

Youth Meat Quality Assurance

Colorado's Commitment to Quality



COLORADO STATE UNIVERSITY
EXTENSION

Purpose of the MQA Program

- Help define your responsibilities as a 4-H or FFA livestock producer.
- Increase the use of production practices that relate to Meat Quality.
- Assist you in providing a “safe” product.



Your Responsibilities as a Livestock Producer

- Provide safe, wholesome food to consumers.
- Understand and follow the labels carefully for every feed additive, medicine, or product used.
- Develop a close working relationship with your veterinarian.



Food Supply Continuum



Good Production Practice #1

Use an appropriate veterinarian/client/patient relationship (VCPR) as the basis for medication decision-making





Veterinarian/Client/Patient Relationship

A working relationship with your veterinarian where he or she advises and guides you in determining which medications are appropriate and when to use them as part of your animal project.



➤ = **Client**



➤ = **Patient**



In a VCPR a Veterinarian Must:

- Have working knowledge of the animal(s) and/or operation.
- Accept the responsibility for the administration of a drug or medication.
- Provide continued care following the administration of a drug or medication, if needed.
- Be available for follow up assistance or treatment if needed.



Extra Label Drug Use

- Actual use or intended use of a drug(s) in an animal in a manner that does not follow the approved label directions.
- Only a veterinarian with a VCPR for your animal can direct extra-label drug usage.
 - Veterinarians have advanced training, access to scientific literature and ability to draw conclusions from their resources.
 - They use knowledge and information to establish extended withdrawal times so no residue violations occur.

What is Considered Extra Label Drug Use?

- Increasing dosage.
- Changing the frequency and/or route of administration.
- Changing duration of the treatment.
- Treating a disease or condition not stated on the label.
- Changing the species or life stage to be treated.

Producer Requirements for Extra Label Drug Use

- Have an established VCPR.
- Have records showing the instructions from the veterinarian directing the extra-label drug use.
- Maintain appropriate treatment records when extra-label products are administered.



Distribution & Use of Approved Animal Drugs

- Over-The-Counter (OTC)
 - Can be purchased by anyone from places such as farm supply stores, animal health salespersons, catalogs and veterinary clinics.
- Prescription (Rx)
 - Drugs for which the FDA requires veterinarian oversight for labeled usages because of their danger to either humans or animals.
- Veterinary Feed Directive (VFD)
 - Medication intended for use in, or on, animal feed.

Using Over-the-Counter Products in an Extra-Label Manner

- A VCPR exists.
- Extra-label use instructions have been provided by the veterinarian and are followed by the caretaker.
- A withdrawal time has been assigned by the veterinarian.
- Identity of the treated animal is maintained.
- Treatment is recorded, and records are maintained by the producer for at least one year after animal is treated.



Remember...

- Using a drug or medication in a manner different from the manufacturer's label is not legal unless administered by, or on the order of, a licensed veterinarian.
- **Extra-label use of feed medications is not allowed – not even by a veterinarian.**



How to Avoid Drug Residue

- Record the date(s) of treatment.
- Record the name of the product administered.
- Record the dosage and route of administration for treatment(s).
- Record the withdrawal date and time.
- Record the identity of the person who administered the product.

Good Production Practice #2

Establish & implement an efficient and effective health management plan.



COLORADO STATE UNIVERSITY
EXTENSION

Health Management Plan

- Development and maintenance of a vet/client/patient relationship (VCPR)
- Development of a health plan for your animals.
- Development of a biosecurity plan.

Herd Health Plan

- Designed to
 - Address potential and current health challenges.
 - Help prevent diseases from entering into your operation.
- The Plan
 - Includes all vaccinations to be given.
 - Includes the treatment guidelines for common disease challenges.
 - Helps prevent and control potential disease outbreaks.



Biosecurity

- A combination of management practices designed to prevent the introduction and spread of diseases and disease-causing agents into a herd.
- Biosecurity includes:
 - Barn cleaning and disinfecting.
 - Rodent control.
 - Caretaker and visitor entry guidelines.
 - General security measures.



Biosecurity

- External Biosecurity
 - Keeping diseases out of a herd.
- Internal Biosecurity
 - Keeping diseases already in one or more area(s) of the herd from spreading to other area(s).

