Name: _____

CASE

Activity 6.2.1 Is Natural Best?

Purpose

Livestock producers must make a decision determining how he or she intends to breed their animals. This decision is based upon a variety of factors including profitability, animal and human safety. Four main breeding systems are natural, artificial insemination, embryo transfer, and cloning. Due to costs and labor intensities, natural breeding and artificial insemination are the most commonly used systems.

When producers choose natural breeding, the male and female animals mate physically. During artificial insemination, a producer collects the semen from the male and inserts it into the female. The animals may or may not be on the same farm or even the same state.

The dairy industry was one of the first segments of the livestock industry to embrace artificial insemination as the norm. While the majority of producers utilize artificial insemination for at least the majority of their breeding herd, there are still some that cling to the use of natural breeding in order to facilitate reproduction and lactation. Which system of breeding animals seems most appropriate for the dairy industry?

Materials

Per student:

- Copy of article **"Does the extra effort of A.I. pay off?"**
- Copy of article **"Why natural service is not the solution"**
- Pencil
- *Agriscience Notebook*

Procedure

In this activity, you will compare the advantages and disadvantages of the common methods of breeding as well as opposing viewpoints within the dairy industry.

Part One – Comparing Methods

1. Using your presentation notes from *Livestock Breeding Systems*, fill in the blanks in Table 1 of *Activity 6.2.1 Student Worksheet*.
2. Once you have finished, your teacher will give you three minutes to compare your notes with a classmate.
3. After you have shared your notes, your teacher will lead a class discussion to complete any remaining areas in the chart.

Part Two – Artificial Versus Natural Breeding

1. Read the statements below Table 1 in *Activity 6.2.1 Student Worksheet* and determine whether you agree or disagree by checking the "Before Reading" box for either "yes" or "no".
2. Read both of the articles from the October, 2003 "Hoard's Dairyman" magazine.
3. Based upon your reading, check the "After Reading" box either for "yes" or for "no" in *Activity 6.2.1 Student Worksheet*.

4. Fill in the “Evidence For” and “Evidence Against” boxes for each statement with short quotes or paraphrasing from the reading. The evidence should come from the articles, not from your personal thoughts or beliefs. While you will find evidence for and against each statement, your check box should show which side you felt had the stronger evidence.
5. When you have completed the reading and *Activity 6.2.1 Student Worksheet*, your teacher will lead a discussion of class opinions of each method.

Conclusion

1. In the dairy industry, which breeding system provides the highest level of profitability?

2. Is one animal breeding system the best for all species? Why or why not?

3. Is there a breeding system that is not practical for any species? Which one?

4. If you were to produce livestock, what species would you raise and which breeding system would you utilize?

Name: _____

Activity 6.2.1 Student Worksheet

Directions: Complete Table 1 using your presentation notes. Then read the two articles provided by your teacher and complete the statements below Table 1.

Table 1. *Breeding Notes*

Breeding System	Definition	Advantage	Disadvantage
Straight Breeding			
Cross Breeding			
Breeding Method	**Advantages**	**Disadvantages**	**Species Used**
Pasture Breeding			
Hand Breeding			
Artificial Insemination			
Embryo Transfer			
Cloning			

Statement One: Artificial insemination is commonly used in the dairy industry.

Before Reading: □ Agree □ Disagree
After Reading: □ Agree □ Disagree

Evidence For	Evidence Against

Statement Two: Artificial insemination is more profitable that natural breeding.

Before Reading: □ Agree □ Disagree
After Reading: □ Agree □ Disagree

Evidence For	Evidence Against

Statement Three: Natural breeding is just as safe as artificial insemination.

Before Reading: □ Agree □ Disagree
After Reading: □ Agree □ Disagree

Evidence For	Evidence Against