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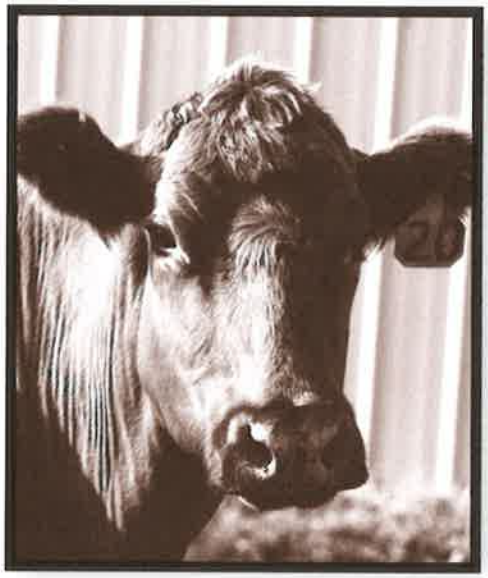
Livestock Quality Assurance



for Youth Producers

YOUTH
Montana 4-H Center
FOR YOUTH DEVELOPMENT

MONTANA
STATE UNIVERSITY
EXTENSION

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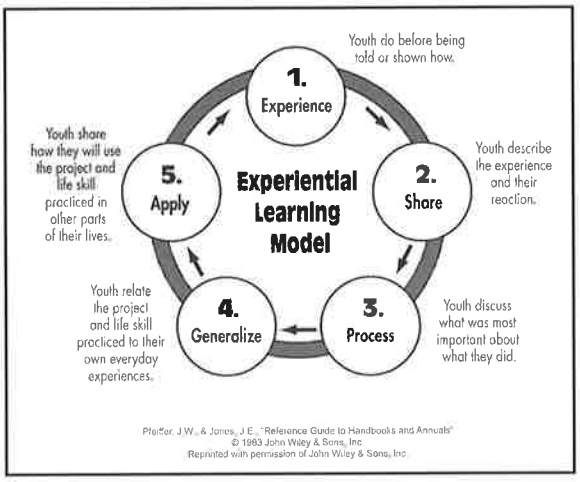


Specific Life Skills & Science Standards

Youth will learn a lot about livestock and raising a quality meat product through this course, but they will also learn a lot about themselves and the volunteers who lead them. Many of the things they will learn are skills they can use in other areas of their life, like: planning/organizing, critical thinking, problem solving, learning to learn, decision making, concern for others, record keeping, and personal safety.

U.S. Educational Standards for Science:

- NS.5-8.1 Science As Inquiry — Abilities necessary to do scientific inquiry.
- NS.5-8.3 Life Science — Structure and function in livings systems, reproduction and heredity, regulation and behavior.
- NS.5-8.6 Personal and Social Perspectives — Personal health, risks and benefits.

(www.educationworld.com/standards/national/science/5_8.shtml)

Contents

Livestock Quality Assurance for Youth Producers

Objective: Assist youth in understanding their role as producers in the food supply chain and their responsibility to produce a safe food product while caring for animals in an ethical manner.

Why Quality Assurance

Improves Care and Management of Livestock

Instills Legal, Moral, and Ethical Production

Provides Safe Food for Consumers

Maintains Public Trust and Confidence

Section 1
Why Quality Assurance?

Just like other livestock, 4-H and FFA project animals are food-producing animals – someone's future meal. Youth members enrolled in livestock projects are livestock producers in the human food chain, no different from livestock producers in ranching and farming sectors of agriculture.

Even if a youth only exhibits and sells one market animal, their moral and legal responsibility is the same as a producer that sells thousands of animals. Providing a safe food product for others is an important obligation for all livestock producers. The general public trusts that producers, whether they be farmers, ranchers, or 4-H and FFA members, will provide for their animals' welfare through proper care and management. This includes providing food, water and shelter, along with protecting them from harm by minimizing pain, stress, and suffering. Consumers want to know where their food comes from, and that it will be a safe and wholesome product. Livestock producers should ensure that no drug residues remain when animals are marketed and do their part to prevent pathogen contamination and prevent carcass defects such as injection-site blemishes and bruises.

No one would like to have their name associated with an unhealthy animal that is not fit for people to eat. 4-H and FFA members need to do their share to make sure that they are doing everything possible to ensure a healthy animal and a happy customer. Remember: If a customer is happy with the product, he or she will be back to buy again. If a customer is not happy with the product, he or she will likely tell other individuals not to buy those animals. The last thing we want is for that consumer to have a bad eating experience, because even when a consumer buys meat from the store, they have to give up some of their hard-earned money in exchange. So if the meat has quality defects, they are more likely to spend their money on alternate items in the future.

By enrolling in a livestock project, youth made a commitment to the proper management and care of their animal. As they complete their project, they will learn motivation, competitive spirit, life skills, and honesty. The primary responsibility of the youth member will be the moral and ethical production of a healthy animal. Youth livestock members are livestock producers in the human food chain and, as livestock producers, they should realize that providing a safe food product for others is a serious business.

Ultimately, customers purchase youth members' animals because they trust them to provide a safe product to feed their family and friends. This trust is formed because the buyer either knows the member or they believe that 4-H and FFA members are concerned about the safety of the livestock they sell. It is up to youth members to maintain this trust. What do you think will happen if a buyer of a market animal at the Fair Auction has a negative experience? The odds of them bidding on an animal next year just went down.

This manual is designed to help provide training and education materials on proper livestock management practices that lead to the production of safe, wholesome, high quality meat products.



Section 2
Facilities

As livestock producers, 4-H and FFA youth are responsible for the welfare of their animals. Environmental variations may have dramatic effects on animal well being and performance. In order to provide livestock with the best possible environment to live and grow, a little planning early on and some precautionary measures during inclement weather will help to produce healthy, productive and comfortable animals. When people plan livestock facilities, they need to keep in mind the animal's comfort zone. An animal's comfort zone is the environment in which they are under the least amount of stress. Livestock owners have the responsibility of caring for their animals in a healthy and humane manner. The safety, comfort, and health of an animal directly impact the success and efficiency of a livestock program. Stress due to extreme temperatures, lack of ventilation, overcrowding and unsanitary conditions greatly affects an animal's health and growth.

Facilities should provide a comfortable environment for the animal, with protection from cold, wind, sun and heat. Dry bedding should be provided during inclement weather, and the animal should have adequate room to move around. The design of animal living facilities should be developed based on the direction of the sun and prevailing winds. Protection from high winds on cold days and direct sunshine on hot days are important factors in the well being of the animal. As you can see from the wind-chill chart (Table 1), even light winds on relatively cool days can have a dramatic effect on the temperature the animal feels. Providing shade for animals on hot days is also important. Under both temperature extremes, animals can be stressed and the likelihood of sickness and poor performance increases.

When preparing animal facilities, pay particular attention to the condition of pens. A protruding nail or wire gap may catch or poke an animal causing not only external cutting, but internal bruising, which could show up at the time of processing. Broken boards or improperly sized panels may entice an animal to crawl out. In their efforts to fit through an opening, animals may be cut and bruised, or worse yet may become stuck. When animals become stuck they have a tendency to struggle and cause even greater harm to themselves. In some circumstances they may even die. To minimize the chances of animal injury due to hazards in the facilities, be sure to eliminate any gaps in the wire, protruding nails, and replace broken boards.

Table 1: Wind-chill chart.
Wind-chill is based on the rate of heat lost from exposed skin caused by wind and cold. As the wind speeds up, it takes heat from the body and lowers the skin temperature. The wind makes temperatures feel colder.

	Temperature (°F)												
Wind (mph)	**40**	**35**	**30**	**25**	**20**	**15**	**10**	**5**	**0**	**-5**	**-10**	**-15**	**-20**
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57

Source: National Weather Service.

Facilities Activity
Temperature Regulation and Comfort Zones

Source: University of Minnesota

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: TEMPERATURE REGULATION AND COMFORT ZONES
	LIFE SKILL: CRITICAL THINKING, PROBLEM SOLVING, LEARNING TO LEARN
	EDUCATIONAL STANDARD: N.S.5-8.1 SCIENCE AS INQUIRY

Learner outcomes:

- Participants will be able to:
  - Understand how facilities influence animal health
  - Define comfort zones for animals
  - Identify factors that influence comfort zones
  - Describe appropriate shelter requirements for animals

Supplies needed:

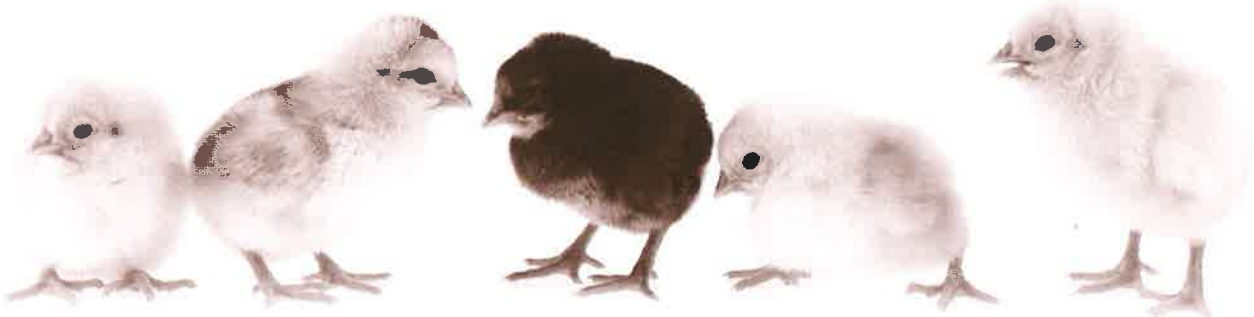
- 1 heat lamp
- 3 thermometers
- 2 shoe boxes
- 1 fan
- Copies of the worksheet "Facilities: Protection from the Heat"

Time schedule: approximately 20 minutes, 10 minutes if materials are set up in advance

Lesson plan:

1. Introduction. People and animals have comfort zones. A comfort zone is the environment in which we feel comfortable. What are some things that affect how comfortable you are? (temperature, room, food and water) This activity deals with how an animal's comfort is affected by temperature and its housing.
2. Activity: How shelter and ventilation affects animals on a hot day.
   - It is recommended to have this first section completed at least 5-10 minutes before the students arrive. This will allow a greater temperature difference.
   - Hang a heat lamp 2 feet off the ground. The shoe boxes represent barns. Keep one of the shoe boxes intact and place under the heat lamp. Place one of the thermometers under the box. Cut sections out of the other shoe box to represent windows and doors in the barn. Place under the heat lamp with the second thermometer under it. Place the third thermometer on the floor beside the two boxes. This represents an animal with no shelter. Have the students record the temperature on the provided worksheet titled "Facilities: Protection from the Heat". Place the fan 4 feet away from the boxes and thermometers and turn it on.
3. Discussion
   - Ask the students what the fan represents (wind).
   - Discuss the temperature readings that they took.
   - Which one was the highest and why?

Note: The time you take in the discussion is important; this allows the impact of the fan to be more evident (10-15 minutes, or experiment to see what works best). After the discussion have them take the readings again. Did the fan affect the readings? If they had to choose a facility to stay in, which would it be? What is the relationship between an animal's need for comfort and their growth rate? Why is temperature important?