External Biosecurity

- Control wildlife and pests to prevent contact with your animal(s) by including the use of perimeter fencing and bird screening.
- When considering the purchase of new animals, ask your veterinarian to discuss the health maintenance program you should start when the new animals get to your farm.
- When possible, establish an isolation and quarantine facility for newly introduced animals and animals returning from an exhibition.
- Limit the number of visitors to your facility and minimize their contact with your animals.

External Biosecurity

- Consider supplying disposable plastic boots to all visitors.
- Change clothes and boots after visiting other exhibitors, livestock markets or shows.
- Limit equipment and tools, including scales, to those that have been cleaned and disinfected.
- Clean and disinfect all tools, scales and equipment every time prior to introducing them to your operation.

Internal Biosecurity

- Establish routine veterinary visits to monitor herd health.
- Clean and disinfect in between groups of animals.
- Develop a routine check of all equipment and have an emergency plan for feed and water delivery.



Good Production Practice #3

Use antibiotics responsibly.



COLORADO STATE UNIVERSITY
EXTENSION

Antibiotic Use in Livestock Production

- Treatment of Illness
- Control of Prevention of Disease
- Improve Nutritional Efficiency

Responsible Antibiotic Use

1. Take appropriate steps to decrease the need for antibiotics.
2. Assess advantages and disadvantages of all uses of antibiotics.
3. Use antibiotics only when they provide measurable benefits.
4. Fully implement the management practices described for responsible use of animal health products into daily operation.
5. Have a working veterinarian/client/patient relationship and follow the responsible antibiotic use guidelines.

Good Production Practice #4

Properly store & administer animal health products.



COLORADO STATE UNIVERSITY
EXTENSION

Properly Administering Products

1. Read, understand, and follow label directions when giving any medication.
2. Develop a medication record and animal ID system so all caretakers know the medication status of animals prepared for harvest.
3. Identify all treated animals.
4. Keep records for making judgments about marketing animals that have been treated.
5. Use medication records to determine when withdrawal times have been completed.



Drug Labels

- Trade Name
- Active Ingredient
- Indications
- Dosage
- Direction for Use
- Cautions and Warnings
- Withdrawal Times
- Manufacturer's Lot Number
- Expiration Date

Omnibiotic
(Hydrocillin in Aqueous Suspension)

Directions for use:
For use in Beef Cattle, Lactating and Non-Lactating Dairy Cattle, Swine and Sheep
Read Entire Brochure Carefully Before Using This Product For Intramuscular Use Only

Active Ingredients: Omnibiotic is an effective antimicrobial preparation containing hydrocillin hydrochloride. Each ml of this suspension contains 200,000 units of hydrocillin hydrochloride in an aqueous base.

Indications: **Cattle** - bronchitis, foot rot, leptospirosis, mastitis, metritis, pneumonia, wound infections. **Swine** - erysipelas, pneumonia. **Sheep** - foot rot, pneumonia, mastitis; and other infections in these species caused by or associated with hydrocillin-susceptible organisms.

Recommended Daily Dosage
The usual dose is 2 ml per 100 lb. of body weight given once daily.
Maximum dose is 15 ml/day.

Body Weight	Dosage
100 lb	2 ml
500 lb	6 ml
500 lb	10 ml
750 lb or more	15 ml

Continue treatment for 1 or 2 days after symptoms disappear.

Caution: 1. Omnibiotic should be injected deep within the fleshy muscle of the neck. Do not inject this material in the hip or rump, subcutaneously, into a blood vessel, or near a major nerve because it may cause tissue damage. 2. If improvement does not occur within 48 hours, the diagnosis should be reconsidered and appropriate treatment initiated. 3. Treated animal should be closely observed for at least 30 minutes. Should a reaction occur, discontinue treatment and immediately administer epinephrine and antihistamines. 4. Omnibiotic must be stored between 2° and 8° C (36° to 46° F). Warm to room temperature and shake well before using. Keep refrigerated when not in use.

Warning: Milk that has been taken from animals during treatment and for 48 hours (4 milkings) after the last treatment must not be used for food. The use of this drug must be discontinued for 30 days before treated animals are slaughtered for food.

