

Course	Agricultural Science I
Unit	Introduction to Dairy Production
Lesson	Introduction to the Dairy Industry
Estimated Time	50 minutes

Student Outcome

Describe the importance of the dairy industry in Missouri.

Learning Objectives


1. Describe the economic importance of the dairy industry in Missouri.
2. Explain how the dairy industry has evolved.
3. Identify modern trends in the dairy industry.
4. Identify career opportunities available in the dairy industry.

Grade Level Expectations

SC/EC/3/B/09-11/a

Resources, Supplies & Equipment, and Supplemental Information

Resources

1. Activity Sheet
 -  AS 1 - A Career in the Dairy Industry
2. *Introduction to Dairy Production (Student Reference)*. University of Missouri-Columbia: Instructional Materials Laboratory, 1997.
3. *Introduction to Dairy Production Curriculum Enhancement*. University of Missouri-Columbia: Instructional Materials Laboratory, 2003.

Supplies & Equipment

- ☐ Milk carton from school's cafeteria
- ☐ Current milk prices from extension office or local milk marketing cooperative


Supplemental Information

1. Internet Sites
 - ☐ Dairy Industry: Milk Production and Dairy Farms. eMints National Center. Accessed August 30, 2007, from <http://www.emints.org/ethemes/resources/S00000466.shtml>.
 - ☐ Dairy Publications. MU Extension. University of Missouri-Columbia. Accessed April 12, 2007, from <http://extension.missouri.edu/explore/agguides/dairy/>.
 - ☐ Employment in the Dairy Industry. Burra Foods Factory Tour. Accessed August 30, 2007, from <http://www.burrafoods.com.au/tour/burrawork.htm>.
 - ☐ Kenealy, M. D. *A Future in the Dairy Industry: The Career Market for Students Trained in Dairy Science*. Accessed August 30, 2007, from <http://www.extension.iastate.edu/Pages/dairy/report95/teaching/dsl-05.pdf>.
 - ☐ LaDue, E., B. Gloy, and C. Cuykendall. *Future Structure of the Dairy Industry: Historical Trends, Projections and Issues*. Accessed August 30, 2007, from <http://www.aem.cornell.edu/research/researchpdf/rb0301.pdf>.

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- ❑ Missouri Dairymen's Resource Guide. MU Extension. University of Missouri-Columbia. Accessed August 30, 2007, from <http://agebb.missouri.edu/dairy/>.
2. Print
- ❑ Pond, K. and W. Pond. *Introduction to Animal Science*. New York: John Wiley & Sons, Inc., 2000.
 - ❑ Schwarzweller, H. K., and A. P. Davidson, eds. *Dairy Industry Restructuring: Research in Rural Sociology and Development*. New York: JAI Press, 2000.
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Interest Approach
Obtain a milk carton from the school's cafeteria. Ask students to calculate how much a gallon of milk would cost if purchased in the lunchroom size containers. Compare that figure to how much the farmer receives. (Contact the local milk marketing cooperative or extension office for current milk prices.)
Communicate the Learning Objectives
<ol style="list-style-type: none"> 1. Describe the economic importance of the dairy industry in Missouri. 2. Explain how the dairy industry has evolved. 3. Identify modern trends in the dairy industry. 4. Identify career opportunities available in the dairy industry.

Instructor Directions	Content Outline
Objective 1 <i>Discuss the economic importance of the dairy industry to Missouri. Focus the discussion on your local community and region of the state. Profile leading dairy areas of the state.</i>	Describe the economic importance of the dairy industry in Missouri. <ol style="list-style-type: none"> 1. The many phases of the dairy industry generate valuable economic activity. 2. In the last couple decades, the number of dairy farms and cows has decreased in Missouri. Agricultural leaders hope to reverse this trend. 3. In 2006, Missouri ranked seventh in the United States for the number of milk cow operations and twenty-first in milk production. 4. In 2003, about 125,000 head of dairy cows were present throughout Missouri. 5. Each cow produced an average of 14,620 pounds of milk per year. 6. The dairy industry in Missouri is primarily located in the southwest. 7. Wright County was the top dairy county as of January 1, 2004, with 11,500 head of dairy cows.
Objective 2 <i>Ask how the dairy industry has evolved in the United States. Compare dairies of today with those in the nineteenth century.</i>	Explain how the dairy industry has evolved. <p>The dairy industry began when settlers brought cows to America in the early 1600s.</p> <p>Until the mid-nineteenth century, the owner of the cow consumed most of its milk; some milk and dairy products were sold to those nearby who did not have their own cows.</p> <p>In the nineteenth century, technological advancements</p>

Instructor Directions	Content Outline
	<p>led to the growth of the dairy industry.</p> <ol style="list-style-type: none"> 1. Refrigerated railroad cars for transport to urban areas. 2. Pasteurization of milk 3. Commercially produced cheese <p>These advances allowed dairy production to become a commercial business, with dairy operations supplying milk to many people.</p>
<p>Objective 3</p> <p><i>Ask how dairy operations are changing. Discuss the differences between past and current dairy trends.</i></p>	<p>Identify modern trends in the dairy industry.</p> <ol style="list-style-type: none"> 1. Decreasing number of operations nationwide with more cows per farm 2. Increase in milk production of existing cows, due to management factors such as the use of BST (bovine somatotropin) 3. Shift in the location of production from the Midwest to the western United States (California, Arizona, New Mexico)
<p>Objective 4</p> <p><i>Have students list careers associated with the dairy industry. Point out that most of the careers in the dairy industry are not in the production of milk.</i></p>	<p>Identify career opportunities available in the dairy industry.</p> <ol style="list-style-type: none"> 1. Dairy producer 2. Loan officer 3. Geneticist 4. Feed company representative 5. Veterinarian 6. Equipment sales and service representative 7. Fluid milk hauler 8. Processing plant supervisor 9. Sales representative for dairy food products
<p>Application:</p> <p> AS 1 - A Career in the Dairy Industry</p>	<p>Answers to AS 1 Answers will vary.</p> <p>Other activities: Schedule a guest speaker who is actively involved in the dairy industry to discuss careers and the future of the industry.</p>
<p>Closure/Summary</p>	<p>The dairy industry is an important part of Missouri agriculture and generates valuable economic activity. In Missouri over the last two decades, the number of dairy</p>

Instructor Directions	Content Outline
	<p>operations and cows has decreased. Dairy production in Missouri is primarily centered in the southwestern part of the state. The general trend in the dairy industry is toward fewer dairy operations, more cows per operation, and increased milk production per cow.</p>
<p>Evaluation: Quiz</p>	<p>Answers:</p> <ol style="list-style-type: none"> 1. c 2. d 3. c 4. Refrigerated railroad cars allowed producers to ship their milk long distances to urban areas. Milk began to be pasteurized. Commercially manufactured cheese became available. 5. Answers may include any three of the following: dairy producer, loan officer, geneticist, feed company representative, veterinarian, equipment sales and service representative, fluid milk hauler, processing plant supervisor, or sales representative for dairy food products.