proper record keeping of production and management practices. Records prove that you are following YBQA guidelines and correctly caring for your animals.

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**Introduction**

*Use the information that you have learned to complete the following sentences by unscrambling the correct answer on the left.*

- easf Consumers want food that is safe.
- sdseeriu The purpose of the BQA program was to eliminate drug residues.
- luvayrnot The YBQA program is voluntary.
- matlenyronvien Cattle are produced with environmentally-sound production practices.
- gelalli BQA focuses on avoiding harmful or illegal drug residues.
- sascrac BQA improves carcass quality.
- lefwear BQA also increases awareness of animal welfare.
- sitoncired BQA will help you learn how to follow label directions.
- derroc saptrecci BQA can help ensure proper documentation and record keeping of production management practices.
- QAB By following a BQA program you are improving your animal care.
Character and Ethics

The youth producer and the welfare of the animals he/she is managing are important in the YBQA program. This is because YBQA is about doing the right thing as a person and producer.

What are ethics? Ethics are knowing the difference between right and wrong, good from bad and the behaviors associated with them.

There are many characteristics and practices of YBQA producers that promote the development of ethical character. They include:

Trustworthiness
- Attend to the nutritional and health concerns of your animals every day.
- Read labels and follow withdrawal times for any medications, dewormers, vaccines, or feed additives.

Respect
- Respect the treatment of people, things and animals.
- Always care for your animals in a humane manner.
- Understand that animals under your care depend on you for their well-being.

Responsibility
- Do what you say you are going to do.
- The responsible YBQA producer feeds and waters his/her animals on a daily basis.
- Use only approved medications, dewormers, vaccines, rations, and feed additives in the production of your animals.

Fairness
- Follow the rules.
- Be honest when caring for, marketing, and showing your animals.

Citizenship
- Make your home, community, state, and country a better place.
- Model ethical behavior and assist younger producers by becoming a role model for younger producers.
- Follow approved practices, ensuring that your home, community, state and country have a wholesome, safe, and quality source of beef.

Character is doing the right thing when nobody’s looking. There are too many people who think that the only thing that’s right is to get by, and the only thing that’s wrong is to get caught.

J. C. Watts
Character and Ethics Scenarios

Read the below scenarios and circle the correct answer.

1. Two weeks before market your steer develops foot rot. You contact your veterinarian and he prescribes an antibiotic to treat the steer that has a 30 day withdrawal. You treat your steer and market it in two weeks as scheduled.

   Ethical [ ] Unethical [ ]

2. You tested incoming cattle for disease and found out that one tested positive. You take the animal to the sale barn and inform the market owner of the test results prior to the animal being sold.

   Ethical [ ] Unethical [ ]

3. On Christmas morning you awake to 8 inches of snow on the ground. You get dressed and head out to break ice and feed your cattle before opening presents.

   Ethical [ ] Unethical [ ]

4. Your veterinarian prescribed antibiotics to treat your sick cow. The prescription is for 6 cc. You remember your grandpa’s old saying of “If a little bit is good, a lot is better.” You decided to take your grandpa’s advice and give your cow 18 cc of antibiotic.

   Ethical [ ] Unethical [ ]

5. A calf is born on February 1. It is a calf that has the genetic background to be successful in the show ring. A birth date of March 15 is recorded on the registration papers to give the calf an advantage when shown.

   Ethical [ ] Unethical [ ]

6. In the spring you decide that it is time to sell your calves. You load them up and haul them to the sale barn. You tell the market owner that they have had all their shots and are weaned. You fail to tell him that they have only had one shot and were sorted off the cows that morning.

   Ethical [ ] Unethical [ ]

7. When working cattle, you remain calm and make sure that both you and the animal are safe at all times.

   Ethical [ ] Unethical [ ]

8. On week days you get up every morning to feed and water your cattle. When the weekend arrives you are extra tired and decide that you will feed and water your cattle whenever you get to it and if not you will just take care of everything on Monday.

   Ethical [ ] Unethical [ ]
9. Your younger brother decides that he wants to get started in the cattle business. You make sure to take him with you when taking care of your own cattle so that he can learn how to care for his cattle. You also offer to help him and answer any questions that he has.

**Ethical**

Unethical

10. Your friend is out of town and calls to ask if you will check on his cattle while he is away. You tell him that you will and then forget because you got busy.

**Ethical**

Unethical
Health and Treatment

The health and appearance of your animals is a reflection of you and your operation. As a responsible YBQA producer your animals depend on you to help prevent or control any potential disease outbreaks. Herd health is an important part of BQA programs.

Herd Health Program

A herd health program and Treatment Protocol Plan (TPP) will help you identify when and how to use vaccines, dewormers, and antibiotics to keep your cattle healthy. Always work closely with your veterinarian and county Extension educator when developing your TPP and herd health program.

Labels

Before handling, storing, or administering any medication you should always read the product label. The label will contain all of the information that you need to know about that product. Important information on every label that you should be aware of includes:

- Indications – What the product is designed for.
- Dosage – How much medicine to give the animal. Most product labels state the dosage amount in milliliters (mL). Most syringes are measured in cubic centimeters (cc). 1 mL is equal to 1 cc.
- Route of Administration – How and where to give the product.
- Precautions – Special instructions to be aware of.
- Withdrawal Times – Time that must pass between the last dosage and the time of sale or slaughter.

You must always use a product EXACTLY as it says on the label unless your veterinarian directs you otherwise. There are two basic categories of medications available to producers.

- Over The Counter (OTC) – Medications that can be bought by producers at local feedstores, veterinary clinics, or through veterinary supply sales people.
- Prescription (Rx, “script”) – Medications that are only available through a prescription by a licensed veterinarian and used under their direction.

Medication Use

There are “right” and “wrong” ways to use OTC and Rx medications. Using drugs correctly and within the law is the responsibility of everyone involved. There are two responsible types of medication use:

- Label Use – Using the medication EXACTLY as it is specified on the label. Medicated feed should only be used as directed by the label. Label use is LEGAL.
- Extra Label Use – Extra Label use is LEGAL when a valid Veterinarian Client Patient Relationship (VCPR) exists. Extra Label Drug Use (ELDU) is the term used for medications that are being used in a manner besides their specific use as stated on the label. A medication may be used in an “Extra Label” manner for several reasons, but must be prescribed by your veterinarian.

Administer “Product Label Lesson.”
**Extra Label Drug Use Activity**

*Answer the following statements by circling the correct answer.*

1. You must have a valid Veterinarian Client Patient Relationship (VCPR) in order to use medications in an Extra-Label manner.
   - [ ] True
   - [ ] False

   - [ ] True
   - [ ] False

3. Off Label use is **LEGAL** and should be practiced on a regular basis.
   - [ ] True
   - [ ] False

4. Medicated feed and feed additives can only be used as directed by the label and cannot be changed by anyone.
   - [ ] True
   - [ ] False

5. Withdrawal times are typically lengthened when using medications in an Extra-Label manner.
   - [ ] True
   - [ ] False

6. Extra-Label use can only be prescribed when no other product is labeled to treat a particular condition or symptom.
   - [ ] True
   - [ ] False

Off Label use is **ILLEGAL**! This is where the PRODUCER uses medications in a manner other than what is stated on the label, without veterinarian guidance.

