

# Moo-ving Through the Ages

**Grade Level: 4-8**

## Lesson Overview

As we have moo-ved through the ages, many changes have taken place in the dairy industry. We have gone from lots of farms with some cows milking by hand with no electricity to fewer farms with larger herds and utilizing technologically advanced automated systems. Explore the changes in the dairy industry through a timeline, Illinois dairy numbers, primary source images, and a farm family's story.

## Student Objectives

1. Identify changes that have occurred over time in the dairy industry.
2. Use data to complete charts, work with percentages, variances, make predictions and conclusions from the data.

## Materials

- ✓ Dairy Industry Through the Ages Timeline, worksheet, and Important Dairy Events
- ✓ Illinois Dairy Numbers through the Years & worksheet
- ✓ Dairy primary source images
- ✓ Changes in Dairy Farming through the Eyes of a Farm Family (optional informational handout)

## Procedure

1. Begin by asking the students some simple questions such as: Who has ever seen a dairy cow? Who has ever seen dairy cows being milked? Who has ever milked a cow by hand? Do you think your parents ever milked a cow? Do you think your grandparents ever milked a cow? Do you think anything has changed in the dairy industry in the last 50-100 years? If so, what?
2. Several suggestions for sharing this lesson are provided below. Please choose which ones are most appropriate for your students.
  - a. Provide the students with a copy of the Dairy Industry Through the Years Timeline provided. Ask students to read through the timeline and pick out one or two items they found to be interesting.

Then divide students into small groups. Each student is responsible for teaching their interesting item/event to the rest of the group using whatever strategies will help their classmates learn. While each group member is a teacher, they are also a learner. It is their responsibility to learn the other items/events shared.

As the students work, walk among the groups to observe what is taking place. Be sure to have some type of writing surface ready to record some of their responses.

When the time has come to share as a class, ask students to turn face down any information they have in front of them. Then ask them to share an item/event they learned from someone in their group. Record these on the board, overhead, poster, etc.

- b. Provide the students with a copy of the Dairy Industry Through the Years Timeline provided. Divide the students into six groups. Assign each group a category to look through the timeline for items or events relevant to that category. After identifying those items or events, each group should come up with a way to present information on that category to the rest of the class. Categories may include innovations, education and promotion, processing, organizations, production changes, and consumer impact. Then provide time for groups to share their information.
  - c. Primary source images from various historical times have been provided as a teaching resource. Those images may also be used to have students write a story about the image.
  - d. Have students write an essay comparing and contrasting the dairy industry through the ages.
  - e. Have students complete the timeline worksheet provided by cutting out the Important Dairy Events provided. Alternately, students may write the events in the correct boxes
  - f. Have students read the “Changes in Dairy Farming through the Eyes of a Farm Family” narrative. Ask students to write an essay comparing their family life to the family in the narrative. These could be shared with the class. Another option would be to discuss the narrative as a class instead of each student writing an essay.
3. Have students look at the Illinois Dairy Numbers through the Years information and complete the worksheet.
  4. Ask the students to go home and ask their family members, relatives and friends about their experiences with dairy cows.

## **Extension Activities**

1. Invite a local dairy farmer into your classroom to discuss changes in the industry.

2. Have students explore different milking systems and/or types of housing used over the years.
3. January 11 is National Milk Day. June is National Dairy Month. June 4 is National Cheese Day. July is National Ice Cream Month. October 15 is National Cheese Curds Day. In thinking of these dairy celebrations, what celebrations or special days do students think we should have and why?
4. Using #12 from the Illinois Dairy Numbers through the Years worksheet, students could have a discussion or debate, write a story or paper, make a presentation, etc. to discuss future options for the family dairy farm.

## **Additional Resources**

- <https://www.ilfbpartners.com/farm/farm-life/robotic-milking/> first robotic milking system installed in Illinois
- <https://ilfbpartners.com/farm/digital-dairy-finke-farms-video/> Why this Illinois dairy farm became a digital dairy
- <https://www.youtube.com/watch?v=c4XLZEI154U> Robots revolutionize milking cows
- <https://www.lhf.org/learning-fields/livestock/dairy/> Dairy - Living History Farms
- <https://www.nal.usda.gov/exhibits/speccoll/exhibits/show/the-american-dairy-industry> USDA National Agriculture Library American Dairy Industry special collection exhibit

## Standards

### ***Illinois Social Science Standard***

SS.H.1.6-8.MdC: Analyze connections among events and developments in broader historical contexts.

### ***Illinois Mathematics Standard***

CC.6.SP.4 Summarize and describe distributions. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.

### ***Illinois English Language Arts Standard***

W.5.3 Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

The **M**ultidisciplinary **A**gricultural Integrated **C**urriculum (mAGic) was created in 2004 under the leadership of the Illinois State Board of Education (ISBE) and the Facilitating Coordination in Agricultural Education Project (FCAE). Funding was made available through the FCAE grant budget from the agricultural education line item of the ISBE budget. This revision, as printed, was developed in September 2021.



