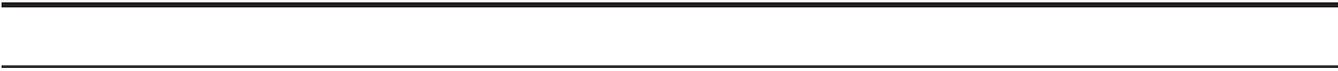
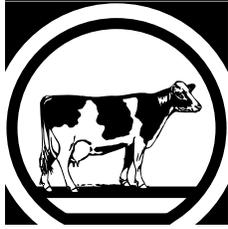


# Kansas 4-H Dairy Cattle Leader Notebook

## *Level II*

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# Setting Goals for Your 4-H Dairy Cattle Project

*Dairy Cattle, Level II*

## What Members Will Learn . . .

### ABOUT THE PROJECT:

- How to set goals

### ABOUT THEMSELVES

- Importance of setting goals

### MATERIALS NEEDED:

- Paper and pencils
- Dairy Cattle Member Guide and Annual Report (MG-38) (Available from your county K-State Research and Extension office)

**ACTIVITY TIME NEEDED:** 30 MINUTES

## ACTIVITY

Goals should indicate growth in the project as well as the member's learning. Each year the goals should include at least one new skill to learn.

The MAP Worksheet defines the steps that members must go through to set their goals for Level II.

## Leader Notes

Have each member share one or two goals he or she met or accomplished during the last year in this project. For example: raised a bucket calf, gave a project talk, etc.

Hand out a "Dairy Cattle Member Guide and Annual Report" to each member.

Ask the members for some suggestions of what they might want to learn during the project year. Share ideas from lesson titles in Level II.

After they have developed a good list, have the members write their goals for the year on their MAP.

Have the members share their goals for the year with each other and the group. With these goals in mind, you can plan the project meetings so that the members will be able to accomplish many of their goals.

**Leader Notes**

**ACTIVITY**

---

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. What is one skill that you learned from your dairy project last year?
2. What is the goal for your dairy project this year?

**Process:**

3. What problems did you have with your dairy project last year?
4. Why do you think you had those particular problems?

**Generalize:**

5. Does setting goals help you solve dairy problems?
6. Does setting goals help you solve your own problems?

**Apply:**

7. How will you use goal setting the next time you plan an activity?

**REFERENCES:**

**Author:**

Clarence W. Linsey, Kansas State Rabbit Breeders Association  
James P. Adams, Extension Specialist, 4-H and Youth Programs, Kansas State University

**Reviewed by:**

James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

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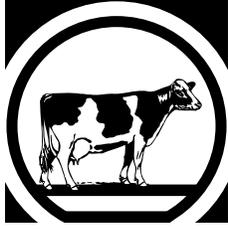
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# History and Comparisons of Dairy Cattle Breeds

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- The history of dairy breeds
- The characteristics of dairy breeds

#### **ABOUT THEMSELVES:**

- The history of their community heritage

#### **Materials Needed:**

- Member Handout 1, Breed Characteristics
- Colored photos of each of the six dairy breeds (via magazines)
- Map of Western Europe

**ACTIVITY TIME NEEDED:** 60 MINUTES

---

### ACTIVITY

The recognized breeds of dairy cattle in the United States had their origin in Europe. The breeds as they were known in Europe were developed through a process of selection for many centuries. The Holstein breed originated in Europe as early as 100 B.C., while the Ayrshire and Brown Swiss breeds originated approximately 1700 A.D.

The breeds came from a small locality, and developed their own characteristics because only animals from that region were selected for breeding stock. Thus, cattle with other characteristics did not influence the characteristics of that breed. The breeds tended to be selected for certain characteristics within the region.

The **Ayrshire** breed originated in the shire (county) of Ayr in Scotland. Thus, the breed's name was taken from its place of origin—Ayrshire. The cattle of Ayr were selected for their ability to thrive on less than ideal foraging conditions. Although the cattle from Ayr were somewhat short legged and blocky, they have been selected for more stature and dairy character since their importation to America in 1837.

**Brown Swiss** cattle were developed in a small region in Switzerland and were called Braunvieh or Schwyz. These cattle were known as Brown Swiss in the United States after their importation in 1869.

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### Leader Notes

Ask each member to give a brief report on the description and history of one of the six breeds. Have each member submit three to five written questions with answers about the breed they studied. Use the questions in a quiz bowl to help members review the material.

Note: Assign breeds one meeting ahead to give members time to find information.

View photo of each breed as it is described by the member. Show places of origin on a map. Give each member a map to color the place or origin or label the country with a breed name or number.

### Leader Notes

### ACTIVITY

---

In Switzerland, the breed was developed to produce milk and meat and for pulling implements in the field. Thus, the breed characteristically was large and rugged with rather coarse bones. The breed is also known for its exceptionally good feet and legs.

The **Guernsey** breed was developed on the Isle of Guernsey which was one of the Channel Islands near England. The selection process began as early as 1000 A.D. Since the cattle were developed on a small island, it was rather simple to avoid the influence of other types of cattle. Guernseys were selected for their rich milk with its characteristic yellow color.

**Holsteins** originated in Holland in the province of Friesland. Holstein is a province in North Germany and the Holstein cattle were selected from the Friesian cattle of Holland. In Holland, the climate and soil were ideally suited for production of lush pasture. The breed was selected for its ability to produce large quantities of milk from forage. This undoubtedly resulted in the breed's large size and body capacity. Even though the breed has a lot of dairy character, there is a good demand for Holstein steers for beef purposes. In the United States, the breed was known as Holstein-Friesians. However, Friesians was dropped from the name years ago and the breed is now known as Holstein.

**Jersey cattle** originated on the Isle of Jersey, another one of the Channel Islands. The selection process emphasized the production of rich milk without having to maintain a large animal. Jerseys were brought to Connecticut in 1850. For some time Jerseys were selected for their "cute" appearance, emphasizing the dished face and dark eyes.

This resulted in very little progress being made in production efficiency. During the 1960s, milk production was the important criterion for selection and the results have been larger framed, more open cows with a lot of dairy character and good udders. In fact, the Jersey breed has increased productivity faster than any of the other breeds.

**Milking Shorthorn** cattle originated as a beef breed in England. Some selection for milking ability was made after they were brought to the United States. For a number of years, Milking Shorthorns were considered good for both milk and meat. Later, it was realized that progress was slow when trying to select for two production traits. During the 1970s Milking Shorthorns from Australia (Illawarra) were introduced into the Milking Shorthorn breed in the United States. Since that time, the breed exhibits more dairy characteristics and milk production has improved.

Many of the "dairy cows" in the late 1880s and early 1900s in Kansas were a result of matings of dairy and beef breeds. Most farms had a few milk cows which did not look like any specific dairy breed. A lot of the cows contained Milking Shorthorn blood mixed with Guernsey, Jersey and Holstein. Thus, there were a lot of cows being milked which were described as roans, blue roans and brindles. The dairy industry is more

Pass out Member Handout 1, Breed Characteristics, as a take home reminder of what was studied. Members should cut and paste a picture of each breed on the handout.

**ACTIVITY**

**Leader Notes**

---

specialized today and the dairy cattle breeds are mostly pure. Today, only 15 to 20 percent of the dairy cattle are registered; however, almost all of the grade cattle are essentially purebred.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. Which of the dairy cows do you think are best, based on this lesson? Rank them.

**Process:**

2. Why was breeding for a “cute” head in the Jersey breed considered less important?
3. Why is breeding for two traits difficult as in the milking shorthorn?

**Generalize:**

4. What other farm animals came from other countries? Why?
5. What animals are native to North America?
6. What countries did ancestors of people in your community come from?

**Apply:**

7. What is the significance of your community heritage today?

**GOING FURTHER:**

- Plan a tour of your community to see some other breeds of dairy cattle. Observe some of the different breed characteristics. Ask why the dairy farmer selected that breed.
- Visit a dairy show and observe different breeds
- Have a genealogist talk to your group about tracing your family history.

**Leader Notes**

**ACTIVITY**

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**REFERENCES:**

**Author:**

James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

**Reviewed by:**

Edward P. Call, Professor Emeritus, Dairy Science, Kansas State University

James P. Adams, Extension Specialist, 4-H and Youth Programs, Kansas State University

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## HISTORY AND COMPARISON OF DAIRY CATTLE BREEDS DAIRY, LEVEL II Member Handout 1, Breed Characteristics

*Note: Cut and paste breed picture with description and place in your recordbook.*



### **AYRSHIRE**

Strong and robust, showing constitution and vigor, symmetry, style and balance throughout, and characterized by strongly attached, evenly balanced, well-shaped udder.

**HEAD**—clean cut, proportionate to body; broad muzzle with large, open nostrils, strong jaw; large, bright eyes; forehead, broad and moderately dished; bridge of nose straight; ears medium size and alertly carried.

**COLOR**—light to deep cherry, mahogany, brown, or a combination of any of these colors with white, or white alone.

**SIZE**—a mature cow in milk should weigh at least 1,200 pounds.



### **HOLSTEIN**

Rugged, feminine qualities in an alert cow possessing Holstein size and vigor.

**HEAD**—clean cut, proportionate to body; broad muzzle with large, open nostrils; strong jaw; large, bright eyes; forehead, broad and moderately dished; bridge of nose straight; ears medium size and alertly carried.

**COLOR**—black and white or red and white markings.

**SIZE**—a mature cow in milk should weigh a minimum of 1,500 pounds.



### **MILKING SHORTHORN**

Strong and vigorous, but not coarse.

**HEAD**—clean cut, proportionate to body; broad muzzle with large, open nostrils; strong jaw; large, bright eyes; forehead, broad and moderately dished; bridge of nose straight; ears, medium size and alertly carried.

**COLOR**—red or white or any combination.

**SIZE**—a mature cow should weigh 1,400 pounds.



### **BROWN SWISS**

Strong and vigorous, but not coarse. Size and ruggedness with quality desired. Extreme refinement undesirable.

**HEAD**—clean cut, proportionate to body; broad muzzle with large, open nostrils; strong jaw; large, bright eyes; forehead, broad and slightly dished; bridge of nose straight; ears medium size and alertly carried.

**COLOR**—solid brown varying from very light to dark. Muzzle is black encircled by a mealy colored ring, and the tongue, switch and hooves are black.

**SIZE**—a mature cow in milk should weigh 1,500 pounds.

**HISTORY AND COMPARISON OF DAIRY CATTLE BREEDS**

**DAIRY CATTLE, LEVEL II**

**Member Handout 1, Breed Characteristics, *continued***

*Note: Cut and paste breed picture with description and place in your recordbook.*



**GUERNSEY**

Size and strength, with quality and character desired.

**HEAD**—clean cut, proportionate to body; broad muzzle with large, open nostrils; strong jaw; large, bright eyes; forehead, broad and slightly dished; bridge of nose straight; ears medium size and alertly carried.

**COLOR**—a shade of fawn with white markings.

**SIZE**—a mature cow in milk should weigh at least 1,150 pounds.



**JERSEY**

Sharpness with strength indicating productive efficiency.

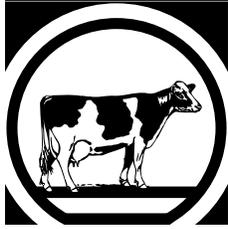
**HEAD**—proportionate to stature showing refinement and well chiseled bone structure. Face slightly dished with dark eyes that are well set.

**COLOR**—some shade of fawn with or without white markings. Muzzle is black encircled by a light colored ring, and the tongue and switch may be either white or black.

**SIZE**—a mature cow in milk should weigh about 1,000 pounds.

**AVERAGE YEARLY MILK PRODUCTION PER COW FOR EACH BREED**

	<b>POUNDS OF MILK</b>	<b>GALLONS OF MILK</b>
AYRSHIRE	14,500	1,813
BROWN SWISS	16,000	2,000
GUERNSEY	13,000	1,625
HOLSTEIN	19,800	2,485
JERSEY	13,000	1,625
MILKING SHORTHORN	14,000	1,750



# Identifying Parts of a Dairy Animal

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- To identify the body parts of a live dairy cow

#### **ABOUT THEMSELVES:**

- Their preferred learning method or style

#### **Materials Needed:**

- Activity Sheet 1, Parts of the Dairy Animal
- Leader's Key, Activity Sheet 1, Parts of the Dairy Animal
- Chalkboard, butcher paper, chalk or marker

**ACTIVITY TIME NEEDED:** 30 MINUTES

### **ACTIVITY**

One of the first things for a member to learn when a dairy project is started is the name and location of the various parts of the animal.

### **Leader Notes**

**Note:** Level II members should only be asked to learn 10 to 15 major parts. Use this lesson again for Level III members to learn a total of 25 to 30 parts. Level IV members should master all 45 parts.

There are a number of ways to teach this information.

(1) Distribute Activity Sheet 1, Parts of a Dairy Cow, with blank lines to be filled in by member. Have each member fill in 10 to 15 names. Use the Leader's Key, Activity Sheet 1, Parts of a Dairy Cow, answers to discuss answers and assist members. Review and ask questions to see if members have learned the parts.

(2) Using the blank Activity Sheet 1, Parts of a Dairy Cow, or a large drawing or poster, point to a part of the animal and let members volunteer to name the part. Discuss or ask how the part should look and the part's importance or purpose.

## Leader Notes

(3) Roll Call—At the beginning of the meeting, have each member answer roll by naming a part of the cow. Insist that each member name a different part. If the group is small, go through the roll more than once and in reverse order, or at random until major parts are covered.

## ACTIVITY

### SUMMARY

Being able to identify the parts of the dairy animal is a good beginning in learning about dairy cattle. This information will be helpful in learning what to look for in selecting dairy animals, in describing injuries or other problems and in general descriptions.

### DIALOGUE FOR CRITICAL THINKING:

#### Share:

1. What dairy animal parts did you already know?
2. What new parts did you learn?
3. Which parts were hardest to learn? Easiest? Why?

#### Process:

4. Why is it important to know the parts of a dairy animal?
5. What dairy animal parts are the best indicators of a high milk producer? Why?

#### Generalize:

6. What techniques did you use to learn the parts of an animal that will help you to learn other things?
7. Which method of learning do you prefer? Why?

#### Apply:

8. How will knowing the parts of a dairy animal help you in the future?
9. What learning techniques might you use next time to learn the purpose or importance of each part in addition to the name?

### GOING FURTHER:

- Members can give illustrated talks on parts of an animal.
- Tour a dairy.
- Attend dairy days and shows.
- Prepare an exhibit showing the different parts of an animal.
- Illustrate parts of an animal on a halter-broken, gentle, live animal, allowing members to touch animals

**ACTIVITY**

**Leader Notes**

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**REFERENCES:**

“Dairy Cow Unified Score Card,” The Purebred Dairy Cattle Association

**Author:**

Larry Boleman, Extension Beef Cattle Specialist, Texas

**Edited by:**

James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

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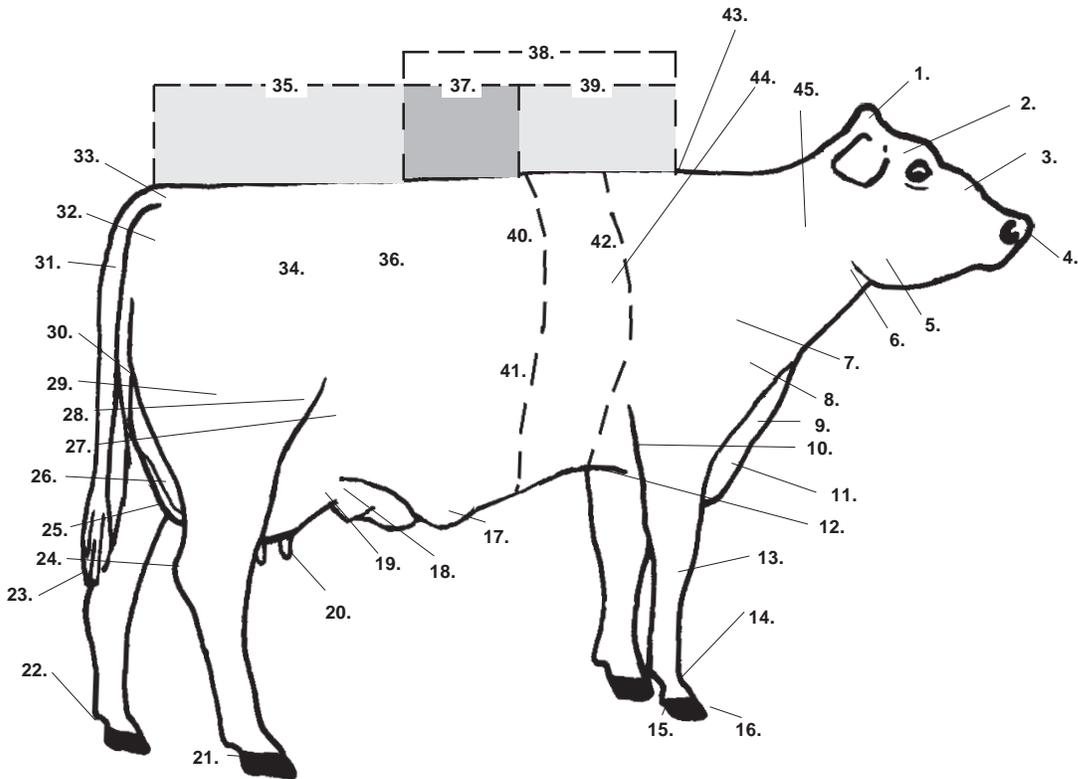
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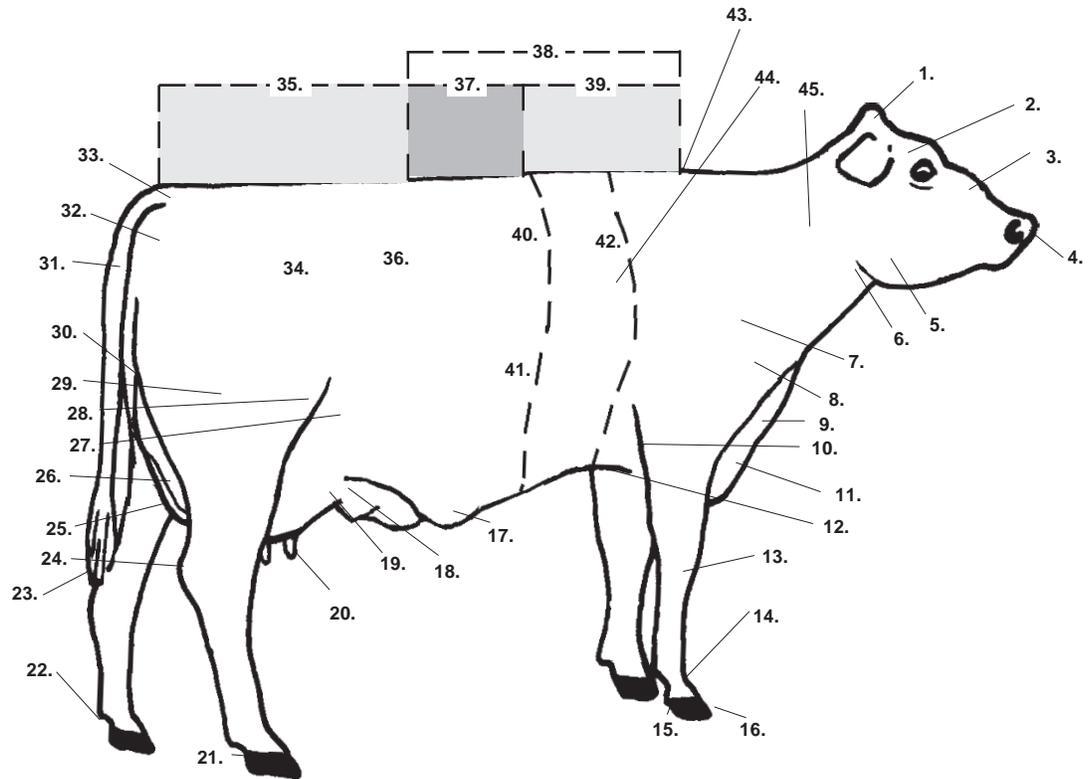
**IDENTIFYING PARTS OF A DAIRY ANIMAL**  
**DAIRY CATTLE, LEVEL II**  
**Activity Sheet 1, Parts of the Dairy Animal**