Extra Label Drug Use (ELDU) is the term used for medications that are being used in a manner besides their specific use as stated on the label. A medication may be used in an “Extra Label” manner for several reasons, but must be prescribed by your veterinarian.

- Your veterinarian may tell you to give your cattle more medicine than the label states.
- Your veterinarian may tell you to give your cattle more frequently than the label states.
- Your veterinarian may tell you to stop giving the drug after a certain period of time.
- Your veterinarian may prescribe a treatment for a disease other than stated on the label.
- Your veterinarian may prescribe a drug for your cattle that is not labeled for use in cattle.
- Your veterinarian may prescribe a longer withdrawal time other than what is stated on the label.

**Veterinarian Client Patient Relationship (VCPR)**

- **Veterinarian** – Your veterinarian (vet).
- **Client** – You as the producer.
- **Patient** – Your animal.
- **Relationship** – Interaction or partnership between you and your vet.

To have a valid VCPR the owner has to agree to follow the veterinarian’s instructions exactly. Accurate records are important to ensure that the instructions were followed. The veterinarian has to be familiar with the owner and the care and management of their animals. The veterinarian is available for follow-ups if needed. The owner and veterinarian have an ongoing relationship.
Sometimes your veterinarian will lengthen the withdrawal time of medications used in an “extra label” manner. Longer withdrawal times help to ensure that drug residues do not enter the food supply. Some medications cannot be used as “extra label.” Your veterinarians will know which medications can and cannot be used. If you are unsure always ask your veterinarian.

**Administration of Antibiotics and Vaccines**

There are several common routes of administration that are used to give medication to your animal.

- **IM** – Intramuscular – Given in the muscle.
- **SC, SQ or SubQ** – Subcutaneous – Given under the skin, injection of medication is given between the muscle and the skin.
- **IV** – Intravenous – Given in the vein (blood vessel).
- **PO or O** – Per Os – Given orally, or by mouth.
- **T** – Topical – Pour On – Given on the skin.
- **IN** – Intranasal – Given in the nose.

All injections should be given in the neck regardless of whether they are IM or SQ, unless labeled otherwise. Always give SQ injections when possible. When giving SQ injections always use the “tenting” technique unless recommended otherwise by the label. “Tenting” the skin allows you to give injections in the correct location without accidently penetrating the muscle. The “tenting” technique is illustrated in the illustration above.

**Administer “Fruit Injection Lesson.”**

**Route of Administration**

<table>
<thead>
<tr>
<th>Viscosity of Injectable</th>
<th>Subcutaneous (SQ) (1/2- to 1-inch needle)</th>
<th>Intravenous (IV) (1 1/2-inch needle)</th>
<th>Intramuscular (IM) (1- to 1 1/2-inch needle)</th>
</tr>
</thead>
<tbody>
<tr>
<td>300 lbs.</td>
<td>300-700 lbs.</td>
<td>&gt;700 lbs.</td>
<td>&lt;300 lbs.</td>
</tr>
<tr>
<td>300-700 lbs.</td>
<td>300-700 lbs.</td>
<td>&gt;700 lbs.</td>
<td>300-700 lbs.</td>
</tr>
<tr>
<td>&gt;700 lbs.</td>
<td>&gt;700 lbs.</td>
<td>300-700 lbs.</td>
<td>&gt;700 lbs.</td>
</tr>
<tr>
<td>Thin Liquids</td>
<td>18 gauge</td>
<td>18-16 gauge</td>
<td>20-18 gauge</td>
</tr>
<tr>
<td>Example: Saline</td>
<td>18-16 gauge</td>
<td>16 gauge</td>
<td>18-16 gauge</td>
</tr>
<tr>
<td>Thick Liquids</td>
<td>18-16 gauge</td>
<td>16 gauge</td>
<td>18-16 gauge</td>
</tr>
<tr>
<td>Example: Oxytetracycline</td>
<td>18-16 gauge</td>
<td>16-14 gauge</td>
<td>16-14 gauge</td>
</tr>
</tbody>
</table>

Select the needle to fit the cattle size.

Use the smallest practical size of needle you can, without bending it.
Proper “tenting” technique.

Proper way to transport medication.

**Remember:**
- Follow label directions exactly as stated.
- Follow label withdrawal times.
- Maintain a valid VCPR.
- When possible give SQ injections.
- Always give injections in the neck unless labeled otherwise.
- Change needles every 10-15 head.
- Never reintroduce a dirty needle back into the bottle.
- Always use sterile syringes.
- Never mix products unless labeled otherwise.

To sterilize syringes rinse internal components with near boiling sterile water. Never use soap or disinfectants on internal parts. Soap and disinfectants can only be used on external syringe parts. Residues left by soap and disinfectants could damage products, and could possibly result in reactions in cattle.

**Storage**

It is important to store products as stated on the product label. Some products need to be stored in a refrigerator. All products need to be kept out of direct sunlight. Products such as Modified Live Vaccines (MLV) that have to be reconstituted or brought to normal strength by adding water to a liquid in concentrated or powder form, cannot be stored for later use and must be used within one hour. Always be sure to check expiration dates and never mix products together, unless they are specifically designed to be mixed.
Care and Handling

Proper cattle handling is very important to reduce the risk of injury and/or carcass defects in cattle. Many factors go into ensuring a safe, quality product to beef consumers.

**Cattle Handling**

Processing cattle should always be done slow and carefully. Working cattle too quickly can lead to bruises, injection-site damage, medication failure, human injuries, and incorrect records. Cattle stress caused by rough handling can reduce both immune and stomach functions.

Cattle have wide-angle vision and tend to work better in areas with solid fences, gates, etc. They will tend to move from dark areas to better lit areas. Cattle are also somewhat sensitive to color and will tend to balk at a sudden change of color.

If you move into the flight zone of an animal it will move away from you. If a handler moves too close into the animal's flight zone, it will either bolt and run away or turn back and run past the person. The best place for you to work is on the edge of the flight zone at the point of balance. Working in proper position will minimize hazards and injury to the handler.

Cattle are herd animals. Isolated cattle will often panic and become very difficult to control. If an animal gets isolated from the group and is out of control, move some quiet animals in with it and give the animal time to settle down.

Administer “Flight Zone Lesson” and “Care and Handling Lesson.”

Rattle paddle.
The technique of using a flag or rattle paddle to sort cattle is very effective and safer than other practices. Minimize the use of sorting sticks. Excessive and improper use of cattle prods can result in carcass bruising.

**Livestock Facilities**

Proper cattle handling starts with a well-designed facility. Facilities should be maintained in good working condition and free from obstacles to provide efficient movement and reduce stress when working cattle. Corrals should be made of sturdy material and designed to allow easy movement of cattle through the facility. Avoid corners and dark areas where cattle will stop. Pay attention to the placement of gates.

**Facility Hazards**

It is important to reduce hazards for both you and your animals. Start by reducing noise in the area. Muffle the sound of banging gates and crashing chutes with rubber or plastic stoppers. Barking dogs or loud talking will excite animals and needs to be controlled.

Floors in the working area should have a non-slippery surface to help prevent injuries. Items sticking out and sharp edges on gates and fences can cut and bruise animals. Eliminate openings where animals might entrap a foot or head. Avoid overcrowding cattle in pens, tubs, and alleys. Eliminate all hazards in the facilities that will cause injury to you or the animals.