Proper Facilities
Protection from the Heat Worksheet

Name _____

	Temperature without wind	Temperature with wind
No shade		
Shade without ventilation		
Shade with ventilation		

1. In the first readings, which facility had the highest temperature?

2. Why do you think it had the highest temperature?

3. In the second group of readings, which had the lowest temperature?

4. Why do you think it had the lowest temperature?

5. Which facility would you prefer to stay in?

Facilities Activity
Bedding and Comfort Zones

Source: University of Minnesota

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: BEDDING AND COMFORT ZONES
	LIFE SKILL: CRITICAL THINKING, PROBLEM SOLVING, LEARNING TO LEARN, PERSONAL SAFETY
	EDUCATIONAL STANDARD: N.S.5-8.1 SCIENCE AS INQUIRY

Learner outcomes:

- Participants will understand:
  - Animal health depends on how facilities meet their comfort zone requirements
  - Comfort zones for animals
  - Factors that influence comfort zones
  - Bedding differences

Supplies needed:

- Resealable plastic bags, quart size
- 3 thermometers
- Different types of bedding (i.e., straw, shavings, shredded or whole paper towels or napkins)
- Ice cubes
- A container for each bedding (i.e., pie pan, paper plate)
- Student worksheet "Bedding Comparison Lab"

Time schedule: 20 minutes

Lesson plan:

1. Introduction. People and animals have comfort zones. A comfort zone is an environment in which we feel comfortable. What are some things that affect how comfortable you are? (temperature, room, food and water). This activity deals with how an animal's comfort is affected by temperature and its housing.
2. Activity: How different types of bedding affect animals in cold weather.
   - Fill bags with ice cubes.
   - Place each bag in the pie pan or other container.
   - Place a 1-2" layer of bedding on each bag.
   - Have an additional example of shavings and wet the shavings. This example helps indicate what happens when bedding is wet.
   - Have one bag of ice with no bedding on top. This will be a control group. This represents when animals have no bedding.
   - Have students record the temperature of each bedding by placing a thermometer on the top of the bedding.
   - Have the students answer the questions on the worksheet "Bedding Comparison Lab"
3. Discussion
   - Review what the group did.
   - Optional discussion point: have the students place their hand on the bedding and imagine how it would feel to sleep on each bedding. Ask the students which bedding they would choose.
   - What are the factors that impact an animal's comfort zone?
   - Why is this lesson important for livestock production?
   - Do people have comfort zones? Are issues of land use related to comfort zones?

Proper Facilities
Bedding Comparison Worksheet

Name _____

Bedding	Temperature
1	
2	
3	
4	
5	
6	

1. Which bedding would keep the animal the warmest?

2. How did the wet bedding differ when it was dry?

3. Which example was the coldest and why?

Section 3
Care and Handling

When a youth accepts the responsibility of a market livestock project, he or she also assumes responsibility for the humane care of another species. Producers can follow all the label directions, provide an excellent facility, and feed the best feed, but none of this matters if the market animal is not properly handled.

Handling livestock is an art and a science. It is also a subject that has received increased attention as we have come to understand that applying best management practices in livestock handling is important for quality assurance of the final product, humane animal care, and profitability.

Understanding animal behavior can help prevent injury, undue stress, and physical exertion for both animals and producers. Farm animals develop good or bad dispositions in part from the way they have been treated or handled. If animals are handled roughly they will remember the rough handling experience and be more stressed when they are handled in the future.

Stress can play a significant role in production, animal health and carcass quality. Stress can be caused by a variety of things, some of which are beyond our ability to control. Extreme heat and cold are examples. Other potential stress triggers such as feeding inconsistencies, handling, and transportation can be minimized through proper management practices. Animals that are stressed exhibit reduced weight gains and are more susceptible to sickness and disease. Research also shows that short-term stress occurring during handling or transportation can interfere with reproduction. Stress at or near harvest can cause carcass defects, resulting in a poor quality carcass.

Farm animals are herd animals; use this instinct. Let animals follow the leader at their own pace and they will seldom injure themselves. When possible, don't leave a single animal by itself, as it is more likely to injure itself. Cattle, hogs, and sheep have wide-angle, panoramic vision, which enables them to see behind without turning their heads. Eliminate obstacles, including light/dark situations, barriers, sharp objects, untrained dogs or other animals from the routes animals are expected to take.

Take flight distance into consideration in handling all livestock. When you enter the animal's flight zone, it will move away. Cattle and sheep have a natural tendency to circle around the handler and keep you in view at all times. When handling livestock, remember: quiet handling is critical. Eliminate or minimize excessive excitement and pressure for animals to move.

Bruised livestock carcasses cost the livestock industry millions of dollars annually. The most common cause of cattle bruises is a hard bump against a protruding object or horns. Hog bruises are most often caused by kicking in the ham or hitting them with canes or clubs. Sheep bruising is caused by grabbing sheep by the wool or by the hind leg. Never apply pressure to the animal where you might damage valuable cuts of meat. Pressure with the trailer door or hitting the animal with a show stick or cane can lead to severe carcass bruising.

Handlers should attempt to rely on the principles of animal behavior to avoid excessive use of prods and whips. Sorting sticks, paddles and canvas slappers are okay as long as they are not used to hit indiscriminately. They are primarily an extension of the handler's presence in close, tight areas to reduce handler injuries.

Be cautious and, above all, be patient when restraining, leading, loading, or showing livestock. By allowing some extra time and paying attention to details, handlers can ensure they are doing everything possible to avoid injuries to their animal and others. With this awareness, 4-H and FFA youth can be confident they are doing everything possible to provide a healthy, safe product for the consumer of their market animal.

Care and Handling Activity
Using Animal Behavior to Safely Handle Animals

Source: University of Minnesota

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: USING ANIMAL BEHAVIOR TO SAFELY HANDLE ANIMALS
	LIFE SKILL: CRITICAL THINKING, DECISION MAKING, LEARNING TO LEARN
	EDUCATIONAL STANDARD: N.S.5-8.3 LIFE SCIENCE

Learner outcomes:

- Participants will be able to:
  - Understand the blind spots, flight zones, and balance points of animals and apply that knowledge to handling their project animals
  - Gain skills in identifying and evaluating livestock handling tools

Supplies needed:

- 3" x 5" card and measuring tape or stick for each pair of members
- Live animal to demonstrate behavior (optional)
- Large posters of an animal of each species
- Worksheet for participants with animal outline
- Display of sorting sticks, prods, whips, etc.

Time schedule: Total time – 60 minutes

- Introduction – 10 minutes
- Basics of Animal Behavior – Activity and Discussion – 30 minutes
- Evaluating Handling Tools – 15 minutes
- Summarize – 5 minutes

Lesson plan:

1. Introduction.
   - Learning to successfully handle cattle and other animals requires knowing about animal behavior. Handlers who understand the ideas of "blind spot", "flight zone", and "point of balance" are able to move animals more easily. Definitions we will be using:
     - Blind spot – the spot directly behind the animal.
     - Flight zone – animal's own space in which it doesn't want any people or foreign objects. Size of the zone is controlled by the animal's wildness or tameness.
     - Point of balance – at the animal's shoulder.
2. Activity: Using Animal Behavior to Safely Handle Animals
   - Peripheral Vision and Blind Spot. This activity demonstrates the concept of peripheral vision and ties this to the blind spot that animals have. Group the participants into pairs of two. Each pair needs a 3" x 5" index card. Have one person sit down. The other person stands to one side of the person's face. The person standing points a finger directly at the one sitting down. This sitting person focuses on the finger. The standing person with the finger still pointing at the sitting person moves the card from the front of the person's face to the side until the sitting person says the card isn't visible. The sitting person must focus on the other person's finger and not move his or her head when the card moves.
     - Sharing/Observing: When did the 3" x 5" card disappear? Can you see what is behind you without moving your head?
     - Processing: What's important? If someone or something was directly behind you and you didn't know it, would it startle you when you saw them?
     - Generalize: Do you think your animal would be startled in the same way? How would you expect your animal to react when it is startled?

- Apply what you learned: Where are your animal's blind spots? How should you approach your animal to avoid being in its blind spot and startling it?

- Flight Zone. Each pair of participants needs a measuring device (yard stick or measuring tape). Have each pair face each other with about four to five feet between them. Have the participants move towards each other one foot at a time pausing after each movement. Have the pair ask themselves if they are comfortable after each step. Have each group complete this activity slowly at first with pauses, then have them repeat this activity rapidly without pausing.
  - Sharing/Observing: When did you feel that the other person was too close to you?
  - Process/Relating: Did you want to get farther away when this happened? How far away from you was your flight zone? Were you more or less calm when your partner approached you slowly or quickly?
  - Generalize/Inferring: If you were too close to your animal, do you think it would want to back away?
- Point of Balance. (Optional if project animal is available; suggest practice at home). With the animal in a small, enclosed area, have each of the participants separately move towards the animal at a moderate rate. Note when the animal moves away. Repeat the exercise with the participants moving more quickly and then more slowly towards the animal. Have the youth try to stop or change the animal's direction by moving in front of the point of balance when the animal is moving. They may have to get closer to the animal to have the animal respond.
  - Sharing/Observing: Did the animal move faster when you moved faster towards it? About how far away from you was the animal when it moved? What happened when you stepped in front of the animal's point of balance?
  - Process/Relating: Was the animal more or less calm when you approached it slowly?
  - Generalize/Inferring: What do you think your animal would do if you approached it too quickly?
- Handling Tools. Have on display a variety of handling tools: electric prod, sorting stick, show stick, paddle, whip. As a group, discuss the advantages and disadvantages of each and when and how they might be used.

3. Summarize: Big ideas to take home (and record in project journals)
   - Blind Spots – animals have blind spots, entering or exiting from an animal's blind spot can frighten the animal. This causes the animal to react to protect itself.
   - Flight zone – approaching an animal slowly gives it time to adapt to your presence. Slow approaches decrease the size of the flight zone. Rapid approaches excite the animal and increase the area of the flight zone. The tamer the animal, the smaller the flight zone.
   - Balance point – using the animal's point of balance can help get the animal to stop or go in the direction you want. Sometimes if you are too close to the animal, it will try to get away from you. It does this by quickly running past you even though you were in front of the point of balance. When the animal does this, get in front of the point of balance again and use more dramatic body language like waving your arms and getting closer to the animal.
   - Use of tools – sorting sticks and paddles are helpful as long as they are not used indiscriminately. They are primarily an extension of the handler's presence in close, tight areas to avoid handler injuries.

Care and Handling Quiz

Name _____

1. A successful livestock handler understands and uses principles of animal _____.

2. An animal's blind spot is:
   a. their damaged or diseased eye.
   b. the spot directly behind the animal.
   c. the spot at its shoulder.

3. Entering or exiting from an animal's blind spot can _____ the animal.

4. The flight zone is:
   a. the animal's own space in which it doesn't want any people or foreign objects.
   b. space an animal needs to leave a barn or corral.
   c. space animals need for exercise.