These mAGic lessons are designed to bring agriculture to life in your classroom. They address the Illinois Learning Standards in math, science, English language arts and social studies.

Dairy mAGic project update writers/reviewers: Rhodora Collins – Dekalb County; Suzi Myers – Kane County; Connie Niemann – Montgomery County; Debbie Ruff – Livingston County; Jennifer Waters – Sangamon County; and Dawn Weinberg – Hancock County.

## Dairy Industry Through the Ages Timeline

- 1611 Cows arrive for Jamestown Colony.
- 1776 First ice cream parlor opened in New York City.
- 1812 Dolly Madison served ice cream at a White House inaugural ball.
- 1834 Jacob Perkins obtains a British patent for the first refrigerator unit.
- 1841 First regular shipment of milk by rail - Orange County to New York City.
- 1846 Ice cream cone and first hand-cranked ice cream maker developed.
- 1851 First cheese factory in the U.S. was built in Oneida County, New York.
- 1861 Louis Pasteur establishes the science of microbiology and the basis for pasteurized milk.
- 1878 Continuous centrifugal cream separator invented by Dr. Gustav De Laval.
- 1884 Milk bottle invented by Dr. Hervey D. Thatcher, Potsdam, New York.
- 1885 Hoard's Dairyman, a journal devoted to dairy farming, was founded and published which shared educational columns with farmers.
- 1886 Automatic bottle filler and capper patented.
- 1890 Test for fat content of milk and cream perfected by Dr. S.M. Babcock. (see primary source images)  
Widespread use of Mehring milking machine. (see primary source images)
- 1892 Grass or hay silage was first recommended as a means of preserving the hay. The practice continues to be used today. (see primary source images)
- 1895 Commercial pasteurizing machines introduced in United States.
- 1904 Waffle cone introduced at the 1904 St. Louis World's Fair.
- 1910 While many of the early milking machine inventions were hard on the cow, inventors eventually developed a better system. A double-chambered teatcup along with alternating vacuum and pulsation provided the solution. The process of mechanical milking had become milk then rest, milk...rest, milk...rest. By now, it was estimated that 12,000 milking machines were being used on 20 million cows in the nation even though still considered experimental.
- 1910-1935 Milk emerged as a staple American beverage. Nutrition became an important issue as public health concerns shifted away from milk sanitation. Milk gained a reputation as a "nearly perfect food."
- 1914 Tank trucks first used for transporting milk.
- 1915 National Dairy Council was created to educate the public about nutrition.

- 1919 Homogenized milk sold successfully in Torrington, Connecticut.
- 1920-21 During this time, University of Illinois Researchers showed chlorine was an effective sanitizer for dairy equipment and utensils. Chlorine is universally used today. They also demonstrated the safety of paper milk containers.
- 1931 Documented changeover to power plants supplying electricity through power lines to farms in December Hoard's Dairyman article. According to the article, one dairy farmer said: "Electric lights save me nearly an hour each day. I get a real thrill from going into my barn early in the morning and pressing a button. Now I can see. 'The dairyman added an automatic water heater to his equipment and experienced the convenience of having hot water "at the turn of a faucet." (see primary source images) Early farm electricity came mostly from gas engines and some wind-powered generators with batteries to store the energy.
- 1932 First plastic coated paper milk cartons introduced commercially.
- 1935 Milk handling was still all done with milk cans. (see primary source images)
- 1935-1960 Innovations included first mechanical barn cleaners, silo unloaders, bunk feeders, elevated milking parlors; shift from horsepower to tractor power rubber tires used on tractors; baling hay became more common than handling it loose. (see primary source images)
- mid 1930's Artificial insemination was adopted in the U.S.; use of only fresh semen limited the service area.
- 1937 Agricultural Marketing Agreement Act establishes federal milk marketing orders. Producers Creamery - Carlinville plant which later became Prairie Farms Dairy was organized.
- 1938 First farm bulk tanks for milk began to replace milk cans.  
First "National Milk Month" was celebrated which later became known as "June is Dairy Month."
- 1940 First federal milk program for schools providing milk with financial assistance from the government
- 1942 Every-other-day home milk delivery started (initially as a war conservation measure).
- 1941-1945 World War II increased the demand for milk. People were asked to use equipment carefully and keep it in good repair because many farm equipment manufacturing efforts switched to producing defense equipment. Even scrap metal was a constant plea for farmers to turn in. In 1942, the Secretary of Agriculture asked dairy farmers to increase milk production by 8 billion pounds to reach 125 billion pounds of milk being produced. War milk production accounted for one-fifth of the total food delivered to allied nations at one point. Universities published information

on how to increase production to meet defense needs. There was even an article in a magazine telling West Coast dairy farmers how to black out their barns to prevent lights from being shown out toward the ocean. (see primary source images) Milking machines were called “war tools” by the USDA’s Bureau of Agricultural Economics claiming they saved 210 million of hours of labor a year.