**Facility Activity**

List as many problems as you can identify in the above working facilities. Be prepared to discuss the problems identified and how they could be corrected.

Boards are missing or broken. Gates are dragging the ground and left open. Pallets are being used as fences. Temporary fencing supplies are being used as permanent.
These two pictures are of the same working facilities. Explain what is wrong with the picture on the left and what can be done to correct the problems.

Objects have been left in the alleyway and gates have been left open. Care should be taken to ensure that all gates are closed and the alleyways are free of obstructions.

List all of the good qualities found in pictures of this working facility. _________________________________


www.bqa.org/bqafacilitiesdesign.aspx
Avoid Stress

Working with a good attitude positively affects other workers and can be transferred to the cattle being processed.

Stress is a factor contributing to beef quality and many diseases that affect cattle. When everyone does their job in a calm controlled manner, the task will be completed in a satisfactory timeframe. The stress related to extreme weather conditions most often cannot be avoided. However, the process in which we handle cattle, either when processing, vaccinating or clipping cattle can cause undue stress which can lead to illness and decreased meat quality.

Avoid working cattle in stressful weather. If cattle must be handled or worked on hot days, early morning hours are best. Cattle can also be stressed by cold spells, particularly when they have a wet hair coat. Working cattle in dusty conditions can also lead to potential health problems.

Sudden changes in the feed ration or keeping cattle off of feed or water for long periods while they are being worked or transported can cause various health issues.

Weaning is a very stressful period. Work calves several weeks prior to weaning to help avoid stress.

Shelter

Cattle are adaptable to a wide range of natural conditions and artificial environments. When cattle are matched to local conditions, beef cattle thrive in virtually any environment without artificial shelter. However, during extreme conditions, cattle should have access to clean, well-drained and well-ventilated resting areas.

Transportation

Proper handling and transportation are important for the safety and welfare of the animals being moved. Cattle should be loaded and unloaded as quietly and patiently as possible to prevent stress or injury.

Cattle should be separated by size or gender prior to shipping and, if possible, loaded into separate trailers or compartments in a trailer. See the chart below for recommended maximum number of cattle for your trailer size.

Avoid overloading the trailer.

bqa.org/bqastocktrailertransportation.aspx
Drivers should avoid sudden starts/stops and sharp turns while in transit. Flooring should be clean and slip resistant. Washing the trailer after each load helps promote good health. Use caution when entering a confined area with cattle.

List the differences between these two pictures. Identify which one is correct and explain why.

The picture on the left is aligned straight with the gates flush against the fence. The picture on the right has a gap where cattle could get legs caught and injured.

The picture on the left is correct.

Care has been taken to ensure that cattle will load easy and avoid injury.
Biosecurity

Biosecurity is preventing the spread of disease by reducing the movement of disease-causing organisms, commonly called pathogens, into and within your livestock operation. Developing and maintaining biosecurity is difficult, but it is the cheapest, most effective means of disease control available. Disease prevention programs will not work without biosecurity. Below are a few examples of potential diseases that could be present in beef herds:

- BVD-PI
- Johne's Disease
- Anaplasmosis
- Leptospirosis
- Brucellosis (bangs)
- Mastitis
- Trichomoniasis
- Vibriosis
- Others

How are Infectious Diseases Spread?

There are many ways that infectious diseases can be spread. Below are a few examples:

- From outside cattle to your cattle or from one of your cows to the next.
- Introduction of healthy appearing cattle who have recovered from a disease but are now carriers.
- A person who has been around other cattle and then comes onto your farm. Disease-causing agents can be transported or spread to your farm from their vehicles, shoes, or equipment.
- Carcasses of dead cattle that have not been disposed of properly.
- By contaminated feed, manure, impure water and by non-livestock animals such as cats, deer, skunks, rodents, and other wildlife.
- Using common syringes and needles between healthy and sick cattle. Always process healthy animals first and sick cattle last. Discuss this procedure with your veterinarian and county Extension educator.

How can you prevent the spread of infectious diseases?

The most important step in disease control is minimizing the grouping and movement of animals. Also clean livestock equipment routinely, keeping feed storage areas clean, control rodent infestations and mow grass around livestock handling areas. All of the practices will help minimize the spread of diseases as well as isolating sick animals from the rest of the herd.

Remember:

- Isolate sick animals.
- Reduce facility hazards and stress on animals.
- Sanitation helps promote good health.

Administer “Sick Animal Lesson.”
Carcass Composition and Quality

Carcass Quality Considerations

A beef producer’s end goal is to provide a wholesome, safe, and consistent product. This task can be challenging because your product flows through many hands with each contributing to product quality and each needing to make a profit.

- The cow-calf producer must have animals that function in the ranch’s environment.
- The stocker-feeder wants animals that gain weight efficiently.
- The packer wants pounds of red meat without waste.

All of these factors make it difficult to decide what type of animal will produce consistent quality for the entire beef industry.

Positive factors contributing to carcass quality include: portion size, palatability, tenderness and carcass grade.

Portion Size

Consumers desire cuts of beef that are adequate in serving size, but not too large or too small. Carcasses that are too large or too small make it difficult for restaurants and retailers to give consumers cuts which meet their expectations.

Moderation in frame size, adequate fat and increased muscle are traits of importance when raising cattle to go in the food chain.

Palatability

Quality grades are used to predict palatability or eating satisfaction. USDA Prime is associated with the highest eating quality followed by USDA Choice, USDA Select and USDA Standard.

Tenderness

Tenderness is a desirable trait for quality beef. Product toughness costs the beef industry millions of dollars annually. Stress, injection site lesions and genetic traits are some factors that affect quality.

Carcass Grade

Carcass grading is an evaluation of individual components that are combined to make up the overall carcass grade. Carcass grading is complicated, but understanding the process and grading terminology will help you learn more about the end product. Below you will find the individual components and their definitions to help you better understand carcass grades.

Carcass Weight – the weight of the beef carcass after the animal has been slaughtered (harvested). This weight includes only the skeletal frame, muscle and fat cover.

Dressing Percentage – the dressing percentage is figured by taking the carcass weight and dividing by the animals live weight. A typical dressing percentage is 63% to 65%.

Administer “Drug Residue Lesson.”
Yield Grade – the yield grade score indicates carcass meat yield compared to industry standards. This mathematical calculation takes into effect the carcass weight, fat thickness, ribeye area and KPH (kidney, pelvic and heart fat).

Quality Grade – is a descriptive grade given upon visual inspection of the carcass. It is based upon the marbling (intramuscular fat) within the ribeye and the skeletal maturity. In general, as an animal increases in weight, marbling will typically increase as well.

Ribeye Area – the actual area of the exposed rib muscle between the 12th and 13th ribs. The measurement is taken by using a grid and placing it over the muscle to count how many square inches make up the muscle area.

Backfat Thickness – an actual figure measured in tenths of inches. This measurement is taken at the same time as ribeye area. It is taken at the outer midpoint of the carcass ribeye. The cost of additional feed and trimming excess fat can cause beef to be less competitive with other meats. Fat costs more to put on the live animal than muscle.