5. Animal handlers should approach an animal _____ so the animal can get used to their presence.

6. The tamer the animal, the smaller the flight zone True / False

7. An animal's point of balance is at its shoulder. True / False

8. If a handler stands behind the point of balance, the animal walks _____.

9. Sorting sticks and paddles are helpful but should not be used to abuse the animal. True / False

10. Making loud, high frequency noises and using an electric prod are good practices when loading animals in a trailer. True / False

Answers are on pg 42

Section 4
Nutrition

The most important responsibilities of undertaking a livestock project are providing a balanced ration with the appropriate amount of feed along with clean water. Most livestock projects are raised in a confined environment, thus the only feed the animals will receive is provided by the owner. Therefore, the producer needs to make sure all the animals' requirements are being met to promote animal growth and health. As a livestock producer, 4-H and FFA youth need to make sure the animal is receiving the correct amount of feed for its size and provide it with a continuous supply of clean, fresh water.

Most prepared livestock feeds will meet animal nutritional requirements if fed at recommended levels. The local MSU Extension agent can assist in balancing a ration if youth are interested in mixing their own feeds. Be sure to maintain a routine feeding schedule. To promote growth, it is important that animals have easy access to the feed. The bunk should be large enough to accommodate all the animals that will be feeding from it at one time. Dispense livestock feed in a clean trough or bucket that is in good repair. A feed bunk with damage to it or with loose wires can cause injury to the animal, resulting in bruising or cuts.

Record keeping is an important aspect of any livestock operation. By maintaining records, producers are able to determine how much it costs to produce a market animal, how efficient the animal is, and records can provide early notice of potential health problems. The records will also be useful when working the animals up on feed. Accurate records are much more reliable when trying to determine how much to increase feed for an animal. If records are maintained, it is simple to look up the amount of feed the animal has been receiving as opposed to trying to remember. Animal feed requirements also change as the animal grows older. By maintaining accurate records, producers will be able to track the amount of feed provided and check it against required amounts.

To promote healthy, good performing livestock, provide clean, dry and uncontaminated feed for the animals. Sealed feed containers or storage bins are the easiest method to ensure that feed is kept in good condition. Moldy or spoiled feed will reduce livestock acceptance and lead to wasted feed and animals that do not gain as they should. Feed that has been exposed to pet, rodent or bird droppings may not be accepted and may infect livestock with parasites. The droppings of other animals can cause disease and affect the animals' overall performance. Be sure when storing or buying feed that it is free of mold, animal droppings or other contaminants for the health of the animal.

It is important to remember when changing an animal's feed to do it slowly over a period of days. This is especially important when feeding ruminants. The microorganisms in the rumen need time to adjust to the new feed to avoid adverse effects on the animal. If an animal has its ration dramatically changed in a short time, there is a possibility of the animal going off feed. While not always the cause, a rapid change in diet can cause ruminal damage, which will cause the animal to reject feed. When animals don't eat, it increases the chances of them becoming sick and they will lose weight.

Weight loss of market animals has a direct impact on the livestock producer. The animal will eventually have to regain the lost weight and that will increase expenses. If the animal was sick and had to be treated, there are associated medical expenses. Treatment with antibiotics will have a withdrawal time associated with their use and delay the expected sale date (withdrawal times are covered in a later chapter). All the expenses will have to be covered by the eventual sale of the animal and will reduce profit.

Fresh, clean water is very important for producing healthy livestock. An animal can survive for a long time without feed, but it needs water on a regular basis to survive. Water is used by the animal to digest feed, move nutrients through the body and move waste out of the system. During the summer months, even more water is required by an animal because it loses a large amount keeping cool. When providing water for a livestock project, it is important to supply a sufficient amount in an adequately sized dispenser. The water and tank should be clean and in a location where the animal has easy access to it at all times. Water of poor quality can have adverse effects on the animal's health and performance. An animal will not drink as much water from a dirty or salty source as it will from a clean source. If the animal is not consuming an adequate amount of water, it will not perform as well as it should and the chance of the animal becoming sick is increased.

Medicated feeds are available for most classes of livestock used for youth projects. Using medicated feeds means the producer is responsible for the proper use of the product. Medicated feeds are labeled for specific species of animals, and what is safe for one species may not be safe for another. It is very important as a livestock producer to know what you are feeding and the limitations as directed on the label. When the decision is made to provide medicated feeds to livestock, it is important to make sure the feed is labeled for the class of animal being fed and to check whether there are any precautions about other species having access to the feed. Make sure medicated feeds are stored separately from non-medicated feed in a labeled package or container and that the amount fed falls within the guidelines of the label. Do not allow non-medicated feeds to be contaminated with medicated feeds.

Remember, the label is a legal document and it is the law. Medicated feeds may have a withdrawal time that will have to be observed. An accurate record of the feeding of medicated feeds is very important. Your records are your proof that you followed the label, and thus the law if there are ever any questions.

Nutrition Activities

Source: University of Minnesota

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: FEED – MIXING A RATION; WATER
	LIFE SKILL: CRITICAL THINKING, DECISION MAKING, LEARNING TO LEARN
	EDUCATIONAL STANDARD: N.S.5-8.1 SCIENCE AS INQUIRY

Two activities are included in this topic: "Feed – Mixing a Ration" and "Water – To Drink or Not to Drink"

Learner outcomes:

- Participants will be able to:
  - Describe appropriate feed/water handling procedures.

Time Schedule: Can be done in two 15-minute stations with a 10-minute introduction and a 10-minute wrap-up

Feed – Mixing a Ration

- Determine what feed label you want to use and identify the number of ingredients you want to simulate.
- Identify what ingredients you will use to simulate the feed label's ingredients, i.e., Corn Chex could represent grain by-products as in the following example (based on a common feed tag):

  Grain By-Products: *Corn Chex Cereal*
  Plant Protein Products: *Rice Chex Cereal*
  Processed Grain By-Product: *Oyster Crackers*
  Animal Fat: *Mini Pretzel Twists*
  Calcium Monohydrochloride: *Raisins*
  Methionine Supplement: *M&M's*
  Active Drug Ingredient – Chlotracycline: *Coconut*

- The above ingredients are not set in stone; you can use whatever ingredients you feel represent the feed ingredients. *Using generic or store brands of cereal will stretch your budget dollars.*
- You can use any feed label appropriate for your activity.
- No need to use exact measurements – just eyeball the amounts and decrease amounts each time as you are only simulating the mixing of feed. *Note: two boxes of Corn Chex, two boxes of Rice Chex, one large bag of pretzels, one large bag/box of oyster crackers, one bag (1 lb) of M&M's, one large can (1 lb) of raisins, and one small package (8 oz) of coconut will make enough for 40-50 five ounce servings.

Supplies needed:

- 4 large mixing bowls/plastic buckets (or more depending on how many groups)
- Small plastic containers (resealable plastic bags also work) for feed ingredients (enough for each group to have one for each feed ingredient)
- 4 different sized measuring tools/scoops (or more depending on how many groups)
  - 5-oz Dixie cups

Lesson plan:

1. Check to make sure everyone has everything, making sure to point out each supply.
   - Teaching point: Identify the main ingredients that are normally found in feed and what equipment it takes to manufacture feed.
2. Tell them to put ONLY one scoop of everything into their bowl/bucket. Tell them not to mix ingredients together until instructed.
   - Teaching point: All of the scoops are different sizes so every group will be different. Have someone from the group hold up the bowl and another the scoop to show the difference. Discuss that a scoop to one person may be different than a scoop to another. To be accurate, they should be weighed.

3. Don't mix the ingredients together until instructed.

- When mixing feed, one should take about half or less of the major ingredients (i.e., corn) and then mix in the minor ingredients (i.e., vitamins, minerals, medications, etc.). MIX WELL. Then add the rest of the major ingredients and mix together. This is done to get the minor ingredients more evenly distributed.
- Be sure to stop and show the group the feed after only a few stirs which will show them the feed just barely mixed and explain the importance of proper mixing (to evenly distribute all ingredients.)
    - Teaching points:
        - Talk about contamination, cleaning of equipment, etc. Discuss what the major ingredients are and what the minor ingredients are.
        - Discuss the importance of using clean equipment when mixing feed to prevent contamination of the new feed with medication from the feed you had previously mixed in the mixer.
        - Discuss the importance of using separate feed buckets when feeding different animals. Example: you should use a separate bucket and feed scoop for your sow's medicated feed and a different bucket and feed scoop for your barrow's non-medicated feed.

4. Instruct the group to mix for 30 seconds. Each person should take a handful and count one feed ingredient (M&M's work well). Have the participants compare within their groups.
    - Teaching points: Every group doesn't have the same system for mixing. Feed will not be mixed well and everyone will not get the same number. Use this point to demonstrate that the medication and small units need to be mixed thoroughly.
    - Point of discussion: Benefits of using a pellet feed – you know that your animals are getting all of the ingredients in the regulated or appropriate quantities.

5. Finish mixing all the feed and separate into disposable cups and let everyone enjoy the snack.
    - Teaching point: While they are eating, review key points and check for understanding of the activity by asking questions.
        - What makes a feed ingredient a major or minor ingredient?
        - How should feed be mixed?
        - Why does feed need to be measured correctly?
        - Why should instructions for mixing be followed?
        - Why is it necessary to have the correct equipment?
        - What is cross contamination?

Water – To Drink or Not to Drink

Supplies needed:

- 3 to 4 containers of water (each should hold enough water for everyone in the group to get a sample out of each)
- Salt, vinegar, lemon juice, chlorine, molasses, sugar
- Disposable cups (3-4 per youth)
- Four 5-gallon buckets
- Measuring device (2 to 4 quarts)
- Water

Lesson plan:

1. Prepare 3 or 4 containers of water. Add one of the following flavoring agents to each of the containers you prepare. The amount of flavoring agent can be altered, it's okay to experiment a little:
   - Salt – ½ teaspoon per quart of water
   - Sugar – 2-3 teaspoons per quart of water
   - Molasses
   - Chlorine – 3-4 drops per quart of water
   - Vinegar
   - Lemon juice

   Provide disposable cups for the youths to taste a sample of water from each container. Have each member taste each water sample. Have them write down how each one tasted.

   Add lemon to some of the samples participants have already tasted. Add sugar to others. Have the individuals taste these samples after adding other flavors.
   - Discussion questions:
     - Did the water taste good or bad? Did it taste like minerals? Which one tasted best?
     - Does the water taste differently (after adding lemon or sugar)? Does it taste better or worse? Did the worst-tasting sample taste better with lemon or sugar?
     - Do you think your animal could get used to the taste of lemon/sugar? If lemon/sugar were in the drinking water, do you think it would keep your animal drinking if the water tasted bad or different?
     - Ask the youth for their observations about the amount of water that their animals drink. Is it a lot? Which animals drink more?How does the amount of water that they drink differ from the amount of water that their animal drinks?
     - How does not drinking water affect the well-being and quality of meat or milk that your animal produces?
2. Calculate the amount of water than an average-size steer, lamb, and hog would drink (use one gallon of water per 100 lbs of body weight). Also determine the amount of water that the youths drink each day. In each of four different buckets, place the amount of water that they calculated.

Section 5
Animal Health

Healthy animals have an appetite, drink more water, and gain weight more efficiently than a sick animal. Signs of a healthy animal are eyes that are bright and alert, "perky" ears, a shiny coat and a moist nose. Healthy animals exhibit normal temperature, heart rate, and respiration rate, which are summarized for beef cattle, hogs, sheep, and goats in Table 2 below.

