An educational activity for 4-H youth to test their dairy management knowledge and skills, evaluate top quality animals, and receive experience in evaluation and decision making to further their success in the dairy industry.

**When/Where:** Dairy Challenge is normally a one day competition designed to test youth on their understanding of the dairy industry, and how to properly manage a dairy farm. This contest is held annually on the first Thursday of the New York State Fair in late August. The statewide program is for youth 8-18 as of January 1st. The contest is set up as a rotation through various stations testing skills and knowledge of the dairy industry.

**Who:** 4-H youth between the ages of 8 and 18 as of January 1st. Each County may have a maximum of 8 contestants (3 to 4 individuals makes a team) per age division; senior, junior, and novice.

**Why:** It is a great way to interact with other youth interested in dairy from across the State. It’s a hands-on and fun educational activity for youth to test their dairy management knowledge and skills.

**How:** Contact your County 4-H Cornell Cooperative Extension Educator and register with your county.

**What:** Contest activities will consist of youth rotating through different stations within their division. Youth will be tested on general knowledge in the following designated areas:

1) **Dairy Judging:** Participants will judge and place a class of 4 dairy animals

2) **Linear Dairy Evaluation:** Participants will observe dairy animals and answer a series of questions based on linear type evaluation

3) **Farm and Food Safety:** Hands-on activities and questions relating to safe practices involved with farm, livestock and machinery plus handling and production of food.
4) **Dairy Nutrition and Feeds**—Participants will identify feedstuffs and/or answer questions about the nutrition components and use in dairy cattle feeding programs.

5) **Dairy Housing and Facilities**—Activities will include questions and evaluation of housing facilities and management practices relate to cow and/or calf dairy facilities.

6) Meat Identification, Dairy Products and Quality Assurance of Dairy Beef—Activities will include identifying cuts of dairy beef and veal and a variety of dairy products through look, smell and taste. (May be cuts or photos/pictures)

7) **Dairy Health and Diseases/ Mastitis** and Biosecurity—Activities will include proper identification and use of equipment use for herd health along with testing participants understanding of herd health management.

8) **Dairy Reproduction**—Equipment and questions related to A.I. breeding and reproduction management for cows and heifers.

9) **Farm Business Management**—(For A and B division only) Participants will be tested on their understanding of basic farm business management concepts like debt, assets and budgeting along with analyzing and calculating financial statements.

10) Dairy Records—Participants will be tested on the knowledge and understanding of basic concepts and management analysis of DHI management records and herd analysis pages.

**Rules/Regulation:**

Open to all bona-fide Dairy Cattle 4-Her’s and entry will be in Senior, Junior, or novice divisions. Novice division includes youth age 10 and under as of January 1( or any youth under 13 years old at the time of the contest who have not previously competed in the specific contest at the State Fair. Junior team members must be at least 9 and less than 14 years old as of January 1 of the current year. Senior members must be at least 14 years old as of January 1 of the current year and not reached their 19th birthday prior to January 1 of the current year. The members of a particular “team” should all be from the same county unless there is a multi-county program agreement. If a county does not have enough team members to fill 2 full teams (up to 8 participants per division), counties within the same 4-H Dairy Educational region may combine contestants to make a full team or additional team as long as the maximum number of participants has not exceeded 8 for each division from each county.

If a youth participates at the State Fair Contest and goes on to Harrisburg for the Dairy Management contest and places as high individual at the contest in a prior year, regardless of state or county representation, that youth is ineligible to compete at our State Dairy Challenge contest held at the State Fair in subsequent years or the Dairy management Contest.

If you have any questions about the program, please contact Debbie Grusenmeyer at djc27@cornell.edu
Dairy Judging

**Objective:** Develop and test a skill for selecting animals based on body conformation and breed characteristics

**Procedure:** Place four animals based on body conformation

**Useful Links:**

- [http://www.holsteinfoundation.org](http://www.holsteinfoundation.org)
- [http://www.hoards.com/youthresources](http://www.hoards.com/youthresources)

**Linear Dairy Trait Evaluation:**

**Objective:** Classify animals based on the linear evaluation scale

**Procedure:** Select one of three animals which best answer questions on their linear type evaluation Linear Traits and Judging

**Useful Links:**

- [http://www.hoards.com/youthresources](http://www.hoards.com/youthresources)