- |           |           |           |
|-----------|-----------|-----------|
| 1. _____  | 16. _____ | 31. _____ |
| 2. _____  | 17. _____ | 32. _____ |
| 3. _____  | 18. _____ | 33. _____ |
| 4. _____  | 19. _____ | 34. _____ |
| 5. _____  | 20. _____ | 35. _____ |
| 6. _____  | 21. _____ | 36. _____ |
| 7. _____  | 22. _____ | 37. _____ |
| 8. _____  | 23. _____ | 38. _____ |
| 9. _____  | 24. _____ | 39. _____ |
| 10. _____ | 25. _____ | 40. _____ |
| 11. _____ | 26. _____ | 41. _____ |
| 12. _____ | 27. _____ | 42. _____ |
| 13. _____ | 28. _____ | 43. _____ |
| 14. _____ | 29. _____ | 44. _____ |
| 15. _____ | 30. _____ | 45. _____ |

**IDENTIFYING PARTS OF A DAIRY ANIMAL**  
**DAIRY CATTLE, LEVEL II**

**Leader's Key, Activity Sheet 1, Parts of the Dairy Animal**

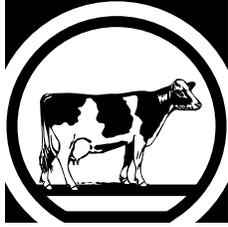


- |                      |                           |                 |
|----------------------|---------------------------|-----------------|
| 1. Poll              | 16. Sole                  | 31. Tail        |
| 2. Forehead          | 17. Mammary veins         | 32. Pin Bone    |
| 3. Bridge of nose    | 18. Fore udder attachment | 33. Tail head   |
| 4. Muzzle            | 19. Fore udder            | 34. Thurl       |
| 5. Jaw               | 20. Teats                 | 35. Rump        |
| 6. Throat            | 21. Hoof                  | 36. Hip or Hook |
| 7. Shoulder blade    | 22. Dew claw              | 37. Loin        |
| 8. Point of shoulder | 23. Switch                | 38. Back        |
| 9. Dewlap            | 24. Hock                  | 39. Chine       |
| 10. Point of elbow   | 25. Suspensory ligament   | 40. Barrel      |
| 11. Brisket          | 26. Rear udder            | 41. Ribs        |
| 12. Chest floor      | 27. Flank                 | 42. Crops       |
| 13. Knee             | 28. Stifle                | 43. Withers     |
| 14. Pastern          | 29. Thigh                 | 44. Heart girth |
| 15. Heel             | 30. Rear udder attachment | 45. Neck        |

---

IDENTIFYING PARTS OF A DAIRY ANIMAL

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# Selecting a Dairy Heifer

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- The characteristics of a good project heifer

#### **ABOUT THEMSELVES:**

- Important decisions should be carefully studied
- Not to be easily influenced by things that have little importance

#### **Materials Needed:**

- Dairy heifer for demonstration (or)
- Large picture or photo of a dairy heifer

**ACTIVITY TIME NEEDED:** 45 MINUTES

---

### ACTIVITY

The success of your Dairy Project will be influenced by the heifer calf you select to begin the project. Many projects last for less than a year, but a Dairy Project can last for several years. Therefore, the process of selecting a heifer calf for your project is a very important decision.

Several factors must be considered when selecting a heifer calf. You must remember that the winning show heifer may or may not be the most successful project. Every dairy member cannot have a heifer that wins in the show ring. However, heifers that have not been show winners can be very productive cows. Therefore, the factors used in selecting a heifer calf should include those things that are related to success in the show ring as well as those things that will affect production when your heifer becomes a cow.

The success of a heifer in the show ring is affected by the following factors: (1) general appearance, (2) dairy character and (3) body capacity. All of these factors have some affect on the productivity of the heifer when she becomes a cow.

**General appearance** considers the overall look of the animal. It considers how correct the heifer walks on her feet and legs. Also, general appearance involves how straight she is over her topline and how well her body parts blend together. The rump should have a slight slope from hips to pins. Heifers with their pins higher than their hip or with a lot of slope from hips to pins will be lacking in general appearance. The most important aspect of general appearance is the overall size of the heifer. Size is determined by height, length and width of the body.

---

### Leader Notes

This lesson should be held at a farm where heifers can be observed and compared. (If heifers are not available, use pictures.)

Using a heifer or picture, have members, point out the characteristics of good general appearance.

## Leader Notes

Discuss the age groups for dairy classes

Have members point out the characteristics of dairy character.

## ACTIVITY

One thing that affects the size of your heifer in comparison to the other heifers in the class is her age. Therefore, it is a good idea to select a heifer that will be one of the older animals in her class. Heifer classes are divided into senior and junior classes. Heifers born between September 1 and February 28 are in the senior class. Those born between March 1 and August 31 are in the junior class. Hence, it is a good idea to select a calf born in either September or March.

Young heifers grow fast and change fast. The older the animal is when you make your selection, the more you can predict what she is going to look like. You can be more confident of what a heifer will look like if she is 4 or 5 months old instead of 4 weeks old. Therefore, try to avoid selecting a heifer from a group of very young calves.

**Dairy character** includes those characteristics that make a heifer look like a dairy animal. It is more closely related to the future productivity of a dairy animal than any of the other type characteristics. Dairy animals should have long necks that are free from excess fat. They should be sharp over the withers and free from excess fat over the hips and pins. In addition, dairy heifers should be clean and flat in their thighs. Heifers with dairy character will be long, stretchy animals with ribs wide apart and slanted toward the rear. Their bones, as observed in their legs, will be flat and not coarse.

**Body capacity** is the total volume of the heifer's body (length  $\times$  depth  $\times$  width) from the shoulders to the hips. This area, called the barrel or rib cage, goes from the top of the back to the lowest point of the body behind the front legs or chest floor. This total area should be long, deep and wide.

When selecting a heifer, avoid being influenced by things that are not related to the quality of the animal. Just because a certain heifer tends to be a pet, or has certain color markings that strike your fancy does not necessarily mean that she will make a good project.

Registered heifers are not necessarily better dairy animals than nonregistered (grade) heifers. However, registered heifers will have a traceable pedigree, while grades may not. Therefore, everything else being equal, a registered heifer is preferred.

All animals have a pedigree whether they are registered or not. The success of your dairy project may be affected by your calf's pedigree. When selecting a heifer, select one whose dam's milk production is higher than her herdmates and was sired by a positively proven bull. Likewise, the heifer you select should be sired by a sire that ranks in the upper 80 percentile of available sires. Heifers with these attributes in their pedigrees have good odds of being good cows.

Whether you are selecting a heifer from the family herd or from another dairy farm, compare heifers of the same age. It won't hurt to get an

**ACTIVITY**

**Leader Notes**

---

unbiased opinion from someone else. Remember, the heifer you select will be your future cow.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. What are the three factors that affect the success of a heifer in the showing?
2. You should choose calves born in what month for the senior and junior class?
3. What are the important factors to consider for general appearance? Dairy character?

**Process:**

4. Why is it important to select a good heifer?
5. What characteristics are not important when selecting a heifer?

**Generalize:**

6. What are activities, professions, etc., where size is an important factor?
7. Is appearance always important? Why or why not?
8. What are some important decisions you are currently making?

**Apply:**

9. Think of a decision you will have to make in the future (i.e. classes to take, how to spend personal money, etc.). What factors will you need to consider before making your choice?

**GOING FURTHER:**

- Attend a dairy show and observe the type of heifers that are doing well in the show ring.
- Attend a dairy auction and observe the pedigrees of heifers that are in the greatest demand.

**Leader Notes**

**ACTIVITY**

---

**REFERENCES:**

**Author:**

James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

**Reviewed by:**

Edward P. Call, Professor Emeritus, Dairy Science, Kansas State University

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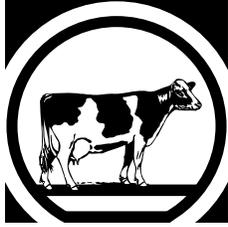
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# Introduction to Judging Dairy Cattle

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- Major parts of dairy animals
- The procedure to follow in judging a class of dairy animals

#### **ABOUT THEMSELVES:**

- The importance of being able to make a decision
- The importance of being organized when making decisions

#### **Materials Needed:**

- Dairy animals for judging
- Member Handout 2, Dairy Unified Scorecard
- Member Handout 3, Dairy Judging Glossary

#### **ACTIVITY TIME NEEDED:** 45 MINUTES

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## ACTIVITY

Judging dairy cattle helps members learn the characteristics that contribute to a long and productive life for the cow. Dairy cattle judging also enhances the decision-making skills of the member.

The productivity of dairy cattle can best be evaluated with production records. Therefore, the most important reason for judging dairy cattle is to be able to select for type traits that are related to longevity—mammary system and feet and legs. These traits are called functional type traits because they are related to function.

Although showing dairy cattle is not as important as it once was for making improvement in dairy cattle, there still is a need to be able to evaluate those traits related to productivity and longevity. Cows with poorly supported udders and poor feet and legs usually do not stay in the herd as long as those cows with better functional type.

In addition, heifers do not have production records, except on their ancestors. For this reason, using visual observation to judge dairy cattle assists in the selection process of heifers.

The **first step** in learning to judge is to learn the names of the parts of the dairy cow. This is not a difficult task because most of the parts have a logical name. You must know the parts in order to be able to talk with your leader and other members about individual animals.

---

## Leader Notes

**Note:** Explain only the 10 to 15 major parts identified earlier in this level. Use this lesson again in Level III before the lesson on oral reasons. Level IV members can also use this lesson to complete judging terms.

This lesson should be conducted on a dairy farm where animals can be used for judging. Start by passing out Member Handout 2, Dairy Unified Scorecard. Using a live animal, point out the various parts shown on the scorecard. Discuss each category on the scorecard to illustrate the parts that are considered in each category.

Learn the parts over a period of time, depending on member experience.

## Leader Notes

Pass out Member Handout 2, Dairy Unified Scorecard. Have members discuss the scorecard and ask questions for clarification. Refer to Member Handout 3, Dairy Judging Glossary, to help members understand terms on the scorecard

Judge some classes of cows of similar age. Ask individual members about some of the outstanding characteristics of some of the animals and some of their faults; then discuss a placing on the class. The same procedure should be followed with some classes of heifers.

## ACTIVITY

Next, become familiar with what the ideal cow looks like. The Dairy Cow Unified Scorecard is useful for this purpose as well as looking at outstanding individuals in breed magazines. Your leader can provide you with some of this information.

Study the Dairy Cow Unified Scorecard and learn the relative points assigned to the various categories. You will learn that general appearance (frame, feet and legs) is worth 30 points and mammary system is worth 40 points, compared to 20 points for dairy character and 10 points for body capacity. The points show the importance of each of the categories.

The most important consideration for judging cows is general appearance and mammary system. Cows with poor udders or serious faults in their feet and legs should be placed in the lower part of the class. Also, thick cows who are lacking in dairy character should not be considered for the top of the class. In heifer classes, the larger heifers with good general appearance and dairy character should be in the top part of the class. Don't place small heifers lacking in general appearance or dairy character at the top.

Since heifers do not have mammary systems which can be evaluated with any degree of accuracy, the following assignment of points is suggested: general appearance, 55; dairy character, 35; and body capacity, 10. More points have been assigned to stature (height) for heifers in the general appearance category. You will notice that the heifers at the top of classes usually are quite tall because this is an indication of their size when mature. Feet and legs are also emphasized in judging heifers because they are related to functional type.

Dairy character is also emphasized when judging heifers because this is an indication of their milking ability. You will notice thick, low-set heifers tend to be placed in the lower part of classes.

**Now**, you're ready to practice what you have learned. When judging, stand at least 25 feet away from the animals. You can get a much better view from this distance. It is easier to evaluate general appearance, size and stature if you are standing far enough away to observe all of the animals at the same time. You may need to get a little closer to observe the mammary system or how sharp an animal is over the withers.

After you have observed the class, you will find most classes of four animals can be divided into a top and bottom pair or a top and bottom animal with a pair in the middle that are similar. So, judging is actually easy. You usually only have to make one or two decisions to place the class. All you need now is practice.

**ACTIVITY**

**Leader Notes**

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**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. What parts of a dairy cow are hard to evaluate? Why?
2. How useful was the Dairy Cow Unified Scorecard? Why?

**Process:**

3. What are the major differences to consider when selecting dairy heifers versus dairy cows?
4. Why is it important to develop a pattern, procedure, or sequence when judging cattle?

**Generalize:**

5. When do you need a procedure or pattern to do other things? List and discuss.
6. What did you learn about yourself as a result of the process in this lesson?

**Apply:**

7. When might you need to be well organized in the future? Why?

**GOING FURTHER:**

- Evaluate cows and heifers in your herd and decide what type characteristics you like best and what things you would like to change.
- Attend dairy shows and observe the kind of cattle being placed at the top and bottom of the classes.

**Leader Notes**

**ACTIVITY**

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**REFERENCES:**

Dairy Cattle Judging Techniques, Fourth Edition, Waveland Press,  
Prospect Heights, Illinois

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**INTRODUCTION TO JUDGING DAIRY CATTLE**  
**DAIRY CATTLE, LEVEL II**  
**Member Handout 2, Dairy Unified Scorecard**

**MAJOR TRAIT DESCRIPTIONS**

**15% (1) FRAME**

**The skeletal parts of the cow, with the exception of feet and legs, are evaluated. Listed in priority order, the descriptions of the traits to be considered are as follows:**

**Rump**—long and wide throughout with the pin bones slightly lower than hip bones. Thurls need to be wide apart and centrally placed between hip bones and pin bones. The tailhead is set slightly above and neatly between pin bones, and the tail is free from coarseness. The vulva is nearly vertical.

**Stature**—height, including length in the leg bones. A long bone pattern throughout the body structure is desirable. Height at the withers and hips should be relatively level.

**Front End**—adequate constitution with front legs straight, wide apart and squarely placed. Shoulder blades and elbows need to be firmly set against the chest wall. The crops should have adequate fullness.

**Back**—straight and strong; the loin-broad, strong, and nearly level.

**Breed Characteristics**—overall style and balance. Head should be feminine, clean-cut, slightly dished with broad muzzle, large open nostrils and a strong jaw is desirable.

*Rump, Stature, and Front End receive primary consideration when evaluating Frame.*

**20% (2) DAIRY CHARACTER**

The physical evidence of milking ability is evaluated. Major consideration is given to general openness and angularity while maintaining strength, flatness of bone and freedom from coarseness. Consideration is given to stage of lactation. Listed in priority order, the descriptions of the traits to be considered are as follows:

**Ribs**—wide apart. Rib bones are wide, flat, deep, and slanted toward the rear.

**Thighs**—lean, incurving to flat, and wide apart from the rear.

**Withers**—sharp with the chine prominent.

**Neck**—long, lean, and blending smoothly into shoulders. A clean-cut throat, dewlap, and brisket are desirable.

**Skin**—thin, loose, and pliable.

**10% (3) BODY CAPACITY**

The volumetric measurement of the capacity of the cow (length × depth × width) is evaluated with age taken into consideration. Listed in priority order the descriptions of the traits to be considered are as follows:

**Barrel**—long, deep, and wide. Depth and spring of rib increase toward the rear with a deep flank.

**Chest**—deep and wide floor with well-sprung fore ribs blending into the shoulders.

*The Barrel receives primary consideration when evaluating Body Capacity.*

## INTRODUCTION TO JUDGING DAIRY CATTLE

### DAIRY CATTLE, LEVEL II

#### Member Handout 2, Dairy Unified Scorecard, *continued*

#### 15% (4) FEET AND LEGS

Feet and rear legs are evaluated. Evidence of mobility is given major consideration. Listed in priority order, the descriptions of the traits to be considered are as follows:

**Feet**—steep angle and deep heel with short, well-rounded closed toes.

**Rear Legs: Rear View**—straight, wide apart with feet squarely placed.

**Side View**—a moderate set (angle) to the hock.

**Hock**—cleanly molded, free from coarseness and puffiness with adequate flexibility.

**Pasterns**—short and strong with some flexibility.

Slightly more emphasis placed on **Feet** than on **Rear Legs** when evaluating this breakdown.

#### 40% (5) UDDER

The udder traits are the most heavily weighted. Major consideration is given to the traits that contribute to high milk yield and a long productive life. Listed in priority order, the descriptions of the traits to be considered are as follows:

**Udder depth**—moderate depth relative to the hock with adequate capacity and clearance. Consideration is given to lactation number and age.

**Teat Placement**—squarely placed under each quarter, plumb and properly spaced from side and rear views.

**Rear Udder**—wide and high, firmly attached with uniform width from top to bottom and slightly rounded to udder floor.

**Udder Cleft**—evidence of a strong suspensory ligament indicated by adequately defined halving.

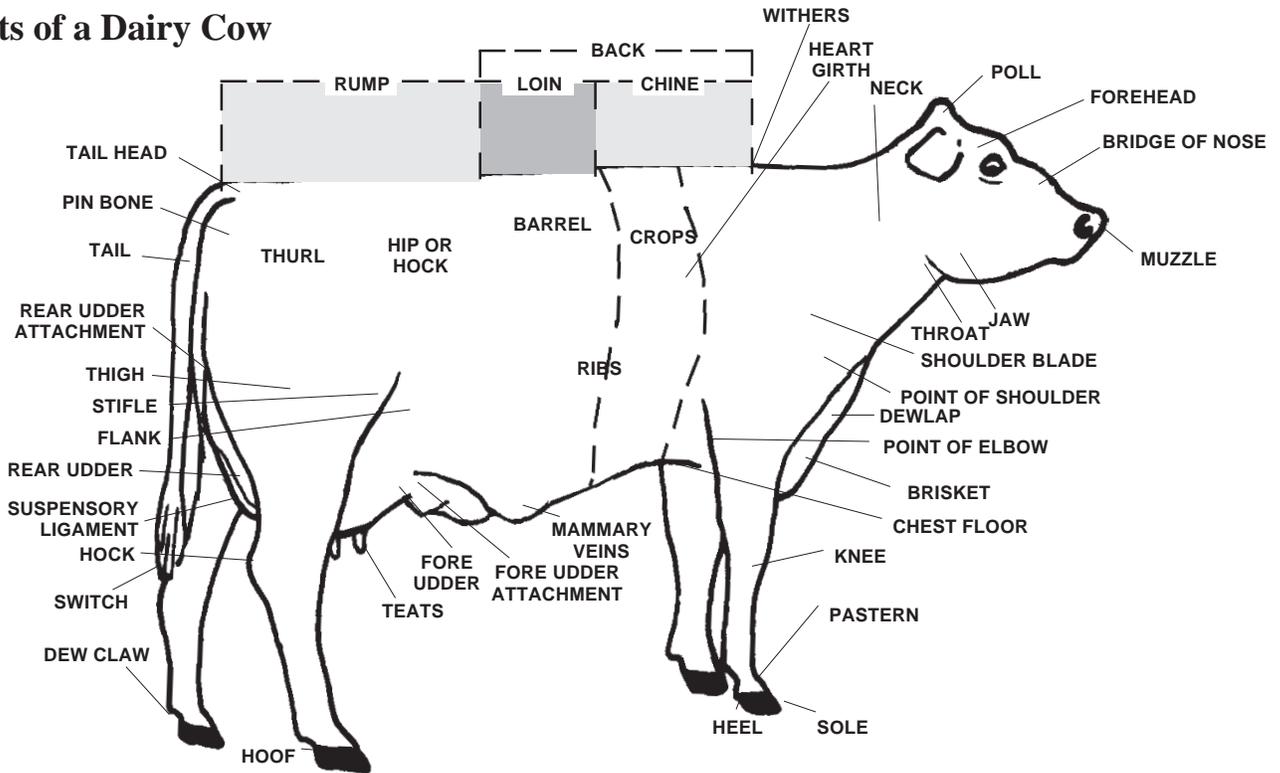
**Fore Udder**—firmly attached with moderate length and ample capacity.