It has been said many times, "An ounce of prevention is worth a pound of cure." This saying applies to youth livestock health management plans. If youth are feeding a balanced ration, supplying clean water, ensuring proper sanitation, implementing a preventative herd health program, and providing quality facilities, then they have accomplished the goal of reducing the disease susceptibility of their animal.

Use the guidelines listed below to evaluate current animal health practices. Then, plan a strategy for the utilization of animal health products:

1. Consult your veterinarian and choose a health program that will work for you and your animal(s).
2. Read and follow all label directions, including proper storage.
3. Be aware of and observe label withdrawal times.
4. Follow the proper guidelines for all injections.
5. Keep records of when, where, and what medications were given.
6. Check with your veterinarian or specialist to keep current with new research and technologies.

Livestock should be treated for two reasons. One is to prevent a disease, and the other is to assist the animal to return to good health. There are several ways to give the treatment listed below in the bulleted list. The label gives directions for how the medicine can be given.

- Subcutaneous (Sub-Q): under the skin – usually in the neck
- Intramuscular (IM): in the muscle – usually in the neck
- Intravenous (IV): directly into the vein. This type should be given only by a veterinarian.
- Intranasal (IN): into the nostril
- Intramammary: directly into the teat
- Orally: directly into the mouth
- Topically: applied to the skin
- Intraperitoneal (IP): into the abdominal cavity (right side on ruminants). This type should be given only by a veterinarian.
- Intraruminal: into the rumen (left side on ruminants; not applicable to hogs). This type should be given only by a veterinarian.

Choosing the proper needle size reduces the effect of injection site lesions. To avoid injection site lesions and/or reduce stress to the animal, administer the medicine with the smallest recommended needle gauge. Refer to Table 3 for needle selection guidelines by livestock species for the two most common injection routes, intramuscular and subcutaneous.

It is important to follow proper sanitation practices when utilizing injectable drugs and vaccines. The improper sanitation of the needle, injection site and syringe can cause abscesses in the meat. These abscesses can lead to the contamination of other meat and sometimes the entire carcass can be condemned. Sanitation and proper injection site methods are critical for reducing the possibility of an injection site lesion. Age has no effect on injection site lesions, since they can occur in both young and old animals. These lesions are not temporary and can last for the life of the animal.

Table 2: Normal body temperature, heart rate, and respiration rate for healthy beef cattle, hogs, sheep, and goats.

Species	Temperature	Heart Rate	Respiration Rate
Cattle	101.5° F	40-70 beats/minute	10-30 breaths/minute
Hogs	102.5° F	70-120 beats/minute	30-60 breaths/minute
Sheep and Goats	102.3° F	70-80 beats/minute	15-35 breaths/minute

To avoid problems with injection site lesions:

1. Change needles often. Disposable needles are relatively inexpensive and they can prevent the spread of disease to another animal.
2. After vaccinating or treating an animal, ensure that syringes and needles are properly cleaned with hot soapy water and rinsed of any residue.
3. Make sure the injection site is clean and dry.
4. Never straighten a bent needle or attempt to use a bent needle.
5. Check to make sure the needle is placed properly on the syringe.

To reduce the expense of injection site lesions, avoid giving injections in the high value cuts of meat and only administer 10 ml per site for beef, 5 ml per site for swine, and 3 ml per injection site for sheep and goats. Additionally, make sure to have at least four inches between injection sites to help reduce injection site lesions. If the label states you can utilize IM or Sub Q injection methods, choose the Sub Q administration method to reduce the possibility of causing a lesion.

Table 3: Needle selection guidelines for beef, swine, sheep, and goats.

	Intramuscular	Subcutaneous
Cattle	16-18 gauge, 1" to 1½"	16-18 gauge, ½" to ¾"
Swine		
Feeder	16-18 gauge, ¾"	16-18 gauge, ½"
Finisher	16 gauge, 1"	16 gauge, ¾"
Sheep/Goats	20 gauge, 1"	20 gauge, 1"

Animal Health Activity

Source: University of Minnesota

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: PROPER INJECTION SITES
	LIFE SKILL: CRITICAL THINKING, DECISION MAKING, LEARNING TO LEARN, CONCERN FOR OTHERS
	EDUCATIONAL STANDARD: N.S.5-8.1 SCIENCE AS INQUIRY

Proper Injection Sites

Learner outcomes:

- Participants will be able to:
  - Use proper techniques for administering (giving) injections
  - Identify where the meat cuts are located on the animal
  - Observe and describe damage on meat cuts from improper administration of injections

Supplies needed:

- Syringes, needles, oranges (or bananas), food coloring, medication bottles, blunt needles, meat cuts, silly putty, and a plastic container of rotten eggs or sour milk.
- Visual aids (posters or handouts) of animal outlines, needle gauge selection guidelines, and wholesale meat cuts
- Copies of quiz

Time schedule: 30-40 minutes for both activities.

Lesson plan:

1. Introduction: Introduce yourself and ask participants why injection sites are important in animal agriculture. Remind the youth that they are financially and ethically responsible for their animal. This is true even if they have adults who help them care for their animal.
   - Subject Matter – Split the group into two or more sections if you don't have enough syringes or oranges. Hand out animal sheets, needle gauge sheets, and wholesale cut sheets (if applicable).
   - Delivery Systems – Introduce the concepts of delivery systems in the muscle (IM), under the skin (Sub-Q), in the abdominal cavity (IP), in the vein (IV), and in the nasal passages (IN).
   - Needle Selection – Use appropriate reference chart to select correct gauge and length of the needle. Needles should always be selected using a reference chart. Charts are available from animal health companies and from the commodity groups. Select the needles based on the amount of medicine and the size of the animal.
   - Shot Location – Using the animal posters or worksheets, ask the youth where the IM and Sub-Q shots should go. Have them point or draw a circle at the point where the shot should be given. (The IM and Sub-Q should always be given in the neck, making sure that you don't hit a bone that would bend a needle or hit a major artery. This is the part of the animal that has the lowest meat value of the whole carcass. If giving Sub-Q and the animal is small (i.e., baby pig), you can give it under the skin in the flank areas, although this location is less desirable than the neck.)
   - Injection Procedures
     - Use a syringe, needle, orange and food coloring to demonstrate injection procedures. Demonstrate syringe setting for exact dosing requirements. Inject the orange with both IM and Sub-Q methods. Cut open the orange after practicing and note the location of food coloring in the orange. Use extreme caution when demonstrating the handling of syringes and needles in a group. IM injections should be deposited deep into the muscle of the neck just behind and below the ear. Sub-Q deposition should be into the loose flaps of skin in the flank or elbow. IN injections should be deposited from a syringe with the needle removed through the nasal passage with the head tilted upward. Only veterinarians should administer other injections (intravenous, intraperitoneal, and intraruminal). Properly restrain the animal before giving an injection. Use sterilized needles and syringes. Keep the bottle cap clean. Give injections at clean, dry sites on the animal.

- Using a pre-bent needle, demonstrate difficulty in injecting the orange. Also demonstrate trying to bend it back and why we wouldn't practice this. It will eventually break. Leave a piece of the needle in the orange and talk about the implications of needles breaking off in the animal. Bent needles should never be straightened and should be properly disposed of after use. Do not discard where animals may accidentally come in contact with disposed needles.

2. Discussion: Talk about residues that animal health products leave. When an animal is injected with a health product the medication needs time to work out of the system. If the animal is marketed before all the medicine is out of the system of the animal, a drug residue occurs. A residue is the leftover medicine remaining in the animal. A carcass that has a drug residue is not allowed into the food chain and is a loss for the producer and packer. The packer may not even let you sell animals to him in the future. It is important for withdrawal times to be observed.
   - Show a piece of meat with a needle in it as well as a hole with silly putty or play dough to show an abscess. Talk about the implications of what the abscesses cost animal agriculture. Have the youth smell sour milk or rotten eggs so they understand how the smell of abscesses can be a turn-off for the consumer. Keep needles dirt-free to prevent injection site lesions or abscesses.
   - Show the wholesale meat cuts chart and talk about which cuts have higher value. Then correlate that information to the correct places where we can inject the animal. Don't give injections in the high value cuts of meat such as the loin and hindquarters.

Animal Health – Proper Injection Sites Quiz

Name _____

1. The financial and physical responsibility of my animal belongs to:

   a.) my 4-H project leader c.) my friends who show pigs

   b.) my FFA advisor d.) me

2. Both the gauge and the length of the needles should be selected using a reference chart.

   a.) True b.) False

3. Bent needles should never be straightened and should be properly disposed of after use.

   a.) True b.) False

4. A drug residue is what is remaining in the meat from an animal drug.

   a.) True b.) False

5. Where should you never give a shot on an animal?

   a.) Leg c.) Loin

   b.) Behind the ear d.) Both a and c

Answers are on pg 42

Section 6
Labels/Withdrawal Times

Even the best cared for animal can become ill and need medical attention. A drug may even need to be administered to assist with its recovery from an illness. When used properly, these drugs can return their cost many times over the initial expense. However, the misuse of these drugs can result in increased costs to the producer, irreversible harm to the animal, and dangerous residues in the meat. These misuses can result in legal action against the owner of the animal.

The most important step to ensure the proper use of vaccines, medications and medicated feeds is to READ THE LABEL. The label has been researched and approved by the Food and Drug Administration (FDA), and the label is the law. The company that sells the drug has performed extensive testing to ensure that the product is safe for the animal and the drug will not cause residue problems for human consumption.

The label on vaccines, medications and medicated feeds contain the important information about the product. If you have questions about label instructions, contact your veterinarian for clarification before you use the drug. At no time should you use a drug not labeled for food animals or practice any extra label drug use unless prescribed by a veterinarian under a valid veterinarian-client-patient relationship.

Items that need to be specifically checked when reading a label include:

- **Expiration date:** if the medication has expired, do not use it.
- **Species:** if the product is not labeled for use in the species under consideration, do not use it unless it has been prescribed by a veterinarian with exact dosage amount and withdrawal time.
- **Storage instructions:** if refrigeration is required, make sure to keep medications in the refrigerator or cooler, except when in use.
- **Use of product:** if the animal is not suffering from the labeled illness, signs, symptoms, or disease, do not use it.
- **Dosage:** use the correct amount for treatment; make a note if a booster is required or how often it is to be given. Write these dates on the calendar and in your records. Giving more animal health product than recommended does not cure the animal faster, it just wastes medication and money, and it requires a longer withdrawal time.
- **Injection location:** this is very important as antibiotics and vaccines differ in how they are absorbed by the body to be the most effective.
- **Withdrawal time:** this is the length of time after giving the medication before residues are reduced to safe levels.

One of the most important guidelines you can practice is the proper observation of drug withdrawal times. All major packing plants, in cooperation with the Food and Drug Administration, randomly sample animals to test for drug residues in the meat. The Food and Drug Administration has found illegal drug residues in all the major meat animal species. If there is a high occurrence of a certain drug residue being detected, the FDA may ban the use of the drug due to producers being unable to follow the directions.