**Sample Questions for Novice:** These questions are made to test the general understanding of linear classification; questions may vary from year to year

- Cows that score with 80-84 points are given a final score of:
  - Answer: Good Plus
- Stature is important because it is related to:
  - Answer: Udder Depth
- Width of Chest is important because it is related to:
  - Answer: Strength
- A cow that is extremely shallow bodied and has decreased capacity to consume large amounts of roughage would most likely be given a body depth score of:
  - Answer: 2
- Which of the following characteristics are taken into consideration when evaluating dairy form:
  - Answer: Length of neck, Thinness of tail head, Sharpness and flatness of bone
- Linear Classification evaluates ________________ functional or linear traits plus body conditions score
  - Answer: 17
- When evaluating rear legs from the side, a posty and straight leg will most likely receive a score of:
  - Answer: 5
- Which of the following traits are very important to herd’s life as it effects udder depth and the likelihood for injury:
  - Answer: Fore Udder Attachment
- A cow that receives a score of 46 for Rear Udder height would be described as a cow with:
  - Answer: Low udder capacity and an extremely high udder attachment
- Bulls can receive linear scores:
Answer: True

Sample Questions for Seniors/Juniors: All of the answers vary depending on three animals chosen for that year

- Most likely this cow’s score for Stature would be:
- How many points would she score for Dairy Form:
- How many points would she score for Rump Angle:
- What score would she receive for Rump Width:
- How many points would she receive for Foot Angle:
- How many points would she receive for Udder Depth:
- How many points would she receive for Teat Length:
- What would her Body Condition Score be:
- What will this cow’s final score be:
- Will this cow have a BAA over 100:

- List four categories that make up the final score for a cow:
  1) Udder - 40%
  2) Dairy strength - 25%
  3) Rear feet and Legs - 20%
  4) Frame/Rump: 15%

Farm and Food Safety

Objective: Identify and understand risks that maybe encountered on a farm with dairy

Procedure: Identify hazardous/dangerous situations and formulate solutions/preventatives to these dangers.

Useful Links:
- [www.nycamh.com/resources/articles/](http://www.nycamh.com/resources/articles/)
**Sample Farm Safety Animal Handling Questions:**
Match the pictured Animal Hazard to the appropriate label
Match the “Animal Hazard” with “How to Protect Myself and Others” in column 2

<table>
<thead>
<tr>
<th>Animal Hazard</th>
<th>Danger? How to Protect Myself and Others?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sensitive Hearing</td>
<td>2 Poor depth perception, “Blind Spot”, and see in black and white. Nervous around shadows, lack of light, foreign objects and change in texture or surface. Use “Flight Zone” and well lit areas.</td>
</tr>
<tr>
<td>2 Limited Sight</td>
<td>5 Can behave differently when ill. Wear protective gloves when treating sick or injured animals. Wash hands, etc when done.</td>
</tr>
<tr>
<td>3 Aggressive Behavior</td>
<td>1 Detect noises that humans can’t hear. Loud noises hurt their ears. Speak quietly and move in calm, quite manner.</td>
</tr>
<tr>
<td>5 Sick Animals</td>
<td>7 Protect and defend newborns and young. Let young animals stay with their mothers when handling.</td>
</tr>
<tr>
<td>6 Animal Medications</td>
<td>3 Pinned ears, snorting, bared teeth, pawing ground, raised tail, or hair on back. Use quiet and deliberate routines, move as a group, ask for help, and always have an escape route.</td>
</tr>
<tr>
<td>7 Mothers with babies</td>
<td>6 Dosages can be harmful. Store in locked cabinets away from food, use under supervision of an adult. And use proper animal restraint.</td>
</tr>
<tr>
<td>8 Foodborne Pathogens</td>
<td>4 Diseases from animals can be transmitted via saliva, bites, and open wounds. Wash hands before and after eating and using bathroom. Wash boots and change clothes before leaving barn.</td>
</tr>
<tr>
<td>9 Male Animals</td>
<td>9 Maybe aggressive. Use caution and have an escape route.</td>
</tr>
<tr>
<td>10 Slippery Surfaces</td>
<td>8 Diseases from food-ie raw milk. Follow correct milking procedures. Wash hands/boots before leaving barn. Change clothes</td>
</tr>
</tbody>
</table>

...
**Dairy Nutrition and Feeds**

**Objective:** Recognize and name common feeds and nutrients used on a dairy farm, as well as have background knowledge on the role the nutrient plays in the diet.