- 1948 Ultra-high temperature pasteurization is introduced.
- early 1950’s Distribution of fluid milk greatly expanded due to several developments over the years which included paper packaging, pasteurization and homogenization, improved interstate road systems, mechanically cooled semi-trailers, and palletized loading
- 1953 First calf born as a result of artificial insemination using frozen semen.
- 1959 First free stall barn developed in Washington.
- 1962 Automatic calf feeder patented
- 1964 Plastic milk container introduced commercially.
- 1970’s Electronic cow tags invented utilizing radio frequency identification (RFID)
- 1973 Only 10% of Americans still receive home milk delivery.
- 1980 American Dairy Association launches the national introduction of the REAL® Seal dairy symbol (see primary source images).
- 1992 The first commercial Automated Milking System using a robotic milker installed on a farm in The Netherlands. (see primary source images)
- 2000 Automated Milking System using a robotic milker was introduced in the U.S.  
Federal milk marketing orders reformed; component pricing introduced.
- 2010 The first automatic rotary milking parlor was released.

*Note: This information was gathered from several sources. Special thanks to Hoard’s Dairyman and Prairie Farms Dairy for their contributions.*

## Illinois Dairy Numbers through the Years

Year	Average price farmer received per hundredweight	Number of milk cows	Milk production per cow in a year (pounds)	Total milk produced (million pounds)
1930	\$2.21*	1,026,000	4,650	4,650
1940	\$1.82*	1,100,000	4,890	5,188
1950	\$3.41	925,000	5,630	5,208
1960	\$3.76	570,000	7,420	4,229
1970	\$5.50	297,000	9,596	2,850
1980	\$12.90	235,000	10,901	2,540
1990	\$12.90	177,000	14,707	2,559
2000	\$12.30	120,000	17,450	2,074
2010	\$17.10	101,000	18,400	1,840
2020	\$17.90	82,000	21,530	1,787

\* These prices represent the average national price rather than Illinois specific.

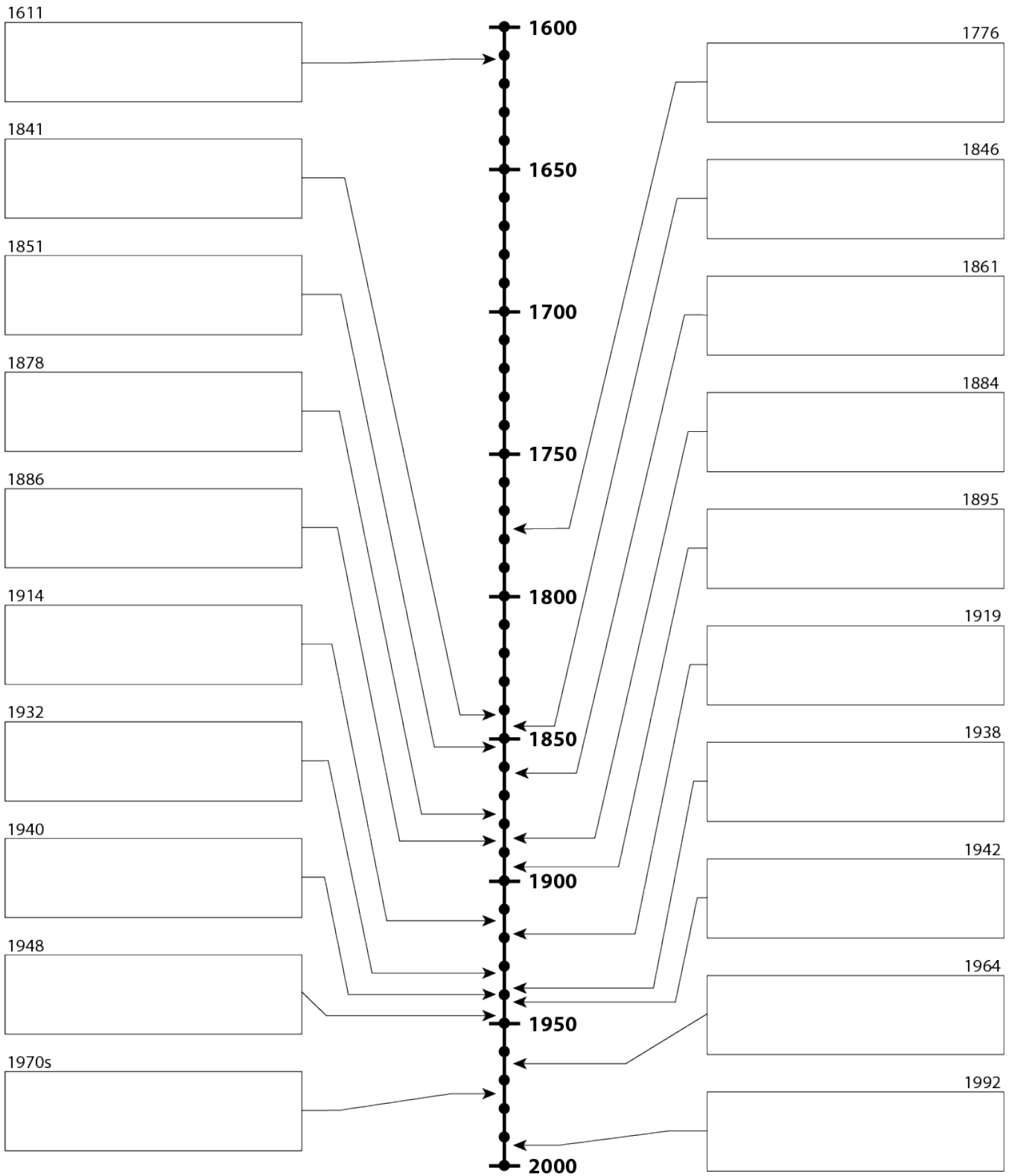
Year (census)	Total Farms in Illinois	Farms Reporting Milk Cows	Share of Farms with Milk Cows
1920	237,181	183,501	77.4%
1930	214,497	183,435	
1940	213,439	183,069	
1950	195,268	143,889	
1959	154,640	56,999	36.9%
1969	123,565	14,803	
1978	104,690	7,021	
1987	88,786	4,304	
1997	79,112	2,259	2.9%
2007	76,860	1,217	
2017	72,651	924	