Acceptable ranges among carcass grading factors

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Carcass Weight</td>
<td>600 to 900 pounds</td>
<td></td>
</tr>
<tr>
<td>Backfat Thickness</td>
<td>0.35 to 0.50 inches</td>
<td></td>
</tr>
<tr>
<td>Ribeye Area</td>
<td>11.0 to 15.0 square inches</td>
<td></td>
</tr>
<tr>
<td>Yield Grade</td>
<td>3.5 or less</td>
<td></td>
</tr>
<tr>
<td>Quality Grade</td>
<td>High Select or better</td>
<td></td>
</tr>
</tbody>
</table>

To reach a carcass weight between 600 and 900 pounds, cattle should weigh 1,050 to 1,400 pounds at slaughter. Cattle should also have adequate backfat thickness to give them the chance to grade USDA Select or better. Cattle with heavy or average amounts of muscling are desirable. Their carcasses will produce ribeye areas of 11.0 to 15.0 square inches. This is large enough to satisfy a large appetite but still affordable to consumers on an average income. Typically, as frame size changes, so does mature weight.

Frame Size Target Weights

<table>
<thead>
<tr>
<th>Mature Size</th>
<th>Mature Weight (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>750 to 1,000</td>
</tr>
<tr>
<td>Medium</td>
<td>1,050 to 1,350</td>
</tr>
<tr>
<td>Large</td>
<td>1,400 plus</td>
</tr>
</tbody>
</table>

Minimum Marbling Required

<table>
<thead>
<tr>
<th>Marbling</th>
<th>Quality Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slight Marbling</td>
<td>USDA Select Quality Grade</td>
</tr>
<tr>
<td>Moderate Marbling</td>
<td>USDA Choice Quality Grade</td>
</tr>
<tr>
<td>Slightly Abundant Marbling</td>
<td>USDA Prime Quality Grade</td>
</tr>
</tbody>
</table>
Carcass Defects

Many factors can contribute to a carcass having defects. Bruising and injection site lesions are two types of defects that can easily be controlled. Bruises cost the cattle industry $22 million annually. Some of the common objects that cause bruising in cattle include:

- Horns
- Gates
- Protruding objects such as:
  - Broken boards
  - Nails
  - Exposed bolts

Care should be taken to minimize or eliminate potential problems.

These two pictures are of the same carcass. The picture on the left is before the bruises were cut out and the carcass weighed more than 500 pounds. The picture on the right is after the bruises were cut out and the carcass weighed around 100 pounds. This is an example of excessive bruising that is unacceptable. In many cases, carcasses with extreme bruises are often condemned.

Injection Site Lesions

Producers can help to avoid carcass defects, as a result of abscesses and lesions, by giving injections in the neck and following label directions. All injections create scar tissue and result in a decrease in meat tenderness. Moving the injection-site area to the neck stops damage to expensive steak cuts.

Administer “Cupcake Lesson.”
Nutrition and Feedstuffs

Proper nutrition is required to keep your animal healthy. As a producer, it is your responsibility to provide quality and quantity feedstuffs that will supply nutrients to meet the animals' needs for growth, maintenance and production.

**Feed quality** - concentration of nutrients in the feed that will not reduce consumption, performance or cause an illness.

**Feedstuffs** - the type of "feed" your animal is provided. It could be forage or a feed mix that has been processed or mixed. Required nutrients found in quality feedstuffs include:

- Water
- Energy
  - Carbohydrates
  - Fats
- Protein
- Vitamins
- Minerals

Your animals should have access to an adequate supply of clean water at all times. Although water requirements vary greatly, as a rule of thumb, water consumption will range from 1 gallon per 100 lbs of body weight during cold weather, to nearly 2 gallons per 100 lbs of body weight during hot weather.

**Storage**

To maintain the quality of the feedstuffs, storage becomes an important factor you need to consider.

- Properly store feedstuffs to prevent spoilage and contamination.

Administer “Feed Mixing Lesson” and “Feedstuffs Word Search.”

- Never store chemicals, petroleum products, or other toxins in feed storage or processing areas.
- Clean equipment (buckets, shovels, etc.) before using for feed.
- Storage area should be kept clean to minimize rodent and pest infestations.

**Feed Additives and Medications**

- Only FDA approved medicated feed additives are to be used in rations.
- Extra-Label use of medicated feed additives is ILLEGAL and strictly prohibited.
- Label or prescribed withdrawal times should be observed to prevent violative tissue residues.
Nutrition and Feedstuffs Activity

Explain why the hay and feed are stored correctly in these two pictures.

The hay and feed is stacked neatly and the surrounding areas are clean and picked up.

Explain why the hay and feed are NOT stored correctly in these pictures.

The hay and feed is not stacked neatly and the surrounding areas are not picked up. Chemicals are stored incorrectly on feed. Trash has not been picked up and can become infested with rodents.
Nutrition Crossword Puzzle

Take a few minutes to go through the list of items that are most important to maintaining a nutritionally balanced ration and complete the crossword puzzle by filling in the correct term based on the definitions listed below.

Across

2. A grain normally grown in the _____ belt used in many rations.
3. Fresh _____ is the most important of all the nutrients.
4. _____ it’s “what’s for dinner.”
5. _____ is needed for strong bones, and balanced calf rations.
7. Dry winter grass with low nutritional value is normally best suited to be _____.
9. _____ is a high protein hay choice.
11. TDN is short for Total Digestible _____.
12. Corn gluten, soy hull pellets and _____ midds are popular by-products.
13. 20% _____ cubes are a popular winter supplementation choice.

Down

1. Range cubes are classified by their percent of _____.
4. _____ is a common introduced pasture grass in Oklahoma.
6. _____ come in major and in trace categories.
8. A ruminant digestive system is designed to digest _____.
10. _____ is found on your dinner table and in blocks in most pastures.

Answers
(in no particular order)

A L F A L F A
R A N G E
CO
W E A T
S A L I N U T R I E N T S
C A L C I U M
B E E F
W A T E R
O R F A N R
W H E A T
C O N R A N G E
B E E F E E F
B E E F
**Body Condition Score**

An excellent tool to evaluate the effectiveness of an animal's current nutritional status is the Body Condition Scoring (BCS) system. The BCS system, in beef cattle, is on a scale from 1 to 9. Nutritional stress can impact the animal's health and immune system, making it important to use the proper balance of protein and energy for the nutritional needs of cattle.

Body Condition Score (BCS) = 1

Cattle in a BCS = 1 are very thin and physically weak. These cattle typically are unable to stand and move around on their own. Their ribs and bones are easy to see.

Body Condition Score (BCS) = 5

Cattle in a BCS = 5 are in moderate condition. Only the last two ribs can be seen. Some fat can be seen over the other ribs. Cattle in a BCS = 5 are in an ideal body condition for commercial cow-calf operations.

Body Condition Score (BCS) = 9

Cattle in a BCS = 9 are very obese. Fat can be seen all over the cow. These cattle have been fed too much and have not produced a calf in recent years.

Remember:
- Proper nutrition is important for healthy animals.
- Extra Label use of medicated feed additives is ILLEGAL.
- BCS (Body Condition Score) = 5 is ideal for commercial cattle.