**Procedures:** Identification of dairy feed ingredients commonly found on dairy farms and questions related to nutrient content, quality, feeding management, and nutrient management practices. Feed and Nutrient Management.

**Useful Links:**
- Nutrient Management Planning: An Overview

**Feed and Nutrient Management and Evaluation Sample Questions:**
*Novice Identification:*

- Hay
- Wheat Midds
- Distillers-Ethanyll
- Sodium Bicarbonate
- Citrus Pellets
- Salt
- Corn Meal
- Oats
- Soybean Meal
**Whole Corn**

**Junior & Senior Identification:**

**Hay/Green Forages:**

1st Cut Alfalfa

2nd Cut Alfalfa

3rd Cut Alfalfa

Alfalfa/Clover

Alfalfa/Grass

Brome

Clover

Clover/Timothy

Fescue
Ensiled/Wet Forage/Grain:

Apple Pomace

Alfalfa Haylage, 1st Cut

Corn Silage

Sorghum Silage

Grass silage

Feed Grains Byproducts and Additives:

Alfalfa Meal

Barley

Beet Pulp
Sample Questions:

Novice
• Energy is provided in a dairy ration by:
  o Answer: Carbohydrates
• Corn is a cereal grain. Another example of a cereal grain would be:
  o Answer: Oats
• When talking about dairy nutrition, what do the following abbreviations mean, ADF and TMR
  o Answers: ADF-Acid Detergent Fibers and TMR-Total Mixed Rations
• The most needed nutrient for a cow is:
  o Answer: Water

Senior
• If the corn silage is low in Non-fiber Carbohydrates (NSC), what economical byproduct feed can help raise these levels?
  o Answer:
• What ingredient is an excellent source of calcium in dairy rations?
  o Answer:
• What is the amino acid profile of this feed ingredient that most closely matches the amino acid content of rumen microbes when they are digested in the true stomach?
  o Answer:
• It is now against Federal Law to add what ingredient to dairy rations (20A, 20B, 20C)?
  o Answer:
• When manure is incorporated into the soil as it is spread, about 50% of its’ nitrogen becomes available for crop nutrient needs. If manure is left on the surface for a week or more what % is available?
  o Answer:
• PSNT tests and chlorophyll meters are used to determine the need for what crop nutrient in growing corn?
  o Answer:
• Which feed ingredient or forage provides the highest amount of rumen undegradable protein?
  o Answer:
• Which feed ingredient or forage provides high producing dairy cows with the best energy source?
  o Answer:
• Which feed ingredient improves forage digestion when fed at 2 to 4 oz/head per day, but becomes toxic when fed at 2 to 4 lbs/head per day?
  o Answer:
Meat Identification, Dairy Products and Quality Assurance of Dairy Beef

Objective: Classify meat and dairy products into the appropriate categories based on previously set standards of the dairy and beef industry.

Procedure: Identify dairy and meat produces using many senses, and answer questions on quality and products (both meat and dairy).

Important Links:
- www.beef.org

Dairy Products Identification:

- Heavy Cream
- Whole Milk
- Swiss Cheese
- Butter
- Mild Cheddar
- X Sharp Cheddar
- Feta Cheese
- Cottage Cheese
- Colby
- Cheese Curd
- Yogurt
- Cream cheese
How many pounds of whole milk to make a pound of butter?
Answer:

Which protein is unique to milk & contributes 82% of the total milk proteins?
Answer:

A cheese made from goats milk?
Answer:

What class of milk is Cream Cheese in?
Answer:

Milk is classified as Class I is usually sold as what?
Answer

What does MILC Stand for?
Answer:

“Great cheese comes from happy cows.” Happy cows come from ________?
Answer:

This enzyme is added to milk to make cheese and causes milk to coagulate, creating curds and whey?