How supplied: Omnibiotic is available in vials of 100 ml.

Lot # 56789B Expires June, 20XX

Take Time
Observe Label Directions



Drug Storage

- Store medications in a clean, dry and dark location.
- As a rule, once a bottle of medication has been opened, it should be stored in a refrigerator unless specifically directed by the label or your veterinarian.
- Observe medication expiration dates, and maintain your supply to avoid using expired products.
- Maintain drug identity.
- Do not store medications in syringes. Draw medications from labeled bottles and administer the product in a timely manner.

Drug Storage

- Store medication appropriately to prevent contamination.
 - Keep injectable medications in a tightly sealed, clean bottle.
 - Clean rubber stoppers before inserting a needle into the vial.
 - Use only clean needles to withdraw contents from multi-dose vials.



Administering Medication

- Oral
 - Given through the mouth using water or feed
 - No risk of broken needles or injection-site reactions
- Topical
 - Applying to animal's skin
 - Sprays, dusts, pour-ons and dips
- Injection
 - Treat individual animals
 - Treat animals too sick to eat or drink

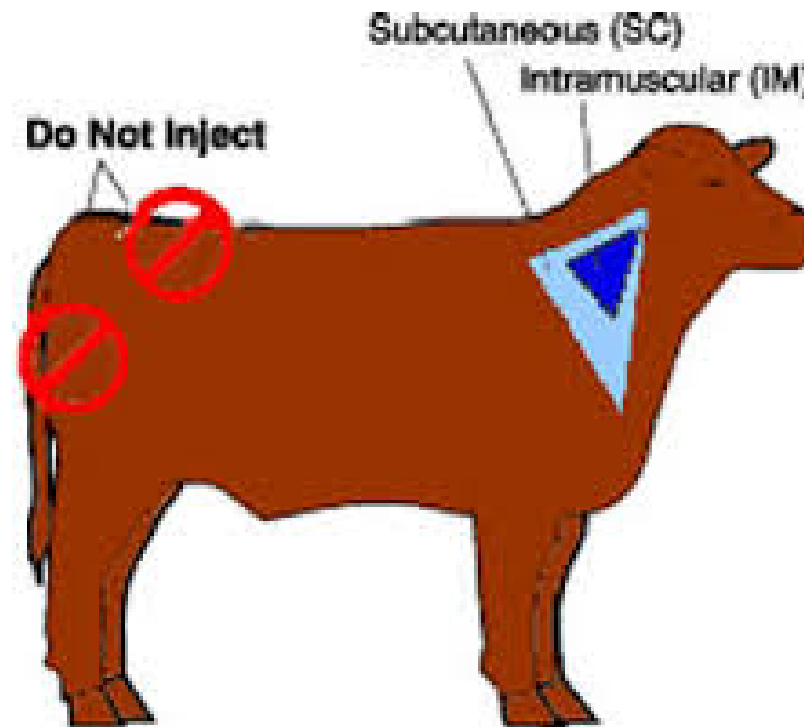


Injections

- Intramuscular (IM)
 - In the Muscle
- Subcutaneous (SQ)
 - Under the Skin
- Intraperitoneal (IP)
 - In the Abdominal Cavity
- Intravenous (IV)
 - In the Vein
- Intranasal (IN)
 - In the Nasal Passages