In the United States drugs are used in three ways:

1. **Labeled Use** is a common practice of using a drug. The person reads and FOLLOWS all the directions on the label. Once again, if you read the label and have any questions, contact your veterinarian for clarification to ensure the proper use of the drug.
2. **Extra-Label Use** can only be accomplished under a valid veterinarian-client-patient relationship. This type of use includes the veterinarian increasing the dosage,

changing the frequency or route of administration, increasing the duration of treatment, or changing the animal species to be treated. If you practice any of the above techniques without the guidance of a veterinarian, you are violating the label directions and performing off-label drug use.

3. **Off-Label Use** is an illegal and dangerous use of a drug. It does not matter who gives the drug, but who owns the animal. Therefore, you are legally responsible for any off label use of drugs on your animal. Some drugs are not allowed in food animals because the residues can cause allergic reactions, illnesses, and even death to the consumer of the meat. To put it simply, this type of use is unacceptable and can result in severe legal penalties.

Medicated Feeds

Medicated feeds are available for most classes of livestock used for youth projects. Medicated feeds have the advantage of providing a low dose of a drug to promote a healthy animal. Using medicated feeds means the producer is responsible for the proper use of the product.

Medicated feeds are labeled for specific species of animals, and what is safe for one species may not be safe for another. It is very important for a livestock producer to know what is being fed and the limitations as directed on the label. When the decision is made to provide medicated feeds to livestock, it is important to make sure the feed is labeled for the class of animal being fed and to check whether there are any precautions about other species having access to the feed. Make sure medicated feeds are stored separately from non-medicated feed and that the amount fed falls within the guidelines of the label. Do not allow non-medicated feeds to be contaminated with medicated feeds.

Remember, the label is a legal document and IT IS THE LAW.

Medicated feeds may have a withdrawal time that will have to be observed. An accurate record of the feeding of medicated feeds is very important. Your records are your proof that you followed the label, and thus the law if there are ever any questions.

Labels/Withdrawal Times Activities

Source: University of Minnesota

STANDARDS
LIVESTOCK QUALITY ASSURANCE SKILL: READING A MEDICATION LABEL
LIFE SKILL: CRITICAL THINKING, PROBLEM SOLVING, DECISION MAKING, CONCERN FOR OTHERS
EDUCATIONAL STANDARD: N.S.5-8.6 PERSONAL AND SOCIAL PERSPECTIVES

Worksheet: Reading the Label of a Veterinarian Prescribed Medication

Learner outcomes:

- Participants will be able to:
  - Accurately interpret medical labels.

Name _____

Today is July 12, and your name is Jody Producer. Two days ago your market animal, Sport, with ear identification 36-7 and eartag 16091 started having breathing difficulty. Yesterday your animal would not eat and would not move around unless forced to do so. Your animal is nearly at market weight. At your request, Dr. Bruce E. Losis, the local veterinarian, has examined your animal and diagnosed its problem as pneumonia. He administered medication at the time and recorded the treatment on your *Pen/Individual Animal Treatment Record*. He also left more medicine for you to give today. As a producer it is important that you know what information is on the label of the medication that you are to give today.

BOTTLE LABEL

Bruce E. Losis, DVM
100 Quality Avenue
Hometown, MT 59000
406-555-7777

OWNER: Jody Producer **DATE:** July 12, 2011

INDICATIONS: Pneumonia **ANIMAL ID:** 36-7, eartag 16091

DIRECTIONS: Give 15 ml (cc) subcutaneously on July 12

PRECAUTION: Use care in injections to avoid infections

WARNING: USE OF THIS DRUG MUST BE DISCONTINUED FOR 7 DAYS BEFORE SLAUGHTER

PRODUCT/ACTIVE INGREDIENTS: Biomycin

EXPIRATION DATE: August 1, 2011

Keep this medication refrigerated.

From the label, find the following:

1. Who is the veterinarian that prescribed this treatment? _____
2. What animal is to receive this treatment (pen or individual identification)? _____
3. What is the animal being treated for? _____
4. On what date was the medication prescribed? _____
5. What amount of medication is to be given as a follow-up treatment? _____
6. How is it administered? _____
7. Is there a withdrawal period? _____
8. What is the active ingredient in the medication? _____
9. Is there an expiration date for the medication? _____
10. How should the medication be stored? _____

Residues – Chocolate Milk Activity

Source: University of Minnesota

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: CHEMICAL RESIDUES
	LIFE SKILL: CRITICAL THINKING, DECISION MAKING, LEARNING TO LEARN, CONCERN FOR OTHERS
	EDUCATIONAL STANDARD: N.S.5-8.1 SCIENCE AS INQUIRY

Learner outcomes:

- Participants will be able to:
  - Understand residues.
  - Understand withdrawal times.

Time Schedule: 15 minutes, with time for introduction and wrap-up

Supplies needed:

- Pitcher or 2-liter pop bottle of water for each group
- Ice cream bucket or similar container
- Whole (or 2%) milk (whole works best)
- Chocolate and strawberry syrup
- Powdered chocolate and strawberry mix
- One clear glass for each participant (glass or clear plastic)
- Spoons

Activity:

- Split the class into manageable groups.
- Have each participant prepare a glass of chocolate or strawberry milk to their taste, either from powdered or syrup mix. Try to have a cross-section of milk types within each group.
- Have the participants drink their glass of milk.
- After each participant drinks their milk, have them fill the empty glass with clean, clear water from the pitcher.
- Carefully dump the water from the glass into the ice cream bucket. Continue to refill the glass and dump the water into the ice cream bucket until the water in the glass appears completely clear. Each individual should keep track of the total number of refills it took until the water in their glass was clear.

Discussion Questions:

- Why was the water cloudy after you drank the milk? (Some of the milk was still in the glass.) Introduce the term "residue". Residue is the substance that remains in the glass. The residue remained in the glass until it was rinsed several times.
- Why was the water less cloudy after each rinsing? Residues are also substances that remain in an animal's body tissue after the animal has been exposed to that substance. Medications enter an animal's body as feed additives, water additives, as an injections or pour-on or sometimes by accident. These medications may leave a residue in the animal's body tissue (meat).
- Residues leave an animal's body at different rates. Sometimes residues take a few hours to leave the animal's body and others take days or months, depending on the medication. Some residues may never entirely leave certain tissues during the animal's lifetime.
- Each rinsing of the glass clears away some of the residue. Each day after you stop giving the animal a medication, some of the residue is cleared. Time removes some of the drug residue from the animal.
- The Food and Drug Administration (FDA) establishes and enforces rules about acceptable levels of residues. The FDA bases the withdrawal times for products to ensure that unacceptable residues are not in the product when it is marketed.
- How can we make sure our animals don't have residues from medication when we send them to harvest?
- Why be concerned?
  - Meat that contains unsafe levels is in violation of federal law. People who are very sensitive to certain drugs may react if traces are in the meat. People who eat the meat may develop severe allergic reactions from the traces of medication that are present in the meat.
  - Consumers expect safe, residue-free meat. People may lose confidence in the safety of the food product that we produce if there are residues.

Cupcake Activity

Source: *Youth Beef Quality Assurance Program Manual for the Pacific Northwest*

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: RAISING A QUALITY MEAT PRODUCT
	LIFE SKILL: CRITICAL THINKING, DECISION MAKING, LEARNING TO LEARN, CONCERN FOR OTHERS
	EDUCATIONAL STANDARD: N.S.5-8.1 SCIENCE AS INQUIRY

Learner outcomes:

- Participants will be able to:
  - Understand the relationship between a quality product and consumer expectations.

This cupcake activity will demonstrate why quality matters to consumers. Panelists will sample six different cupcakes, each doctored in some way before or after cooking to represent similar problems in a carcass. You can have volunteers or choose panelists, or you can divide all attendees into 4 groups. If more than one person will be tasting each cupcake, provide forks. Cupcakes (4 each) need to be kept separate and identified just with the numbers as follows, based on special ingredients at the time of preparing them:

#1 – normal
#2 – salty
#3 – ground chili
#4 – overcooked
#5 – pudding inside
#6 – red food coloring

Materials needed

- Flip chart
- Markers
- 24 cupcakes made from following the recipe on this page
- Tables: 1 for each group of taste panel participants
- New, clean syringe and needle
- Small paper plates
- Napkins
- Plastic gloves for serving cupcakes
- Plastic knife to cut cupcakes for serving, or plastic forks for each participant

Cupcake ingredients and preparation

- 1 box of white cake mix
- 1 can of prepared white frosting (plain)
- Paper baking cups
- 1 package instant banana or vanilla pudding mix
- Salt
- Chili powder
- Food coloring

1. Prepare cupcakes as directed on the box. Fill each baking cup about half full.
   Before cooking:
   - Don't add anything to the first 4 cupcakes (These will be #1).
   - Add ½ teaspoon salt to each of the next 4 of the cupcakes – mix in. (These will be #2).
   - Add 1 teaspoon of ground chili powder to each of the next 4 of the cupcakes – mix in. (These will be #3).
   - The remaining cupcakes will be altered later.

2. Bake according to instructions.
   - Leave 4 cupcakes in oven to overcook to very dry – not burned. (These will be #4).

   Allow all cupcakes to cool.
3. Prepare instant pudding according to directions; refrigerate. This will be used as filling for four cupcakes. (These will be #5).
4. Prepare #5 cupcakes.
   - Cut a circle from the center of 4 cupcakes. Save the top as a cap. Trim underneath the cap and hollow out the center of the cupcake. Fill the hole with chilled pudding and replace the cap.
5. Frost cupcakes.
   - Inject 4 cupcakes with many small drops of red food coloring. (These will be #6).
   - Use food coloring to color frosting (optional).
   - Frost all cupcakes.

   Depending on the number of youth in your group, serve 6 cupcakes per person on the taste panel or 6 cupcakes per subgroup of four or five people.

Cupcake evaluation activity

Time Schedule: The activity will take 30 to 45 minutes depending on the length of discussion. Begin by discussing quality assurance.

Discussion Questions:

- What does quality mean? How good is it? A measure of good and bad.
- What is "assurance"? I can "assure" you. A pledge or guarantee.
- What is the name of those really good-tasting donuts? (Krispy Kreme). Why do we remember that? (Because they are *good!*) Would you buy them again? Would you recommend them to a friend? Why?

Have each taste panel assemble at a table with the six types of cupcakes labeled in front of them. Tell the taste panel not to touch the cupcakes.

Moderator states: "When a company develops a new product they go through a testing phase to evaluate public response. The cupcakes you have represent six trial recipes. We need you to help us decide which ones are the best to use for a fundraising project for youth groups."

Panel Evaluation

First, remind the participants to listen to the directions. Ask each taste panel to evaluate each cupcake. As each cupcake is evaluated – one at a time – use the following procedure for each cupcake. Start with #1 (normal) and work your way through #6.

1. **Look at the cupcake.** Just evaluate the appearance. Hold up one finger for great, 2 for good, and 3 for "give it to the dog." A recorder will write down each taster's response (a flip chart works well for this). Provide a general summary of the results. Verbally note the range of scores.
2. **Now eat only part of the cupcake, because we will evaluate the appearance of the inside and taste.** Walk among the group as they eat. Ask for an evaluation of taste. 1 finger for great, 2 for good, and 3 for dog food or less. Verbally note the range of scores.
3. **Repeat 1 and 2 until you have gone through all six types of cupcakes and noted the good and bad points of each.** Then ask the question, "What does this tasting panel demonstration have to do with youth raising livestock projects for a fair?" *Answer:* Youth are producing food, and that food must be a wholesome product that customers enjoy seeing and eating.