**Note:** This information was compiled from the National Agricultural Statistics Service web site.



Name \_\_\_\_\_

## Moo-ving Through the Ages Worksheet

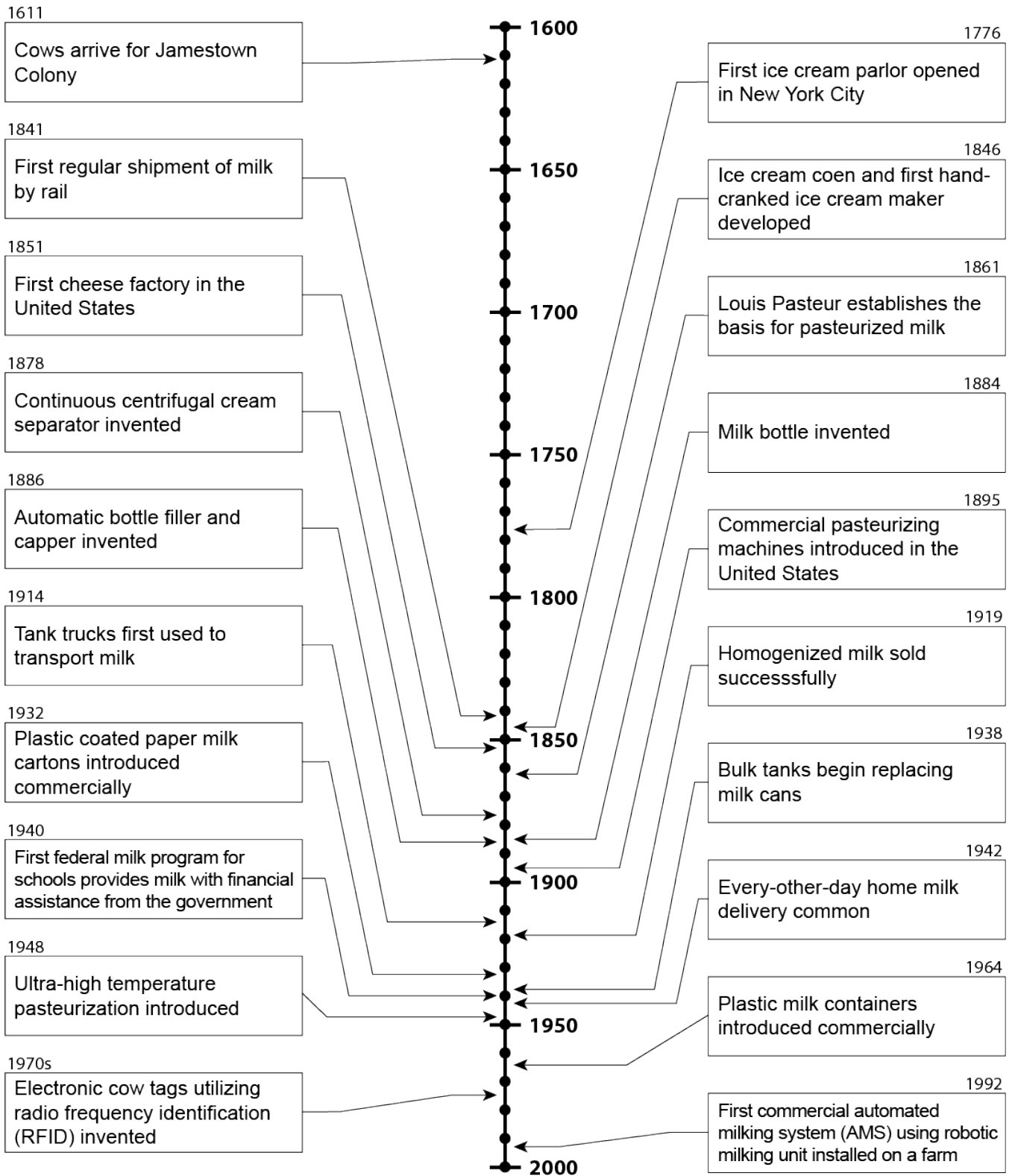


## Important Dairy Events through the Ages

Cut apart the events below and glue them in the correct places on the Moo-ving Through the Ages timeline. (Alternately, you may write the events in the correct boxes.)

Louis Pasteur establishes the basis for pasteurized milk	Milk bottle invented
Commercial pasteurizing machines introduced in the United States	Plastic coated paper milk cartons introduced commercially
Every-other-day home milk delivery common	First ice cream parlor opened in New York City
Automatic bottle filler and capper patented	Cows arrive for Jamestown Colony
First federal milk program for schools provides milk with financial assistance from the government	Continuous centrifugal cream separator invented
First regular shipment of milk by rail	Ultra-high temperature pasteurization introduced
Electronic cow tags utilizing radio frequency identification (RFID) invented	Ice cream cone and first hand-cranked ice cream maker developed
First cheese factory in the United States	Bulk tanks begin replacing milk cans
Homogenized milk sold successfully	Plastic milk containers introduced commercially
First commercial automated milking system (AMS) using robotic milking unit installed on a farm	Tank trucks first used to transport milk

# Moo-ving Through the Ages ANSWER KEY



Name \_\_\_\_\_

## Illinois' Dairy Numbers Through the Years Worksheet

Show your work for each calculation.

1. Before doing any math calculations, by looking at the Illinois Dairy Numbers through the Years chart, what can you tell about the dairy industry in Illinois?
2. Make a prediction as to whether the dairy industry in Illinois will increase or decrease from this data? Support your prediction with evidence in the charts.
3. Complete the farm reporting milk cows chart by finding the percentages of farms with milk cows.
4. What 9/10-year span shows the largest difference in the percentage of Illinois farmers?

What is this difference?