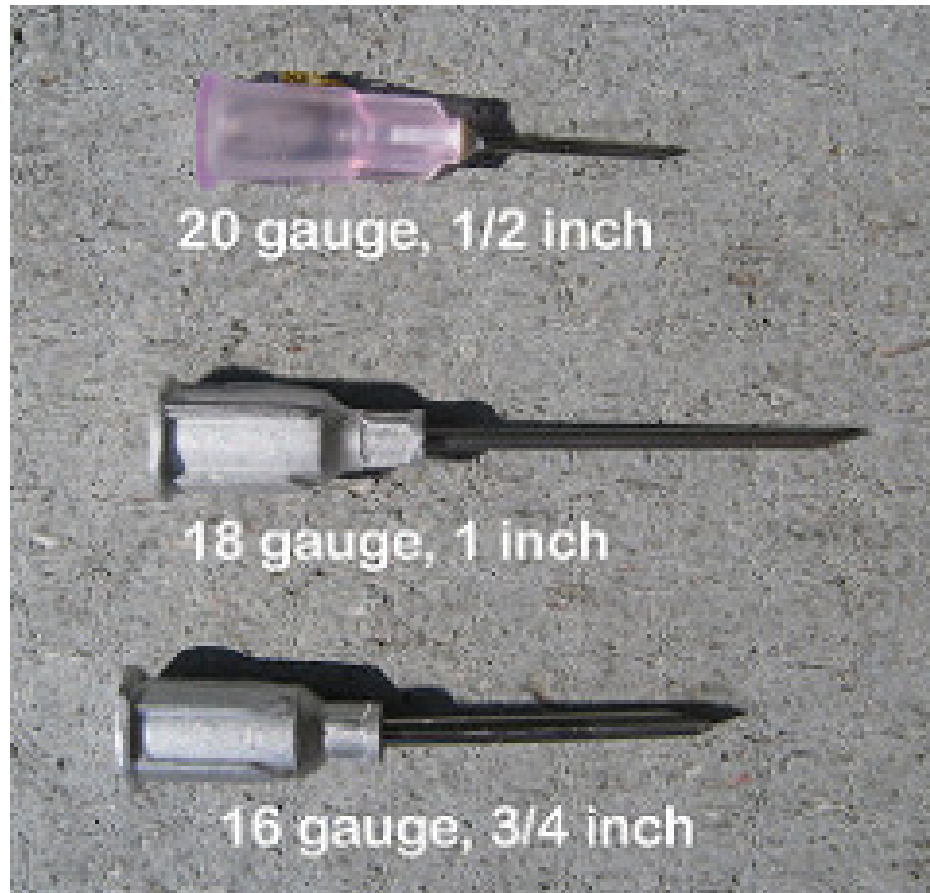
Where to Administer IM & SQ Injections



INJECTIONS SHOULD BE IN THE NECK OF THE ANIMAL & NOT IN THE RUMP AREA!!!



What Size Needle to Use?



Recommended Needle Sizes and Lengths for Swine*				
<u>Type of Pig</u>	<u>Intramuscular (IM)</u>		<u>Subcutaneous (SQ)</u>	
	<u>Needle Gauge</u>	<u>Needle Length</u>	<u>Needle Gauge</u>	<u>Needle Length</u>
Baby pigs	18 or 20	5/8" or 1/2"	--	--
Nursery pigs	16 or 18	3/4" or 5/8"	16 or 18	1/2"
Finishing pigs	16	1"	16	3/4"
Breeding stock	14 or 16	1" or 1 1/2"	14 or 16	1"

*Source: NPPC Pork Quality Assurance Guidelines



Good Production Practice #5

Follow proper feed processing protocols.



COLORADO STATE UNIVERSITY
EXTENSION

Veterinary Feed Directive

- Regulated by the Food & Drug Administration
- What is a VFD Drug?
 - Antibiotic drugs added in or on the feed that is considered medically important to humans by the FDA.
 - Ex. Penicillin & Tylosin
- To purchase medicated feed containing a VFD drug you **MUST** have a prescription from your veterinarian!!
 - Why it is so important to have a VCPR
- VFD records must be kept a minimum of 2 years

Strategies for Livestock Exhibitors for Medicated Feeds

- Make sure all feeds, especially medicated feeds, are properly labeled.
- Clean storage & feed equipment used for medicated feed after use, if a different feed is to be used next.
- Properly identify all animals receiving medicated feeds & monitor the withdrawal period.
- Maintain records for use of medicated feeds for at least 1 year.



Strategies for Livestock Exhibitors for Feeding in General

- Clean feed equipment regularly.
- Employ pest control practices.
- Regularly inspect feed for quality and freshness.
- Store feed in a dry environment.

Good Production Practice #6

Establish effective animal identification, medication records & withdrawal times.