Administer “Body Condition Scoring Lesson.”
Record keeping, either computer or hand written, is an important management tool for beef producers. Accurate records allow you to know exactly what is going into each animal or group of animals. All records should be kept for three years.

**Records include:**
1. Treatment records, with the following accurately recorded:
   - Individual animal/group identification
   - Date treated
   - Product administered and manufacturer’s lot/serial number
   - Dosage used
   - Route and location of administration
   - Earliest date animal will have cleared withdrawal period
   - Name of person administering product
2. All records should be checked to assure that all cattle have cleared withdrawal dates prior to shipping.
3. A copy of all records should be transferred with cattle when they are shipped.

**Conclusion**
Young producers can have a positive impact on the quality and consistency of beef products by implementing YBQA guidelines. The goal of the YBQA program is to help assure the consumer that all cattle shipped from a beef operation are healthy, wholesome, safe, and their management has met all government and industry standards.
## Health Treatment Record for Cattle

<table>
<thead>
<tr>
<th>ID/Group Description</th>
<th>Date of Treatment</th>
<th>Comments/Symptoms/ Temperature</th>
<th>Product Used</th>
<th>Serial/ Lot Numbers</th>
<th>Route¹ and Location² of Administration &amp; Dosage</th>
<th>Withdrawal Date</th>
<th>Person Giving Treatment</th>
</tr>
</thead>
<tbody>
<tr>
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¹ SQ (Subcutaneous); IM (Intramuscular); O (Oral).
² RN (Right Neck); RE (Right Ear); LN (Left Neck); LE (Left Ear).

*Keep This Record for 3 Years*
abscess – Localized collection of pus in a cavity formed by disintegration of tissues.
anaplasmosis – A tick-borne disease in cattle caused by a bacterium and characterized especially by anemia and by jaundice.
antibiotic – Product produced by living organisms such as yeast that destroys or inhibits the growth of other organisms, especially bacteria.

backfat – Amount (thickness) of fat over the animal's back, usually measured at the twelfth to thirteenth rib.
Bang's disease – See brucellosis.
Beef – Meat from cattle (bovine species) other than calves. Meat from a calf is called veal.
Beef Checkoff program – Beef Promotion and Research Act established in October 1986. Each time cattle are marketed, $1 per head is paid by the seller to the State Beef Council or Cattlemen's Beef Board. Money is used in promotion, research, and education.
Beef Quality Assurance (BQA) – Program(s) designed to help beef producers implement good management and production methods which help prevent defects in beef products.
Biosecurity – Measures taken to ensure security from exposure to harmful biological agents.
body condition score (BCS) – A visual score (usually 1 = thin; 9 = very fat) for body fatness. BCS is typically related to postpartum interval in beef females and other factors such as feeding regime.
bovine – Refers to a general family grouping of cattle.
bovine viral diarrhea (BVD) – Viral disease in cattle that can cause diarrhea, lesions of the digestive tract, and repeated breeding, abortion, mummification, and congenital defects.
brucellosis – Contagious bacterial disease that results in abortions.
bull – Bovine male. The term usually denotes animals of breeding age.
calf – Young male or female bovine animal under one year of age.
carcass – The dressed body of a meat animal that has been slaughtered (harvested).
carcass grade – Quality of a carcass found through the evaluation of the individual components of the carcass.
carcass weight – The weight of the carcass after it has been slaughtered (harvested).
character – A desired attribute or feature of an individual, moral excellence.
citizenship – The quality of an individual's response to membership in a community.
computer – Electronic machine which by means of stored instructions and information performs rapid, often complex, calculations or compiles, correlates, and selects data.
dewormer – Medication used to rid cattle of internal worms and parasites.
disease – Any deviation from the normal state of health.
disinfectant – A chemical used to kill bacteria and help prevent infection.
dressing percentage – Percentage of the live animal weight that becomes the carcass weight at harvest (slaughter). It is determined by dividing the carcass weight by the liveweight and multiplying by 100. Also referred to as yield.

drug residue – Something that remains after a drug has been used, usually found at slaughter (harvest).

ear tag – Method of identification by which a numbered, lettered, and/or colored tag is placed in the ear.

environment – Total of all external (nongenetic) conditions that affect the well-being and performance of an animal.

ethics – The discipline dealing with what is good and bad, a theory or system of moral values.

fairness – marked by impartiality and honesty, free from self-interest, prejudice, or favoritism

Fat thickness – refers to the amount of fat (thickness) that covers muscles; typically measured at the twelfth and thirteenth rib as inches of fat over the longissimus dorsi muscle (rib eye).

feed additive – Ingredient such as an antibiotic or hormone like substance that is added to a diet to perform a specific role.

feeder – (1) Cattle that need further feeding prior to harvest (slaughter). (2) Producer who feeds cattle.

feedlot – Enterprise in which cattle are fed grain and other concentrates, usually for 90-120 days. Feedlots range in size from less than 100-head capacity to many thousands. Also known as a feedyard.

feedstuff – Feed, individual feed in a ration.

finished cattle – Fed cattle whose time in the feedlot is completed, and have attained the desired goals such as weight, and are now ready for harvest (slaughter).

flight zone – An area around an animal that when entered will cause the animal to move or flee.

Food and Drug Administration (FDA) – U.S. government agency responsible for protecting the public against impure and unsafe foods, drugs, veterinary products, biologics, and other products.

forage – Grazed or harvested herbaceous plants that are utilized by cattle.

frame score – Score based on visual evaluation of skeletal size or by measuring hip height (from ground to top of hips). This score is related to the slaughter weights at which cattle grade Choice or have comparable amounts of fat cover over the loin eye at the twelfth to thirteenth rib.

frame size – Usually measured by frame score or estimated visually.

goal – Target or desired condition that motivates the decision maker.

government regulation – Rules or laws issued and enforced by the government.

growth – Increase in mass (particularly protein) over loss in the animal body. Growth occurs by increases in cell numbers, cell size, or both.

heifer – Young female bovine cow prior to the time that she has produced her first calf.

immunity – Ability of an animal to avoid, resist, tolerate, or overcome infection.

infectious disease – A disease that spreads or is capable of spreading rapidly to others.

injection – Forcing a fluid (medication) into an animal through the use of a needle and syringe.

intermuscular fat – Fat located between muscle systems. See also seam fat.

intramuscular fat – Fat within the muscle, see also marbling.

intravenous – Within the vein. An intravenous injection is made into a vein.

isolate – To set apart from others.