**Teats**—cylindrical shape and uniform size with medium length and diameter.

**Udder Balance and Texture**—should exhibit an udder floor that is level as viewed from the side. Quarters should be evenly balanced; soft, pliable and well collapsed after milking.

**INTRODUCTION TO JUDGING DAIRY CATTLE**  
**DAIRY CATTLE, LEVEL II**  
**Member Handout 2, Dairy Unified Scorecard, *continued***

**Parts of a Dairy Cow**



**FACTORS TO BE EVALUATED**

The degree of discrimination (points subtracted) for each defect is related to its function and heredity. The evaluation of the defect shall be determined by the breeder, the classifier or the judge, based on the guide for discrimination and disqualifications given below.

**HORNS**

*No discrimination*

**EYES**

1. Blindness in one eye: *Slight discrimination*
2. Cross or bulging eyes: *Slight discrimination*
3. Evidence of blindness: *Slight to serious discrimination*
4. Total Blindness: *Disqualification*

**WRY FACE**

*Slight to serious discrimination*

**CROPPED EARS**

*Slight discrimination*

**PARROT JAW**

*Slight to serious discrimination*

**SHOULDERS**

Winged: *Slight to serious discrimination*

**TAIL SETTING**

Wry tail or other abnormal tail settings: *Slight to serious discrimination*

**CAPPED HIP**

*No discrimination unless effects mobility*

**LEGS AND FEET**

1. Lameness—apparently permanent and interfering with normal function: *Disqualification*
2. Evidence of crampy hind legs: *Serious discrimination*
3. Evidence of fluid in hocks: *Slight discrimination*
4. Weak pastern: *Slight or serious discrimination*
5. Toe out: *Slight discrimination*

**INTRODUCTION TO JUDGING DAIRY CATTLE  
DAIRY CATTLE, LEVEL II**

**Member Handout 2, Dairy Unified Scorecard, *continued***

**UDDER**

1. Lack of defined halving: *Slight to serious discrimination*
2. Udder definitely broken away in attachment: *Serious discrimination*
3. A weak udder attachment: *Slight to serious discrimination*
4. Blind quarter: *Disqualification*
5. One or more light quarters, hard spots in udder, obstruction in teat (spider): *Slight to serious discrimination*
6. Side leak: *Slight discrimination*
7. Abnormal milk (bloody, clotted, watery): *Possible discrimination*

**LACK OF SIZE**

*Slight to serious discrimination.*

**EVIDENCE OF SHARP PRACTICE**

(Refer to PDCA Code of Ethics)

1. Animal showing signs of having been tampered with to conceal faults in conformation and to misrepresent the animal's soundness: *Disqualification*
2. Uncalved heifers showing evidence of having been milked: *Slight to serious discrimination*

**TEMPORARY OR MINOR INJURIES**

Blemishes or injuries of a temporary character not affecting animal's usefulness: *Slight to serious discrimination*

**OVERCONDITIONED**

*Slight to serious discrimination*

**FREEMARTIN HEIFERS**

*Disqualification*

**INTRODUCTION TO JUDGING DAIRY CATTLE**  
**DAIRY CATTLE, LEVEL II**  
**Member Handout 3, Dairy Judging Glossary**

**ADDITIONAL DEFINITIONS**

**Angularity:** The appearance of being wedge-shaped from the hips to the top of the withers. Also, the ribs will be extended in a sweeping direction to the rear.

**Capped Hip:** Is the result of an injury in which the end of the hip has been broken loose from the hip bone.

**Chine:** Includes the area of the back from the withers to about half way to the hips. The other half of the back is the loin.

**Constitution:** Evidence of strength and vigor, such as width of chest, barrel and rump.

**Cropped Ear:** One or both ears are shorter than normal, usually due to frost bite.

**Degrees of Discrimination:**   **Slight:**   Minus 2 to 5 points  
  **Serious:** Minus 5 to 10 points

**Freemartin:** An animal that has both male and female reproductive parts and is, thus, nonproductive.

**Lactation:** Period of time that a cow produces milk. Typically from the birth of a calf for the next 300 days.

**Mammary System:** The parts of a cow's body that function for the main purpose of producing milk (udder, teats, milk veins, etc.).

**Overconditioned:** An animal that is too fat for good health.

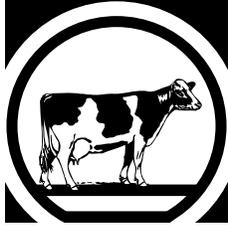
**Parrot Jaw:** The lower jaw will be much shorter than the muzzle. The upper lips will protrude well beyond the lower jaw. The lower teeth will not line up with the upper gum pad.

**Winged Shoulder:** The shoulders will be especially open between the shoulder blade and the body wall or chest. The point of elbow will be out away from the body wall.

**Wry Face:** The face looks twisted in the area of the bridge of the nose when viewed from the front of the animal. The muzzle may not be in alignment with the top of the head.

**Wry Tail:** The tail head is twisted either to the right or left.





# Identifying Types of Feeds and Understanding Feed Tags

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- Identify the five major types of feed nutrients
- Categorize feeds into roughages or concentrates
- Identify feed nutrient sources
- Identify types of feed tag information

#### **ABOUT THEMSELVES:**

- Identify five to eight human foods and whether they are a primary source for protein, energy, mineral, vitamin or water
- The importance of a balanced diet

#### **Materials Needed:**

- Five paper plates
- Various index cards with feed ingredients written on them
- Samples of feed ingredients in small jars or plastic bags
- Chalkboard, flip chart or overhead projector
- Examples of various feed tags
- Activity Sheet 2, Cereal Box/Feed Tag Quiz
- Pencils and paper

#### **ACTIVITY TIME REQUIRED: 60 MINUTES**

### **ACTIVITY**

Proper animal nutrition is the key to a successful dairy business and a dairy project. Animals require proper nutrition for growth and development. In the same way, if we don't get the proper nutrition by eating right, we can have health problems and our growth and development may be affected in a negative way.

Members in the dairy project should know the types of feed ingredients and how to identify various samples. Learning about the basic feed nutrients is an excellent way to prepare members to learn more about animal feed requirements and understand feed tags.

Generally, feeds are classified into two broad categories: roughages and concentrates. Roughages are typically the leafy green plants such as alfalfa and grasses, crop residues like straw from the production of grains, and silages which are green leafy plant materials that have been chopped and stored wet. Roughages are higher in fiber and less digestible than

### **Leader Notes**

As members arrive for the project meeting, have four different samples of feed set out on a table. Ask them to work together to decide what the feeds consist of and to what animal(s) they might be fed. Encourage them to discuss their opinions together and come to some consensus as a group.

Show the samples that members looked at previously and discuss which are concentrates and which are roughages.

**Leader Notes**

**ACTIVITY**

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concentrates—meaning it takes longer for the material to pass through the animal’s stomach. But young and rapidly growing animals do not have the capacity to consume enough low-quality roughage to achieve normal growth and, thus, need other nutrient sources.

Concentrates include grains (corn, wheat, barley, oats and milo), oilseed meals, (like soybean meal, linseed meal and cottonseed meal), fish meal, packing house by-products, molasses, and dried milk products. Concentrates are high in energy, low in fiber, and highly digestible—usually about 80 to 90 percent digestible.

Regardless of feed type, all feeds are sources for some of the basic types of nutrients: protein, energy sources (carbohydrates and fats), minerals, vitamins and water. Knowing what combination of these nutrients your feed supplies is critical to a good feeding program.

Show an example of a protein source.

**Proteins** supply the materials necessary to make body tissues. They are the building blocks of which calf bodies are made. Proteins make up muscle, internal organs, bones and the blood. They also make up the skin, hair, hooves, and horns of a dairy animal’s body. If you feed more protein to your calf than it needs, the extra protein is used as energy—for body heat, cooling, movement, producing milk in females or for other functions. Grains such as corn, oats, and milo supply part of the protein your calf needs to grow. **Protein supplements** such as soybean, cottonseed, or linseed meal are used to balance your calf’s ration (what they eat each day).

Show an example of an energy source.

**Energy** is supplied to your dairy animal from two types of feed nutrients—**carbohydrates** and **fats**. These nutrients are to a calf what gasoline is to a car. They provide energy for growth and maintenance. These nutrients also help the animal produce heat to keep the body warm. Energy fed in excess of what the animal needs for maintenance is stored as fat until the body needs it.

Show an example of a mineral source.

**Minerals** build bones and teeth and support other life functions in the calf. Livestock need a total of 16 different minerals in their diet. Calcium, phosphorus and salt make up the largest percentage of the minerals needed by the calf. Calcium and phosphorus are usually added to the calf ration for growth of bones and teeth. Many producers use bone meal or dicalcium phosphate as feed ingredients to supply these necessary minerals. Sodium, chlorine, and iodine are also critical minerals for your calf and are usually added in the form of iodized salt. Minerals that are needed only in very small amounts are called **trace minerals** and are sometimes added to salt.

Show a good vitamin source.

**Vitamins** are just as important as other feed nutrients, but they are needed in smaller amounts. Vitamin A is required for the health of skin, eyes, nose and lungs. For strong bones and healthy blood, vitamin D is needed. Other vitamins are required for numerous body functions. The calf’s body produces some vitamins while others must be added to the ration.

## ACTIVITY

**Water** is usually not considered to be a nutrient, but without it, life would not be possible. Many people consider water to be the most important part of the calf's diet. Moreover, it is the cheapest part of an animal's diet, but it is often the most neglected part, too. A calf's body is over two-thirds water and blood is over 90 percent water. Water is also necessary in digestion and for carrying food nutrients to the rest of the body. Water carries away waste products through the urine, functions as the body's built-in cooling system, and helps joints move. Your calf can live longer without feed than without water.

Now that we have learned something about the two feed categories (concentrates and roughages) and nutrients, let's see how well you can classify some of the major feed ingredients according to their type.

On this table are five paper plates, each one labeled as either **PROTEIN**, **ENERGY**, **MINERALS**, **VITAMINS**, or **WATER**.

Alongside these paper plates are index cards with the names of various feed ingredients written on them. As a group, sort through these various feed ingredient cards and decide which plate they should be placed on. When you have finished, let me know and we will discuss your classification.

**Primary Protein Sources:** Cottonseed meal, soybean meal, linseed meal, corn gluten meal.

**Primary Energy Sources:** barley, oats, wheat, corn, milo.

**Primary Mineral Sources:** bone meal, dicalcium phosphate, salt, trace mineralized salt.

**Primary Vitamin Sources:** vitamin supplements, green pasture, alfalfa hay.

**Primary Water Sources:** cool, clean water. (Snow does not provide enough water to meet an animal's daily needs for water.)

Have you ever thought about what goes into prepared animal feeds? Let's look at these samples of feed and the tag from each feed. The tag is an important tool for us—it tells us what is in the feed.

When you study the samples, answer these questions:

- What kind of animal is this feed meant for?
- What are some of the major ingredients in the feed?
- What are the sources of protein, energy, vitamins and minerals in this feed?
- Why do some feeds include medicine?

## Leader Notes

Optional: You may want to get actual feed samples from either your own supply or ask your feed dealer for samples and have the members classify these rather than the index cards.

Following their efforts, review their classifications with them. Remember to ask questions about their choices rather than being critical of their decisions. Try to discover why they placed the feed ingredients the way they did. At the same time, you can also ask them which are concentrates and which are roughages.

Arrange the feed samples on a table so that all members can gather around it. Or, divide the group into pairs and give each pair a feed sample and a feed tag.

Providing a situation and asking your members to come up with answers or a solution is an effective way to teach this kind of material. Use a teen leader or group facilitator to ask questions as the members study the samples and tags. Let members do the talking and ask questions but don't give the answers.

## Leader Notes

Once all groups have had an opportunity to give their explanations, use a different feed tag to help them understand how to read the information that is included. Refer back to the good points each group made and also be sure to correct some inaccuracies that they might have made.

Provide cereal boxes, Activity Sheet 4, Cereal Box/Feed Tag Quiz, and pencils; then briefly examine the cereal box labels together. Look for the requested information and, when everyone is done, compare the cereals represented for nutritional value.

Repeat this activity with a feed tag from animal feed and compare with the cereal box exercise.

## ACTIVITY

### DIALOGUE FOR CRITICAL THINKING:

#### Share:

1. What are two feed types?
2. What are the feed nutrients?
3. What is the protein content on the feed tag for the feed you give your calf?

#### Process:

4. What is the main purpose of each of the nutrients? Discuss one at a time.
5. What nutrient is needed most often by a calf?

#### Generalize:

6. What nutrients might you find in other animal feeds?
7. Why do nutrient requirements vary for different ages of animals?

#### Apply:

8. Where else do you find nutrient information?
9. What nutrient will you look for on the label of the next bag of feed you buy for your calf?

### GOING FURTHER:

- Arrange a trip to a local feed mill to see how the feed ingredients are weighed and mixed together to make a complete ration.
- Have members make lists of essential nutrients found on the feed tag. Does each feed provide all nutrients?

**ACTIVITY**

**Leader Notes**

---

**REFERENCES:**

**Author:**

This lesson was modified from original material adapted from *Identifying and Classifying Feed Ingredients*, Thomas D. Zurcher, University of Minnesota, by Kirk A. Astroth, Extension Specialist, 4-H Youth Programs, Montana State University, with further adaptation by :  
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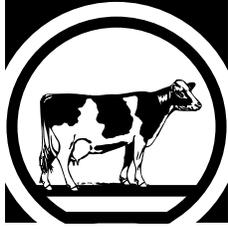
## **IDENTIFYING TYPES OF FEEDS AND UNDERSTANDING FEED TAGS**

### **DAIRY CATTLE, LEVEL II**

#### **Activity Sheet 2, Cereal Box/Feed Tag Quiz**

Cereal manufacturers are required to include “Nutrition Facts” on the box. The label includes a list of ingredients which are listed in order from most to least. It also lists percentage of daily value, amounts of some nutrients per serving, serving size, and servings per container.

1. Name of cereal
2. Main ingredient
3. Serving size                      Servings per package
4. Which vitamins are listed?
5. Does this cereal provide all of your daily value (100 percent) for any of the nutrients?
6. Which nutrients increase when milk is added?
7. Which nutrients are minerals?
8. Repeat this exercise using an animal feed tag. Compare and discuss the answers.



# Recognizing Healthy Dairy Animals

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- Identify normal habits, attitudes and behaviors of a dairy animal
- Recognize the color and conditions of a normal animal's body characteristics
- The importance of vital signs in measuring animal health

#### **ABOUT THEMSELVES:**

- To become more sensitive of others by observing their own behavior and appearance

#### **Materials Needed:**

- A healthy dairy animal
- Thermometer
- Member Handout 4, Animal Health Record Sheet
- Activity Sheet 3, Healthy and Sick Animals
- Leader's Key, Activity Sheet 3, Healthy and Sick Animals

#### **ACTIVITY TIME NEEDED: 60 MINUTES**

### **ACTIVITY**

It is important to learn to recognize an animal's normal characteristics in order to recognize when a characteristic becomes abnormal.

#### **Habits, Attitudes and Behavior**

An animal exhibits many different attitudes during one day and throughout its lifetime. A change in attitude can be a sign of disease. Attitude may also be called mental condition, state of mind, disposition, or temperament. Behavior is the manner by which attitude is exhibited or displayed. The types of behavior that are indicators of attitudes are:

1. Stance/Posture
2. Movement/Gait
3. Appetite/Eating Habits
4. Voice

The different attitudes of animals that are displayed:

1. Hungry
2. Nervous
3. Excited
4. Cautious
5. Frightened
6. Confused
7. Stubborn
8. Angry
9. Sad
10. Happy

### **Leader Notes**

Pass out Member Handout 4, Animal Health Record Sheet, to each member. Have them note observations on worksheet. Note: Most useful when beginning with a sick animal.

Observe a normal, healthy dairy animal and the four types of behavior exhibited or videotape these animals.

Note whether it is normal or abnormal. Observe animal and any attitudes displayed.

## Leader Notes

Observe a healthy dairy animal's hair coat, skin, mucous membranes, feces and urine for normal color and condition.

Use a rectal thermometer to determine the body temperature of a healthy dairy animal.

Have a member try to count the respiration rate of a live animal.

Hand out Activity Sheet 3, Healthy and Sick Animals.

## ACTIVITY

### Body Characteristics

Evaluation of body characteristics of a dairy animal can be determined by the color and characteristics of the:

1. Hair Coat
2. Skin
3. Mucous Membranes
4. Body Discharges
5. Degree of Fatness

To determine an animal's body characteristics, one will need to do more than listen and watch the animal as can be done to determine behavior and attitude. One will need to touch the animal. While touching the animal, the hair coat, skin, mucous membranes and degree of fatness can closely be examined. Mucous membranes line all body openings such as the eyelids, nostrils, mouth, anus and vagina. These tissues should be moist and pink. Abnormal color and conditions are:

1. Dry, flaky skin
2. Dry, rough hair coat
3. Dull hair coat
4. Pale mucous membranes
5. Yellow mucous membranes

Body discharges are excellent indicators of an animal's health. Feces and urine should be normal in color and consistency. Feces are normally firm and dark brown or green. Urine is normally clear and yellow as opposed to bloody or milky white. Any deviation from normal may be an early sign of digestive or urinary disease.

### Measurable Vital Signs

If you have observed signs that your animal is not well, there are several checks you can make to verify your observations. Body temperature, pulse, and respiration rate are measurable vital signs of a dairy animal. A rectal thermometer is used to determine an animal's body temperature. A reading of 101.5°F is normal for cattle. An elevated reading can indicate fever which may be caused by anemia, cold weather, shock, or terminal illness.

Pulse and respiration rates of animals are determined by using a stethoscope. Normal pulse rate for cattle is 60 beats per minute and 20 inspirations/expiration per minute for normal respiration rate. Rates faster or slower than normal can indicate an abnormal condition.

### SUMMARY

Recognizing that a dairy animal is healthy can usually be done by observing and recording characteristics of attitudes, behavior, body condition and vital signs. A systematic method is a physical exam.

Knowledge of a healthy animal makes it easier to recognize an animal with health problems, and treatment can be started quickly.

**ACTIVITY**

**Leader Notes**

---

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. What are the normal habits, attitudes and behaviors of healthy dairy animals?
2. What abnormal characteristics did you observe in sick animals?

**Process:**

3. How can you verify if a calf is ill?
4. What weather changes might cause a calf to become ill?
5. What are some of the costs of a sick animal? Direct or cash? Indirect?

**Generalize:**

6. What is the affect of a sick calf compared to an entire herd or a large group of dairy animals?
7. How do you recognize illness in other animals?

**Apply:**

8. As a result of this lesson, how will you react to signs of illness in the future? Why?
9. What can you do differently to better prepare you to identify illness symptoms in the future?