COLORADO STATE UNIVERSITY
EXTENSION

Identify Treated Animals By

- Individual
- Pen
- Lot



Methods of Identification

- Tattoo
- Brand (Electric & Freeze)
- Retinal Scan
- Electronic ID
- Ear Tag
- Paint Brand
- Leg Band
- Ear Notch



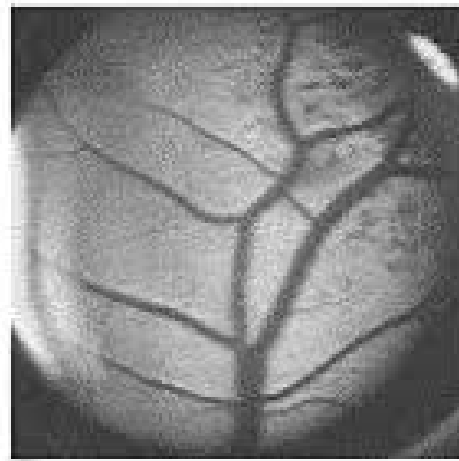
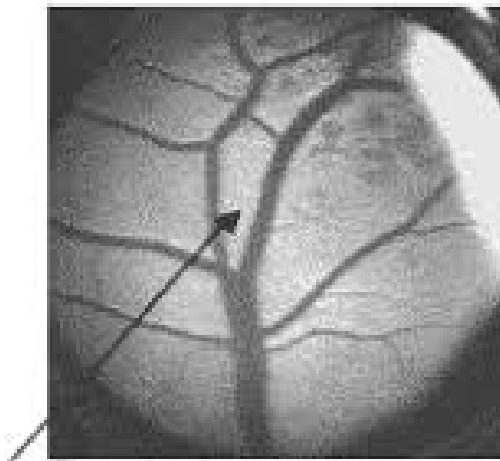
Tattoo



Brand



Retinal Scan



Electronic ID



Ear Tag



Paint Brand



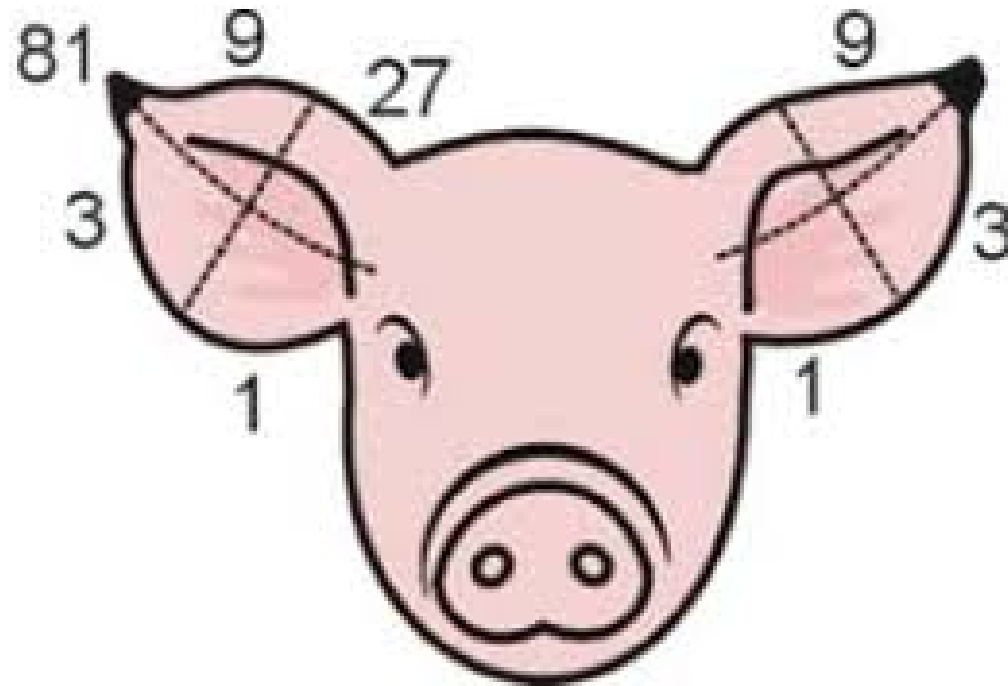
Leg Band



Ear Notch



Ear Notch System



Scrapies Tags

Required on all intact sheep and goats!!!

- Some fairs & shows require Scrapies tags for wethers too.
- Your breeder must provide you with the tags.
- Not lawful to remove a Scrapies tag!



