

Course	Agricultural Science I
Unit	Introduction to Beef Production
Lesson	Herd Health
Estimated Time	50 minutes

Student Outcome

Develop a herd health plan.

Learning Objectives

1. Identify the common health problems of beef cattle.
2. Determine the type of herd health program used for each production system.
3. Describe the proper techniques for administration of medications and vaccinations.

Grade Level Expectations

Resources, Supplies & Equipment, and Supplemental Information

Resources

1. PowerPoint Slides
 - ☐ PPt 1 – Herd Health Program Based on Spring Calving (March 1 to April 30)
 - ☐ PPt 2 – Routes of Administration
2. Activity Sheets
 - ☐ AS 1 – Information about Vaccines
3. *Introduction to Beef Production (Student Reference)*. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.
4. *Introduction to Beef Production Curriculum Enhancement*. University of Missouri-Columbia: Instructional Materials Laboratory, 2003.

Supplies & Equipment

- ☐ Pictures of beef cattle affected by disease
- ☐ Different types of animal health care products

Supplemental Information

1. Internet Sites
 - ☐ Animal Science Publications. MU Extension. University of Missouri-Columbia. Accessed June 29, 2007, from <http://extension.missouri.edu/explore/agguides/ansci/>.
 - ☐ "Beef Cattle Herd Health Vaccination Schedule." Cooperative Extension Service. University of Arkansas. Accessed June 29, 2007, from http://www.uaex.edu/Other_Areas/publications/PDF/FSA-3009.pdf.
 - ☐ "Beef Quality Assurance Injection Sites and Techniques." Department of Animal Biotechnology. University of Nevada-Reno. Accessed June 29, 2007, from <http://www.cabnr.unr.edu/ab/Extension/Cattleman/Cattleman2002/Page01.htm>

2. Print

- ❑ Campbell, J. R., M. D. Kenealy, and K. L. Campbell. *Animal Sciences: The Biology, Care, and Production of Domestic Animals*. 4th ed. New York: McGraw-Hill Companies, 2003.
 - ❑ Thomas, H. S. *Storey's Guide to Raising Beef Cattle: Health/Handling/Breeding*. Rev. Ed. North Adams, MA: Storey Publishing, LLC, 1998.
 - ❑ Thomas, H. S. *Getting Started with Beef and Dairy Cattle*. North Adams, MA: Storey Publishing, LLC, 2005.
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Interest Approach

1. Show pictures of beef cattle affected by disease. Ask the students to guess what type of disease is affecting the cattle.
2. Bring in different types of animal health care products to begin a discussion.


Communicate the Learning Objectives



1. Identify the common health problems of beef cattle.
2. Determine the type of herd health program used for each production system.
3. Describe the proper techniques for administration of medications and vaccinations.

Instructor Directions	Content Outline
Objective 1 <i>Ask the students about their experiences with sick animals. List the diseases on the board along with symptoms and preventative measures.</i>	Identify the common health problems of beef cattle. Anaplasmosis <ol style="list-style-type: none">1. Symptoms – weight loss and labored breathing2. Prevention and treatment<ol style="list-style-type: none">a. Controlling insectsb. Vaccinesc. Tetracyclined. Daily doses of antibiotics Blackleg <ol style="list-style-type: none">1. Symptoms<ol style="list-style-type: none">a. Swollen and inflamed musclesb. Lamenessc. Cracking noise when gas under skin is pressed2. Prevention – vaccines Bovine respiratory syncytial virus (BRSV) <ol style="list-style-type: none">1. Symptoms<ol style="list-style-type: none">a. Discharge from the mouth and noseb. Feverc. Hacking cough2. Prevention – vaccine Bovine virus diarrhea <ol style="list-style-type: none">1. Symptoms<ol style="list-style-type: none">a. Diarrheab. Feverc. Coughingd. Nasal discharge2. Prevention – vaccine

Instructor Directions	Content Outline
	<p>Brucellosis</p> <ol style="list-style-type: none"> 1. Symptoms – abortions and sterility in cows and bulls 2. Prevention – vaccine <p>Fescue Foot</p> <ol style="list-style-type: none"> 1. Symptoms <ol style="list-style-type: none"> a. In severe cases, loss of one or both of the rear hooves, as well as the tips of the ears and tail b. Arched back c. Rough coat d. Stiffness or lameness 2. Prevention – mixing legumes with fescue <p>Grass tetany</p> <ol style="list-style-type: none"> 1. Symptoms – trembling and staggering 2. Prevention and treatment – feeding magnesium supplements and intravenous administration of a solution containing magnesium and calcium <p>Infectious bovine rhinotracheitis (IBR, red nose)</p> <ol style="list-style-type: none"> 1. Symptoms <ol style="list-style-type: none"> a. Respiratory form – fever, nasal discharge, and reddened muzzle b. Reproductive form – inflammation of the vagina and vulva and abortions c. Pinkeye – symptoms similar to pinkeye 2. Prevention – vaccine <p>Leptospirosis</p> <ol style="list-style-type: none"> 1. Symptoms <ol style="list-style-type: none"> a. Fever b. Rapid respiration c. Poor appetite d. Jaundice e. Abortions f. Weak calves g. Stillbirths 2. Prevention – vaccine <p>Pinkeye</p> <ol style="list-style-type: none"> 1. Symptoms <ol style="list-style-type: none"> a. Pinkish color to eye b. Watery eye