**GOING FURTHER:**

- Visit a pen or herd of dairy cattle and observe healthy and unhealthy animals.
- Conduct a physical exam on a dairy animal at regular intervals.
- Record observations and data on an animal health record sheet for one week.
- Visit a veterinarian and use the stethoscope to measure pulse and respiration rate on dairy cattle.
- Videotape signs of healthy and/or sick animals.

**Leader Notes**

**ACTIVITY**

---

**REFERENCES:**

The Normal Animal—4-H Member Guide—Vml.1 10  
The Normal Animal—Leader Guide—Vml.120

**Author:**

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**RECOGNIZING HEALTHY DAIRY ANIMALS  
DAIRY CATTLE, LEVEL II  
Member Handout 4, Animal Health Record Sheet**

By recording information at regular intervals on this chart you will gain experience in animal observation skills.

1. Record normal (N) or abnormal (A) for behavior and body condition characteristics.
2. Record a check (✓) for attitude characteristics displayed.

<b>DAY</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>DATE</b>							
<b>BEHAVIOR</b>							
Stance/Posture							
Movement/Gait							
Eating Habits/Appetite							
Voice							
<b>ATTITUDES</b>							
Hungry							
Nervous							
Excited							
Cautious							
Frightened							
Confused							
Stubborn							
Angry							
Sad							
Happy							
<b>BODY CONDITION</b>							
Hair Coat							
Skin							
Mucous Membranes							
Body Discharges							

**RECOGNIZING HEALTHY DAIRY ANIMALS**  
**DAIRY CATTLE, LEVEL II**  
**Activity Sheet 3, Healthy and Sick Animals**

**MATCHING EXERCISE**

(Draw a line from the sign to the correct animal condition.)

**HEALTHY**

humped-back

snotty-nose

frisky

yellow, runny feces

slow-moving

doesn't come to feeder

ears forward, alert

**UNHEALTHY**

shiny hair coat

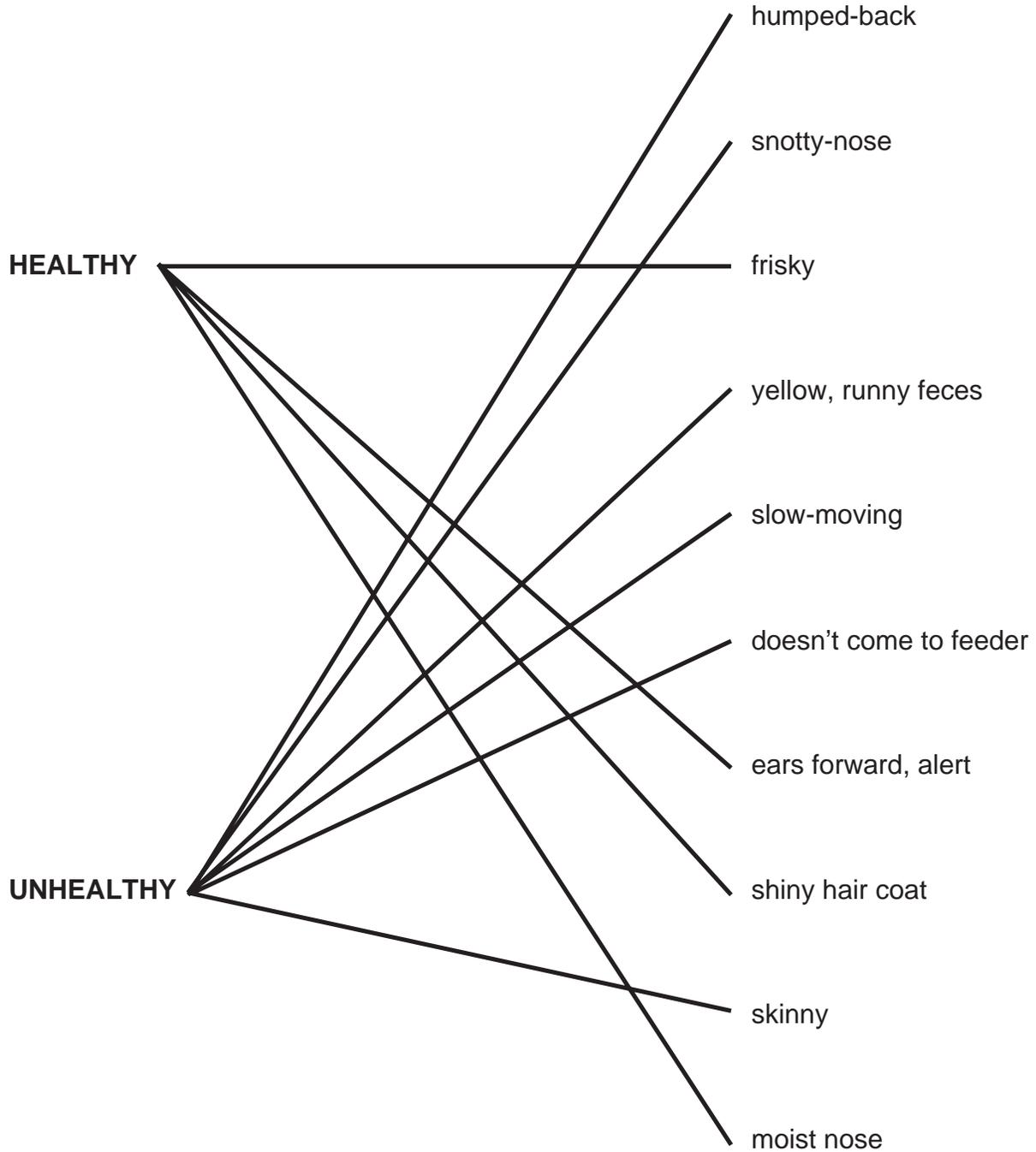
skinny

moist nose

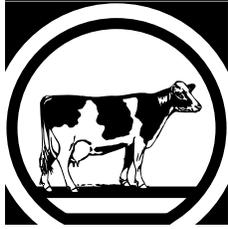
**RECOGNIZING HEALTHY DAIRY ANIMALS**  
**DAIRY CATTLE, LEVEL II**  
**Leader's Key, Activity Sheet 3, Healthy and Sick Animals**

**MATCHING EXERCISE**

(Draw a line from the sign to the correct animal condition.)







# How to Give a Shot

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- The different types of shots given to cattle
- How to give intramuscular, intravenous and subcutaneous shots to cattle
- How to identify various syringes

#### **ABOUT THEMSELVES:**

- Sometimes it is necessary to get a shot to ensure good health.
- It is important to use medicines or drugs according to the directions.

#### **Materials Needed:**

- Disposable 100 cc syringes (1 per group)
- Disposable needles (1 per group)
- Various sizes of disposable syringes
- Various glass and metal syringes
- Bananas (1 per group)—oranges may be used if unavailable
- Water in a cup (1 per group)

#### **ACTIVITY TIME NEEDED:** 30 MINUTES

### **ACTIVITY**

Just like people, cattle must receive shots in order to stay healthy. There are many different kinds of shots and each kind has its own way of working on the calf's body. Some vaccines work best when they are inserted just below the skin, but not into muscle. Some should be given into the muscle and some are even given directly into the vein. We're not going to talk about which ones go where, because there are so many, instead we're going to talk about the places to give the shot.

There are many kinds of syringes used to give shots. Some are plastic and are used a few times and thrown away. Some are glass and metal and can be washed and used many times. There are also many sizes of syringes, because some vaccines only need a small amount given to the calf to be effective, but others and some medicines, need a large quantity to be effective on a large calf.

We are going to use real needles and syringes to learn how to give shots, today; so you must be very careful. Do not play with them, they are sharp and will puncture your skin. The banana has a thick skin just like a calf and we can use it to learn how to give shots.

### **Leader Notes**

Show the different kinds of syringes, but do not pass them around. Set up a display table where the members can see the syringes after the lesson.

---

**Leader Notes**

To each group hand out a banana, cup of water and syringe with the needle already on it and still covered up.

Be sure everyone understands the danger of the needles and do not let anyone misuse them. You should stand at the front or middle of the group with your own equipment to show how to give the shots.

---

**ACTIVITY****INTRAMUSCULAR**

The first shot we'll give is intramuscular or IM. "Intra" means within, and "muscular" is the muscle, so intramuscular means within the muscle. So when we insert the needle, it needs to go through the skin and inside the muscle of the calf. This shot is for medicine or vaccines that must be absorbed slowly by the calf. Intramuscular shots are usually given in the neck of the animal.

Taking turns and being very careful, let one person in the group take the cap off the needle. Holding the needle facing the table top and away from people, pull the plunger back to fill the syringe with air. Push it out to get the feel of the syringe. Then place the end of the needle into the cup of water and pull the plunger back again to fill the syringe with water. Now, pick up your banana. Insert the needle through the skin of the banana and into the soft "meat" of the fruit. The needle should go into the banana nearly the full length of the needle. Holding the syringe steady, push the plunger in slowly so that you release a little water into the fruit. Don't release very much as the fruit isn't big enough to hold much extra water. When you've released the water into the banana, let go of the plunger and holding the syringe, pull it slowly out of the banana. Put the cap back on the needle and hand it to the next person in your group. Be sure everyone understands the danger of the needles and do not let anyone misuse them.

**SUBCUTANEOUS**

The next shot is called subcutaneous. "Sub" means under or below and "cutaneous" is the skin. So "subcutaneous" means under the skin. This shot is not to be given in the meat of the calf, but just under the skin. So when we practice, we need to be careful that we only get the water under the skin of the banana. It is most common to give this shot in the neck of an animal.

Carefully take the cap off the needle (there should still be water in it from the first time) and pick up the banana. Holding the syringe at a slight angle with the banana, slowly insert the needle into the skin and slide it just under the skin of the fruit, not into the meat. Holding the syringe steady, slowly release a little water into the fruit. Then withdraw the needle and put the cap back on and hand it to the next person in the group.

**INTRAVENOUS**

The last shot is called intravenous. "Intra" means within and "venous" means the vein. So what does "intravenous" mean? It means within the vein. This may be used to draw blood from the calf or give medicine that must get into the system very quickly. The vein that is usually used to give an intravenous shot is the jugular vein in the neck of the animal alongside the throat.

Pick up your banana. The edge that runs along the side of the banana is going to be the vein for us today. So you will want to insert the needle into the vein, but not through it. Carefully take the cap off the needle and

## ACTIVITY

hold the syringe at a slight angle to the banana. Push the needle through the first layer of skin and slowly push it along the vein until most of the needle is buried in the skin. Do not get under the skin as in the last shot, you should still be inside the skin and in the corner of the banana. Slowly release some water into the banana and withdraw the needle and put the cap back on. Now let's review these shots and the locations we give them on a live calf.

## Leader Notes

Using a live calf or a picture or drawing, review the name and abbreviations of shots and the locations each are given.

### DIALOGUE FOR CRITICAL THINKING:

#### Share:

1. What happened to the banana after each type of shot? How did it look? Was there a different feel when handled? Why?
2. Which shot was most difficult? Easiest?
3. What type of shots (injections) did your calf need? Why?

#### Process:

4. What problems did you have while giving the shots? Why?
5. Why is it important to give a shot (injection) in the correct place or manner?
6. Which type of shot is absorbed fastest? Slowest? Why?

#### Generalize:

7. How important are shots, vaccinations, or injections in other animal projects?
8. When have you needed a shot? Why did you need it?

#### Apply:

9. How will understanding shot location help you understand the purpose of the medicine in the future?
10. What can you do different next time to make it easier to give each type of shot?

### GOING FURTHER:

- Visit a veterinarian and watch them give shots to live animals.
- Visit each member's calf and give them the shots they need at the beginning of the year. Let the member give the shots to their own cattle so you can supervise.
- Have group members give demonstrations on giving shots at the club meeting or the project meeting.

**Leader Notes**

**ACTIVITY**

---

**REFERENCES:**

Kansan Beef Cattle Handbook

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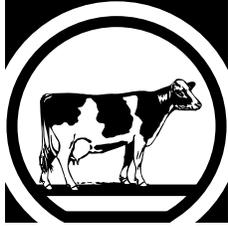
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## Is Your Calf Scouring?

*Dairy Cattle, Level II*

### What Members Will Learn . . .

#### ABOUT THE PROJECT:

- The cause of scours
- Treating a scouring calf
- Preventing scours

#### ABOUT THEMSELVES:

- Nutrition plays an important role in healthfulness
- Sanitation is important in disease prevention

#### Materials Needed:

- Package of electrolytes
- Labels from milk replacers
- Raising Dairy Heifers, C-721, your local K-State Research and Extension county office

**ACTIVITY TIME NEEDED:** 30 MINUTES

---

### ACTIVITY

The best treatment for scours is prevention! A good scours prevention program is based on good sanitation. The milk feeding equipment needs to be thoroughly washed after each feeding to avoid a build up of microorganisms that might cause scours. Use individual bottles or pails to feed each calf. The housing must provide clean and dry conditions, and calves should not have contact with each other.

The proper amount of milk or milk replacer needs to be fed to avoid overfeeding which might cause a digestive upset. If a milk replacer is fed, it should contain at least 12 percent fat and 22 percent protein. Also, the protein and carbohydrate should come from milk products such as dried skim milk, dried whey, whey protein concentrate, dried buttermilk, etc. Milk replacers containing grain products usually will not be digested as well as those made from milk products.

In some herds, a vaccination program is required to prevent calf scours. Vaccinating dry cows and springing heifers with E. coli, Rota virus, and Corona virus vaccines may be required. Consult with your veterinarian regarding these vaccines.

If your calf develops scours (diarrhea), its growth rate will be reduced and it may even die. Therefore, a scouring calf is very ill and immediate attention is required.

---

### Leader Notes

Pass out Raising Dairy Heifers, C-721. Show the members the pictures of good housing in the publication.

Show members a label from a milk replacer. Observe the guaranteed fat and protein percentages. Read the list of ingredients to determine if the protein and carbohydrate are coming from milk products.

**Leader Notes**

**ACTIVITY**

---

Show a package of electrolyte powder to the members. Note there are many minerals (electrolytes) provided by this mixture.

Calf scours may be caused by one or more of the following factors: bacteria, viruses, nutritional or environmental factors. The diarrhea causes dehydration, a loss of water and minerals from the body. An irritation to the digestive tract caused by one of the above factors results in inefficient digestion of food. Scouring calves are usually losing body weight because of dehydration, and are unable to digest their food well enough to maintain or gain body weight.

The greatest concern for a scouring calf should be to replace the loss of minerals and avoid body weight loss. Therefore, the immediate treatment should be to replace the lost minerals by feeding an electrolyte solution in addition to milk or milk replacer.

Effective electrolyte powders for mixing with water are available from your veterinarian. The electrolytes should be mixed according to instructions and fed 10 to 15 minutes after the milk or milk replacer is fed. It is important not to feed the electrolyte solution immediately after the milk feeding since the solution will dilute the milk too much and will affect the digestive enzymes.

Since a scouring calf's digestive system is upset, the feeding schedule should be changed to avoid overloading the system. Milk or milk replacer should be fed at the rate of 1 percent of the calf's birth weight, but this total amount should be divided into four equal feedings. A good feeding schedule would be: morning, noon, evening, and at bedtime. The same amount of electrolyte solution should be fed approximately 15 minutes after the milk.

When the scouring condition begins to subside, the number of feedings can be reduced to three times per day and then two times per day. Then, the use of the electrolyte solution can be withdrawn during a three-day period.

If the scouring condition does not improve within two to three days, or if the condition becomes worse, contact a veterinarian.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. What does a calf with scours look like?

**Process:**

2. Why do you think scours is such a serious problem?
3. Have your calves had diarrhea? What was the cause? How did you cure it?

**Generalize:**

4. One cause of diarrhea in humans is unclean dishes or baby bottles. What can you do to be sure food containers are clean?

**ACTIVITY**

**Leader Notes**

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5. What conditions might cause a digestive upset for human babies?
6. Have you noticed that overeating or eating certain foods may cause a digestive upset? What foods cause you to have an upset stomach?

**Apply:**

7. How will this lesson in sanitation affect choices you make in the future?
8. What other problems in life are better if you use prevention to take care of them?

**GOING FURTHER:**

- Visit a dairy farm and observe how calves are fed and housed.
- Ask a dairy farmer how scours are treated.
- Visit with a veterinarian about the use of electrolytes in the treatment of scours and vaccines for the prevention of scours.
- Visit a feed store and observe the different milk replacers available with regard to their nutrient content and ingredients.

**REFERENCES:**

Raising Dairy Heifers, C-721, K-State Research and Extension  
Scouring Calves Require Energy and Fluids, Hoard's Dairyman, page 28,  
1-10-92

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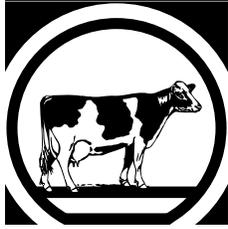
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# Common Cattle Diseases: Ringworm and Warts

*Dairy Cattle, Level II*

## What Members Will Learn . . .

### ABOUT THE PROJECT:

- The basics of ringworm infection and warts in cattle
- How to control ringworm and warts

### ABOUT THEMSELVES:

- What it means to have a contagious disease
- Importance of prevention

### Materials Needed:

- Picture of calf with ringworm or warts (or live animal)
- Curry comb and brush
- Soapy water
- Tincture of iodine
- Plastic gloves
- Vaccines
- Petroleum jelly
- Castor oil
- Surgical knife
- Cotton balls
- Adhesive bandages
- Tape

**ACTIVITY TIME NEEDED:** 45 MINUTES

## ACTIVITY

### Ringworm

Unlike other cattle diseases, ringworm does not affect the performance of cattle, but instead causes unsightly patches on the skin of the animal. In addition, this disease is contagious to humans. Ringworm is a problem on show animals, so it is necessary to treat for this common disease.

Most commonly seen in winter, ringworm is a contagious disease that affects the outer layer of skin. Normally, it is seen as round scaly areas nearly devoid of hair on the head, neck and root of the tail of cattle. Ringworm is caused by microscopic molds or fungi and can easily be transmitted to people.

Most ringworm outbreaks are found in areas of the body that are combed. Combs and brushes become the major culprits, picking up the fungus from infected animals and spreading it to the entire show string.

## Leader Notes

Show picture of calf infected with ringworm, or show live calf, but be careful that the members are not subjected to infection. Show the proper way to treat for ringworm with water, soap and iodine. Show plastic gloves. Show materials that can be used for treatment as they are mentioned.

## Leader Notes

Show the proper way to treat for ringworm with water, soap and iodine.

Show plastic gloves.

Show pictures of warts or show live animal with warts.

Show materials that can be used for treatment as they are mentioned.

## ACTIVITY

Because of the unsightly appearance of the show cattle with ringworm, it becomes necessary to treat it. The first step is to remove the scabs on the affected area and clean it well with soap and water. Then thoroughly apply iodine to the area.

When treating an animal for ringworm, be careful because it is contagious to humans. Use plastic gloves and wash your hands with clean water and soap immediately after treatment.

### Warts

Although they usually don't directly affect performance of cattle, warts do detract from the appearance of show cattle. In severe cases, warts may develop extensive lesions, cause cattle to lose weight and develop secondary bacterial infections.

Warts are skin tumors commonly found on the shoulder, neck or head region of cattle less than 2 years old. Warts are more often seen in the late winter and early spring. They are thought to be due to the low sterilizing effect of winter sunlight, and lowered natural resistance at this time of the year due to weather stress.