840 Tags

- Part of a USDA Program.
- Consists of a 15 digit tag number, starting with 840.
- Can be used in multiple species.
- Created for traceability purposes.
- It is unlawful to remove an 840 tag!!!



Medication Records

- Must Include:
 - The animal(s) that were treated.
 - The date(s) of treatment, including last day of administration.
 - The drug(s) administered.
 - The route of administration.
 - The person who administered each drug.
 - The amount of each drug administered.
 - The withdrawal time prior to harvest.

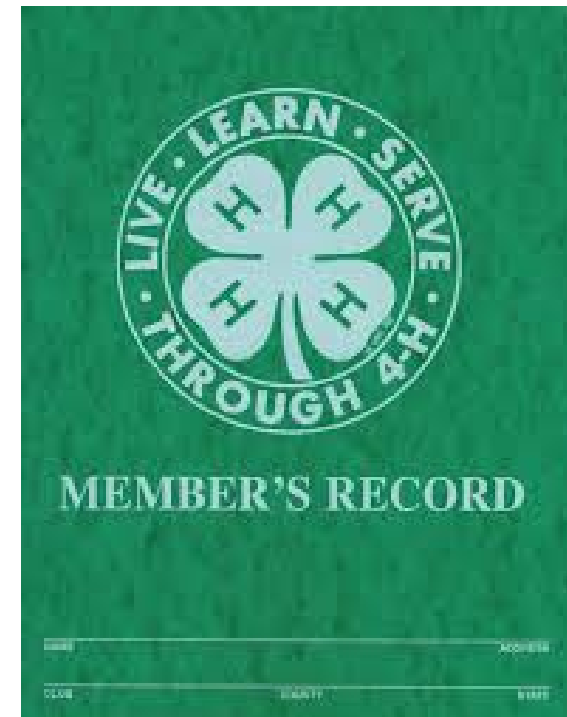


Medication Records

Table 3. Animal Medication Record (minimum requirement)						
Date	ID	Product Name	Amount Given	Route	Given By	Withdrawal Time
9-17	145	Penicillin	10 ml	IM	Bill P.	7 days

4-H Project Records

- Keep 4-H project records for at least 1 year after marketing your animal
 - Excellent source of medication records



Withdrawal Times

- **Period of time required for medication to be metabolized, broken down or excreted so that the level remaining in the body at harvest is below the level established as safe for humans.**
- Found on label, package insert or feed tag.
- Veterinarian assigns withdrawal time for extra-label drugs.



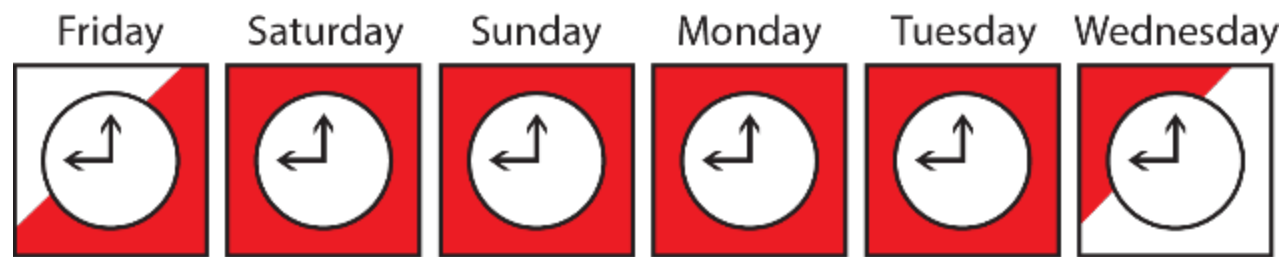
How to Calculate Withdrawal Time

Each withdrawal day is a full 24 hours starting with the last time the animal is treated or has had access to medicated feed, water, topical or injectable products.



How to Calculate Withdrawal Time

If a animal is last treated at 9 a.m. on Friday with a drug having a 5-day withdrawal, when would the withdrawal period end?



The withdrawal period would be complete at 9 a.m. on the following Wednesday.