4. **Then ask what percentage of food animals (beef, sheep, swine, meat goat) produced in the United States are marketed through a youth livestock show.** *Answer:* about 1%. That is a large enough number of animals to cause a consumer confidence problem and a small enough number of animals for commercial agriculture to disown the youth livestock show.

5. **Now go back through the six types of cupcakes that have been tested and relate each problem with a potential quality assurance problem with youth livestock project animals.**

   #1 Good Cupcakes. It is hoped this is like the food animals you are producing in your youth livestock project: healthy, well taken care of, no medicine residues.

   #2 Normal-looking, but salty. Caused by a drug residue. The person may have not provided an adequate withdrawal time prior to harvest or administered a higher dose of medicine than recommended.

   #3 Brown spots inside – ground chili pepper. May be a result of improper diet or feeding something not labeled for animals.

   #4 Overcooked/dry. These were overdone, or over-baked. Like an animal that is held for six months and continued to be shown for six months after it is market-ready.

   #5 Soft/pudding inside. Injection site abscess. This is from an improper vaccination. The needle may have been dirty. How would you like to find this is your steak or pork chop?!

   #6 Red food coloring/dark. Tastes okay, but is a sign the animal was stressed – like a dark cutter in beef.

Be creative in making the cupcakes, and develop a scenario that might have happened to cause the problem.

Wrap-up

"Our goal is to assure our buyers that they are getting a high quality product, one that is safe, nutritious and good tasting. Satisfied customers give us repeat business, and they will tell others. Remember this important fact. Whenever we market an animal, we are promoting not only ourselves and our clubs, but the livestock industry as well."

This information can be presented differently depending on the size of the group. With a small group you could just serve the different types of cupcakes randomly at break or refreshment time and help lead the discussion when problem cupcakes are discovered. This way everyone would be tasting the cupcakes.

Discussion questions – answers can be recorded in 4-H journals

- What are some factors that may influence the quality of the product we produce?
- What can we do to produce a quality product?
- What can we do to assure our buyers they are getting a quality product?
- In what ways has this activity affected how you think about animal production?

Applying discussion questions

- What happens when you produce a poor quality product?
- What happens when you produce a quality product?
- What changes do you need to make in raising your animals?

Section 7
Record Keeping

Adapted from Youth Beef Quality Assurance Program Manual for the Pacific Northwest

Complete and accurate records are a valuable asset in animal health care and management. Keeping track of vaccinations and treatment of illnesses are both important when marketing animals. Other types of records may include financial records to track profit and loss or performance records to make selection decisions. This section will focus on animal health care record keeping.

Today's consumers expect each food product they buy to be safe, wholesome, high quality and consistent. Livestock producers, both youth and adult, must be able to document the safety and quality of their product. Treatment records are a way to meet this goal.

Why are treatment records important?

Animals not responding to treatments may require an extended withdrawal period. Good records show if this was the case. Extra-label drug usage is only permitted under FDA guidelines involving a veterinarian-client-patient relationship. Individual animal identification and record keeping is important. Should a livestock producer be cited for a residue problem and that producer believes a mistake in identity has been made, good records may be the only proof of compliance. Records will show the list of drugs used by a livestock producer. Questions on whether certain drugs have been used can be avoided when the producer can prove the medications used on the operation.

Accurate records also allow you to know exactly what is going into each animal. This information prevents the re-administration of treatments that have previously failed to work. Furthermore, the information tells the consultant/ veterinarian what treatments you are applying so they can make sure treatment recommendations are being followed and judge whether treatment regimens need to be adjusted for changing animals and conditions.

Common types of records

Animal treatment records

1. Keep all records for at least three years from the date of transfer or sale of the animals.
2. Treatment records should contain:
   - Treatment date
   - Animal or group identification
   - Approximate weight of animal or group average
   - Product administered
   - Product lot/serial number
   - Earliest date the animal could clear with-drawal time
   - Dose given
   - Route of administration (Sub-Q, IM, IV, etc.)
   - Location of injections
   - Name of person who administered the treatment
3. A copy of the records should be made available to the buyer of your animal. Records should include all individual and group treatment/processing history.

Feed records

1. Keep all feed records for at least three years from the date of transfer or sale of the animals.
2. It is a good management practice to require that all feed products be accompanied by an invoice that includes:
   - Date
   - Kind of feed (corn, oats, hay, etc.)
   - Amount
   - Lot/batch/field number
   - Signatures of the person who delivered the product and the person receiving the product
   - Place the feed was purchased
   - Feed additives (medications, etc.)
   - Feed restrictions (not for horses, etc.)

Summary

Record keeping is often viewed by producers and youth as a major inconvenience. Good records allow producers and exhibitors to make informed decisions related to a number of management issues. In today's agricultural industry, survival and success depend on the ability to accurately evaluate all aspects of the enterprise or project. Accurate and complete records are the first step in the evaluation process.

Record Keeping Activity

Adapted from *Youth Beef Quality Assurance Program Manual for the Pacific Northwest*

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: RECORD KEEPING
	LIFE SKILL: KEEPING RECORDS, PLANNING/ORGANIZING, CRITICAL THINKING
	EDUCATIONAL STANDARD: N.S.5-8.6 PERSONAL AND SOCIAL PERSPECTIVES

Learner outcomes:

- Participants will be able to:
  - Keep accurate and complete records.

Materials needed

- Flip chart paper or white board
- Markers
- Bag or box of ear tags
- Bag or box of animal drug labels
- Handouts of blank *Individual Animal Treatment Record* (pg. 31)
- Handouts of blank *Animal Health Product Record* (pg. 32)

1. Introduction:
   - Start the lesson by asking youth, parents, and leaders to discuss what records are, why records are important, and methods of keeping records. Use the flip chart paper or white board to list responses.
2. Activity:
   - Discuss the basic fundamentals and value of complete records. Have participants select a drug label from the bag or box. This is similar to purchasing animal drugs from an animal health store or veterinarian. Have the participants enter the needed information from their purchase on the Animal Health Product Record form.
   - Have the participants select an ear tag from the bag or box. This is similar to identifying an animal in the sick pen that is in need of treatment or selecting an animal from the herd that is in need of vaccination or treatment. Have the participants "treat" the animal and record the needed information from their actions on the Individual Animal Treatment Record form (page 31).
3. Summary:
   - On the flip chart or white board, give every participant the opportunity to list one thing they learned regarding quality assurance records. Ask participants to share some of their record entries. Give participants an opportunity to identify other types of records that may be important to livestock producer and junior livestock exhibitors. Remind participants about the importance to the livestock industry of producing a safe, wholesome, consistent, and quality product and the role records play in that effort.

Adapted from *Youth Beef Quality Assurance Program Manual for the Pacific Northwest*

Sample of Animal Health Product Record

FARM NAME: Montana Ranch **OWNER:** Jim Montana **ADDRESS:** Anywhere, MT

Date Received	Supplier/ Distributor	Product Name	Quantity	Cost	Lot#/ Serial#	EXPIRATION DATE
2/15/09	Duravet	Cattle Vac Pinkeye 4	100 ml		1121 T	12/10
3/10/09	Duravet	Duramycin 100	500 ml		3752 T	01/11

Sample of Individual Animal treatment Record

FARM NAME: Montana Ranch **OWNER:** Jim Montana **ADDRESS:** Anywhere, MT

Date	Animal ID	Problem/ Diagnosis	Product	Dosage	Rt. of Admin.	Site	With-Drawal Time	Safe Mktg. Date	Init.	Booster
2/15/09	63	Pinkeye	Cattle Vac-4	2 ml	IM	Right side neck	60 days	05/01/09	JM	Yes
3/10/09	22	Pneumonia	Duramycin 100	12 ml	IM	Right side neck	22 days	04/05/09	JM	No

INDIVIDUAL ANIMAL TREATMENT RECORD

Farm Name: _____ **Owner:** _____ **Address:** _____

DATE	ANIMAL ID	PROBLEM/ DIAGNOSIS	PRODUCT	DOSAGE	ROUTE OF ADMIN.	SITE	WITHDRAWAL TIME (DAYS)	SAFE MARKETING DATE	INITIALS	BOOSTER

ANIMAL HEALTH PRODUCT RECORD

Farm Name: _____ **Owner:** _____ **Address:** _____

Date Received	Supplier/Distributor	Product Name	Quantity	Cost	Lot #/Serial #	Expiration Date

Section 8
Biosecurity

Adapted from *Youth Beef Quality Assurance Program Manual for the Pacific Northwest*

Youth livestock projects are fun and exciting. Youth can learn many different life skills, including recognizing diseases. Young people enrolled in livestock projects are livestock producers. Youth will raise animals that will become food products as well as other valuable products for consumers. Being able to understand biosecurity and diseases allows youth to raise healthy animals that will provide a safe product to consumers.

Biosecurity

Biosecurity refers to policies and measures taken to protect a nation's food supply and agricultural resources from both accidental contamination and deliberate attacks of bioterrorism. Bioterrorism might include such deliberate acts as introducing pests intended to kill United States food crops; spreading a virulent disease among animal production facilities; and poisoning water, food, and blood supplies.

In this manual, biosecurity can be defined as an integrated plan to stop the spread of diseases that may be found within a herd or to prevent the introduction of diseases that are common in the area around a herd. A good biosecurity plan can also prevent the spread of foreign or exotic diseases.

Disease

Diseases can have a major effect on the health of livestock and the cost of production for owners. Taking care of livestock is very important, whether that is ensuring proper nutrition and health care or maintaining facilities. Knowing what diseases can possibly affect your project can help you prevent harm to your animal(s).

Early detection by recognizing the signs and symptoms of a disease can help stop disease from spreading. Prevention is the best way to treat disease because diseases can have major economic consequences on the ability to make money with market animals. Biosecurity plays an important part in preventing disease outbreaks and reducing the spread of disease found within a herd or preventing the spread of foreign/exotic diseases. Youth should visit with a local veterinarian or their Extension agent about diseases that are common in your area.

Disease spread

Diseases can have a variety of signs and symptoms associated with them and can be spread in a variety of ways. Direct contact with animals that have the disease or direct contact with carriers that have the disease but do not show signs of illness are common ways of transmission. Vectors can transport a disease agent between hosts and are critical for the disease agent's life cycle. Typically, vectors are insects such as ticks or mosquitoes, but vectors can also be other animals such as birds. Fomites – inanimate objects such as boots, clothing, brushes, combs, and vehicles – can indirectly transport disease agents. Contaminated soil, feed, and water and air-borne infection can also rapidly spread disease.

Foreign disease

Examples of foreign diseases that have entered or could enter the United States include Bovine Spongiform Encephalopathy (BSE), West Nile Virus, and Foot-and-Mouth Disease (FMD). It is important to be very careful around certain zoonotic (animal) diseases because they can spread to humans. It is a serious challenge for youth and producers to keep foreign diseases out because our domestic livestock have no immunity to them, and an outbreak could cause great losses.