Senior:

The month of June is nationally recognized as what in the Dairy Industry?
Answer: National Dairy Month

What milk class does ice cream fall under?
A. Class I
B. Class IV
C. Class II

What month is National Ice Cream month?
Answer: July

How many pounds of whole milk does it take to make a pound of cheese?
A. 5 pounds
B. 8 pounds
C. 10 pounds
D. 20 pounds
Meat Product Identification:

Identify the wholesale cuts of beef:
- Round
- Chuck
- Rib
- Flank
- Short Loin
- Sirloin
- Short Plate
- Fore Shank/Brisket

**Meat Production Questions:**

What type of cut is a Porterhouse?
Answer: Steak

London Broil is another name for what?
Answer: Flank Steak
Dairy Health and Diseases/ Mastitis/ Bio-Security

Objective: Recognize possible diseases and contaminations that may be in place on a dairy, and understand ways of treatment or prevention

Procedure: Activities will include proper identification and use of equipment use for herd health along with testing participants understanding of herd health management.

Useful Links:
- http://nyschap.vet.cornell.edu/
- http://vbs.psu.edu/extension/resources/pdf/animal-health/DACQA022309.pdf
- Recommended Milking Procedures http://www.nmconline.org/milkprd.htm

Novice Questions:
Tony’s Tiestall has a herd of registered Holsteins and strives to have a herd with excellent health. The farm sells many animals and also frequently takes animals to fairs and exhibitions.

1. (5 points) Look at the layout of Tony’s Tiestall. What major problem exists in the area where calves on milk are housed?
   Answer: The calves are tied up in front of the cows

2. (5 points, 2.5 points for each right answer) The herdsman at Tony’s Tiestall, John, is careful to take very good care of the calves. What two practices are important to perform within the first hour after birth?
   Answer: Feed colostrum and Dip the navel

3. (25 points total) Many pieces of equipment are used at the farm to keep animals healthy. Match the piece of animal health equipment to its use
   ___ evaluate the quality of colostrum
   ___ used for collecting blood
   ___ clean and disinfect teats prior to milking
   ___ used to feed calves on milk
   ___ injected into the teat to treat mastitis

4. (5 points) John is careful to keep all animals vaccinated. On the recommendation of his veterinarian he uses Bovi-Shield Gold FP 5 L5. Look to the end of the label where there are directions. What size dose should be used when administering the primary vaccine?
   Answer: 2 mL
5. (5 points) Two years ago before there was a good vaccination program on the farm some cows came back from the fair and caused a respiratory disease outbreak. Some cattle needed to be treated with antibiotics. When cows are treated what is one item below that must be recorded in a treatment record? Answer: Animal identification

6. (5 points) To keep cows from getting contagious mastitis at the fair, John does the following: Answer: Uses a milking unit brought from home

Junior

Each correct answer is worth 2.5 points.
Tony’s Tiestall has a herd of registered Holsteins and is struggling with animal health issues.

1. The veterinarian believes that calves may be exposed to disease in the calving area. Which animals present the most risk? Answer: Sick cows

2. What is an appropriate time frame for harvesting colostrum from the cow? Answer: 2 hours

3. Calves at Tony’s Tiestall are fed 2 quarts of colostrum 18 hours after birth. Which is an appropriate statement? Answer: Calves are not receiving enough colostrum.

4. John leaves the cow/calf pair in the maternity pen for up to 3 days. Look at the layout of the farm. Why is this problem? Answer: Manure spreader is next to the maternity pen

5. Which of the following diseases is more likely infect calves through fecal-oral transfer? Answer: Salmonella

6. Johne’s disease is caused by which type of organism? Answer: Bacteria

7. Tony’s Tiestalls shows cattle at many fairs and exhibitions. The farm has numerous visitors. What is the most important biosecurity measure when hosting other farmer’s? Answer: Be certain that footwear is clean and disinfected

8. When the veterinarian comes to the farm what is the most important practice in cleaning footwear? Answer: Physically removing all organic (manure) material from the boots

9. John is careful to vaccinate the show animals and the rest of the herd. Use the vaccine label to answer the next several questions. Bovi-Shield Gold FP 5 VL5 is being used on heifers. Which disease is not included in this vaccination? Answer: Johne’s
10. John is planning on vaccinating all the heifers, none of which have been vaccinated in the past.
   The liquid bacterin needs to be combined with the freeze dried vaccine. Once this is done how much is administered to the heifers?
   Answer: 2 mL

11. Once the vaccine is prepared, how long can the product be stored?
   Answer: Cannot be stored, use immediately

12. After a heifer is vaccinated for the first time (primary vaccination) when should it get a second dose?
   Answer: 3-4 weeks