Johne's disease – A bacterial disease in cattle that affects the small intestines.

kidney, pelvic and heart fat (KPH) – The internal carcass fat associated with the kidney, pelvic cavity and heart expressed as a percentage of chilled carcass weight. The kidney is included in the estimate of kidney fat. Used in the calculation of yield grade.

leptospirosis – A disease in cattle that can cause abortion.

lesion – An abnormal change in structure of an organ or part due to injury or disease.

load – Pounds (number) of cattle that can be hauled on a large cattle truck. For example, pot load is 42,000-52,000 lb (~40-42 head of slaughter steers, 72 yearlings, or 100 calves).
maintenance – Condition in which the body is maintained without an increase or decrease in body weight and with no production or work being done.

marbling – Flecks of intramuscular fat distributed in muscle tissue. Marbling is usually evaluated in the rib-eye between the twelfth and thirteenth ribs and is a key determinant in evaluating Quality Grade.

mastitis – Inflammation of the mammary gland.

maturity – An estimation of the chronological age of the animal or carcass.

meat – Tissues of the animal body that are used for food.

medication – A substance or preparation used in treating disease.

modified live vaccine (MLV) – Vaccines that contain live viruses that have been modified or weakened. MLV’s are in a dry state and must be reconstituted.

muscling – Amount of lean meat in a slaughter animal or carcass. Estimated on the live animal by thickness of forearm muscle or stifle thickness. Ultimately it is the ratio of muscle to bone or lean yield of the carcass after fat and bone are removed.

nutrient – (1) Substance that nourishes the metabolic processes of the body. (2) End product of digestion. nutrient density – Amount of essential nutrients relative to the number of calories in a given amount of food.

over-the-counter (OTC) – Animal health products that can be bought without a veterinarian’s prescription.

packer – Any entity engaged in the purchase of livestock for slaughter, or preparation of meat products for sale.

palatability – Degree to which food (e.g., beef) is acceptable to the taste or sufficiently agreeable in flavor, juiciness and tenderness to be eaten.

portion size – Adequate serving size desired by consumers.

prescription – A written direction for the preparation and use of a medication or antibiotic.

protein – Substance made up of amino acids that contains approximately 16% nitrogen (based on molecular weight).

quality – (1) Something special about an object that makes it what it is; a characteristic, attribute, excellence. (2) The composite or attribute of an animal or product that has economic or aesthetic value to the user; meeting or exceeding each customer’s expectations at a cost that represents value to the customer every time.

quality grades – Grades such as Prime, Choice, and Select that group slaughter cattle and carcasses into value- and palatability-based categories. Grades are determined primarily by marbling and age of animal.

ration – Feed fed to an animal during a 24-hour period.

reconstitute – To restore to a former condition by adding water.

red meat – Meat from cattle, sheep, swine, and goats.

reintroduce – To place or insert again into.

respect – High or special regard.

responsibility - Moral, legal, or mental accountability, reliability.

rib-eye area (REA) – Area of the longissimus dorsi muscle, measured in square inches, between the twelfth and thirteenth ribs. Also referred to as the loin-eye area.

risk – Possibility of suffering economic loss. Sources of risk include climate, disease, and changes in the marketplace.


size – Usually refers to weight, sometimes to height.

steer – Bovine male castrated prior to puberty.

sterile – Free from living organisms and especially microorganisms.

sterilize – To make sterile.

stocker – Weaned cattle that are fed high-roughage diets (including grazing) before going into the feedyard.

stress – Unusual or abnormal influence causing a change in an animal’s function, structure, or behavior.

subcutaneous – Situated beneath, or occurring beneath, the skin. A subcutaneous injection is an injection made under the skin.

success – Progressive realization of predetermined, worthwhile goals that are based on true principles.
tenderness – Easily chewed.
tenting – Technique used when giving a subcutaneous shot achieved by pinching the hide between the index finger and thumb and pulling outward allowing the shot to be easily placed between the skin and muscle.
treatment protocol plan (TPP) – A written plan of how to diagnose, and treat simple health problems.
trichomoniasis – A venereal disease of domestic cattle marked by abortion and sterility.
trustworthiness – Worthy of confidence, dependable.
type – (1) Physical conformation of an animal. (2) All physical attributes that contribute to the value of an animal for a specific purpose.

U.S. Department of Agriculture (USDA) – An executive department of the U.S. government that helps farmers supply farm products for U.S. consumers and overseas markets.

vaccination – The act of administering a vaccine or antigens.
vaccine – Suspension of attenuated or killed microbes or toxins administered to induce active immunity.
vibriosis – An infectious disease of cattle caused by a bacterium and marked by infertility and abortion.
virus – Ultra-microscopic bundle of genetic material capable of multiplying only in living cells. Viruses can cause a wide range of diseases in plants, animals, and humans, such as rabies and measles.
viscosity – The property of resistance to flow in a fluid.
vitamin – Organic catalyst, or component thereof, that facilitates specific and necessary functions.
weaning or wean – Separating young animals from their dams so that the offspring can no longer suckle.
welfare – The state of doing well especially in respect to well-being.
wholesome – Promoting health and well-being, safe.
withdrawal time – Amount of time before slaughter during which a drug cannot be given to an animal.
yield – See dressing percentage.
yield grades – USDA grades identifying differences in cutability—the boneless, fat trimmed retail cuts from the round, loin, rib, and chuck.
## Acronym/Abbreviation Appendix

<table>
<thead>
<tr>
<th>Acronym/Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCS</td>
<td>Body Condition Score</td>
</tr>
<tr>
<td>BQA</td>
<td>Beef Quality Assurance</td>
</tr>
<tr>
<td>BVD-PI</td>
<td>Bovine Viral Diarrhea - Persistently Infected</td>
</tr>
<tr>
<td>BVD</td>
<td>Bovine Viral Diarrhea</td>
</tr>
<tr>
<td>cc</td>
<td>Cubic Centimeter</td>
</tr>
<tr>
<td>CWT</td>
<td>Hundredweight</td>
</tr>
<tr>
<td>ELDU</td>
<td>Extra-Label Drug Use</td>
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<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
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<tr>
<td>hd</td>
<td>Head</td>
</tr>
<tr>
<td>ID</td>
<td>Identification</td>
</tr>
<tr>
<td>IM</td>
<td>Intramuscular</td>
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<tr>
<td>IN</td>
<td>Intranasal</td>
</tr>
<tr>
<td>IV</td>
<td>Intravenous</td>
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<tr>
<td>lb</td>
<td>Pound</td>
</tr>
<tr>
<td>MLV</td>
<td>Modified Live Vaccine</td>
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<tr>
<td>OTC</td>
<td>Over-the-Counter</td>
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<tr>
<td>PI</td>
<td>Persistently Infected</td>
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<tr>
<td>PO or O or Per Os</td>
<td>Orally</td>
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<tr>
<td>REA</td>
<td>Ribeye Area</td>
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<tr>
<td>Rx</td>
<td>Prescription</td>
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<tr>
<td>SC, SQ or Sub Q</td>
<td>Subcutaneous</td>
</tr>
<tr>
<td>T</td>
<td>Topical</td>
</tr>
<tr>
<td>TPP</td>
<td>Treatment Protocol Plan</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>VCPR</td>
<td>Veterinarian/Client/Patient Relationship</td>
</tr>
<tr>
<td>YBQA</td>
<td>Youth Beef Quality Assurance</td>
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</tbody>
</table>
References

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Bite Into Beef, Buckley, Jackie; Schafer, Stephen; Sorrell, Wendy; Rodgers, Carrol; Yarger, Sandy; and Kerr, Susan. Chevy Chase, MD. National 4-H Council, 2005. Print.

Guiding Principles

The guiding principles of BQA are based on these core beliefs:

WE BELIEVE production practices affect consumer acceptance of beef.

WE BELIEVE the BQA Program has and must continue to empower beef producers to improve the safety and wholesomeness of beef.

WE BELIEVE these fundamental principles are the fabric of the BQA Program.