Because they are so contagious, warts can be a real problem on show cattle because they detract from the calf's appearance. If one calf in your show string has warts, you should treat for them soon, before the rest of your show cattle contract warts. There are a few different treatments for warts in cattle. A wart vaccine is usually very effective in removing warts from yearling cattle. Daily application of either castor oil or petroleum jelly will speed up the reabsorption of warts. Warts may also be removed surgically by a veterinarian or someone with experience.

### DIALOGUE FOR CRITICAL THINKING:

#### Share:

1. Have you ever had or been around cattle with ringworm or warts? What did or should you do?
2. What was most difficult to understand about ringworm and warts? Easiest?

#### Process:

3. What causes ringworm? Warts?
4. How contagious are these two diseases and how do they spread to other animals?
5. When do these diseases occur most? Why?

#### Generalize:

6. How might these diseases affect other animals?
7. What is the potential for these diseases to affect people? Why?

**ACTIVITY**

**Leader Notes**

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**Apply:**

8. How will you act differently the next time you see or discuss ringworm or warts?
  
9. What can you do differently in the future to prevent these diseases?

**GOING FURTHER:**

- Visit a local veterinarian and see how to treat for ringworm and warts.
- Visit a local dairy and see and talk about cattle with warts and ringworm. Ask how they treat this problem.
- Visit a local dairy cattle breeder who actively shows cattle during the winter months, and see how they treat for warts and ringworm.
- Visit a local health care center and see how much of a problem ringworm is in humans and what the treatment is.

**REFERENCES:**

- Kansas Beef Cattle Handbook*, Animal Sciences and Industry, Kansas State University, Manhattan, Kansas
- Beef Cattle*, Roscoe R. Snapp and A.L. Neumann, Publisher John Wiley and Sons, Inc., New York
- Beef Cattle Science*, M.E. Ensminger, The Interstate Printers and Publishers, Inc., Dansville, Illinois

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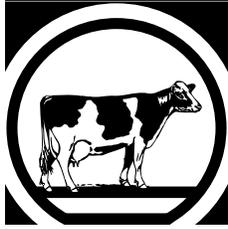
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COMMON CATTLE DISEASES: RINGWORM AND WARTS

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## Practical Farm Knots

### *Dairy Cattle, Level II*

#### What Members Will Learn . . .

##### **ABOUT THE PROJECT:**

- The four working parts of a rope
- How to tie at least four basic farm knots
- To understand the importance of tying knots that hold but that are also easy to untie
- To name a situation in which a knot might be most useful

##### **ABOUT THEMSELVES:**

- To develop learning-by-doing skills to enhance self concept
- To improve ways of getting along with others

##### **Materials Needed:**

- 3 to 4 feet of rope for each youngster. The white braided cord sold almost everywhere for curtain pulls or blinds works best—it is fairly flexible and yet holds the shape of a knot well enough so youngsters can see its construction clearly
- Member Handout 4, Knot Patterns
- Chairs or other objects on which to tie knots
- **OPTIONAL:** A knot board which illustrates the major knots displayed

**ACTIVITY TIME REQUIRED:** 60 TO 120 MINUTES

#### **ACTIVITY**

The tying of knots does not come naturally, like eating or watching TV. Tying knots, like playing a guitar, driving a car, or hammering a nail without hammering your thumb, takes practice. You will find that tying knots will require at least some practice before you can tie them easily, quickly, and without having to think about what you are doing. And like any skill, if you don't continue to practice it, you forget some of what you have learned.

The ability to tie a variety of knots is a useful skill to have when working with dairy animals. Not only do you need to know how to tie knots that will stay tied, but it is also useful to be able to tie a knot that you can untie relatively easily after pressure or strain has been put on the knot. The mark of a good knot is one that is easy to tie, stays tied when you want it to, but is also easy for you to untie after the knot has done its work. It might be best to start off with some definitions so that we can easily communicate about how to tie knots. This will make tying knots easier if

#### **Leader Notes**

You may want to divide this into two, one-hour lessons.

## Leader Notes

Refer to the diagrams on Member Handout 4, Knot Patterns.

Even though most people know how to tie this knot—even young children—you will probably need to demonstrate it for them.

Show how, then allow them to try.

There are two ways to begin the second overhand knot. Depending on how you start the knot, the ends may or may not come out alongside their own working part. Demonstrate both ways, emphasizing the difference.

## ACTIVITY

we can remember the part we're referring to. The end that we will be tying knots with will be called the **working end**. Normally, the remainder of the rope that we don't use for knot-tying is called the **standing part**. When we put a bend in a rope, it is called **taking a bight**. When a rope crosses over itself, it is called a **loop**.

Sometimes ends of rope will unravel. To prevent this, the cut ends must be whipped, dipped, or burned, depending on the type of rope you purchase. Most synthetic ropes can simply be burned to prevent any unraveling.

### THE OVERHAND KNOT

The easiest knot to tie—and one that most of you are probably familiar with—is the simple overhand knot. This is the knot that you make to tie your shoes. The purpose of the overhand knot is to prevent the rope from slipping through something. Although it is one of the simplest knots to tie, it is also one of the least useful when used by itself. It is the first step in the formation of more complex knots, however.

To tie an overhand knot, make a loop, then bring the working end over and around the working part, pass it through the loop, and draw it tight. Let's practice this so that everyone understands.

### THE SQUARE KNOT

The square knot is a more useful version of the overhand knot. In fact, the square knot is just two overhand knots—one tied on top of the other. Tied correctly, it is an excellent knot for joining two pieces of rope with equal or nearly equal thickness, or for tying the ends of a single rope together to form a loop. In raising animals, the major use of square knots is to tie or secure gates.

To tie a square knot, start by tying an overhand knot. Next, tie another overhand knot on top of it, but this time in reverse in such a way that each end comes out alongside its own working part, and on the same side of the loop through which they pass. In other words, using the working end, its left over right and right over left. If the knot is left loose, it appears as two closed loops leading in opposite directions and linked together.

### QUICK RELEASE KNOT

The quick release knot (also known as the bowknot or the reefer's knot) is the standard knot used to tie an animal to a post or fair stall. Like the square knot, it is a good non-slip knot with which to tie ends of rope together. It has the added advantage, though, that it can be untied under tension—an important feature of any knot used to restrain livestock.

To tie a quick release knot, the steps are identical to those used in tying the square knot: a simple overhand knot, coming from right over left (1).

Now, begin to tie the second overhand knot, coming from left to right, by laying the new left-hand strand over the new right-hand strand (2).

## ACTIVITY

## Leader Notes

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Instead of inserting the running end of the new left-hand strand into the loop formed by the crossing strands, form a bight, or small loop, in the new left-hand strand and insert it into the loop (3).

Grasp the bight with the thumb and index finger of your right hand and pull it part way through the loop.

Grasp the left-hand strand and left working end in your left hand and the right-hand strand in your right hand. Pull to shape and secure the knot. Be certain that the end of the bight is “trapped” in the center of the knot.

Some animals have a habit of biting on the knots restraining them and freeing themselves. To prevent this with the quick release knot, insert the running end of the rope into the bight.

In an emergency, the free end of the bight can be pulled sharply, immediately releasing the knot.

Let’s all practice tying a quick release knot.

### THE BOWLINE KNOT

Knot users, from livestock producers to seafarers, consider the bowline knot one of the most useful knots. It is a non-slip knot, and as such it can be used to form a loop that will not tighten or draw down when placed around an animal’s body or a post. Moreover, it is relatively easy to untie.

To tie a bowline knot, position the rope so that the standing part is to your left and the working end to your right. Form a right-hand loop by passing the working end of the rope over the standing part.

Secure the loop by positioning the strands where they cross between the thumb and index finger of your left hand (1).

Insert the working end of the rope into the loop from the back (2).

Cross the working end over the top of the standing part and wrap it around the rear of the standing part (3).

Re-insert the working end into the loop from the front (3).

Grasp the working end of the rope and the right-hand strand of the loop in your right hand, and the standing part of the rope in your left hand. Pull to shape and secure the knot (4). The size of your loop will depend on the amount of working end originally allowed for use.

The following story will help you remember how to tie a bowline knot. If you consider the first loop to be a “rabbit hole,” the standing part to be a “tree,” and the working end to be the “rabbit,” remember that the rabbit comes out of the hole, runs around the tree, and goes back down its hole.

**Leader Notes**

**ACTIVITY**

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**DOUBLE HALF HITCH KNOT**

The double half hitch knot is an extremely useful knot for the handler of livestock. It is quick, easy to tie, acts like a slip knot, and provides a convenient way to tie up the end of a rope when no other knot seems appropriate.

Begin by positioning the standing part of the rope to your left and grasp the working end of the rope in your right hand. Pass the running end of the rope over or around the post.

Bring the running end over the standing part of the rope, under it, and then insert it into the loop (the one around the post) from the bottom. Repeat this same step again to form the second half of the hitch.

**THE HONDA KNOT**

A honda is a small loop secured into the working end of a rope through which the standing part of the rope passes as it forms a much larger loop. Most lariats come with the honda knot already tied into an end. A few are manufactured with a quick release honda tied into the end. Bulk ropes or broken lariats must have honda knots retied into their ends.

Start by tying an overhand knot tightly into the end of the rope. Approximately 8 inches below this, tie another overhand knot, only this time leave it in the loosened state.

Grasp the loose overhand knot in your hands and study it until you have determined how to orient it so that the working end of the rope comes out from the loop and toward you. From there, it runs upward to the end knot. Grasp the running end of the rope and bend it so that it lies over the bend of the overhand knot loop.

Insert it into the overhand knot loop between the bend of the loop and its own standing part. Study the diagram on the handout because it is easy to place the running end improperly.

**CONCLUSION**

I have provided each of you with a handout picturing the knots we have started practicing. You should continue to practice so you will be able to tie these knots automatically.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. Name and explain the four working parts of a rope.
2. Name four basic knots.
3. Which knot was easiest? Most difficult?

Depending upon how long the meeting has gone at this point, you may want to continue to let the members practice these knots. Also, you can follow up by asking them to demonstrate particular knots.

**ACTIVITY**

**Leader Notes**

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**Process:**

4. What was your most common problem when trying to tie knots?
5. Why is it important to know how to tie knots?

**Generalize:**

6. What knots do you use with other projects? Why?
7. What is the easiest way for you to learn to do something with your hands? Why?

**Apply:**

8. What other times will knot tying be helpful?
9. How can you help your friends learn to tie knots?

**GOING FURTHER:**

- Conduct a knot relay. Divide your members into two or more teams. Have each member of each team tie a particular knot you call out. The first team finished wins.
- Situation Relay. Instead of telling members which knot to tie, give them a situation requiring a particular knot. They then choose a knot, tie it, and tell why they chose that particular knot. Repeat for the next member.
- Conduct a Knot Demonstration. Knot tying makes an excellent demonstration topic for members. Let each member or team of two members draw the name of a knot from the hat. Ask them to prepare and give a demonstration for the rest of the members. Allow about 15 minutes preparation time. As the leader or junior leader, you may want to move from group to group to answer questions and provide support.

*(The above activities were taken from 4-H Project Meeting Guides, Agricultural Extension Service, University of Minnesota, 1983).*

**REFERENCES:**

- Useful Knots for Everyone, Edward Montgomery (New York: Charles Scribner's Sons, 1973).
- "Livestock Restraint Techniques" in the Handbook of Livestock Management Techniques, Richard A. Battaglia and Vernon B. Mayrose (Minneapolis, MN: Burgess Publishing Company, 1981).
- The Handbook of Knots and Splices, Gibson (1976).
- The Encyclopedia of Knots and Fancy Rope Work (1946).

**Leader Notes**

**ACTIVITY**

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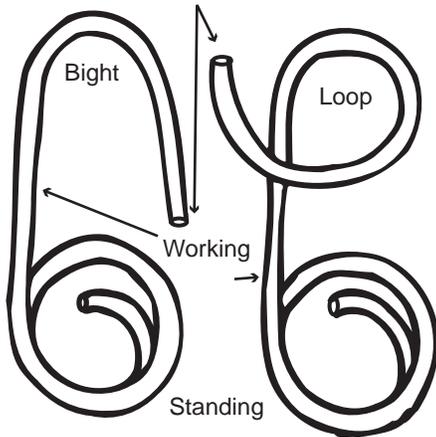
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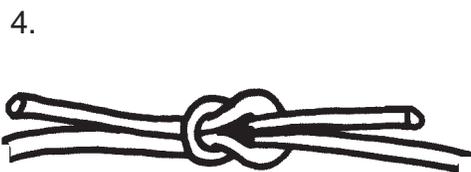
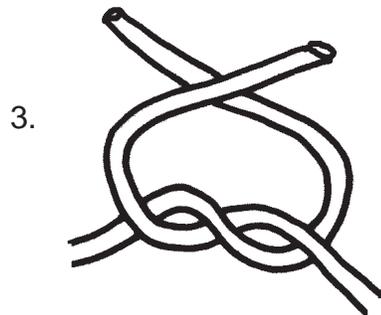
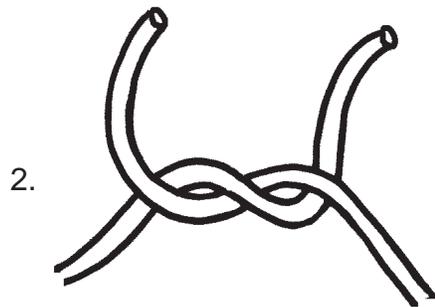
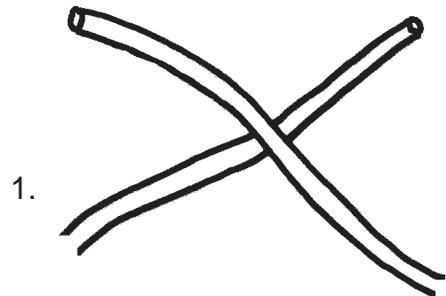
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**PRACTICAL FARM KNOTS**  
**DAIRY CATTLE, LEVEL II**  
**Member Handout 4, Knot Patterns**

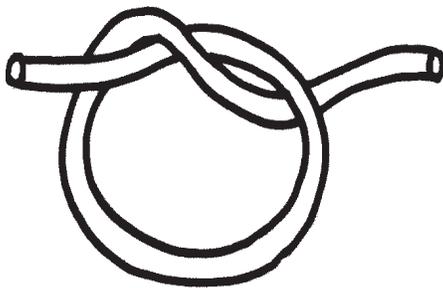
**ROPE PART DEFINITIONS**



**SQUARE KNOT**



**OVERHAND KNOT**

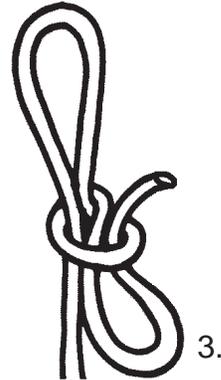
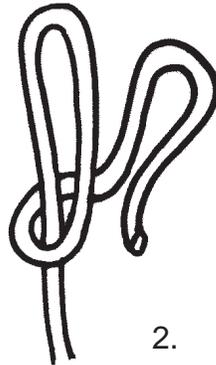
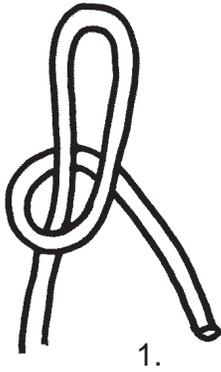


**PRACTICAL FARM KNOTS**

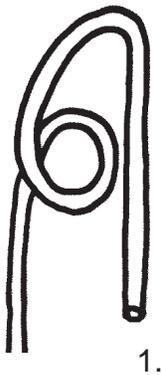
**DAIRY CATTLE, LEVEL II**

**Member Handout 4, Knot Patterns *continued***

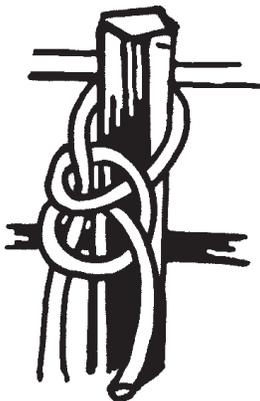
**QUICK RELEASE KNOTS**



**BOWLINE KNOT**

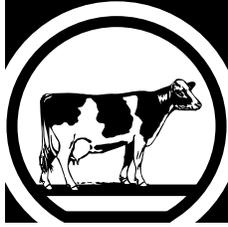


**DOUBLE HALF HITCH**



**HONDA KNOT**





# Clipping Your Dairy Animal

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- The technique used for clipping a dairy animal
- When to clip a dairy animal
- The importance of good clipping for showing an animal

#### **ABOUT THEMSELVES:**

- How grooming affects their personal appearance
- The importance of patience

#### **Materials Needed:**

- Pair of cow clippers
- Member Handout 5, Clipping for Show

#### **ACTIVITY TIME NEEDED: 45 MINUTES**

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### ACTIVITY

### Leader Notes

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Dairy animals are clipped to improve their appearance in the show ring. A good job of clipping will make your animal appear to show with more style, balance and refinement.

Beginners should clip their animal at least six weeks before the show so there is still time to correct mistakes. The final clip job should be given one or two days before the show.

#### **CLIPPING THE TAIL AND RUMP**

It is advisable to start clipping on the tail of the animal, especially if she is not used to clippers. Start clipping about 4 inches above the switch. Avoid clipping too close to the switch as this can cause an unbalanced appearance. Clip against the hair on the tail until you reach the tail head. Then blend the longer hair and the close clipped area, by clipping with the hair, at the point where the tail lies between the pinbones. Blending should be done to remove the clipper marks as much as possible.

If the tail head is higher than you like, clip the hair short on top of the tail head, but clip with the hair. Do not clip all the hair off the tail head as this will draw attention to her tail head. Before leaving the tail head, blend with the hair along the sides of the tail head.

Clipping on the rump is confined to “touch up” work where only the high spots are clipped and long hair is left in the low spots. Always clip with

Plan to use this lesson as a demonstration at a member’s home. Encourage the other members to bring their project animal for experience in clipping.

Pass out Member Handout 4, Clipping for Show.

Demonstrate how far above the switch to begin clipping.

Let each member practice clipping. Then, they can begin clipping their own animal.

## Leader Notes

Demonstrate how to clip from the point of the shoulder to the top of the withers without clipping too far back.

## ACTIVITY

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the hair when removing high spots from the rump. The idea is to make the rump look level and to blend the tail head so that it appears as a part of the rump area.

### CLIPPING THE THIGHS AND HIND LEGS

Clipping long hair will make your dairy animal look cleaner and flatter in the thighs. The clippers may be run down the inside and outside of the thigh, with the hair, to remove any long hair. Also, if there is long hair on the hocks, clip with the hair to make the hocks appear cleaner and flatter.

### CLIPPING THE FRONT END

A critical area for clipping is the shoulders. All of the hair from the shoulders forward should be clipped to give the dairy heifer or cow a refined appearance. The critical area for clipping is the shoulders. The most common mistakes made on clipping the shoulders is to clip too far back or not far enough back. It is a good idea to clip the shoulders at least six weeks before the show so that the hair has time to grow out and corrections can be made.

Start clipping at the point of the shoulder and clip along an imaginary line to the top of the withers. The clippers should come out just at the back side of the withers. The purpose is to clip the withers to improve the appearance of sharpness. Do not clip the hair from the top of the withers, but instead run the clippers with the hair on the top of the withers for blending. If the shoulders and withers are clipped too far back, the animal's shoulders will look too sloping and the crops will be somewhat hollow. If the shoulders are not clipped far enough back, the animal's neck will appear to be short. After the proper line has been clipped along the shoulder, blend the clipper line by clipping with the hair.

Clip all hair on the neck as close as possible unless the animal has a low area just in front of the withers. Leave the hair in this low spot to help smooth the juncture of the neck and withers. Use your free hand to stretch the skin on the neck to help minimize clipper marks.

