

Assuring Quality: A guide for youth livestock producers

Activity for 2008

Daily Care and Management—Dairy Cow Activity 1: Proper Milking Procedures

Resources Needed:

Mud

Bucket for water (ice cream pails will work well)

Paper Towels

Video

Before the Meeting:

- 1. Get two to three buckets of water and small pail of mud.**
- 2. Get paper towels, rag, sponge, and milking units together**

Background information:

Milking time is harvest time, the time to reap the return from your feeding and management investments. Proper milking procedures play a major role in maximizing this harvest and assuring the highest quality dairy products for consumers.

Understanding the cow's milk let-down is the first step in proper milking; the timing of milking procedures is built around the let-down time. Proper sanitary techniques are also crucial to milk quantity and quality. Finally, building these procedures into a workable, regular routine assures the same excellent harvest every milking, in the shortest amount of time. A good milking routine uses the producer's labor efficiently while yielding large quantities of quality milk.

During the meeting:

- 1. Divide the youth into several groups if numbers allow.**
- 2. Have each group designate one person as the "cow", who then gets his or her hands dirty. The fingers represent the teats, and the rest of the hand is the udder. Allow hands to dry with the mud before proceeding.**
- 3. Have each person in the group clean the teats. Get all the mud off with water and a sponge, and dry with a paper towel. Explain to the group**

that it's necessary to clean the teats before milking for sanitation and to keep any dirt and mud out of the milk.

4. Demonstrate "stripping" to the group and have each person try it. Stripping gives the worker the opportunity to look at the milk for discoloration and also mastitis. Remember, some mastitis can be seen with the naked eye. Any cows that have mastitis should be treated and the milk should be dumped because it affects the quality of all the milk in the bulk tank.
5. Show a video on milking demonstration.
6. Discuss the questions as a group.

Dairy Cow—Milking Techniques Student Worksheet

1. Why is understanding the cow so important?

You will be able to figure out when the proper milking time is and the proper let-down. The cow will produce better when the timing and understanding are right.

2. How does premilking sanitation affect milk quantity and quality and the time it takes to milk?

The premilking procedures prepare the cow for milk let-down. The sanitation keeps that cow's milk from getting contaminated and getting in with the other cows' milk.

3. Why is it important to have a good milking routine?

A good routine lets the cow know when they are going to get milked and allows milk let-down. A routine also prevents contamination and keeps the quality and quantity up.

4. Why is it important to have cows clean before milking?

Clean cows mean clean milk. Dirt and other particles can't enter the milk keeping the lines and the tank clean. A little bit of dirt or mud can ruin the whole batch of milk.

5. Can you think of other examples at home where cleanliness and routines make things easier, faster, and better?



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Daily Care and Management: Dairy Activity 2: Residues

Background Information (Avoid reading to participants):

Consumers want to know the products they buy at the grocery store are free of harmful residues. So avoiding such residues in animals raised for food is an important part of a Total Quality Management program.

A residue is substance that remains in an animal's body tissues after the animals has been exposed to that substance. The substance can enter the animal's body as a feed or water additive, as an injection or external treatment, or simply by accident. Some substances leave an animal's body tissues a few hours after the exposure, but others many remain several months; some may never entirely leave certain tissues.

To protect our food supply, the FDA establishes and enforces rules about acceptable levels of particular residues. For some substances, no amount of residue is acceptable. The FDA also establishes withdrawal times for products to ensure that unacceptable residues are not in a product when it is marketed. It is illegal to sell animals or animals products that contain residues exceeding FDA limits.

Random tests at slaughter or processing facilities indicate which food producers are not following the regulations. If illegal levels of a residue are found in the tissue of a slaughtered animals or in milk or eggs, the USDA will require a facility not accept animals or products from the noncomplying producer until tests indicate products from the at producer are safe. If milk with unacceptable residue levels contaminates milk, the noncomplying producer is responsible for the cost of all the adulterated milk. The loss of a market can cause substantial economic loss for the producer. In addition, legal actions can be taken against those who don not follow the guidelines.

Perhaps the worst consequence of violating the FDA guidelines is loss of consumer confidence in food products from animals. Consumers are increasingly health conscious. They demand that their food be lean and wholesome. They fear hat people with allergic tendencies may have severe allergic reactions if traces of medications are present in the meat they eat. Although such reactions are not likely, it is important that residue in animal products be kept below FDA limits.