Empowering people...because producers can make a difference.
Taking responsibility...because it’s our job, not someone else’s.
Working together...because product safety and wholesomeness is everyone’s business.
**Product Label Lesson**

**Section/Purpose:**
Health and Treatment

This activity will teach youth how to correctly read a product label and how to locate: indications, dosage, route of administration (ROA), withdrawal times, precautions, storage, etc.

**Materials Needed:**
Product labels or copies of product labels (can be from a local veterinarian, industry magazines, etc.)

Pencils or highlighters

**Steps:**
Pass out product labels or copies to each student.

Have the students read through the product labels and identify/locate the following by circling, underlining, copying, or highlighting:
- Indications (what the product is used to treat)
- Dosage (how much to give each animal)
- Route of Administration (where and how to give the product, i.e. Subcutaneous in the neck)
- Withdrawal Times (time between date of last treatment and date of slaughter)
- Precautions/Warnings (human implications)
- Storage (where and at what temperature the product should be stored)
- Etc. (anything else that might be important to any one particular product)

**Discussion:**
Discuss why it is important to read the product label and follow it exactly. Explain why each category is listed on the product label and why it is important information to know. Emphasize that by not following the label you are breaking the law and using products in an Off Label manner which is ILLEGAL.
Injection Site Activity

Section/Purpose:
Health and Treatment

The purpose of this activity is to teach youth the proper way to give an injection. This activity will also aid in teaching various injection techniques and the difference between an intramuscular (IM) and subcutaneous (SQ) injection. Proper needle handling and disposal can also be taught with this activity.

Materials Needed:
Bananas – one per student
Syringe and needle (18 ga x 1 in.) – one per student
One box of food coloring
Paper towels
Newspapers
Exam gloves

Steps:
1. Lay down paper towels or newspapers over work area.
2. Have students put on gloves.
3. Properly attach needle to syringe.
4. Draw 1 mL food color into syringe.
5. Practice IM or SQ injections into the banana.
6. Upon completion, peel or cut open the banana to ensure injections were properly place in target areas.
7. Dispose of trash properly.

Discussion:
Discuss why different routes of administration are used and how they affect carcass quality. Stress the importance of giving shots as directed on the label. Illustrate that by giving a SQ shot incorrectly it can become an IM shot, which the product may not be labeled for.
Syringe Cleaning Demonstration

Section/Purpose:
Health and Treatment

The purpose of this activity is to teach students about how to correctly clean syringes.

Materials Needed:
- Syringes
- Needles
- Water
- Food Coloring
- Paper Towels
- 3 Large Bowls

Steps:
1. Fill two of the large bowls half full with water.
2. Add food coloring to water in one bowl.
3. Have students draw colored water into syringes.
4. Have students expel colored water into the empty third large bowl (simulating vaccinating cattle).
5. Tell students to clean their syringes at the sink.
6. When students are finished cleaning their syringes have them draw clean water out of the second large bowl into their syringe.
7. Inspect syringes to see if water becomes discolored from vaccine residue that wasn’t cleaned out.

Discussion:
Any change in color of clean water will demonstrate what happens when syringes aren’t cleaned properly and either vaccine is left behind or disinfectants were used when they shouldn’t have been. Discuss how this can damage vaccines and cause them to become ineffective. Be sure to state and demonstrate how to correctly clean syringes.
Flight Zone Lesson

Section/Purpose:
Care and handling.

This activity will demonstrate how the flight zones of cattle work using magnets. You are unable to see the flight zone, but it is there.

Materials Needed:
Two magnets of the same pole (+) or (-)

Steps:
Place first magnet (cow) on table top.

Use second magnet (person) to direct, start and stop movement of first magnet (cow).

Demonstrate how entering the flight zone (magnetic field) will cause the cow (first magnet) to move away and exiting the flight zone (magnetic field) will cause the cow (first magnet) to stop moving.

The faster and more aggressive a person (second magnet) enters the flight zone (magnetic field) the faster and more aggressive the cow (first magnet) will move away from the pressure.

Discussion:
Discuss how the flight zone works using the magnets and flight zone illustration (found in the care and handling section) to illustrate principles: point of balance, blind spots, speed, etc. Also, explain how different cattle have different sized flight zones (some are larger than others) and how just because we can't see it doesn't mean that it isn't there. Explain that cattle learn through the release of pressure. For more information and for videos to help illustrate these principles visit: http://www.bqa.org/bqacow-calfhandlingtips.aspx
Care and Handling Lesson

Section/Purpose:
Care and handling.

This activity will demonstrate how negative impacts, or bad things, can spread through your entire herd. For example, at first improper or careless handling only negatively impacts 1 cow then 2 and so on, 1 – 2 – 4 – 8 – 16 – etc. It may start out as one wild cow that doesn’t come into the corral and can then progress into 2 cows tomorrow that won’t come into the corral and then can begin to spiral to others in the herd.

Materials Needed:
A set of dominos

Steps:
Place first domino on table; then two behind it side by side; followed by three dominos in the next row and finally four dominos to make a triangle shape.
X = domino

X
X X
X X X
X X X X

Domino #1 represents your problem cow. When she spooks and runs back through the herd, you can see the effect it will have on the other cattle by knocking some of them down.

Discussion
Discuss how proper care and handling on a daily basis can impact your herd when it comes time to work cattle for vaccinations, weaning, etc. Also discuss with youth the importance of remaining calm, moving slowly, and not spooking or scaring any of the animals. By doing these things, you can minimize the risk of something like the domino demonstration occurring.
Sick Animal Lesson

Section/Purpose:
Health and Treatment

This activity will illustrate why isolating sick or new cattle from the rest of the herd is important to prevent the spread of disease.

Materials Needed:
Dominos
Plastic Fence

Steps:
Designate two dominos as either sick or new cattle.

Set one designated (sick or new) domino up by itself in a pen made from the plastic fence and set several remaining dominos up outside the fence.

Set another designated (sick or new) domino up in a line with other dominos and no fence.

Knock over the single domino in the pen.

Knock over the second domino in the line causing a chain reaction.

Discussion:
Discuss how the single domino in the pen was sick and because it was isolated no other animals in the herd got sick. Explain that because the second domino wasn’t isolated it caused all the other animals in the herd to get sick. Emphasize that isolating sick or new animals is the most important step in disease control and biosecurity.
Drug Residue Lesson

Section/Purpose:
Carcass

The purpose of this activity is to teach youth about carcass medication residues.

Materials Needed:
3 clear plastic or glass drinking glasses
½ gallon white milk
½ gallon pre-mixed chocolate milk
Liquid chocolate syrup
Powder chocolate milk mix
Spoons

Steps:
1. Fill one glass with pre-mixed chocolate milk
2. Mix one glass of chocolate milk using liquid chocolate syrup
3. Mix one glass of chocolate milk using powder chocolate mix
4. Talk about residue testing and why it is important that all cattle be free of drug residues
5. Dump out milk
6. Evaluate and discuss residue left behind in the glasses from each chocolate milk.

Discussion:
The leftover residues in the glasses will demonstrate what a residue test identifies. Each chocolate milk mixture has the potential to leave a different residue, just like different medications. The powdered milk mix may have a gritty residue while the pre-mixed chocolate milk should have no residue at all. This activity can be used to show differences in withdrawal times. A YBQA producer who follows all withdrawal guidelines should have no residue at all.
Cupcake Lesson

Section/Purpose:
Carcass

This activity will demonstrate how carcass quality can be affected by different actions. You may not be able to pick out carcass defects by just looking at the animal.