5. What is the difference in price farmer received per hundredweight in 1930 and that of 2020?

Did the price increase, or decrease during this time span?

6. What is the difference in total milk produced in 1930 and 2020?

Did the milk produced increase or decrease?

7. What reasons can you think of to explain the differences in your answers to questions 5 and 6?

8. In what time span did the milk production per cow increase the most?

By how much did it increase?

Why do you think these increases happened?

9. The number of farms in Illinois fell from 1920 to 2017. By what percent?

10. The Share of Farms with Milk Cows also fell from in 2017 to 1920. By what percent?

11. After completing the above calculations, do you agree with your prediction in question 2? Write a conclusion you come to after completing this worksheet as to the status of Illinois dairy farming from 1920 to 2020. Be sure to support your conclusions with data.

12. Imagine a dairy farm family conversation regarding the future of their dairy farm. What are some of the factors important to discuss in making their decision?

## Illinois' Dairy Numbers Through the Years ANSWER KEY

Show your work for each calculation.

1. Before doing any math calculations, by looking at the Illinois Dairy Numbers through the Years chart, what can you tell about the dairy industry in Illinois?

***The dairy industry has decreased in the number of farms and cows. Reasons will vary.***

2. Make a prediction as to whether the dairy industry in Illinois will increase or decrease from this data? Support your prediction with evidence in the charts.

***Prediction should be decrease. Reasons will vary.***

3. Complete the farm reporting milk cows chart by finding the percentages of farms with milk cows. **example:  $183,501 / 237,181 = 77.4\%$**

Year (census)	Total Farms in Illinois	Farms Reporting Milk Cows	Share of Farms with Milk Cows
1920	237,181	183,501	77.4%
1930	214,497	183,435	<b>85.5%</b>
1940	213,439	183,069	<b>85.8%</b>
1950	195,268	143,889	<b>73.7%</b>
1959	154,640	56,999	36.9%
1969	123,565	14,803	<b>12%</b>
1978	104,690	7,021	<b>6.7%</b>
1987	88,786	4,304	<b>4.8%</b>
1997	79,112	2,259	2.9%
2007	76,860	1,217	<b>1.6%</b>
2017	72,651	924	<b>1.3%</b>