Disease control

Targeting specific diseases can help reduce costs and allow healthy high-quality livestock to be raised. Table 4 gives many examples of monitoring locations, causes of disease spread, and corrective actions.

Table 4: Examples of monitoring locations, causes of disease spread, and corrective actions when considering a biosecurity plan.

Monitoring locations/critical control points (CCP)	Mode of disease spread	Corrective action(s)
Fence line	Entry of stray animals Entry of people/visitors	• Maintain fences to keep out strays and unknown animals. • Establish fences, gates, signs to stop and inform people.
Facility entrance	Visitors, clothes, footwear	• Allow public to enter designated areas away from livestock. • Restrict visitors who have been out of the US in the past two weeks. • Provide protective covers for footwear or on-farm boots and/or on-farm coveralls.
Barn/receiving pen for newly arrived animals	Animal carrying disease	• Isolate for 3-4 weeks. • Know status of herd of origin.
Vehicles – cars, trucks, ATVs, trailers Parking lot	Manure on or in vehicle (including tires and undercarriage)	• Restrict vehicles to public area only. • Wash vehicles, tires, and undercarriages.
Farm personnel	Clothes, footwear	• Wear boots, clothes, or coveralls specific for this farm only.
Raw feed products and standing water in pen/pasture	Contaminated feed and water Insects	• Don't feed ruminant-derived protein. • Remove standing water. • Keep dogs, cats, rodents, and wildlife out of feed and feeding areas. • Pesticide applications for insect control.
Feed bunks and water tanks	Personnel Contaminated feed and water Insects	• Provide clean feed. • Clean out water source often. • Provide restrooms for personnel.
Manure/bedding pile	Contaminated manure in feed and water Insects	• Use separate tractor bucket to move feed and manure. If only one bucket, thoroughly clean between feeding and manure removal. • Follow industry recommendations when applying lagoon water to hay or grazing areas. • Insect control for animals.
Equipment box/tack room	Brushes, combs, etc.	• Clean equipment.
Pastures/common allotments	Animals	• Vaccinate.
Working facilities (chutes, etc.)	Needles and equipment Airborne diseases	• Exchange needles and clean equipment. • Remove broken boards, wires that could cause wounds susceptible to airborne diseases.

Biosecurity plan

In order to keep animals healthy and prevent a disease outbreak and the spread of disease, all producers should develop a biosecurity plan. This plan is made up of the following:

1. **Conduct a disease potential analysis.** Develop a list of possible diseases that your animal(s) may come in contact with at each location at your facility. For example, possible diseases for a beef cattle facility may include ringworm, lice, pneumonia, and blackleg.
2. **Determine monitoring locations or critical control points.** Critical control points (CCP) are places where control or prevention can be applied and are essential to prevent, eliminate, or reduce a disease. The identification of CCP is important in controlling the spread of disease. An example of a CCP may include a receiving area for new livestock, fence line, feed bunk, or water tank.
3. **Prevent disease spread.** The goal of a biosecurity plan is to keep the disease agent from entering the herd. Protection may be done in a variety of ways depending on the CCP. For example, increasing immunity of the herd, isolating new animals, quarantining sick animals, using disinfectants, insect control, and cleaning equipment or clothing. Producers need to determine at each CCP what is the correct mode of action. These actions also need to be understood by all workers within the operation.
4. **Record keeping.** Keep records of what was done to facilities and animals. Examples of records may include vaccinations given, medications given, visitors, and date of facility cleaning. Refer to the Record Keeping chapter of this manual for more information.

Summary

Establishing a biosecurity plan and following it through is very important to the health of your animal(s) and the survival of your project and farm. A high-quality, safe, wholesome food product is the goal of every livestock producer. Knowing diseases and how they spread is very important in achieving this goal.

Biosecurity Activities

Adapted from *Youth Beef Quality Assurance Program Manual for the Pacific Northwest*

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: BIOSECURITY
	LIFE SKILL: CRITICAL THINKING, PROBLEM SOLVING, DECISION MAKING
	EDUCATIONAL STANDARD: N.S.5-8.3 LIFE SCIENCE

Learner outcomes:

- Participants will be able to:
  - Explain the spread of animal diseases.
  - Develop a biosecurity plan.

Materials needed

- Flip chart
- Markers
- 3 sets of dominos (28 pieces each)
- Enough tables for 3 to 5 participants per table
- If you do activity 2, bring at least 1 Biosecurity Plan worksheet for each participant (page 38). Bring more worksheets if you want each participant to create a plan on individual worksheets for separate potential problems.
- Pens or pencils for each participant

Read and discuss with the group the following lesson, conduct the domino activity (activity 1), do activity 2 if time permits, then finish the lesson with the "what you can do" section.

Ask participants to define these terms. Write their answers on the flip chart.

What is biosecurity?

Biosecurity can be defined as an integrated plan to stop the spread of diseases that may be found within a herd or to prevent the introduction of diseases that are common in the area around a herd. A good biosecurity plan can also prevent the spread of foreign or exotic diseases.

What is a disease?

A disease is an illness that affects the health or decreases the performance of an animal. A disease can have a variety of signs and symptoms associated with it. Early detection of a disease can help producers reduce losses. Prevention of diseases is the best way to treat them because diseases can have major economic consequences to a producer's ability to make money. You can visit with a local veterinarian about the common diseases found in your area.

How do diseases spread?

Disease can spread in a variety of ways:

1. Direct contact with animals that have the disease.
2. Direct contact with carriers.
3. Vectors – for example, mosquitoes transport disease agents between hosts.
4. Fomites (any inanimate object – vehicles, brush, boots – that can transmit infectious agents from one person or animal to another) indirectly transport diseases.

Contaminated soil, feed, and water and airborne infection can also rapidly spread disease. Producers need to keep the environment where their animals are located clean. Ask if anyone can give an example of a foreign disease that has entered the United States (i.e., BSE, West Nile Virus). Besides spreading to other livestock, ask why it is important to be very careful around these particular diseases (they may be spread to humans). It is critical for you and producers to keep foreign diseases out because the livestock have no immunity to them, and the foreign disease outbreak would cause even greater losses.

Activity 1 – Dominos

Depending on the number of youth in the group, you can do the domino activity together or separate the youth into smaller groups. If you separate youth into 3 groups, give each group one set of dominos.

- Group 1 should 4set up the dominos in any arrangement so that all of the dominos will fall down when the first domino is knocked over.
- Group 2 should set up the dominos so that one domino is protected from falling down.
- Group 3 should arrange the dominos so that only one domino falls down.

After each group has constructed their domino configuration, tell the youth the standing dominos represent healthy animals, and the fallen dominos represent diseased animals. Have groups review their domino situation and explain how they arranged their dominos. Relate that to how diseases spread in that group's herd of dominos.

Discussions

Discuss with the group the following questions:

- How did the disease spread in your herd? Tell me some other ways disease can spread.
- Is disease prevention important? Why?
- How could you prevent your herd situation?

Activity 2 – Quality Assurance Biosecurity Plan

Activity 2 can be conducted if time allows, or youth can do the biosecurity plan on their own. Hand out the worksheet to help youth develop a biosecurity plan. Biosecurity plan worksheets could be included in participants' record books.

One worksheet per disease is ideal; however, the worksheet can be used for one plan with multiple diseases. Using one worksheet per disease shows participants the specific location to monitor and the corrective action to stop the spread of that particular disease.

1. Help youth determine the possible disease(s) that their animals may come in contact with.
2. Determine the critical control point or monitoring location for the possible disease.
3. Select the corrective action needed to stop or prevent the spread of the potential disease.

Each biosecurity plan should include:

1. List of possible diseases.
2. List of critical control points/monitoring locations.
3. List of methods of protection or corrective action.
4. List of records to be kept.

Preventing disease outbreak: What you can do

In order to prevent a disease outbreak and the spread of a disease, all producers should develop a biosecurity plan. This plan is made up of the following:

1. **Conduct a disease potential analysis.** Develop a list of possible diseases that your animal(s) may come in contact with. For example, possible diseases may include ringworm, lice, pneumonia, and foot rot.
2. **Determine monitoring locations/critical control points.** Critical control points (CCP) are places at which control or prevention can be applied and are essential to prevent, eliminate, or reduce a disease. The identification of CCP is important in controlling the spread of a disease. Examples of a CCPs may include the receiving area for new livestock, fence line, feed bunk, or water tank.

3. **Prevent disease spread.** The goal of a biosecurity plan is to keep the disease agent from entering and spreading among the herd. Protection may be done with a variety of methods depending on the CCP. For example, increasing the immunity of the herd, isolating new animals, quarantining sick animals, using disinfectants, and cleaning equipment or clothing. Producers need to determine at each CCP what the correct mode of action is. These actions also need to be understood by all workers within the operation.
4. **Record keeping.** Keep records of what was done to facilities and animals. Examples of records may include animal identification, vaccinations given, medications given, visitors, and date of facility cleaning.

Summary

A high-quality, safe, wholesome food product is the goal of every livestock producer. Knowing diseases and how they spread is very important in achieving this goal. The implementation of a biosecurity plan allows producers to prevent disease outbreaks, reduce the spread of disease, and increase the quality of their animals.

Biosecurity Activity Worksheet

Adapted from *Youth Beef Quality Assurance Program Manual for the Pacific Northwest*

_____ **BIOSECURITY PLAN** What I can do to prevent diseases from spreading within my project.
(Year)

Possible Diseases

List each of the potential disease(s) your animal(s) may come in contact with.

Determine Monitoring Locations or Critical Control Points (CCP)

Check the area(s) in your facility that would prevent or control the above-listed diseases from spreading.

- ❑ Feed bunk/pan
- ❑ Working facility (chutes, etc.)
- ❑ Visitors, workers
- ❑ Water tank
- ❑ Manure pile
- ❑ Vehicles
- ❑ Fence line
- ❑ Pasture
- ❑ Receiving area
- ❑ Barn
- ❑ Water/mud hole
- ❑ Equipment box
- ❑ Other (list)

Corrective Action

Circle and/or list the methods you will use in order to protect your project animal(s).

Vaccinations	Fence/gates	Isolating new animals
Clean feed storage area	Quarantine sick animals	Clean pen/facilities
Use disinfectants	Protective clothing	Clean equipment
Proper and clean feed	Clean clothing	Clean water
New needle	Other:_____	

Record keeping

Attach records.

Section 9
Ethics

Adapted from *Youth Beef Quality Assurance Program Manual for the Pacific Northwest*, University of Minnesota, and Youth Pork Quality Assurance

Youth livestock producers gain positive life skills through working with animals, such as responsibility and communication. However, most livestock projects have a component of competition. It is that element of the livestock project that tests the integrity and values of youth owners. The definition between right and wrong is seen in just about as many ways as the number of families who participate in youth livestock projects.

Ethical behavior is a personal choice about what is good or bad, right or wrong, or about your duties and obligations. Ethics are based on personal principles or values. Livestock project participants will have many opportunities to do the right thing.

There are five key questions for helping to determine if a practice is ethical or not:

1. Does the practice violate FDA law?
2. Does the practice harm the animal?
3. Does the practice result in a fraudulent misrepresentation of the animal?
4. Would the public be offended?
5. Does the practice conflict with real world agriculture?