13. According to beef quality assurance guidelines where should the vaccine be administered?
   Answer: Intramuscular in the neck region

14. John and an employee have to round up the heifers in a pasture get them into the tiestall barn to vaccinate the group? One heifer has not yet gotten in the barn. Where is the appropriate position to approach the heifer to get her to move forward?
   Answer: Slightly behind and to the side of the shoulder area

15. Which statement is true?
   Answer: Cattle have panoramic vision and can see approximately 320°.

16. John tries to take just non-lactating animals to the fair so as not to use the common milking parlor. Why?
   Answer: Getting infectious mastitis from common milking equipment

**Senior:**

Each correct answer is worth 2.5 points.

Tony’s Tiestall has a herd of registered Holsteins and is struggling with animal health issues.

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   Answer: Sick cows

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    Answer: Cattle have panoramic vision and can see approximately 320°.

16. John tries to take just non-lactating animals to the fair so as not to use the common milking
    parlor. Why?
    Answer: Getting infectious mastitis from common milking equipment
**Objective:** Comprehend practical farm business management

**Procedure:** Calculate and answer to the following questions based on farm business management in a hypothetical farm along with understanding debt, assets, and budgets.

**Useful Links:**

**Scoring:** Each question is worth 5 points for a total of 100 points

Financial ratios can be used to help evaluate the financial efficiency of the dairy business. Use the following information to assist you in answering questions 1-13 on Wild Rose Farm.

**Terms:**
- **Current Ratio** = Total current farm assets divided by total current farm liabilities.
- **Working Capital** = Total current farm assets minus total current farm liabilities.
- **Debt/asset ratio** = (Total farm liabilities divided by total farm assets) then multiply by 100
- **Asset Turnover Ratio** = Gross revenue divided by average total farm assets

**Wild Rose Farm-Farm Business Information**

<table>
<thead>
<tr>
<th>Total Current Assets</th>
<th>$800,000</th>
<th>Total Current Liabilities</th>
<th>$75,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Intermediate Assets</td>
<td>$3,000,000</td>
<td>Total Intermediate Liabilities</td>
<td>$500,000</td>
</tr>
<tr>
<td>Total Long Term Assets</td>
<td>$6,200,000</td>
<td>Total Long Term Liabilities</td>
<td>$425,000</td>
</tr>
<tr>
<td>Total Assets</td>
<td>$10,000,000</td>
<td>Total Liabilities</td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

| Total Full Time Labor | 20 |
| Total Farm Acreage | 1500 |
| Total Cows | 1,000 |
| Pounds of Milk sold in 2009 | 24,000,000 |
| Net Farm Income | $2,500,000 |
| Interest expenses for 2009 | $100,000 |
| Unpaid Family Labor Value | $150,000 |
| Gross Revenue | $3,000,000 |

Machinery & equipment assets | $600,000 |

Inventories of crop/Feed | $400,000 |
1) From the information provided, calculate the Current Ratio for Wild Rose Farm for 2009?
   Answer: 10
2) From the information provided for Wild Rose Farm calculate the Net farm income per cow.
   Answer: $2,500
3) From the information provided, what are the Interest expenses for Wild Rose Farm in 2009
   Answer: $100,000
4) From the information provided what is the Total Assets for Wild Rose Farm for 2009?
   Answer: $10,000,000
5) If the Wild Rose Farm had 1000 cows in 2008 calculate the Number of cows per worker in 2009?
   Answer: 50
6) From the information provided calculate Wild Rose Farm’s assets per cow in 2009?
   Answer: $10,000
7) From the information provided calculate Wild Rose Farm’s debt per cow in 2009?
   Answer: $1,000
8) From the information provided calculate the sum of their current and intermediate assets for Wild Rose Farm.
   Answer: $3,800,000
9) From the information provided for Wild Rose Farm calculate the Asset Turnover Ratio.
   Answer: 30
10) From the information provided for Wild Rose Farm calculate Pounds of Milk sold per worker in 2009.
    Answer: 1,200,000 pounds/worker
11) From the information provided for Wild Rose Farm calculate the Working Capital.
    Answer: $725,000
12) From the information provided for Wild Rose Farm what is the value for Unpaid Family Labor?
    Answer: $150,000
13) The milk production per cow for Wild Rose Farm in 2009 was 25,000 pounds per cow?
    Answer: False
14) What is the Debt/asset ratio for Wild Rose Farm in 2009?
    Answer: 10
15) If you purchase a Springer (a heifer about to calve) for $ 4,000 and if after freshening she provides you with an average profit of $800 per year, approximately how many years until you have earned back the original price? Assume no income from any calf sales.
    Answer: 5.0 years

Use the following data in the chart below to answer questions 16-20.