Resources Needed:

Clear Glasses (enough for each group of two or three to have one glass)
Chocolate Milk

**Pencils
Paper
Water**

To Complete the Activity:

- 1. Divide youth into groups of two or three. Give each group one clear glass filled with chocolate milk, pencils, and paper.**
- 2. Each group should designate someone to write and someone to drink the milk.**
- 3. Have someone from each group drink the milk and fill the glass with water.**
- 4. Record the observations.**
- 5. Dump the water and refill the glass with water.**
- 6. Record the observations.**
- 7. Continue dumping the water and refilling the glass with water until the glass appears clear.**

Discussion Questions:

- 1. Why was the water cloudy after the milk was drank?
Some of the milk was still in the glass (Explain to the youth what residues are and explain some of the background information)**
- 2. After a period of time, the water became clear. Why?**
- 3. What practices can be done to avoid residues?**
- 4. What are consequences of residues?**
- 5. Why do some residues occur?**
- 6. As a dairy producer, where do you see some residues?
Mastitis can be thought of as a residue. A cow with mastitis can contaminate all the milk from the cows on your farm. It can also contaminate other producers milk also during delivery to the plant.**

Assuring Quality: A guide for youth livestock producers— Animal Health Activity

Dairy Cow Health Activity

Medications and Animal Health Products: Giving Injections

Background information (Avoid reading to participants):

Medications can be given to livestock in several different ways. Your vet not only helps you select the most appropriate medications but also the best way to administer.

Medication may be given orally, by IV, or injection.

Oral medications are given by mouth, either directly or mixed with feed or water. Mixing with food or water is a convenient way to medicate groups of animals. Medicated feed usually is used when the medication needs to be given over a period of time such as for disease prevention or growth. Water is a way to treat sick animals who are off their feed. The concentration of medicine in water is usually higher than the concentration in feed.

Injections are given with a syringe and needle. Although usually more expensive than other types of medications, injections are often the best treatment when immediate and rapid recovery is needed, or for immunization. Read the labels on injectable medications to learn where they should be given. IM injections are put into the muscle tissue and SQ injections are given just under the skin. IV injections are deposited directly into the bloodstream and require more skill to administer.

Resources Needed:

1. Bananas and Oranges (1 for every two or three youth)-older oranges and firm bananas work better
2. Cotton balls soaked in rubbing alcohol
3. Towels or newspaper to cover the table for cleanup
4. Sharp knife (for leaders only)

5. Additional adult supervision
6. 10 Syringes (3cc)
7. 10 Needles (18 X $\frac{3}{4}$)
8. 2 small (10 cc) rubber top bottles
9. Food coloring

Procedure:

1. Demonstrate IM and SQ injections, including how to properly load a syringe. Steps include:
 - a. Obtain a sterilized syringe.
 - b. Swab the rubber plug on the top of the bottle with a cotton ball soaked in alcohol or other appropriate disinfectant.
 - c. Pull the syringe back to fill it with about the same amount, or slightly less, air as the dose of medicine.
 - d. Push the needle through the rubber plug on the bottle and push the plunger in, forcing air into the bottle.
 - e. Slowly draw the plunger back, drawing the medicine into the syringe. Fill to the correct dosage. Be sure no air bubbles are in the syringe.
 - f. Withdraw the needle from the bottle.
 - g. For an IM injection, use an orange or banana and insert the needle straight into the fruit, perpendicular to the outer surface. Often, bananas provide a more visual distribution of the “medicine”, as there is greater contrast in color with the banana flesh.
 - h. **Slowly** push the plunger in. Leave the needle in place for at least 2 seconds after all the “medicine” has been injected. This helps reduce leakback.
 - i. For a SQ injection, a banana works best for the demonstration. Insert the needle at an angle so that it just goes under the peel and not into the “meat” of the fruit.
 - j. Remove needle from fruit and disinfect.
2. Have 4-H'ers give an IM injection in the banana or orange. Only use .5 cc of colored water or LESS to inject. Usually there is a maximum of 2-3 injections per orange, possibly 4-5 per banana (depending on how small of pieces you cut them into in advance) before the water starts leaking back out right away. 4-H'ers don't need to go through the disinfecting process, but should be aware that this is proper

procedure. Cut open the oranges so youth can see how the product is distributed throughout the fruit.

3. Next, have the youth give a SQ injection.
4. Again, cut open the fruit. The product should be between the fruit and the peel, not distributed throughout.
5. Discuss the questions.

Discussion Questions:

1. Which type of injection was easier to do? Why?
IM is usually easier because you just push the needle straight in, as compared to SQ, where you have to be concerned about not getting in too deep, but adequately under the skin.
2. Would it be harder or easier to get the injection in the right place on an animal?
Animals are harder because they don't stand still. It is probably easier to determine where the skin ends because the skin will slide around over the tissues.
3. If IM is easier to give, why isn't it the preferred method?
The muscle becomes part of the meat. This causes inflammation in the tissue and leaves an abscess, even when given correctly. There is less irritation and problems with SQ injections.