4. What 9/10-year span shows the largest difference in the percentage of Illinois farmers?  
**1950-1959**

What is this difference?  **$73.7\% - 36.9\% = 36.8\%$**

5. What is the difference in price farmers received per hundredweight in 1930 compared to 2020?

$$\mathbf{\$17.90 - \$2.21 = \$15.69}$$

Did the price increase, or decrease during this time span? ***The price increased.***

6. What is the difference in total milk produced in 1930 and 2020?

$$\mathbf{4,650 - 1,787 = 2,863 \text{ million pounds}}$$

Did the milk produced increase or decrease? ***Production decreased.***

7. What reasons can you think of to explain the differences in your answers to questions 5 and 6?

***Answers will vary.***

8. In what time span did the milk production per cow increase the most?

***1980-1990***

By how much did it increase? ***14,707 - 10,901 = 3,806 pounds***

Why do you think these increases happened?

***Answers will vary.***

9. The number of farms in Illinois fell from 1920 to 2017. By what percent?

$$\mathbf{72,651 / 237,181 = 30.6\%}$$

10. The share of farms with milk cows also fell from in 2017 to 1920. By what percent?

$$\mathbf{77.4\% - 1.3\% = 76.1\%}$$

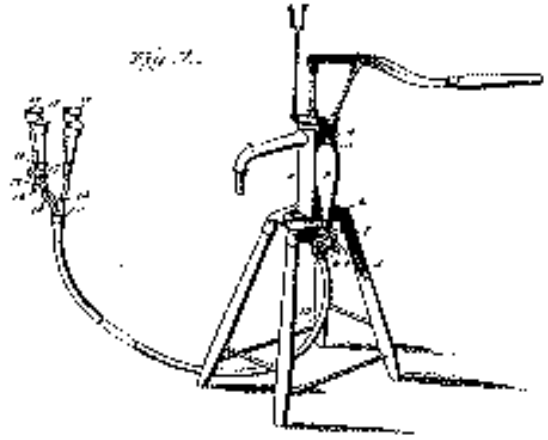
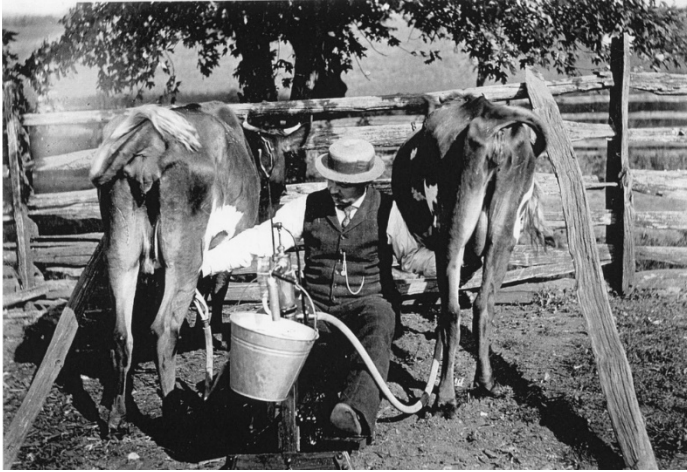
11. After completing the above calculations, do you agree with your prediction in question 2? Write a conclusion you come to after completing this worksheet as to the status of Illinois dairy farming from 1920 to 2020. Be sure to support your conclusions with data.

***Answers will vary.***

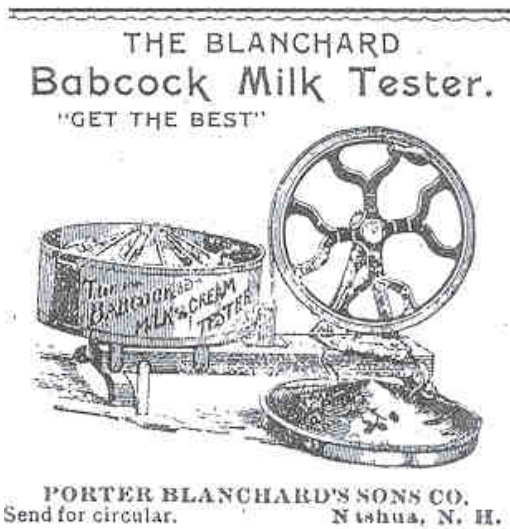
12. Imagine a dairy farm family conversation regarding the future of their dairy farm. What are some of the factors important to discuss in making their decision?

