

<b>Course</b>	Agricultural Science I
<b>Unit</b>	Introduction to Beef Production
<b>Lesson</b>	Herd Management
<b>Estimated Time</b>	50 minutes

### Student Outcome

Explain management factors important to profitable beef production.

### Learning Objectives

1. Describe how nutrition affects herd health.
2. Explain the factors to consider in reproductive management.
3. Describe the identification methods for beef cattle.

### Grade Level Expectations

SC/LO/1/B/09-11/b

SC/ST/1/B/09-11/a

SC/ST/1/C/09-11/a

### Resources, Supplies & Equipment, and Supplemental Information

#### Resources

1. PowerPoint Slides
  - ☐ PPt 1 – Gestation Table
2. Activity Sheets
  - ☐ AS 1 – Herd Management Calendar
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.

#### 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 Identification." *Livestock Management*. Cooperative Extension Program. University of Arkansas. Accessed June 29, 2007, from [http://www.uaex.edu/Other\\_Areas/publications/PDF/UAPB/FSA-3002.pdf](http://www.uaex.edu/Other_Areas/publications/PDF/UAPB/FSA-3002.pdf).
  - ☐ National Animal Identification System. Animal and Plant Health Inspection Service. United States Department of Agriculture. Accessed June 29, 2007, from <http://animalid.aphis.usda.gov/nais/index.shtml>.
2. Print
  - ☐ Kellems, R. O., and D. C. Church. *Livestock Feeds and Feeding*. 5th ed. Upper Saddle River, NJ: Prentice Hall, 2002.
  - ☐ Peters, A. and Ball, P. J.H. *Reproduction in Cattle*. 3<sup>rd</sup> Ed. Blackwell Publishing Limited, 2004.
  - ☐ Thomas, H. S. *Storey's Guide to Raising Beef Cattle: Health/Handling/Breeding*. Rev. Ed.


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- North Adams, MA: Storey Publishing, LLC, 1998.
- ❑ Thomas, H. S. *Getting Started with Beef and Dairy Cattle*. North Adams, MA: Storey Publishing, LLC, 2005.
3. Electronic Media
- ❑ *Animal Nutrition Interactive PowerPoints*. University of Missouri-Columbia: Instructional Materials Laboratory, 2006.
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### Interest Approach

Ask students when herd bulls should be turned out with the cows to have calving begin on March 1 and end on April 30. Discuss their answers. Point out that beef cows have a gestation length between 280 and 290 days. Also, focus on the fact that cows will not experience estrus until 60 to 90 days after the birth of the calf.

### Communicate the Learning Objectives

1. Describe how nutrition affects herd health.
2. Explain the factors to consider in reproductive management.
3. Describe the identification methods for beef cattle.

Instructor Directions	Content Outline
<b>Objective 1</b>  <i>Describe the importance of proper nutrition to health and production. Refer to the nutrition unit for specific information about animal nutrition. Discuss possible diets used for beef cattle.</i>	<b>Describe how nutrition affects herd health.</b>  Components of nutrition <ol style="list-style-type: none"><li>1. Energy – provided by fats and carbohydrates</li><li>2. Protein</li><li>3. Vitamins</li><li>4. Minerals</li><li>5. Water</li></ol> Maintenance <ol style="list-style-type: none"><li>1. Involves replacing cells, repairing damaged cells, and fighting off diseases</li><li>2. Requires a balanced diet with essential vitamins and minerals</li></ol> Production increases nutritional needs <ol style="list-style-type: none"><li>1. Growth and development</li><li>2. Gestation</li><li>3. Lactation</li></ol>
<b>Objective 2</b>  <i>Ask students to list various factors to consider when managing reproduction. Discuss the factors with the class. Hand out AS 1 and use PPT 1 to have students develop a herd management calendar.</i>   AS 1 – Herd Management Calendar	<b>Explain the factors to consider in reproductive management.</b>  Limit calving season to 60 days to ensure uniformity at weaning.  Turn the bull out 60 to 90 days after the first calf is born and lock it up 90 days after the last calf to maintain the current calving cycle.  Evaluate bulls for breeding soundness by having their semen checked before turning them out with the cows;

Instructor Directions	Content Outline
<p>📄 PPt 1 – Gestation Table</p>	<p>replace bulls that fail the exams to help ensure that cows will be bred.</p> <p>Check for heat when using artificial insemination.</p> <p>Check all females for pregnancy 60 days after the bull has been locked up; sell open cows.</p>
<p><b>Objective 3</b></p> <p><i>Ask students how someone who is unfamiliar with a herd could find a sick animal in a group of cattle that have no form of identification. Discuss the various identification methods.</i></p>	<p><b>Describe the identification methods for beef cattle.</b></p> <p>Ear tags – plastic tags that hang in the ear of the animal; can be removed if necessary</p> <p>Tattoos – permanent form of identification in which numbers and a herd prefix are tattooed in the ear of the animal</p> <p>Brands</p> <ol style="list-style-type: none"> <li>1. Fire brands – method of identification in which a hot branding iron is used to burn a number or symbol into the hide permanently</li> <li>2. Freeze brands – permanent method of identification in which a branded iron is placed in liquid nitrogen or dry ice and alcohol and then used to brand the calf; grows back with white hair</li> </ol>
<p><b>Application:</b></p> <p>📄 AS 1 – Herd Management Calendar</p>	<p>Answers to AS 1</p> <p>Use PPt 1 - Gestation Table as a basis for evaluating student answers.</p> <p>Other activities:</p> <ol style="list-style-type: none"> <li>1. Bring in different types of ear tags and an ear gun/tagger and let the students practice applying the tags to cardboard cutouts of an ear.</li> <li>2. Take a field trip to a local beef producer and let the students practice body condition scoring cows using the body condition scoring poster available from the Missouri Farmers Association.</li> </ol>
<p><b>Closure/Summary</b></p>	<p>Several factors are important in managing beef cattle effectively. Cattle require proper nutrition to maximize production and remain healthy. Reproduction should be managed closely to ensure reproductive efficiency. Proper identification is necessary for record keeping purposes.</p>

Instructor Directions	Content Outline
Evaluation: Quiz	<p>Answers:</p> <ol style="list-style-type: none"> <li>1. d</li> <li>2. a</li> <li>3. They should be replaced to help ensure that cows will be bred.</li> <li>4. Answers may include any four of the following: energy, protein, vitamins, minerals, and water.</li> <li>5. Freeze branding involves placing the branding iron in liquid nitrogen or dry ice and alcohol to make it cold. White hair grows in after the branding. Fire brands involve using a branding iron heated in a fire. The iron burns away the hair to leave a brand.</li> </ol>