How to Calculate Withdrawal Time

- Medicated feed or water
 - Withdrawal time begins when all medicated feed is removed from the feeder or water supply and feeders and water devices have been cleaned and flushed.
 - Withdrawal time starts at the time the medicated feed was physically removed from the animal's environment, not the last time the feed bin was filled with medicated feed or medication was put in the water supply.



Good Production Practice #7

Practice good environmental stewardship.



COLORADO STATE UNIVERSITY
EXTENSION

Environmental Practices

- General Site Conditions
- Buildings
- Manure Management
- Emergency Action Plan (EAP)
- Inspection

Your goal is to protect our natural resources with all you do in your project.

Daily, Weekly & Monthly Inspections

- Manure storage and disposal method
- Insect and rodent population control method
- Drinking water and cooling devices
- Pens, alley and facilities free of excessive manure
- Fencing
- Building ventilation system
- Disposal of animal health products
- Cooling and heating systems
- Proper shelter and shade
- Dead animal disposal methods
- Emergency contact list



Good Production Practice #8

Maintain proper workplace safety.



COLORADO STATE UNIVERSITY
EXTENSION

Safety is Everyone's Responsibility

- Youth owners and caretakers are responsible for all aspects of safety including:
 - Assigning responsibility.
 - Conducting safety checks.
 - Defining hazard risks for all activities.
 - Allocating resources to ensure safety in all operational activities.
 - Measuring progress and evaluating performance of safety and environmental management.
 - Reviewing all program components and making adjustments.

Controlling Hazards

1. Eliminate the hazard completely.
2. Limit who is exposed to potential hazards.
3. Make sure those around your animal projects aware of potential hazards and how to be safe.
4. Wearing the appropriate equipment to protect against the hazard.



Have an Emergency Action Plan

- Have an Emergency Information Sheet that includes:
 - Address of facility.
 - People at the farm trained in first aid.
 - Location of first aid kits, fire extinguishers and alarms.
 - Evacuation plan for each building.
 - Emergency farm map.
 - Emergency contact information outside building for caretakers and neighbors to use if they notice something is wrong.
 - Owner number, veterinarian number, power and electric company, emergency 911, etc.



Protect Yourself

- Wash hands before and after working in barn and with animals.
- Wear waterproof and puncture resistant gloves when caring for sick animals or assisting with procedures.
- Wear facial protection whenever exposed to splashes or sprays.
- Clean all injured areas with soap and water immediately.
- Don't eat or drink around your animals.



Good Production Practice #9

Provide proper animal handling and care.



COLORADO STATE UNIVERSITY
EXTENSION

Caretaker's Ethical Responsibility

- Providing feed, water and an environment that promotes the well-being of his/her animals.
- Providing proper care, handling and transportation for animals at each stage of life.
- Protecting animal health and providing appropriate treatment, including veterinarian care when needed.
- Using approved practices to euthanize, in a timely manner, those sick or injured animals that fail to respond to care and treatment.

Daily Observation

Animals should be observed at least once a day!!!

Look for:

- Any sick or injured animals
- Availability of water and feed
- Any potential biosecurity risks or hazards



Promoting Animal Well-Being

- Feed Availability
 - Check feeders daily to ensure they are in good working condition and that feed delivery is not blocked.
- Water Availability
 - Poor water quality can reduce consumption rates and negatively impact animal health.
 - Water should be available all the time.
 - Waterers should be designed so animals can drink freely and have adequate flow rates.

Promoting Animal Well-Being

- Ventilation
 - Temperature
 - Air Quality
 - Control contaminants such as dust, ammonia, and others

Facility Maintenance

- Pens, Flooring and Alleyways
 - Sharp protruding objects can cause skin lesions.
 - Non-slip flooring provides good footing where animals are handled.
- Chutes
 - Before loading and unloading animals, inspect chute for damage.
- Feeders
 - Allow unobstructed feed delivery to animals and not cause injury.
- Waterers
 - Designed and positioned so animals can drink freely and have flow rates to meet their water intake needs.

Animal Performance

- Average Daily Gain
 - Average amount of weight an animal gains each day over a period of time.
- Feed Efficiency
 - Pounds of feed required per pound of live weight gain.