All hair on the head and ears should be clipped short by clipping against the hair. This gives a clean, refined appearance to the head. If the animal is afraid of the clippers, cup the hand over the eyes when working around the head. Clip hair both inside and outside the ears.

### CLIPPING OTHER AREAS

Normally, the underline of heifers should not be clipped. However, if there is long hair on their sides or underline, clip with the hair to smooth these areas.

Animals that have freshened will need additional clipping. Clip the udder as close as possible, then clip along the milk veins to make them more noticeable. Clip the belly area between the milk veins. Blend all clipper marks, using the natural body lines to help hide them. It is easier to clip a

**ACTIVITY**

**Leader Notes**

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full udder and you are less apt to cut the skin with the clippers when the udder is full.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. How did you feel about clipping your animal? What was the hardest to do? Easiest?
2. What clipping techniques are you going to have to practice doing a little more?

**Process:**

3. Why is clipping important in showing your calf?
4. What differences do you see in the animals that have been clipped and those who haven't?

**Generalize:**

5. What are some techniques and practices you do to make yourself look better?
6. Are there some styles that look better for you than others? What are they?
7. Learning something new takes time and patience. What other things have you done that require time and patience?

**Apply:**

8. Make a list of all the ways you work to keep yourself under control and to hold your temper (i.e. count to 10, etc.).

**GOING FURTHER:**

- Attend a dairy show a day or two before the show and observe experienced people clipping their animals.
- Notice how attractive your animal appears after it has been clipped compared to the other unclipped animals on your farm.

## **REFERENCES:**

### **Author:**

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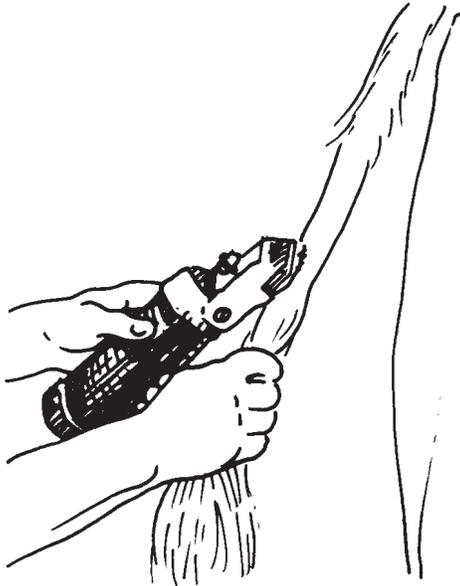
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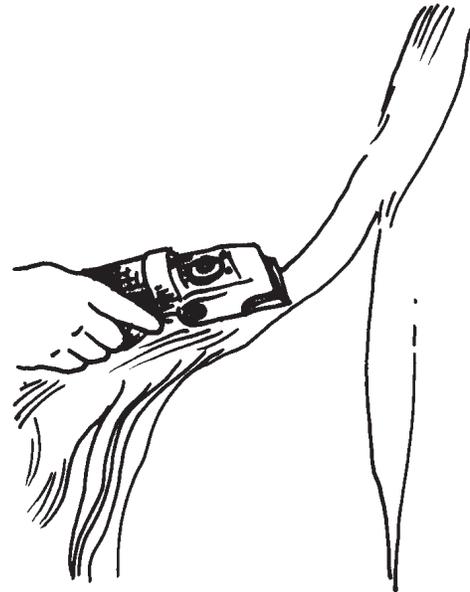
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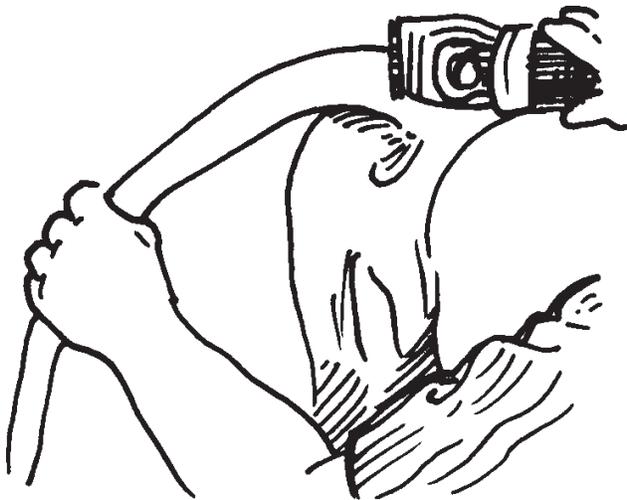
**CLIPPING YOUR DAIRY ANIMAL**  
**DAIRY CATTLE, LEVEL II**  
**Member Handout 5, Clipping for Show**



*1. Begin clipping the tail about 4 inches above the long hairs of the switch.*



*2. Trim lower if necessary to have a well-blended switch.*



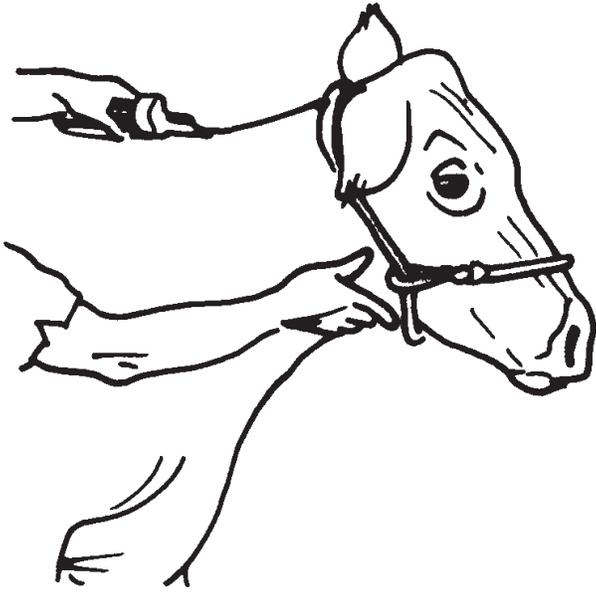
*3. Blend at the tailhead where the tail lies between the pinbone.*



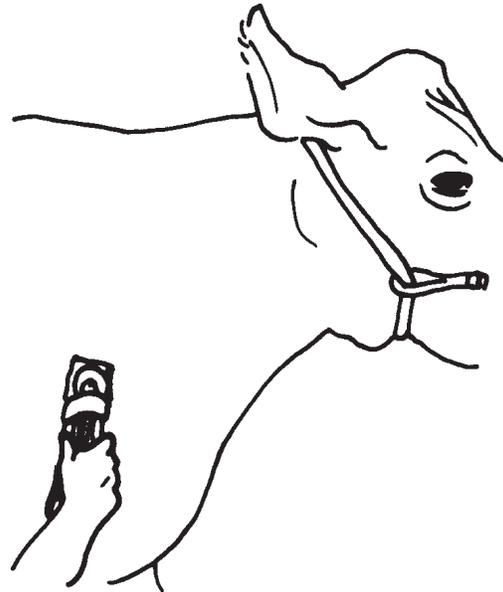
*4. Accustom the animal to the noise of the clippers by resting them on her neck or shoulder.*

**CLIPPING YOUR DAIRY ANIMAL  
DAIRY CATTLE, LEVEL II**

**Member Handout 5, Clipping for Show, *continued***



5. Hold the clippers level with the topline to find the starting point for clipping hair from the top of the neck.



6. The point of the shoulder is usually the best place to begin clipping. From this area, make adjustments to assure the animal her best appearance.



7. Blend all clipper lines by clipping with the lay of the hair.



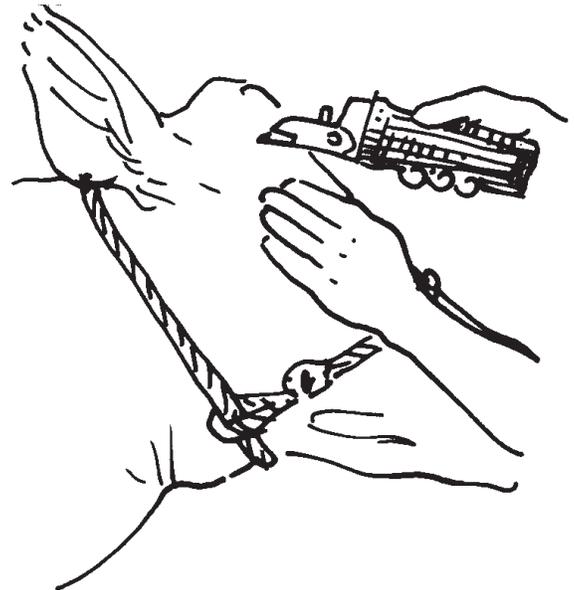
8. For a neater clipping job on the neck, pull the skin tight to help remove wrinkles.

**CLIPPING YOUR DAIRY ANIMAL  
DAIRY CATTLE, LEVEL II**

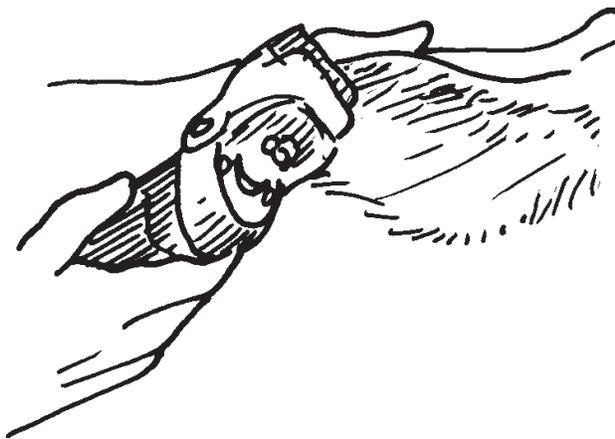
**Member Handout 5, Clipping for Show, *continued***



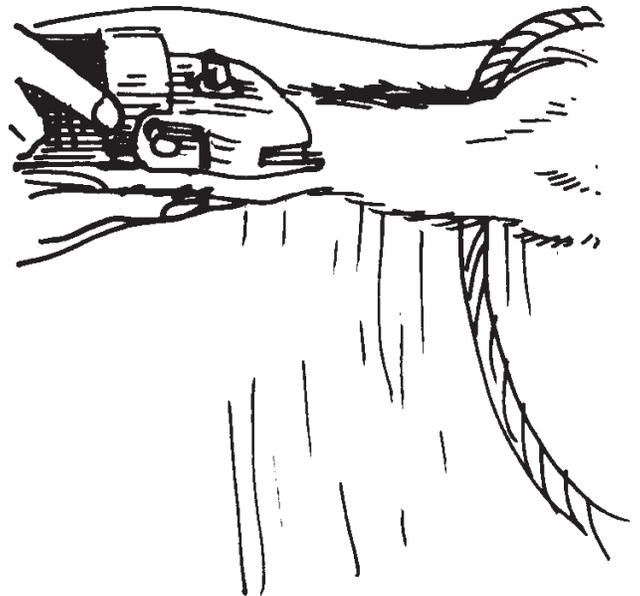
9. Clip all hair on the head as short as possible. Dips and hair swirls necessitate clipping in many directions.



10. Cup your hand over the animal's eye if she displays a fear of the clippers.



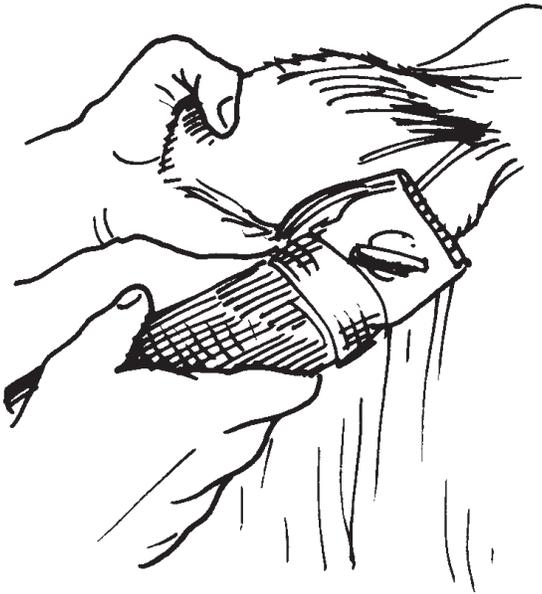
11. Clip hair from inside the ears. Use your free hand to brace the ear.



12. Clip hair from outside the ears. Use your free hand to brace the ear.

**CLIPPING YOUR DAIRY ANIMAL**  
**DAIRY CATTLE, LEVEL II**

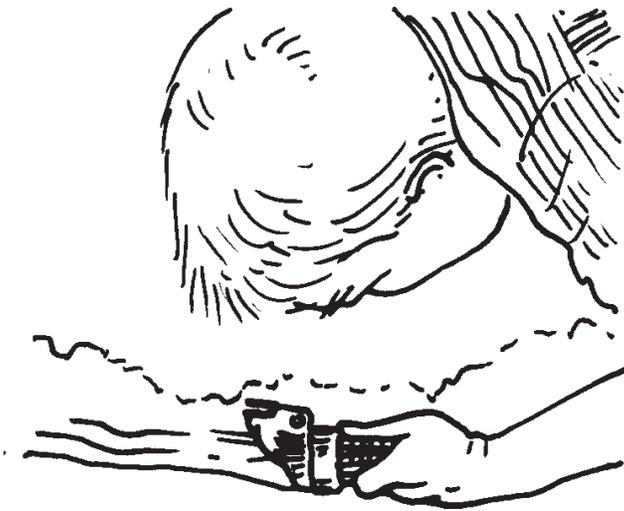
**Member Handout 5, Clipping for Show, *continued***



13. Clip hair from both inside and outside the ears. Use your free hand to brace the ear.



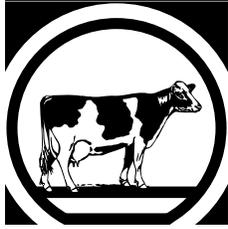
14. Clip the udder as close as possible.



15. Clip along the milk veins.



16. Clip the belly area between the milk veins.



# Showing Your Dairy Animal

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- The proper way to present their animal in the show ring
- The proper way to “set up” their animal
- The information they should know about their animal

#### **ABOUT THEMSELVES:**

- The importance of their appearance at significant occasions
- The value of being prepared
- Setting goals for self improvement

#### **Materials Needed:**

- A well-trained heifer or cow for demonstration
- A show halter
- Member Handout 6, Showing Techniques
- Member Handout 7, Scorecard for Fitting and Showmanship

#### **ACTIVITY TIME NEEDED: 60 MINUTES**

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### **ACTIVITY**

A well trained and fitted animal will give your project the best chance of impressing the judge. The time spent fitting and training your dairy animal for showing will be well spent when show time arrives. This lesson will teach the techniques for showing your animal.

You should have your animal trained to lead well ahead of the show. During this time it is a good idea to start leading with a show halter to let your animal become accustomed to a halter with a chain lead. Make sure the halter fits properly so that the nose piece crosses the bridge of the nose approximately half-way between the nose and eyes. The lead strap should always come out on the left side of the halter so that you will be leading on the left side of your animal.

Animals always look their best with their heads held high and walking slowly, which causes them to take short steps. Long, plodding steps cause the rump to droop and the back to hump.

Be sure to have your animal trained to respond to the halter. When training your animal, lead with a hold on the halter close to the junction of the nose piece and the jaw. This will give you better control and it will be

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### **Leader Notes**

This lesson should be planned as a demonstration at a member's farm. Encourage the other members to bring their animal to practice showing.

## Leader Notes

Pass out Member Handouts 6 and 7, Showing Techniques and Scorecard for Fitting and Showmanship. Have members discuss these handouts in small groups and share their experiences. Each small group could list questions to discuss with the total group. See if members can discover the answers by providing leading questions before sharing the rest of this lesson.

## ACTIVITY

easier to keep the animal's head held high. Your animal must learn that a slight pressure on the halter means "stop," and a gentle pull means "walk."

You will need to spend some time training your animal to back. Being able to back your heifer is necessary when changing the position of the feet, or when changing position in a line. You should be able to back your animal by pushing backwards on the halter with the left hand and putting some pressure with your right hand at the point of the shoulder.

### AT THE SHOW

When the time comes for your animal to be shown, be waiting at the ring side. It is important to be prompt for your class. Enter the ring leading from your animal's left. Lead in a clockwise direction so that you will be toward the outside edge of the ring.

You may lead your animal walking forward with your right hand or walking backwards leading with your left hand. When the judge is observing your animal, it is a good idea to walk backwards and lead with your left hand so that you can more carefully observe the judge and your animal.

Lead your animal slowly with her head held high so that she takes short steps. If there are animals in the ring in front of you, leave about one-half of your animal's length between your animal and the one in front; avoid leading too close or too far from the animal in front.

Pay close attention to your animal and the judge. However, do not get into a staring contest with the judge. You must be aware of the position of your animal and respond quickly to the judge's requests.

Anytime you stop your animal, try to avoid stopping with her front feet in a low spot. In fact, it is preferred to stop with the front feet on a spot that is higher than the back feet since dairy animals look their best standing uphill.

Always set up your animal whenever you are stopped. If you are showing a heifer, you want her front feet placed side by side and squarely under the shoulders. Your heifer looks best with her hind leg on the side of the judge positioned under the pinbone with the other leg slightly forward.

Cows look their best if they are posed with their hind leg on the opposite side of the judge placed under the pinbone and the leg next to judge slightly forward. In this position, the hind leg next to the judge will be alongside the udder so that some of the fore udder and rear udder may be observed by the judge. If the judge moves to the other side of your animal, reverse the position of her feet by moving forward or backward a small step. All of the showing should be done from the halter so that you do not have to use your feet to position the feet of your animal.

Many times when the judge is observing your animal at close inspection, you will be asked for information about your animal. Always be prepared

**ACTIVITY**

**Leader Notes**

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to answer such things as (1) date of birth, (2) stage of lactation, (3) freshening date, (4) date bred or date due to freshen, (5) service sire, (6) sire, and (7) dam.

When the judge asks for your animal to be lined up, be prompt. If you are first in line, try to find a high spot for your animal's front feet. If you are to line up beside another animal, stop your animal even with the other animal. Do not leave enough space between your animal and the next for another animal to be pulled in between. Pose your animal and continue showing her.

When the judge passes in front of the line of animals, stand along the left side of your animal. Hold the halter with the right hand and face the judge so that the judge can observe the head and front end of your animal. If the judge is behind the line, reverse the procedures so that you can see the judge and your animal.

Remember to show your animal to the best of her advantage the entire time you are in the ring.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. How did you feel about showing your animal or watching someone else show their animal?
2. What was the most difficult thing to do or learn?
3. What was the easiest thing to do?

**Process:**

4. Why is it important to learn showing techniques?
5. Why do you think it is important to know basic facts about your animal?
6. How much preparation and training will be needed to show a new animal?

**Generalize:**

7. What are some other activities that require extra preparation?

**Apply:**

8. What will you do to be better prepared for your next major event?  
Why?

**GOING FURTHER:**

- Attend a dairy show and observe how an experienced showman handles animals.

