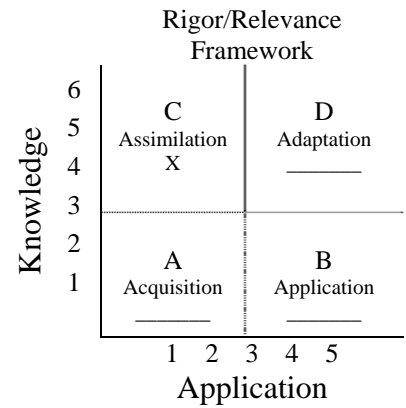


**Dairy Cattle Evaluation
Mammary System
Lesson 2**

Area and/or Course: Animal Science/Dairy



Teacher Goal(s):

1. Students to gain exposure to the components of the mammary system.
2. Students to understand why the mammary system is important in assessment of dairy cattle.
3. Student to have the ability to describe the mammary system with proper terminology.

Lesson Title: Mammary System

Objectives:

The student will be able to (TSWBT). (OR Skill Set numbers in parentheses at the end of the objective statement.)

1. Master the parts of the dairy cow. (AGPC 01.05.04.01)
2. Demonstrate understanding of the mammary system in relation to dairy cattle evaluation. (AGPC 01.05.04.02)
3. Gain experience in terms related to the mammary system to be used for oral reasons. (AGPC 01.05.04.04)

CIM/CAM Standard met by Objectives:

<u>Page</u>	<u>Category</u>	<u>Subject</u>	<u>Common Curr. Goal</u>	<u>Benchmark & Number</u>
1. E-20	English	Communication	Tech. Speak	10:1
2. S-6	Science	Life Science	Organisms	8:1,4
3. S-8	Science	Life Science	Heredity	8:1,2,3

Materials, Equipment, Audio-visual aids:

1. Power Point
2. Dairy Breeds Quiz
3. Class handout
4. Reasons note page

References:

1. Hoards Dairyman
2. American Jersey Cattle Club
3. Holstein Foundation
4. Oregon State University Dairy Cattle Evaluation Extension Publication
5. World Holstein Friesian Association

****Quiz on Dairy Breeds Lesson****

Review Yesterday's Lesson:

During yesterday's lesson, we began our Dairy Evaluation Unit with learning the 6 breeds of dairy cattle. Can anyone give me one of the 6 breeds of dairy cattle that we talked about yesterday?

1. Holstein
2. Jersey
3. Ayrshire
4. Brown Swiss
5. Guernsey
6. Milking Shorthorn

We also talked about the popularity of the breeds in the United States. Would someone share with us the most popular breed of dairy cattle in the United States?

1. Holstein

Why are the Holsteins the most popular breed?

What is the second most popular breed?

1. Jersey

Why would the little brown cow be in demand?

Set:

Today we will begin our voyage of dairy cattle evaluation or "judging". We are going to start with the most important trait on a dairy cow. What might that be? If our main resource from the cows is milk, what would be the most important part of the cow?

1. The Udder!!!!

Summary:

At the completion of the class today, you will be able to:

1. Describe the components of the mammary system.
2. Understand why the mammary system is important in assessment of dairy cattle.
3. Describe the mammary system using proper terminology.

Subject Matter Outline/Problem and Solution (Application Points lace in throughout lesson) (Modeling, Guided Practice, and Content)

Parts of the Cow

1. Picture of Ambers udder

2. Udder
 - a. Most heavily weighted (40%)

 - b. Without it what do we have?

3. Picture of Beef Cow

4. Udder Traits
 - a. Udder Depth

 - b. Teat Size and Placement

Strategy – includes Teacher Activity, Student Activity, Questions/Answers and Objectives

Students are taking notes.

Q: Why is it important to know the parts of the cow?

A: You cannot describe what you don't know.

This is a picture of an Excellent Scored mammary system. Notice the veining, crease, and teat placement.

Q: What is one thing you would change about Ambers udder?