The Youth Pork Quality Assurance program suggests that building character traits of caring, trustworthiness, respect, fairness, responsibility, and citizenship will help to make doing the right thing a little easier.

Caring means showing concern for others, both to people you work with and to your animals. A caring youth will:

- Help new exhibitors
- Say "thank you" and express appreciation to others
- Congratulate other exhibitors
- Avoid gossip, negative publicity, taunting, and teasing
- Provide daily feed and water
- Provide a clean barn or stall
- Treat the animal humanely

Caring for animals includes placing more importance on the health and safety of the animal than the opportunity to go to the big show!

Respect is treating people like you would like to be treated. A respectful youth will:

- Speak kindly about leaders, fair committees, and fellow 4-H members and listen to others
- Keep animals comfortable and clean, and treat them humanely
- Provide daily feeding and watering
- Follow proper drug use to produce a safe, high-quality product for consumers

Trustworthiness means doing what you say you will do. A trustworthy youth will:

- Provide daily care for their animals or make arrangements for help
- Follow the rules for animal ownership and registration
- Consult with a veterinarian and read labels before administering any medication
- Follow all food safety rules and withdrawal times, and use only approved drugs

Fairness means listening to others, playing by the rules, and treating everyone equally. A fair youth will:

- Follow ownership and registration deadlines
- Know and follow show rules
- Be considerate of other exhibitors
- Speak well of winners and resist the temptation to gossip

Responsibility means doing the right thing, considering the consequences of your actions, and being accountable for your decisions. A responsible youth will:

- Care for animals daily
- Train animals to be exhibited safely
- Read, know, and abide by all rules
- Follow entry deadlines
- Read and follow all drug and medication rules and regulations
- Take care of the property of others

Responsibility is also demonstrated by good sportsmanship, good herdsmanship, and good showmanship at ALL times, not just when a judge is watching.

Citizenship means helping others and obeying the law. Youth demonstrate citizenship when they:

- Help others in need
- Work with less experienced exhibitors to improve their skills and knowledge
- Share resources with others
- Follow quality assurance methods to produce a product safe for consumers

Ethical behavior is a personal choice about what is good or bad, right or wrong, or about your duties and obligations. Ethics are based on personal principles or values. Livestock project participants will have many opportunities to do the right thing. By exhibiting the six character traits of caring, respect, trustworthiness, fairness, responsibility, and citizenship, youth will continue to support the positive image of 4-H and FFA.

Ethics Activity

Adapted from *Youth Beef Quality Assurance Program Manual for the Pacific Northwest* and the University of Minnesota

STANDARDS	
	LIVESTOCK QUALITY ASSURANCE SKILL: ETHICS
	LIFE SKILL: CHARACTER, SELF-RESPONSIBILITY, DECISION MAKING, CONCERN FOR OTHERS
	EDUCATIONAL STANDARD: N.S.5-8.6 PERSONAL AND SOCIAL PERSPECTIVES

Learner outcomes:

- Participants will be able to:
  - Exhibit the ability to make ethical choices

Break participants into groups of 3 to 5 people. Pass out an ethics scenario(s) to each group. Give them a few minutes to discuss their scenario, and then have them share their answer with the entire group. They should also be ready to defend their position. Ask them why they chose one over the other. Ethics scenarios are listed below, and answers are listed on page 43. Suggest that they use the five key questions discussed on page 39 as needed to help them make their decisions. Also remind the youth to relate their comments to the six character traits during their discussion and presentation of decisions.

Ethics Scenarios

1. Your steer doesn't have enough volume and the show is here. You remember one time your uncle had a sick heifer that didn't want to drink, so he mixed Jello and 7-Up together and the sick heifer drank a lot and really filled out. It would really help if your steer would fill out more. Should you try your uncle's "remedy"? Or should you consider forcing water into the stomach to make sure the animal has enough fill? Or should you just take your chances?

2. An exhibitor notices that his/her lamb is unwilling to drink city water at the fair due to chlorination. Molasses is added to the water to get the lamb to drink.

3. Two weeks before the fair a hog develops a foot infection. The youth exhibitor contacts a veterinarian and is given antibiotics to treat the hog. The antibiotics do not have a minimum withdrawal requirement prior to slaughter.

4. The base date for your junior yearling beef heifer is January 1st. Your favorite calf was born 16 days early on December 28th and only weighed 45 pounds at birth. Because of her premature birth she's still a little small and should have been born after the first of the year anyway. She would look better in the junior yearling class but you would have to give her a January birth date. Would that be all right?

5. A first-year youth exhibitor does not know how to clip his/her steer. An adult helps the exhibitor by showing them how to clip and then allows them to do as much as they can.

6. Your best friend comes to you in tears at the county fair. It seems her dad made quite a ruckus at the hog show. Everyone could hear him "bad-mouthing" the judge when your friend didn't get the placing her dad thought she should. She was embarrassed! The sheep show is tonight and your friend is afraid her dad will make another scene. She wants to know what she should do about her dad. How would you counsel her?

7. You are participating in junior beef showmanship. The judge appears to have it narrowed down to you and one other exhibitor. She is having you circle one more time and the exhibitor in front of you is having trouble getting his steer to move (the long, hot day is beginning to get to him). Three quick options pop into your mind. Would you gently tap the steer of your competition on the rump to try to get him to move, or pull out and go around the stubborn pair, or wait there until the "team" moved forward in hopes it will make the difference and the trophy will be yours?

Answers are on pg 42

Care and Handling Quiz answers
(pg. 11)

1. behavior,
2. b
3. frighten, scare, startle
4. a
5. slowly, calmly
6. T
7. T
8. forward
9. T
10. F

Proper Injection Sites Quiz answers
(pg. 20)

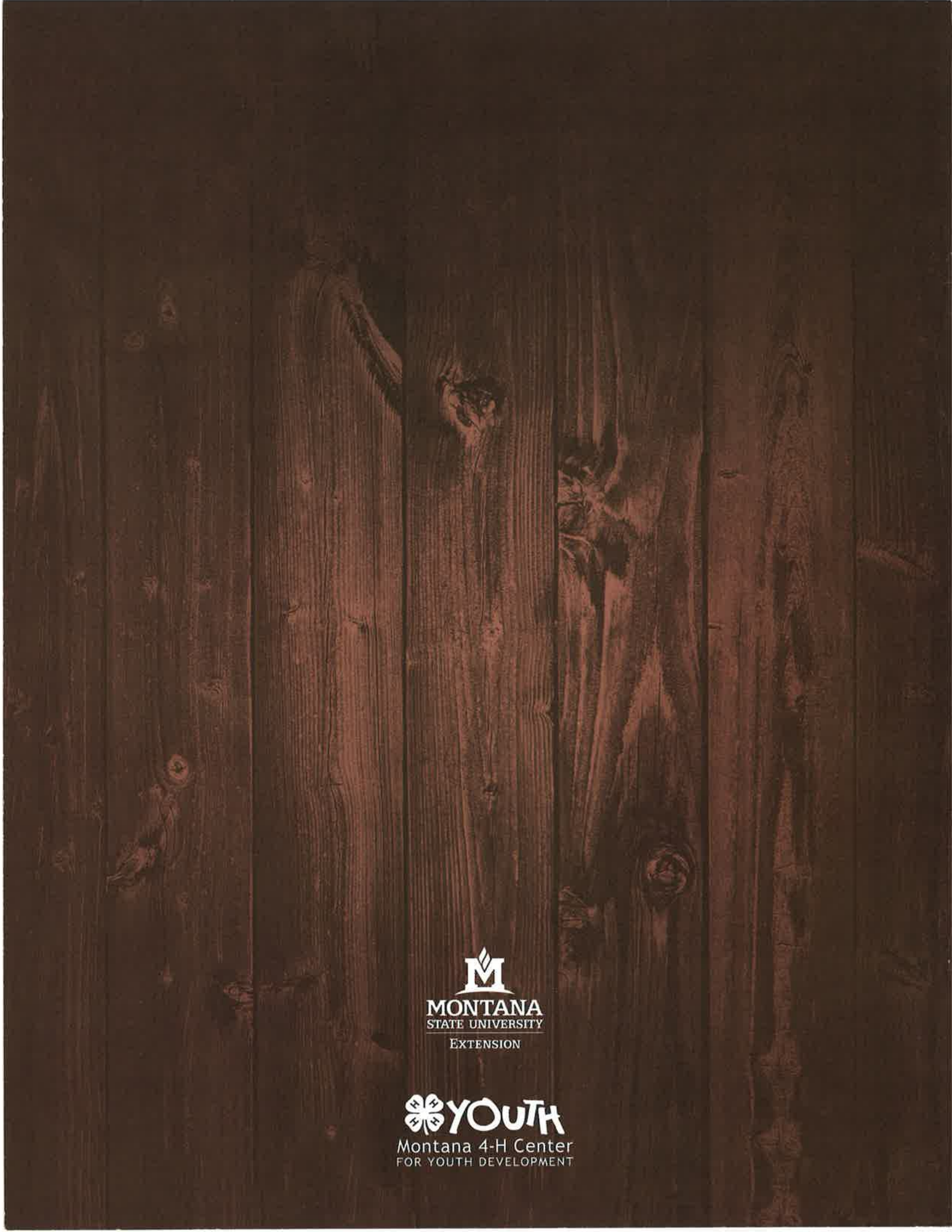
1. d
2. a
3. a
4. a
5. d

Ethics Scenarios answers
(pg. 41)

1. The "remedy" may get the steer to take a better fill, but many would question if it is real-world agriculture. Forced pumping is unethical. The negative appearance this practice would leave in the minds of consumers should be discussed.
2. This is ethical. Molasses is often used in ruminant rations. Using molasses as a sweetener to get the animal to drink the city water is not unethical.
3. This is ethical. The antibiotics that were prescribed and used do not have a withdrawal period. The exhibitor also contacted a veterinarian and was following his/her instructions.
4. A birth date change is unethical under any circumstances. Being born early or having a below average weight are no excuses for altering the birth date. If a child is born prematurely a few days before the new year, the IRS would not allow for a birth date change for tax purposes! The birth date is the birth date.
5. This is ethical. The young member needs help and education on how to clip the animal. Teaching youth how to clip an animal by first showing the proper procedure and then allowing the exhibitor to do the rest of the clipping is ethical. An adult's involvement is to demonstrate and coach. Youth must do the work.
6. Parents can be a livestock youth's best friend through support and encouragement. Unfortunately, at times, this is not the case. The example is one of those situations. Certainly a young person can, in a respectful way, make their feelings known to parents. A caring, sharing adult would also be a good choice for help and support. Perhaps the youth should be encouraged to consult with an adult who understands the situation and is trusted by both parties. The parent needs to understand beforehand (in this case the sheep show) what his actions translate to for the child. It is important for all spectators, volunteers, and parents to model sportsmanship.
7. It is considered good sportsmanship to help other exhibitors in the ring and during the show. Most showmanship judges would give more credit for helping with a gentle tap.

NOTES

NOTES



MONTANA
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Montana 4-H Center
FOR YOUTH DEVELOPMENT