## **ACTIVITY**

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### **REFERENCES:**

**Author:**

James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

**Reviewed by:**

Edward P. Call, Professor Emeritus, Dairy Science, Kansas State University

James P. Adams, Extension Specialist, 4-H and Youth Programs, Kansas State University

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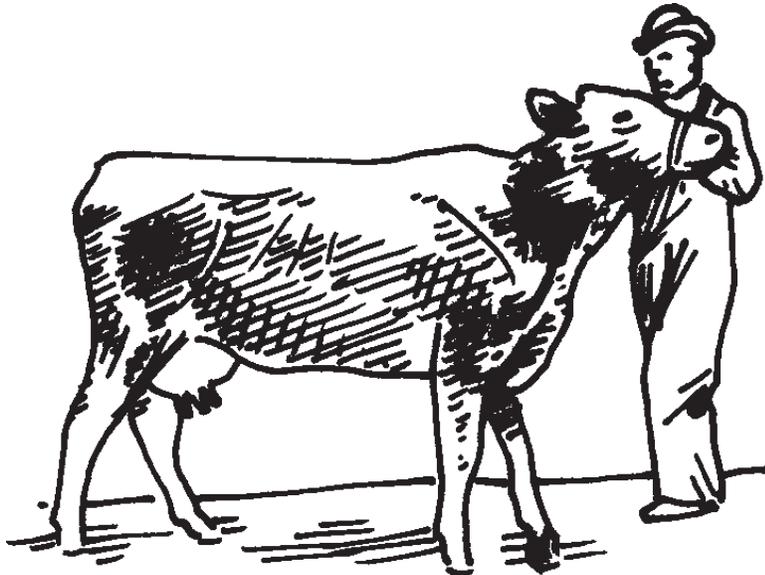
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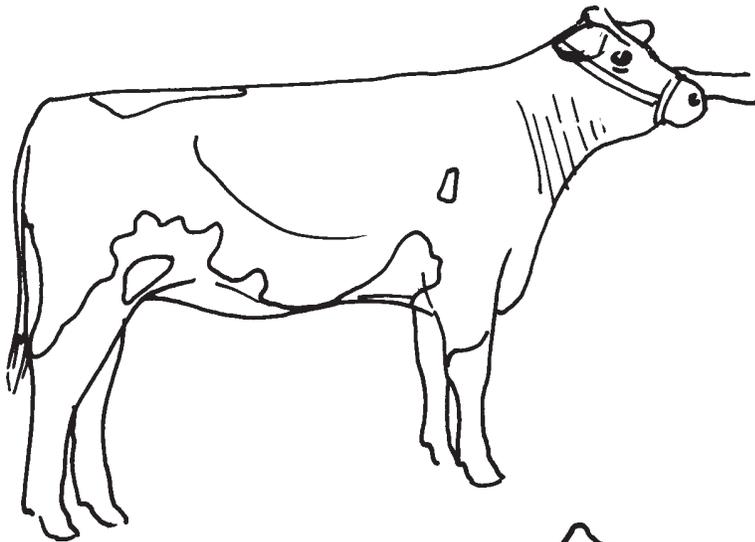
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**SHOWING YOUR DAIRY ANIMAL**  
**DAIRY CATTLE, LEVEL II**  
**Member Handout 6, Showing Techniques**

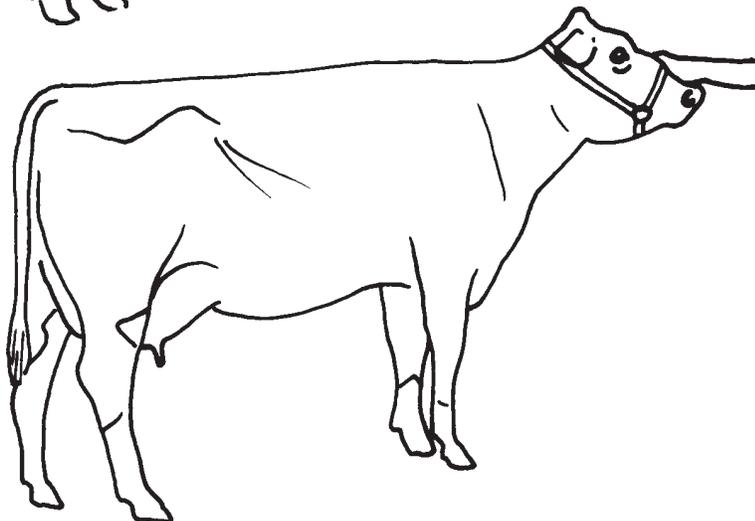


*1. The halter should fit properly and ride midway between the nose and eyes with the lead rope on the left side.*

*2. Train your animal to walk slowly with her head held high. Hold the lead rope closely for best control.*



*3. Proper pose for a heifer being judged from her right side.*

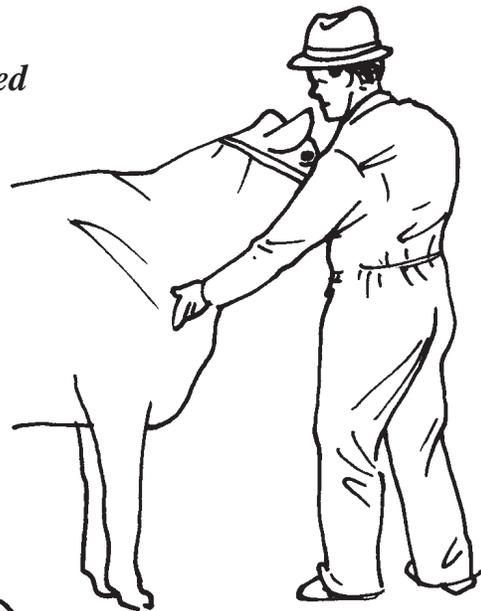


*4. Proper pose for a cow being judged from her right side. While training your animal, have someone else hold her while you stand back to examine her pose.*

**SHOWING YOUR DAIRY ANIMAL  
DAIRY CATTLE, LEVEL II**

**Member Handout 6, Showing Techniques, *continued***

5. *Applying pressure on the lead strap and shoulder point will make it easier to back the animal.*



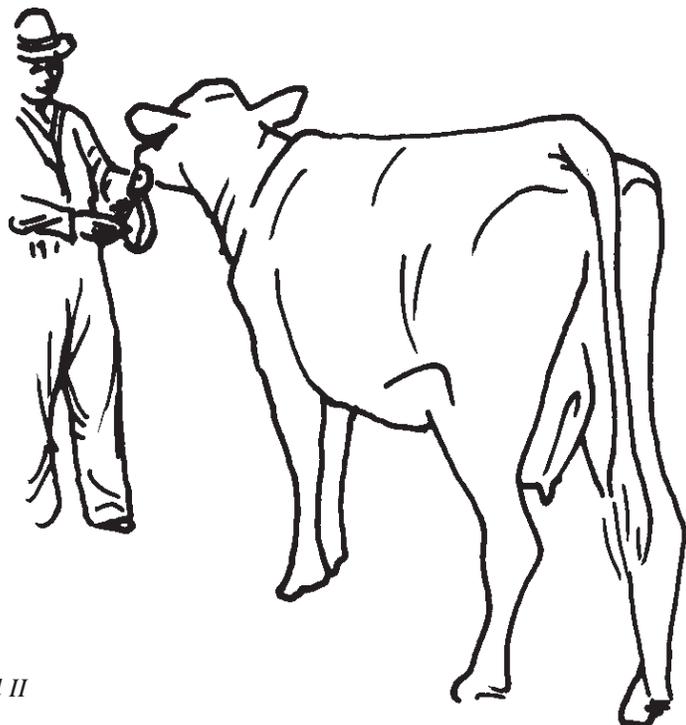
6. *Accustom your animal to a leather show halter a week or two before the first show.*



7. *Walk backwards into the show ring, leading the animal with your left hand.*

8. *When the judge is at the front of the animal, allow a good view of her head and front end. Don't change hands on the lead rope.*

9. *If the judge feels the animal's hide, turn her head slightly toward the judge.*



**SHOWING YOUR DAIRY ANIMAL  
DAIRY CATTLE, LEVEL II**

**Member Handout 7, Scorecard for Fitting and Showmanship**

<b>SCORECARD</b>	
	<b>Points</b>
<b>Appearance of Animal .....</b>	<b>40</b>
Condition .....	10
Grooming .....	10
Clipping .....	10
Cleanliness .....	10
<b>Appearance of Exhibitor .....</b>	<b>10</b>
<b>Showing Animal in the Ring .....</b>	<b>50</b>
Leading .....	15
Posing .....	15
Show Animal to Best Advantage .....	10
Poise, Alertness, Attitude .....	10
	<b>100</b>

**EXPLANATION OF SCORECARD**

**A. APPEARANCE OF ANIMAL ..... 40**

1. Condition and thriftiness, showing normal growth, being neither too fat nor too thin. .... 10
2. Grooming ..... 10
  - a. Hair properly groomed and the hide soft and pliable. Hair dressing should not be used in excess.
  - b. Hooves trimmed and shaped to enable animal to walk and stand naturally.
  - c. Horns (if present) scraped and polished.
3. Clipping ..... 10
  - a. The final clipping should be done about two days before the show.
  - b. Head, ears, tail, udder, and elsewhere clipped as needed but not over entire body. Belly and udder not to be clipped on heifers that have not freshened and are not springing close.

**B. APPEARANCE OF EXHIBITOR ..... 10**

1. Clothes and person, neat and clean, white clothing preferred.

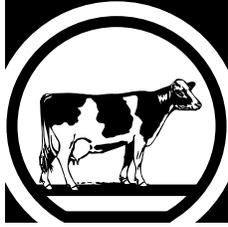
**C. SHOWING ANIMAL IN THE RING ..... 50**

1. Leading ..... 15
  - a. Enter leading the animal at normal walk around the ring in a clockwise direction, walking opposite her head on the left side, holding the lead strap with the right hand quite close to the halter with the strap neatly, but naturally (not necessarily coiled) gathered in one or both hands. Holding close to the halter ensures a more secure control of an animal.
  - b. Animal should lead readily and respond quickly.
  - c. Halter of dairy type, fitting properly and correctly placed on animal. A leather halter is best.
  - d. As the judge studies your animal, the preferred method of leading is walking slowly backward, facing the animal and holding the lead strap in the left hand. (Face forward when leading at all other times.)

**SHOWING YOUR DAIRY ANIMAL  
DAIRY CATTLE, LEVEL II**

**Member Handout 7, Scorecard for Fitting and Showmanship, *continued***

- e. Lead slowly with animal's head held high enough for the animal to present an impressive style, attractive carriage and graceful walk.
- 2. Posing ..... 15
  - a. When posing and showing an animal stay on the animal's left side and stand faced at an angle to her in a position far enough away to see stance of her feet and her topline.
  - b. Pose animal with feet placed squarely under her with the hind leg nearest to the judge slightly behind the other one. (When posing cows in milk, the hind leg nearest to the judge should be slightly ahead of the other one.)
  - c. Face animal uphill, if possible, with her front feet on a slight incline.
  - d. Neither crowd the exhibitor next to you nor leave enough space for another animal when you lead into a side-by-side position.
  - e. Animal may be backed out of line when judge requests that her placing be changed. Many prefer to lead animal forward and around the end of the line or back through the line. Do not lead animal between the judge and an animal being observed.
  - f. Do most of the showing with the halter lead strap and avoid stepping on animal's hind feet to move them.
  - g. Step animal ahead by a slight pull on the lead strap.
  - h. Move animal back by exerting pressure on the shoulder point with the thumb and fingers of the right hand as you push back with the halter.
  - i. When judge is observing the animal, let her stand when posed reasonably well.
  - j. Be natural. Overshowing, undue fussing and maneuvering is objectionable.
- 3. Show to Best Advantage ..... 10
  - a. Quickly recognize the conformation faults of the animal you are leading and show her to overcome them. You may be asked to exchange with another and show her or his animal for awhile.
- 4. Poise, Alertness and Attitude ..... 10
  - a. Keep an eye on your animal and be aware of the position of the judge at all times. Do not be distracted by persons and things outside the ring.
  - b. Show animal at all times and not yourself.
  - c. Respond rapidly to requests from the judge and officials.
  - d. Be courteous and sportsmanlike at all times.
  - e. Keep showing until the entire class has been placed and the judge has given the reasons.



# Dairy Animal's Lifetime History

## *Dairy Cattle, Level II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- The importance of keeping accurate records
- How to keep a lifetime history

#### **ABOUT THEMSELVES:**

- The importance of good record keeping
- How their lives have been recorded by various records
- Their lives are more than just the records that are kept

#### **Materials Needed:**

- Activity Sheet 4, Dairy Animal Lifetime History
- Member Handout 8, Example Dairy Animal Lifetime History

**ACTIVITY TIME NEEDED:** 45 MINUTES

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## ACTIVITY

## Leader Notes

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Every dairy heifer should have a record of her lifetime called a “lifetime history.” A lifetime history is important for recording facts about an animal that otherwise might not be remembered. This history should begin very early in life so that important information will not go unrecorded. The lifetime history should include the following information:

1. Name.
2. Birth date.
3. Identification number.
4. Sire's name and identification number.
5. Dam's name and identification number.
6. Permanent identification (sketch or tattoo).
7. Vaccination record.
8. Purchase and sales record.
9. Breeding and calving record.
10. Reproductive problems.
11. Health disorders (scours, respiratory diseases, mastitis, etc.).
12. Production records.

Pass out Member Handout 8, Example Dairy Animal Lifetime History. Review the information that has been recorded and ask the members where this information may be obtained.

Pass out Activity Sheet 4, Dairy Animal Lifetime History, to be used by the members with their own animal. Have members make copies or start a record for each heifer.

**Leader Notes**

**ACTIVITY**

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**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. What records do you think will be the hardest to keep? The easiest?
2. What are the major differences between a heifer and a cow history?

**Process**

3. Why is it important to keep this much information on each animal?
4. Would you want to buy a cow without complete records? Why or why not?

**Generalize:**

5. What similarities are there between dairy cow records and those kept on other animals?
6. If you looked back over your school, health, immunization and birth information, what can you learn?
7. What are things about yourself that are more difficult to record?

**Apply:**

8. How can you take the concepts of neat and careful record keeping and use it in other areas of your life?

**GOING FURTHER:**

- Visit a dairy and review the lifetime records of the animals.

## ACTIVITY

---

### REFERENCES:

**Author:**

James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

**Reviewed by:**

Edward P. Call, Professor Emeritus, Dairy Science, Kansas State University

James P. Adams, Extension Specialist, 4-H and Youth Programs, Kansas State University

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**DAIRY ANIMAL'S LIFETIME HISTORY**

**DAIRY CATTLE, LEVEL II**

**Member Handout 8, Example Dairy Animal Lifetime History**

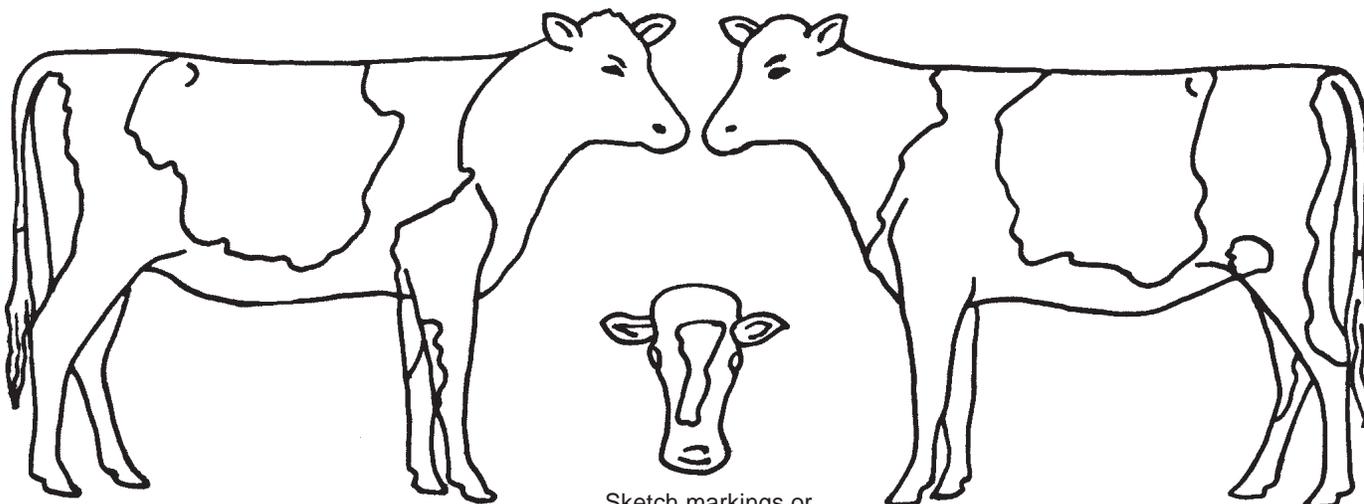
Name: Myown Dairyfine Molly ID No. 2123471 Birth Date 1-23-93

Sire: Best-Farm Sire Dairyfine ID No. 12H0999

Dam: Myown Dairybud Sally ID No. 1973742

*Start this record on the heifer calf at birth and maintain for the lifetime of the animal.*

TATTOO NO. RE317



Sketch markings or attach picture.

**VACCINATION RECORD**

DATE	VACCINE	REMARKS	DATE	VACCINE	REMARKS
3-10-93	IBR-PI <sub>3</sub> BVD; Blackleg		4-10-98	IBR-PI <sub>3</sub> ,BVD, Lepto, E. Coli	
6-02-93	Brucellosis H. Somnus				
7-30-93	IBR-PI <sub>3</sub> ,BVD,				
2-10-94	Lepto, BVD IBR-PI <sub>3</sub>				
12-1-94	IBR-PI <sub>3</sub> ,BVD, H. Somnus,Lepto				
2-1-96	IBR-PI <sub>3</sub> ,BVD, Lepto, E. Coli				
1-10-97	IBR-PI <sub>3</sub> ,BVD, Lepto, E. Coli				

**PURCHASE AND SALE RECORD**

Purchased from: Dad Date: 3-23-93 Price: \$300.00

Date left herd: \_\_\_\_\_ Reason \_\_\_\_\_

Sold to: \_\_\_\_\_ Price: \_\_\_\_\_

Name: Molly

### BREEDING AND CALVING RECORD

Heat Dates	1st Service		2nd Service		3rd Service		4th Service		5th Service		Confirmed Pregnant	Sex of Calf	Identification or Disposal
	Date	Sire	Date	Sire	Date	Sire	Date	Sire	Date	Sire			
4-17-94	5-10-88	12H1111									7-15-94	F	48-WFI-2121
	5-30-89	12H2414	6/21/89	12H2414							8-25-95	M	Sale Barn \$155.00
4-30-96	5-21-90	12H1719									7-22-96	F	48-WFI-3312
3-21-97	4-29-91	12H1800	5-20-91	12H1800	7-25-91	12H1800					9-30-97	F	48-WFI-1020

### REPRODUCTIVE PROBLEMS

Date	Condition	Treatment
7-22-97	Open, No Heat	Lutalyse

### HEALTH PROBLEMS

Date	Condition	Treatment
2-03-93	Scours	BDLUS
4-21-96	Mastitis	Today
5-15-96	Mastitis	Today

### PRODUCTION RECORDS

Fresh Date	Age Yrs-Mo.	305 Days or Less Record					Diff from Herdmates					Completed Record					Lifetime Total		
		Milk	% Fat	Fat	% Prot	Prot	Milk	Fat	Prot	Days	Milk	% Fat	Fat	% Prot	Prot	Milk	Fat	Prot	
1-27-95	2-00	18570	3.8	706	3.3	613	+2655	+100	+88	315	18970	3.8	721	3.3	623	18970	721	623	
3-31-96	3-02	19620	3.7	726	3.2	628	+2130	+79	+68	298	19620	3.7	726	3.2	628	38590	1447	1251	
2-12-97	4-01	20710	3.7	766	3.2	663	+1910	+71	+61	375	24210	3.8	920	3.3	799	62800	2367	2050	
5-05-98	5-04																		