A: A bit bulgy on her left-front quarter.

Q: What are we in the business of producing in the Dairy Business?

A: Milk

This is what we have if we do not have a quality mammary system. The cow is then solely being raised for beef production. We want milk.

Take notice of the structural characteristics of this beef cow versus a dairy cow. As the unit goes on, you will see more and more differences.

We will see diagrams of each of the 6 udder traits. Take good notes and pay attention because this will be on your next quiz.

<ul style="list-style-type: none"> c. Rear Udder d. Udder Cleft e. Fore Udder f. Udder Balance and Texture <p>5. Udder Depth</p> <ul style="list-style-type: none"> a. Measured from the hock b. Capacity relative to stature of animal c. Consideration is given to lactation number and age. <p>6. Trait picture of udder depth</p> <p>7. Picture of Amber</p>	<p>Q: Why does size of the animal influence the udder depth?</p> <p>A: Depth is measured from the hock. Taller animals will have hocks higher above the ground, as shorter animals will have hocks closer to the ground.</p> <p>Q: Why would age affect udder depth?</p> <p>A: Each time an animal freshens, her udder is filled with milk. With each subsequent lactation, the udder will continue to stretch to accommodate the increase in milk production. An animal will peak in production usually after 3 calves.</p> <p><i>The middle picture is the ideal.</i></p> <p>Q: Why do we not want an udder that is too small?</p> <p>This is a perfect balance between size and longevity.</p> <p>The key is to have a strong enough ligament and attachments so that the animal will age gracefully.</p>
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<p>8. Teat Placement</p> <ul style="list-style-type: none"> a. Squarely placed under each quarter b. Plumb and properly spaced from side and rear views <p>9. Trait picture of teat placement</p> <p>10. Rear Udder</p> <ul style="list-style-type: none"> a. Wide b. High c. Firmly attached d. Uniform width from top to bottom e. Slightly rounded to udder floor <p>11. Trait picture of rear udder height</p> <p>12. Trait picture of rear udder width</p>	<p>Q: Why is teat placement important?</p> <p>A: Dairy farmers need to be able to put the milking machine on the cow. If the teats are not centrally located on the bottom of the udder and facing straight down, the machine may either not work properly, or not at all. The result could be mastitis.</p> <p><i>The middle picture is ideal.</i></p> <p>When we get to udder cleft, we will talk about how the ligament responsible for the cleft affects teat placement.</p> <p>Q: Does the rear udder affect the animal's ability to milk or get milked? Is it a functional trait or just for esthetics?</p> <p>A: The rear udder has little or no practical affect on milk production.</p> <p>Height of the rear udder is determined by measuring from the top of her rear udder to the bottom of her vulva</p> <p>When it comes to height and width of rear udder, it cannot be too wide or too high. The more the better.</p> <p><i>Picture on the right is ideal.</i></p> <p><i>Picture on the right is ideal.</i></p>
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<p>17. Teat Size</p> <ul style="list-style-type: none"> a. Cylindrical shape b. Uniform size c. Medium length and ample diameter <p>18. Udder Balance and Texture</p> <ul style="list-style-type: none"> a. Udder floor that is level when viewed from the side b. Evenly balanced quarters c. Udder should be soft, pliable and collapsed after milking <p>19. Picture of Ambers udder</p> <p>20. Udder Support Terms</p> <ul style="list-style-type: none"> a. A deeper crease in her udder b. More clearly defined halving in the udder c. Stronger center attachment d. Leveler on the udder floor, faulting 3 for having a reverse (forward tilt) <p>21. Udder Support Terms</p> <ul style="list-style-type: none"> a. Carries her udder higher above the hocks b. An udder carried higher off the ground 	<p><i>Middle picture is ideal.</i></p> <p>We want the teats averages size so the milking machine will work properly.