Body Condition Score

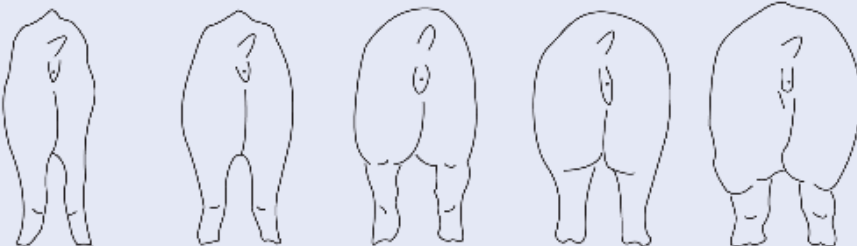
Image					
	1	2	3	4	5
	Emaciated	Thin	Ideal	Fat	Obese
	Detection of Ribs, Back Bone, "H" Bones and Pin Bones	Obvious	Easily detected with pressure	Barely felt with firm pressure	None

Table 1. Description of Body Condition Scores in Beef Cattle. (after Sprott and Herd, undated)	
1	Severely emaciated - no fat observed, backbone, tail head and ribs are prominently visible.
2	Emaciated - little visible muscle tissue, backbone, tail head and ribs less visible.
3	Very thin - no fat over ribs or brisket, backbone still easily visible (about 0.05 inches of fat cover).
4	Borderline - individual ribs noticeable, overall fat cover is lacking, there is increased musculature over shoulders and hindquarters, hips and backbone slightly rounded (about 0.10 inches fat cover).
5	Moderate - increased fat cover over ribs, only 12th and 13th ribs visible, tail head full or flat but not rounded (about 0.20 inches fat cover).
6	Good - back, ribs and tail head slightly rounded and spongy when palpated, fat deposition in brisket (about 0.30 inches fat cover).
7	Fat - cow appears fleshy and carries fat on back, tail head and brisket, ribs are not visible, some udder fat (about 0.40 inches fat cover).
8	Very fat - squared appearance due to excess fat over back, tail head and hindquarters, fat deposition in brisket and along ribs and in udder (about 0.55 inches of fat cover).
9	Obese - fatter than BCS 8 with more fat in udder (about 0.70 inches of fat cover).



Animal Evaluation

- Lameness
 - Animals that cannot bear weight on one or more limbs.
- Skin Lesions, Abscesses, Wounds and Shoulder Sores
- Position of ears
- Nasal discharge
- Behavior

Euthanasia

- Humane death occurring with minimal pain and distress
- Timely Euthanasia
 - Animals showing no improvement after two days of intensive care
 - Severely injured or non-ambulatory animals with the inability to recover
 - Any animal immobilized with a body condition score of 1

Safe Animal Handling

- Flight Zone
 - Imaginary circle around an animal that it considers it's space.
- Point of Balance
 - Located at an animal's shoulders.
- Following/Herding
 - Animals group together to be in visual or physical contact with each other.



Safe Animal Handling

- Handlers should:
 - Act calmly.
 - Avoid sudden movement, loud noises, other distractions.
 - Move animals at their normal walking pace.
 - Avoid aggressive handling.
- Aggressive handling includes things such as:
 - Overuse, or improper use, of electric prods.
 - Loud noises and yelling.
 - Moving animals too fast.
 - Moving too many animals per group.
 - Overcrowding them in chutes, ramps and alleyways.
 - Rough physical contact.

Willful Acts of Abuse

Willful acts of neglect and abuse are unacceptable and are not tolerable.

- Acts outside accepted production practices that purposely cause pain and suffering
 - Purposely applying prods to sensitive parts of the animal such as eyes, ears, nose, genitals or rectus.
 - Hitting or beating animal.
 - Failure to provide minimal food, water and care resulting in harm or death to animals.

Good Production Practice #10

Utilize tools for continuous improvement.



COLORADO STATE UNIVERSITY
EXTENSION

Utilize Tools for Continual Improvement

- Understand the importance of educating all caretakers.
- Use appropriate resources to evaluate records, facilities & animal observations.
- Advocate for agriculture.

Meat Quality Assurance...

A Commitment to Quality Begins With YOU



[Colorado 4-H MQA Junior Assessment Link](#)