85-Dairy Cattle, Level II

**DAIRY ANIMAL'S LIFETIME HISTORY**  
**DAIRY CATTLE, LEVEL II**  
**Activity Sheet 4, Dairy Animal Lifetime History**

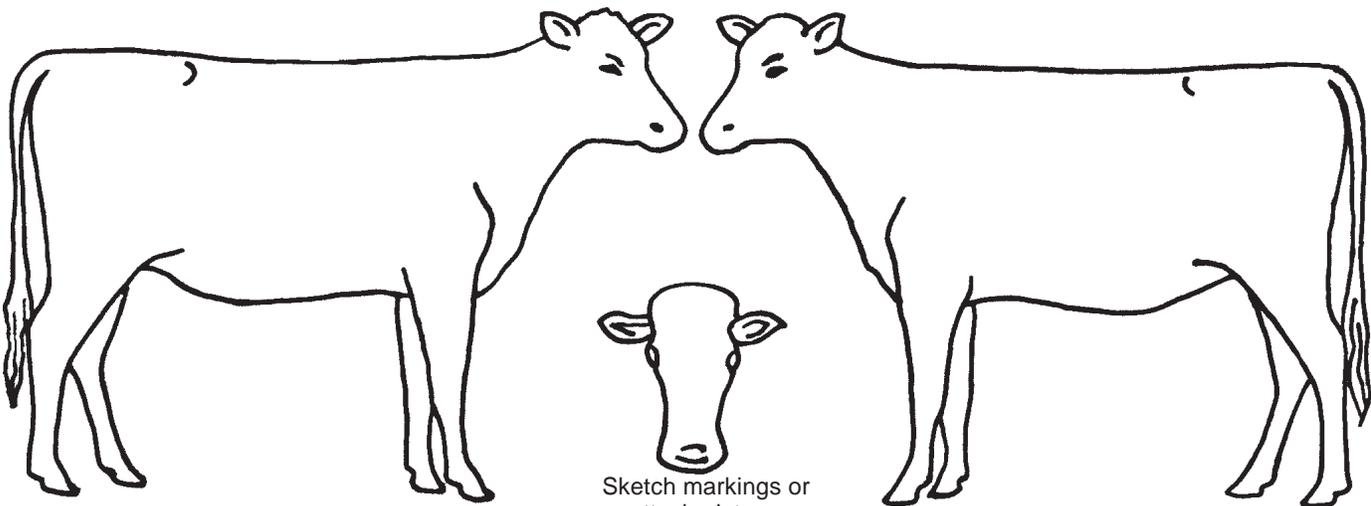
Name: \_\_\_\_\_ ID No. \_\_\_\_\_ Birth Date \_\_\_\_\_

Sire: \_\_\_\_\_ ID No. \_\_\_\_\_

Dam: \_\_\_\_\_ ID No. \_\_\_\_\_

*Start this record on the heifer calf at birth and maintain for the lifetime of the animal.*

TATTOO NO. \_\_\_\_\_



**VACCINATION RECORD**

DATE	VACCINE	REMARKS

DATE	VACCINE	REMARKS

**PURCHASE AND SALE RECORD**

Purchased from: \_\_\_\_\_ Date: \_\_\_\_\_ Price: \_\_\_\_\_

Date left herd: \_\_\_\_\_ Reason \_\_\_\_\_

Sold to: \_\_\_\_\_ Price: \_\_\_\_\_

Name: \_\_\_\_\_

### BREEDING AND CALVING RECORD

Heat Dates	1st Service		2nd Service		3rd Service		4th Service		5th Service		Confirmed Pregnant	Sex of Calf	Identification or Disposal
	Date	Sire											

### REPRODUCTIVE PROBLEMS

### HEALTH PROBLEMS

Date	Condition	Treatment

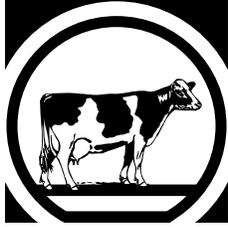
Date	Condition	Treatment

### PRODUCTION RECORDS

Fresh Date	Age Yrs-Mo.	305 Days or Less Record					Diff from Herdmates			Completed Record						Lifetime Total			
		Milk	% Fat	Fat	% Prot	Prot	Milk	Fat	Prot	Days	Milk	% Fat	Fat	% Prot	Prot	Milk	Fat	Prot	

87-Dairy Cattle, Level II





# Learning About Dairy Products

## *Dairy Cattle, Level, II*

### What Members Will Learn . . .

#### **ABOUT THE PROJECT:**

- The kinds of dairy products available
- The nutrients provided by dairy products

#### **ABOUT THEMSELVES:**

- The importance of dairy products in their diet
- The importance of decision making

#### **Materials Needed:**

- Activity Sheet 5, Dairy Products Puzzle
- Leader's Key, Activity Sheet 5, Dairy Products Puzzle
- Activity Sheet 6, Dairy Products Word Search
- Leader's Key, Activity Sheet 6, Dairy Products Word Search

#### **ACTIVITY TIME NEEDED:** 30 MINUTES

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### **ACTIVITY**

### **Leader Notes**

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Milk has long been called “nature's most nearly perfect food.” There is a good reason for this label since milk contains so many of the essential nutrients for life. Milk is the food for the newborn of all mammals. This in itself indicates that milk is a very nutritious product.

Milk is also the source of many products—everything from ice cream for dessert to the cheese on our cheeseburgers.

Fortunately, most dairy products are a good source of the nutrients we require in our diets every day. These include: protein, carbohydrates, vitamins, minerals, fat and water.

**Protein** is the nutrient needed for growth and building muscle.

**Carbohydrates** are needed as a source of energy. The carbohydrate in milk is lactose.

**Vitamins** are nutrients that are needed in very small amounts for certain functions.

- Vitamin A helps prevent night blindness and helps keep skin and mucous membranes healthy.

Ask the group to list or name the basic nutrients. Ask the group to describe each nutrient before discussing it further.

## Leader Notes

## ACTIVITY

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- Thiamine is a vitamin that is needed for a normal appetite and digestion. It also helps change substances in food into energy.
- Riboflavin, another essential vitamin, helps the cells of the body use oxygen needed for growth.
- Vitamin D, helps in the absorption of calcium to build strong bones. Milk does not naturally contain vitamin D, but is added to milk by the processor.

**Minerals** are nutrients needed for building strong bones and teeth and for other body functions.

- Calcium is needed for building strong bones and teeth. Milk and milk products supply most of the calcium in our diet.
- Phosphorus is needed for building strong bones and teeth in combination with calcium. It also is required for converting food nutrients into energy. Milk and milk products are good sources of phosphorus.
- Fat from milk is called milk fat or butterfat. It is a concentrated source of energy and provides essential fatty acids. Many adults drink skim milk which has had the milk fat removed to reduce the amount of calories they consume. However, growing boys and girls usually need the energy furnished by milk fat. The milk fat in cream is churned to make butter.
- Water is necessary for all living things. Milk is 87 percent water.

The following are some of the milk products we should include in our diet.

- **Whole milk** provides all of the important nutrients mentioned above.
- **Skim milk** has had the milk fat removed so that it contains fewer calories than whole milk, but it is an excellent source of protein, vitamins and minerals.
- **Chocolate milk** is skim milk that has had chocolate added for flavoring. It would be similar in nutrient content to skim milk.
- **Nonfat dry milk** is skim milk that has been dried so that it can be stored without refrigeration. Nonfat dry milk is used in many food items such as breads and pastries.
- **Cheese** is made from milk and, therefore, is an excellent source of protein and minerals. There are many varieties of cheese, and they are excellent sources of nutrients.
- **Cottage cheese** is another cheese product. It is made from skim milk and cream is added to the finished product as a dressing. Cottage cheese is a nutritious dairy food that can be included with almost any meal.
- **Sour cream** is a cultured product made from cream by adding lactic acid-producing bacteria which causes the cream to become firm. It is high in energy value, but is not an important source of protein or minerals. It is used in dips and toppings.
- **Butter milk** is another cultured product that is made from skim milk.
- **Yogurt** is a cultured dairy product that is made from skim milk to which nonfat dry milk has been added. It, therefore, is an excellent

Divide members into small groups. Give each group two or three of the milk product names to see if they can write a definition or explain what it is. Have them share the definition or description with the entire group to see if they can guess the term.

Give each member Activity Sheets 5 and 6, Dairy Products Puzzle and Dairy Products Word Search to review either at the meeting or at home.

**ACTIVITY**

**Leader Notes**

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source of protein and minerals. Yogurt is a flavorful dessert that can be made with many different flavors.

- **Butter** is not an important source of nutrients. It is a concentrated source of energy since it is made by churning the milk fat in cream into butter.
- **Ice cream** is a nutritious dairy product that is made from milk, cream, eggs and sugar. It is a good source of protein and minerals, but it does contain calories due to its content of milk fat and added sugar. The number of flavors of ice cream is almost limitless.

**DIALOGUE FOR CRITICAL THINKING:**

**Share:**

1. What nutrient in milk was easiest to identify?
2. What is your favorite milk product? Least favorite? Why?

**Process:**

3. Why are milk products important in your diet?
4. What milk nutrient is needed less by adults than kids?
5. What new milk products did you learn about?

**Generalize:**

6. What other decisions do you make each day?
7. How did you go about making your decision?

**Apply:**

8. Role play some decision making situations
  - (a) How to spend \$10.
  - (b) What library book to check out.
  - (c) Pick your own situation.

**GOING FURTHER:**

- Visit a supermarket and look at all of the products made from milk in the dairy case.
- Have a milk product tasting fair to let members try new products.

## ACTIVITY

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### REFERENCES:

**Author:**

James R. Dunham, Professor Emeritus, Dairy Science, Kansas State University

**Reviewed by:**

Harold A. Roberts, Extension Specialist, Dairy Technology, Kansas State University

Edward P. Call, Professor Emeritus, Dairy Science, Kansas State University

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**LEARNING ABOUT DAIRY PRODUCTS**  
**DAIRY CATTLE, LEVEL II**  
**Activity Sheet 5, Dairy Products Puzzle**

See if you can fill in the spaces with the names of the following dairy products.

Butter

Cheddar Cheese

Chocolate Milk

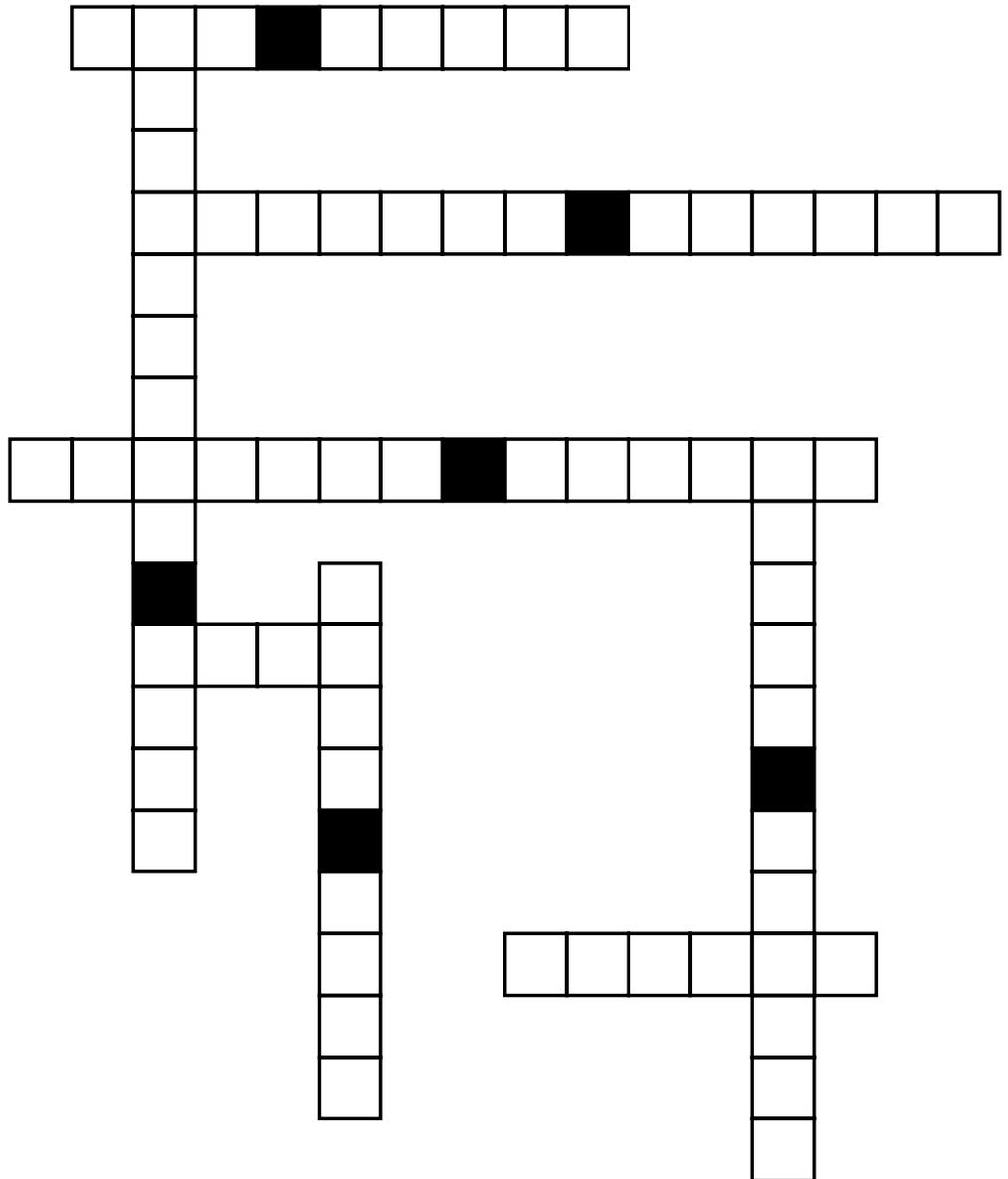
Cottage Cheese

Milk

Ice Cream

Skim Milk

Swiss Cheese



**LEARNING ABOUT DAIRY PRODUCTS**

**DAIRY CATTLE, LEVEL II**

**Leader's Key, Activity Sheet 5, Dairy Products Puzzle**

See if you can fill in the spaces with the names of the following dairy products.

Butter

Cheddar Cheese

Chocolate Milk

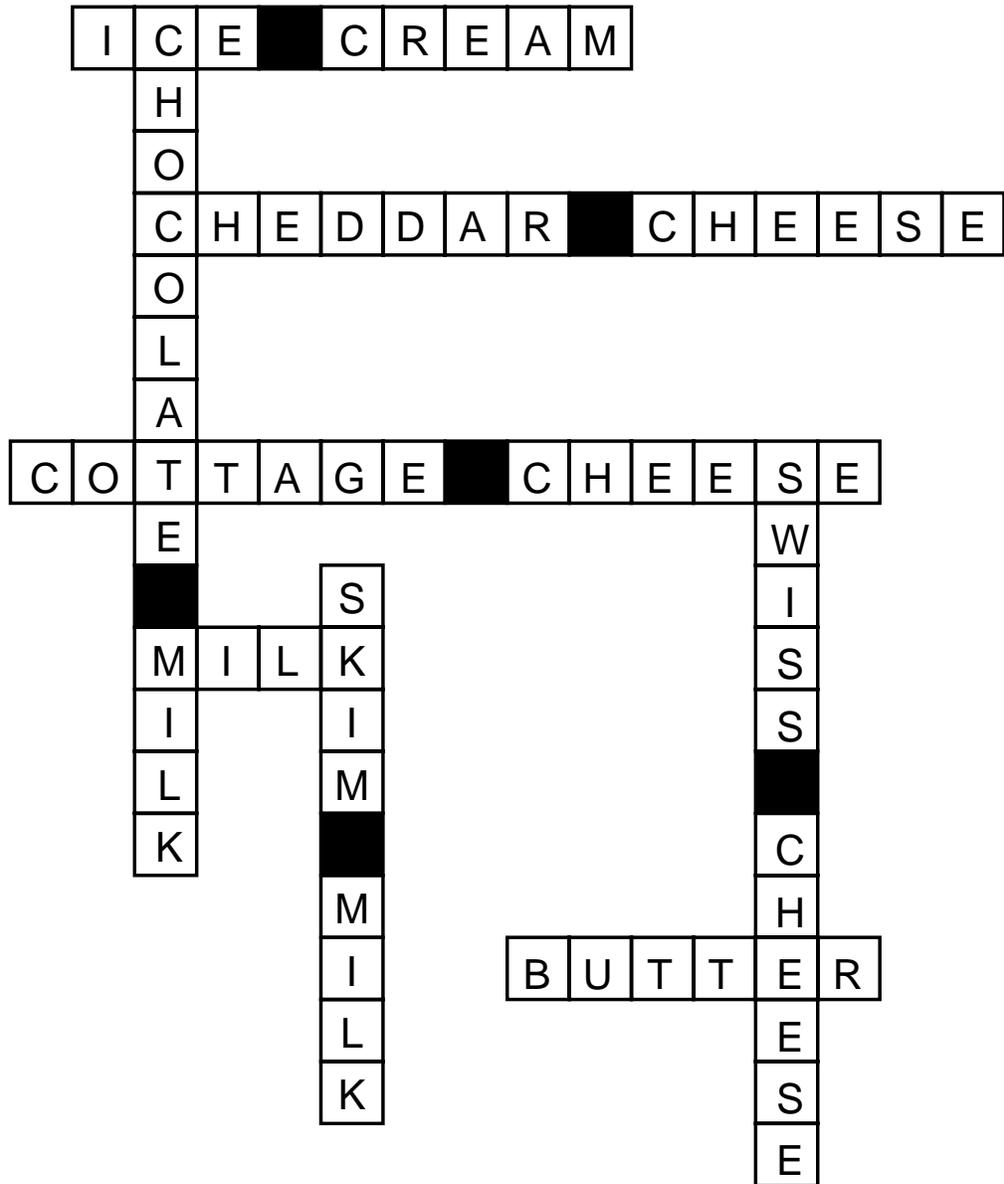
Cottage Cheese

Milk

Ice Cream

Skim Milk

Swiss Cheese



**LEARNING ABOUT DAIRY PRODUCTS**  
**DAIRY CATTLE, LEVEL II**  
**Activity Sheet 6, Dairy Products Word Search**

Circle the dairy products found in this puzzle. Some are spelled forwards, backwards, diagonally, from top to bottom, and from bottom to top.

BUTTER  
BUTTER MILK  
CHEDDAR CHEESE  
CHOCOLATE MILK  
COTTAGE CHEESE  
CREAM  
EGGNOG

ICE CREAM  
MILK  
NONFAT DRY MILK  
SKIM MILK  
SOUR CREAM  
SWISS CHEESE  
YOGURT

B Y C H O C O L A T E M I L K  
U W O V U T R S R Q P O C N L  
T R T T T U B E L K J I E H I  
T H T G B F E D A T M B C T M  
E A A Z Y U X W R M I U R S M  
R R G Q P O T U N M L K E J I  
I I E H G F G T E D K B A A K  
N Z C Y X O W V E U T S M R S  
O A H Q Y P O N M R L K J I H  
J Z E G G N O G T F M E D C B  
U Y E E S E E H C S S I W S X  
C W S O U R C R E A M V L U T  
D S E R Q P O N M L K J I K H  
A Y C H E D D A R C H E E S E  
K L I M Y R D T A F N O N G F

**LEARNING ABOUT DAIRY PRODUCTS**

**DAIRY CATTLE, LEVEL II**

**Leader's Key, Activity Sheet 6, Dairy Products Word Search**

Circle the dairy products found in this puzzle. Some are spelled forwards, backwards, diagonally, from top to bottom, and from bottom to top.

BUTTER

BUTTER MILK

CHEDDAR CHEESE

CHOCOLATE MILK

COTTAGE CHEESE

CREAM

EGGNOG

ICE CREAM

MILK

NONFAT DRY MILK

SKIM MILK

SOUR CREAM

SWISS CHEESE

YOGURT