***Answers will vary. Some possible factors may include: any changes in the family size or roles, profitability, expenses, insurance, labor, technology advancement, value added agriculture (such as opening a creamery, cheese plant, ice cream).***

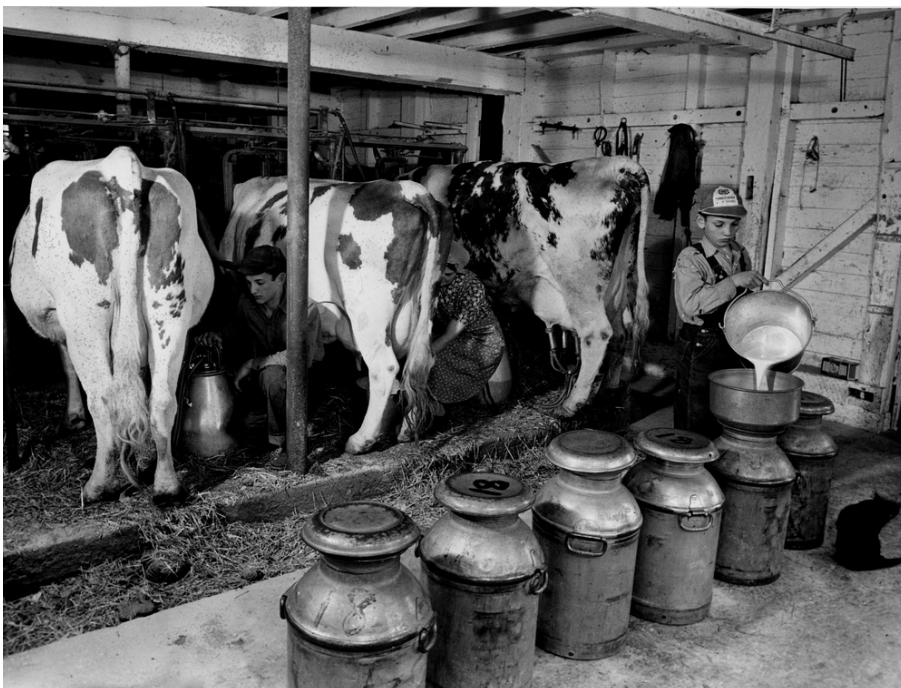
## Moo-ving Through the Ages Primary Source Images



Picture and sketch of the Mehring milking machine used in 1890.  
(From the USDA Bureau of Dairy Industry Records, Special Collections, National Agricultural Library.)



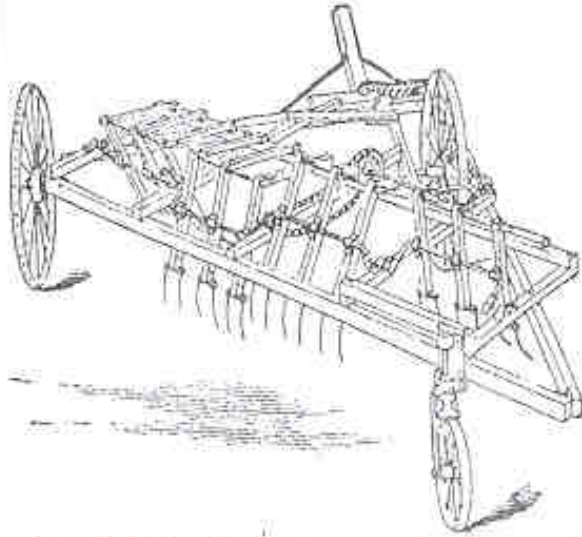
Tester for fat content of  
milk and cream perfected by  
Dr. S.M. Babcock in 1890.



Pennsylvania dairy barn  
showing farmers milking the  
cows, then pouring the milk  
through a filter into the 8-gallon  
milk cans.  
(Emerson Brooks Papers, Special  
Collections, National Agricultural  
Library.)



## Moo-ving Through the Ages Primary Source Images



Only Successful one made.  
Three years use in the field.  
C., B. & Q.

### Side Delivery Hay Rake.

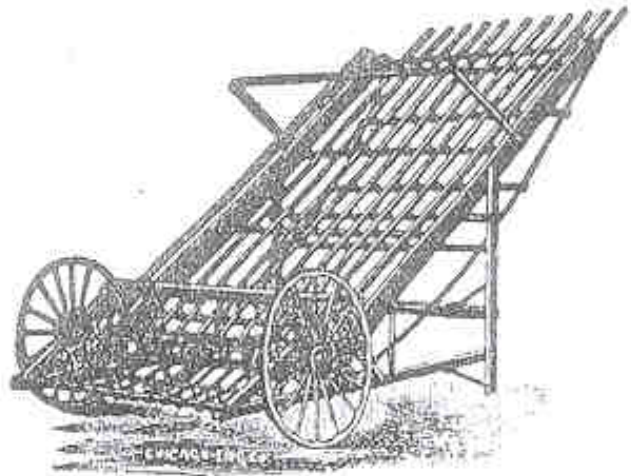
Throws the hay in a loose continuous windrow, so that the sun and wind can penetrate it and thus obviate the necessity of a hay tedder.

The team goes round the field the same as the mower, taking up the driest hay, leaving it shook loosely in the windrow so that the sun and wind will dry it out, if not quite dry when raked.

The BEST Loader ever made. Most durable. Strongest, and will outlast any two loaders made. Being the most serviceable makes it the cheapest.