</p> <p>We want the udder to have “Thin skin” so that we cans see the veining. The veining on the udder has absolutely nothing to do with milk quantity or quality. It does however add to the style of the animal. It is just like chrome on a truck or bike.</p> <p>Udder texture is evaluated for the producer when selecting Canadian bulls, but not in the U.S..</p> <p>Love the texture of Ambers udder. Notice the veining about the udder. Especially in the fore quarters toward the bottom. Normally a cow will not get veining to this extent until latter in lactation.</p> <p>Now. We are going to study terminology to properly describe what the cows are displaying.</p> <p>Q: Where is the height of the udder measured from?</p> <p>A: The Hocks</p> <p>Q: Will age affect udder height?</p> <p>A: Yes.</p>
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<p>c. "Has her udder tucked up higher above the hocks"</p> <p>22. Rear Udder Terms</p> <ul style="list-style-type: none"> a. Higher in the rear udder b. Wider in the rear udder attachment c. Higher and wider in the rear udder d. Fuller at the top of the rear udder <p>23. Rear Udder Terms</p> <ul style="list-style-type: none"> a. More correct turn to the rear udder b. More symmetry and balance of rear udder c. More balance of rear quarters (faulting 2 for being light in the left rear quarter) <p>24. Fore Udder Terms</p> <ul style="list-style-type: none"> a. Stronger fore udder attachment b. Tighter in the fore udder (attachment) c. More firmly attached fore udder d. Fore udder that blends more smoothly into the body wall <p>25. Teat Size and Placement Terms</p> <ul style="list-style-type: none"> a. More correct teat size and shape b. Teats placed more correctly beneath each quarter, faulting 3 for... c. Teats placed more squarely beneath the quarters, noting the wide... <p>26. Teat Size and Placement Terms</p> <ul style="list-style-type: none"> a. More nearly correct teat size, faulting 2... 	<p>Q: Can the rear udder be too high or wide?</p> <p>A: No.</p> <p>Q: Does the rear udder affect the ability of a cow to give milk?</p> <p>A: No.</p> <p>Q: What are some traits that do?</p> <p>A:</p> <ol style="list-style-type: none"> 1. Teat size and placement 2. Udder cleft 3. Udder depth <p>Q: Should we be able to tell where the udder stops and the body wall begins?</p> <p>A: No.</p> <p>Q: What happens when the teats are set way out on the corners of the udder?</p> <p>A: The milking machine will not properly milk out the cow.</p>
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<p>b. More desirable teat shape, faulting 3 for...</p> <p>c. Squarer teat placement, noting the “strutting” front teats on</p> <p>27. Udder Quality Terms</p> <p>a. An advantage in stage of lactation, noting the congestion in 3’s udder</p> <p>b. Displays more veining about the udder</p> <p>c. More apparent udder quality</p> <p>28. General Udder Terms</p> <p>a. More symmetry about the udder</p> <p>b. More balance of udder (noting 3 is light in the right front quarter)</p> <p>c. Leveler on the udder floor</p> <p>d. More bloom of udder</p> <p>29. Summary</p> <p>a. What is one of the 6 udder traits?</p>	<p>Q: Does udder texture affect the quantity or quality of milk produced by a cow?</p> <p>A: Not usually.</p> <p>Q: Can udder texture give some insight to the cows stage of lactation?</p> <p>A: Yes, commonly edema will build up in the mammary system just prior to parturition (calving). Once the cow freshens, the increase in blood flow through her body will eventually remove all of the edema. The term “meat-bag” is used for cows which look like they have edema in their udders even when they are mid lactation.</p> <p>Cows with edema will show little or no veining.</p> <p>Always watch for cows with light quarters. We always want the udder to be as symmetrical as possible. Perfect is always better.</p> <ol style="list-style-type: none"> 1. Udder Depth 2. Teat Size and Placement 3. Rear Udder 4. Udder Cleft