Instructor Directions	Content Outline
	<ul style="list-style-type: none"> c. White eye due to cloudy film 2. Prevention – vaccines and fly control <p>Scours</p> <ul style="list-style-type: none"> 1. Symptoms – diarrhea 2. Prevention – vaccines and good sanitation <p>Shipping fever</p> <ul style="list-style-type: none"> 1. Symptoms <ul style="list-style-type: none"> a. High fever b. Coughing c. Difficulty in breathing d. Discharge from the eyes and nose 2. Prevention – vaccine <p>Vibriosis</p> <ul style="list-style-type: none"> 1. Symptoms – abortion with no outward signs of disease and poor conception rates 2. Prevention – vaccine
<p>Objective 2</p> <p><i>Ask students if they have ever helped in vaccinating or treating a calf for a disease. Focus on the importance of proper techniques and a complete herd health program that emphasizes prevention. List the treatments needed for each type of production. Use PPt 1 to illustrate the timing of vaccinations and treatments for parasites in a spring calving herd.</i></p> <p><input type="checkbox"/> PPt 1 – Herd Health Program Based on Spring Calving (March 1 to April 30)</p>	<p>Determine the type of herd health program used for each production system.</p> <p>Cow/calf producers and purebred breeders</p> <ul style="list-style-type: none"> 1. Feeder calves before weaning <ul style="list-style-type: none"> a. IBR b. Parainfluenza (PI-3) c. BVD d. BRSV e. Pasteurella f. Clostridial diseases (blackleg) g. External parasites h. Internal parasites 2. Replacement bulls and heifers – vaccinations usually given 30 days before breeding <ul style="list-style-type: none"> a. BVD b. IBR c. PI-3 d. Leptospirosis e. Vibriosis f. Hemophilus pneumonia g. Pasteurella

Instructor Directions	Content Outline
	<ul style="list-style-type: none"> h. Clostridial diseases i. Brucellosis (four- to nine-month-old heifers) j. External parasites k. Internal parasites <p>3. Mature cows and bulls</p> <ul style="list-style-type: none"> a. Leptospirosis b. Vibriosis c. BVD d. IBR e. Clostridial diseases f. Internal parasites g. External parasites <p>Backgrounders and feedlot operators</p> <ul style="list-style-type: none"> 1. IBR 2. PI-3 3. BVD 4. BRSV 5. Pasteurella 6. Clostridial diseases 7. External parasites 8. Internal parasites
<p>Objective 3</p> <p><i>Have students think about the types of shots they have received. Display PPt 2 and discuss the various methods of administering vaccines and other health products to animals. Emphasize that subcutaneous injections should be used whenever possible. Describe how a subcutaneous injection prevents tissue damage to the muscle of the calf.</i></p> <p> PPt 2 – Routes of Administration</p> <p><i>Give students a veterinary supply catalog, such as the Jeffers catalog, and have them complete AS 1.</i></p>	<p>Describe the proper techniques for administration of medications and vaccinations.</p> <ul style="list-style-type: none"> 1. Intramuscular (IM) – made into the muscle; should be given in the neck 2. Subcutaneous (Sub-Q) – given between the skin and muscle; should be given in the loose skin of the neck 3. Oral or drench – administered by mouth 4. Intranasal (IN) – sprayed into the nasal cavity 5. Intravenous (IV) – administered into the jugular vein

Instructor Directions	Content Outline
 AS 1 – Information about Vaccines	
Application:  AS 1 – Information about Vaccines	<p>Answers to AS 1 Answers will vary</p> <p>Other Activities</p> <ol style="list-style-type: none"> 1. Have students research the causes, symptoms, prevention and treatment of diseases in greater detail. MU Guide sheets and the Internet are both good resources. 2. Take a field trip to a veterinarian's office or have a veterinarian visit the classroom. Have him or her discuss the importance of disease prevention.
Closure/Summary	<p>Herd health is essential to the success of any beef operation. The local veterinarian and animal health supplier can give valuable advice and assistance in developing a herd health program. Most diseases can be prevented through proper vaccinations.</p>
Evaluation: Quiz	<p>Answers:</p> <ol style="list-style-type: none"> 1. a 2. b 3. d 4. c 5. An intranasal vaccine is sprayed into the nose. 6. Answers may include any four of the following: IBR, PI-3, BVD, BRSV, pasteurella, and clostridial diseases.