Materials Needed:
White or yellow Cupcakes prepared and baked prior to the lesson, clean needle and syringe, plates, napkins.

Steps:
Multiple cupcakes in each category will need to be prepared. Cupcakes can be baked in cupcake liners and can be iced.
1. Normal – Quality Carcass
2. Salty – Drug Residue
3. Chili powder – Improper Diet, Drug Residue, Other Possible Quality Defect
4. Over baked – Animals Past Being Market Ready, Kept To Long
5. Red Food Coloring or mix up red Jell-o – Dark Cutter, Stressed
6. Pudding or Marshmallow Crème – Injection Site Lesion, Abscess
7. Pretzel – Broken Needle
8. Other (if desired)

Ingredients and Preparation:
1 box white cake mix
1 container frosting
Paper baking cups
Cupcake pans
1 package instant banana or vanilla pudding (1 jar marshmallow crème can be substituted)
Salt
Chili pepper, ground or chili powder
Red food coloring or red Jell-o
1 Small bag of pretzel sticks
Prepare cupcakes as directed on box. Fill each baking cup half full.

Before Baking:
Add ½ teaspoon salt to 3 of the cupcakes—mix in. (Remember, these will be #2).

Add 1 teaspoon of ground chili pepper to 3 of the cupcakes—mix in. (These will be #3)

Bake according to instructions.

Leave 3 cupcakes in oven to overcook to very dry – not burned. (These will be #4).

Allow all cupcakes to cool.

Inject 3 cupcakes with many small drops of red food coloring or liquid red Jell-o. (These will be #5).
Prepare instant pudding according to directions; refrigerate for the 3 #6 cupcakes. Marshmallow crème can also be used in place of the pudding so that refrigeration is not necessary. Cut a circle from the center of 3 cupcakes. Save the top as a cap. Trim underneath cap and hollow out the center of the cupcake. Fill the hole with chilled pudding or marshmallow crème and replace the cap. (These will be #6).

Insert one pretzel stick into 3 cupcakes at an angle. Make sure that the pretzel sticks will not puncture the roof of someone's mouth and that they can be hidden by the frosting. (These will be #7).

Do nothing to 3 cupcakes. (These will be #1).

If desired prepare remaining cupcakes to illustrate other carcass defects that might influence eating satisfaction. Use your creativity. (These will be #8).

Frost cupcakes.

**Discussion:**
Have the youth taste their cupcakes leaving enough to evaluate the appearance of each cupcake. Have each youth report on the taste and appearance of their cupcake. Discuss how this relates to beef quality and what it means to the consumer.
Feed Mixing Demonstration

Section/Purpose:
Nutrition/Feedstuffs

The purpose of this activity is to teach students about mixing feeds. This exercise will show what effect ingredient particle size has on the ration and it can also be used to teach about medication residues.

Materials Needed:
Quart Size zipper-sealed plastic bags – one per student
Two large mixing bowls
One “feed scoop” or measuring cup
One sack of M&M's
One small sack of sugar
3 bags of cereal or snack mix (pretzels, Gardetto's, Chex cereal, etc…)

Steps:
1. Give students a pre-determined recipe or allow them to mix their own “feed”.
2. Combine ingredients in large mixing bowl and stir or shake to simulate a feed mixer
3. Add M&M's and/or sugar to resemble medicated feed.
4. Scoop “feed mix” into student's plastic bags.
5. Show students how different sized particles separate

Discussion:
After dividing feed out into plastic bags, have students examine how certain sized particles naturally sift themselves to the bottom. Also notice how medication is not spread evenly throughout the feed. Afterwards, examine the mixing bowl to see if there are any residues left in the bowl. This will demonstrate how medication residues can remain in a mixer or feeder long after the feed is gone.
Allalfa
Bermuda
By products
Calcium
Corn
Dry matter
Forage

Grain
Grain Sorghum
Minerals
Phosphorus
Prairie hay
Protein
Range Cubes

Salt
Soybeans
TDN
Vitamins
Water
Wheat Midds
Body Condition Scoring

Section/Purpose:
Nutrition / Feedstuffs

The purpose of this activity is to educate youth about body condition scoring of beef cattle.

Body Condition Scoring (BCS) is used by beef producers to visually evaluate the effectiveness of nutritional and animal health management programs. BCS suggests the relative fatness or body composition of the cow and allows producers to adjust feeding and health management practices as results of the visual body condition scores. BCS will vary; heifers should be at a BCS of 6 at calving while mature cows should maintain a BCS of 5-6. Body Condition Scores allow the producer to predict re-breeding efficiency and allows them to evaluate the nutritional program each time the herd is seen.

(Refer to OCES fact sheet ANSI-3283 Body Condition Scoring of Beef Cows or the Beef Cattle Manual – E-913 – Fifth Edition – Chapter 15 for more information.)

Materials Needed:
Printed photos of pictures 1-20 or access to a computer to run the PowerPoint slides
Index cards
Pencils

Steps:
1. Allow youth to view slides 1 through 9 and discuss the official score that the cow has been given and why.
2. Distribute index cards and pencils. Ask youth to number their index cards 1 through 5.
3. Show youth provided PowerPoint slides or printed pictures of Cows 1 through 5 and allow them time to determine the BCS score for each cow on their index card.
4. Once everyone is finished; show the provided PowerPoint slides/pictures of cows 1 through 5 with their official scores.

Discussion:
How can this information help the producer?

Can the condition of the cow herd affect the following?
• Conception rates
• Time between birth and when the cow will rebreed
• Calf survival and vigor
• Milk production which affects weaning weights

What steps did you go through before you made your decision about each animal’s score?

How will you use the information gained from this lesson?
Record Keeping Lesson

**Section/Purpose:**
Record Keeping

This activity will teach youth how to correctly read a product label and keep correct records on how and when animals were treated. They will learn how to locate and correctly record: date, animal ID, indications, dosage, route of administration (ROA), lot and serial numbers, withdrawal times, person giving the product, etc.

**Materials Needed:**
Product labels or copies of product labels (can be from a local veterinarian, industry magazines, etc.)
Product boxes or empty bottles (if available)
Record keeping forms
ID tags
Pencils or pens

**Steps:**
Pass out ID tags to each student.
Pass out products/product labels or copies to each student.
Explain to the students that they are processing their cattle (ID tag) either for sickness or providing vaccinations (depending on product labels selected).
Have the students read through the product labels and correctly fill out their record forms to include, but not limited to the following information:

- Date
- Animal ID
- Symptoms/Indications (why the animal is sick/what the product is used to treat)
- Dosage (how much was given to each animal)
- Route of Administration (where and how the product was given, i.e. Subcutaneous in the neck)
- Lot and Serial Numbers (combination of numbers and letters printed on the box designating individual products/batches)
- Withdrawal Times (time between date of last treatment and date of slaughter)
- Persons Giving Products
- Etc. (anything else that might be important to any one particular product or situation)

**Discussion:**
Discuss why it is important to record and keep accurate records. Explain how this can help make you a better producer. Emphasize that records validate treatment responses and verifies what treatment history and production practices.