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<p>b. What is a term used to describe one of those traits?</p> <p>30. Introduction</p> <p>a. I place this class (identification-age and breed) 1-2-3-4</p> <p>31. Notes</p> <p>a. Write down a descriptive trait of each animal as they come into the ring</p> <p>b. Black</p> <p>c. White</p> <p>d. Speckled</p> <p>e. Fat</p> <p>f. No switch</p> <p>32. Grants</p> <p>a. Why the second place cow is better than the first</p> <p>i. I admit</p> <p>ii. Although I recognize</p> <p>iii. I do concede</p> <p>iv. I did not fail to recognize</p>	<p>5. Fore Udder</p> <p>6. Udder Balance and Texture</p> <p>Look back through your notes.</p> <p>At the beginning of our next class, you will be asked to give your reasons.</p> <p>Remember this is only a starting point. I am not expecting you to give a 50 on the first try. We will save that until the at least the 3rd effort.</p> <p>Simply state what the class is recorded as. For example: three year-old Holstein Cow.</p> <p>This will help you to remember the cows when you are giving the reasons. This may have nothing to do with the conformation of the animal. It is for you to remember.</p> <p>Grants help to determine if you saw the cows. There are 4 cows in each class and so there are 3 comparisons. You will see as you look at your notes page, there is room for 3 comparisons and 2 grants.</p> <p>If your placing is 1-2-3-4. A grant will be a trait as to why 2 is better than one, or 3 is better than 2.</p>
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<p>33. Transition Terms</p> <ul style="list-style-type: none"> a. Used between pairs <ul style="list-style-type: none"> i. Additionally ii. Excels iii. Superior iv. Distinct disadvantage v. Dominate <p>34. Closing Statement</p> <ul style="list-style-type: none"> a. For these reasons, I place this class of (identify-breed and age) 1-2-3-4 <p>35. Reasons</p> <ul style="list-style-type: none"> a. Holstein 5 year-olds <p>36. Time to Practice</p> <ul style="list-style-type: none"> a. Place the classes looking only at the mammary system of each cow. b. Write out reasons for each of your placings. 	<p>Transition terms help your reasons to flow. These words are used between comparisons.</p> <p>At the end of each class, state the cows breed and age, as well as the placing. This is a summary of the class.</p> <p>Listen to the reasons in order to get a feel for structure and style. There is a lot of room for individuality.</p> <p><i>Click on the speakers to play sample reasons.</i></p> <p>Listen to these sets taking notice of the structure and mammary system terminology.</p> <p>It is now time to practice what you have learned relative to the mammary system. I have handed out the reasons note page. Use the notes page to organize your thoughts for each of the classes. The notes you have taken in class will assist you in determining the proper placing.</p> <p>Each of you is the official. It is your job to convince me your placing is the correct one.</p> <p>Be sure to use some of the terminology from the Reasons handout.</p> <p>Listening to the sets of reasons will help you to better prepare yourself.</p>
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37. Official

- Mammary System
 - Brown Swiss
 - 4-3-1-2
 - Guernsey
 - 3-1-2-4
 - Shorthorn
 - 1-2-4-3
 - Jersey
 - 3-4-2-1
 - Holstein
 - 3-4-1-2
- Reasons (click on speaker to listen)
 - Brown Swiss
 - Guernsey
 - Shorthorn
 - Jersey
 - Holstein

Here are the placings for the classes based off of mammary system. The reasons are based off official placings taking the entire cow into consideration.

Closure: Summary or Conclusion

(Go back through the pictures for a review of identification)

You should now be able to explain if asked why the mammary system is the most important trait. We are in the business of making milk. What do we have if we don't have an udder? Beef Cow.

You will have a quiz next time on this material. In addition, make sure you are studying the part of the cow.

Evaluation: (Authentic Forms of Evaluation, Quizzes, Written Exam – something you grade).

<u>Item</u>	<u>Obj. Number</u>
1. Complete the quiz	1-3

Assignments: (Student Activities involved in lesson/designed to meet objectives but not graded).

<u>Item</u>	<u>Obj. Number</u>
1. Complete the handout	1-3

Attachments:

1. Quiz
2. Class handout
3. Power Point
4. Reasons notes page