<table>
<thead>
<tr>
<th>Farm</th>
<th>Debt to assets</th>
<th>Return to Assets</th>
<th>Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Farm</td>
<td>45%</td>
<td>9%</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Clover Farm</td>
<td>40%</td>
<td>8%</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Bovine Farm</td>
<td>35%</td>
<td>-10%</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>Dairy Leader Farm</td>
<td>75%</td>
<td>-20%</td>
<td>$2,000,000</td>
</tr>
</tbody>
</table>
16) Which farm above has the lowest Debt?
   Answer: Bovine Farm

17) Which farm is most likely to go bankrupt?
   Answer: Dairy Leader Farm

18) How much debt does Clover Farm have?
   Answer: $800,000

19) How much debt does the Dairy Leader Farm have?
   Answer: $1,500,000

20) Which two farms above are similar in debt to assets and return to assets for their farm business?
    Answer: Green Farm and Clover Farm

**Dairy Reproduction**

**Objective:** Recognize important reproductive organs and apply the knowledge into dairy reproduction management

**Procedure:** Identify equipment involving modern milking equipment and milking management practices

**Useful Links:**

- Dairy Cows [http://www.das.psu.edu/research-](http://www.das.psu.edu/research-)
- Artificial Insemination Technique [http://pubs.cas.psu.edu/FreePubs/pdfs/UD015.pdf](http://pubs.cas.psu.edu/FreePubs/pdfs/UD015.pdf)

**Important Images:**

**Figure 1: Female Reproductive Tract Diagram:**

![Female Reproductive Tract Diagram]
Figure 2: The Ovarian

Sample Dairy Reproduction

Questions:
Identify the body part below in the picture above (on the test the items will not be labeled)
(A. Uterine Horn
(B. Ovary
(C. Cervix
(D. Vagina
(E. Vulva
(F. Oviduct
(G. Uterine Body
(H. Corpus Luteum (CL)
(I. Corpus Albicans
(J. Follicle
(K. Caruncles
(L. Corpus Hermorrhagus

- What ovarian disease is shown in this picture (Figure 3)?
  o Answer: (Senior 3pts, Juniors 5 pts, Novice 5pts)
- This is a picture show a calf in a placenta. What are the pink spots on the outside of the placenta called (Figure 4)?
  o Answer: (Senior 3pts, Juniors 5pts, Novice 5pts)
- What type of cycle is the diagram showing (Figure 5)?
  o Answer: Estrous (Seniors 2 pts each, Juniors 3 pts)
- How long does this cycle take to complete (Figure 5)?
  o Answer: 19-21 Days (Seniors 2 pts each, Juniors 3 pts, Novice 5pts)
- Looking at the chart, when does ovulation take place (Figure 5)?
  o Answer: Days 1-2 (Seniors 2 pts)
- This chart shows a heat cycle of a cow. What is the heat cycle known as (Figure 5)?
  o Answer: (Novice 5pts)
- What is the correct sequence of cow reproductive body parts when passing a semen gun through a cow to breed her? (5pts)
  - Answer: Vulva, Vagina, Cervix, Uterine Body
• What is the correct term for points in a reproductive tract/placenta where the cow and calf join together?
  o Answer: Placentomes

**Dairy Housing and Facilities**

**Objective:** Activities will include questions and evaluation of housing facilities and management practices relate to cow and/or calf dairy facilities.

**Procedure:** Identify equipment involving modern milking equipment, dairy barns, manure systems and ventilation systems.

**Dairy Records**

**Objective:** Be able to view a DHI Herd Sheet and find the herd and management information that is useful in analyzing your dairy for reproduction, mastitis, etc.

**Procedure:** Participants will be given a DHI Herd Summary page to view and find and analyze specific information about the herd.