#### Hawkeye Hay Loader.

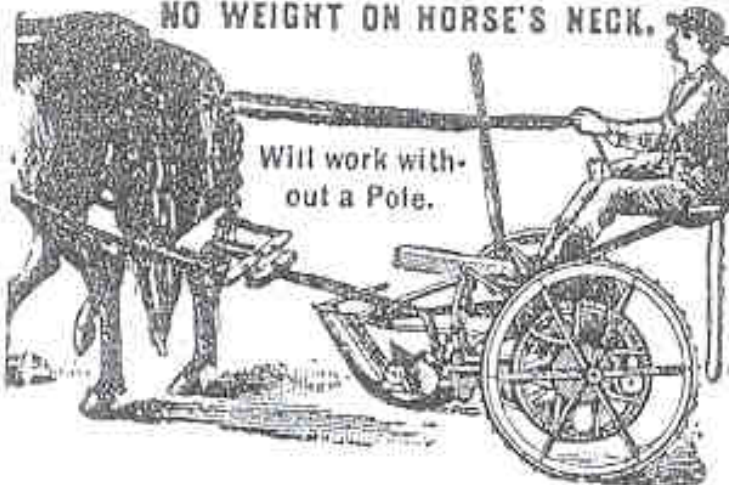
Will take hay from the swath or light windrows, and windrows as made with side delivery Rake. Works on an entirely different principle from any other hay loader ever offered to the public. Has five rake bars with rake teeth in each bar, and rakes against and to the hay and not from it, thereby taking the hay clean from the ground and not dropping it behind the loader. It is easy to handle; can be detached from wagon without getting off the load.



CHAMBERS, BERING, QUINLAN CO., Manufacturers, Decatur, Ill.

## Automatic Mower

NO WEIGHT ON HORSE'S NECK.



Will work without a Pole.

SPECIAL PRICES TO FARMERS.

Write for CATALOGUE and terms.

AUTOMATIC MOWER & MFG. CO.

T. W. HARVEY, Pres. HARVEY, COOK CO., Ill.

These advertisements for a hay rake and mower are from 1892 and provided by Hoard's Dairyman.

## Moo-ving Through the Ages Primary Source Images

Feb. 25, 1910



With progressive farmers it is no longer a question of whether or not to buy a manure spreader. Good spreaders have already proved their value. The real question is—which one will net you the most profit?

The I H C line answers that question. Among the many styles and sizes, you will find one that just meets your needs.

# I H C Manure Spreaders

embody all that is best in manure spreader construction—all that makes for greatest manure profits. They have strength in abundance to withstand the hardest usage; they are simple, sure and steady in operation; they work perfectly with fertilizer in any condition; they are exceedingly light in draft.

I H C manure spreaders are made in three styles; each style is made in three sizes, ranging from 30 to 70 bushels capacity. Corn King and Kemp 20th Century spreaders are of the return apron type; Clover Leaf manure spreaders have endless aprons. Two styles of feed are furnished—either ratchet or double pawl worm gear. There is an I H C to suit each requirement—large sizes for large operations, medium sizes for the average farmer, small sizes for orchards, vineyards—for every condition. I H C spreaders have lime hoods to spread commercial fertilizers; drilling attachments to distribute manure in rows. Whatever I H C spreader you buy will pulverize and spread manure or commercial fertilizer perfectly. You will find it durable, and it will net you big dividends on your investment.

Manure is the cheapest and best fertilizer but it must be handled and spread right or most of its value is wasted. You must have an I H C manure spreader to get 100 per cent value out of the manure. I H C spreaders are doubling the crops of others. The one that suits your needs will do it for you.

See the local International agent to get our catalogue and full information. Or, if you prefer, write us for further particulars.

INTERNATIONAL HARVESTER COMPANY OF AMERICA  
(INCORPORATED)  
CHICAGO U S A



This advertisement appeared in the February 23, 1910 issue of Hoard's Dairyman.

PUREBRED

May 20, 1910

## HOLSTEIN CATTLE



are the greatest milkers in the world. A test was made at the Wisconsin Experiment Station between five Holsteins and five medium weight Jerseys. The Holsteins averaged \$95.31 per head and the Jerseys \$80.01 per head. The Holsteins, the heavier cows, you see yielded the larger return, and while these larger cows eat more, the milk they give well pays for the increased cost in food. Here is a good reason why you should have purebred Holsteins on your farm. Remember

*"Holsteins are the most profitable cattle."*

Send For Free Illustrated Booklets

HOLSTEIN-FRIESIAN ASSOCIATION

201 American Bldg., Brattleboro, Vt.

This advertisement appeared in the May 20, 1910 issue of Hoard's Dairyman.

## Moo-ving Through the Ages Primary Source Images

June 10, 1928



### She Noticed a Suspicious Light

*An Advertisement of the American Telephone and Telegraph Company*

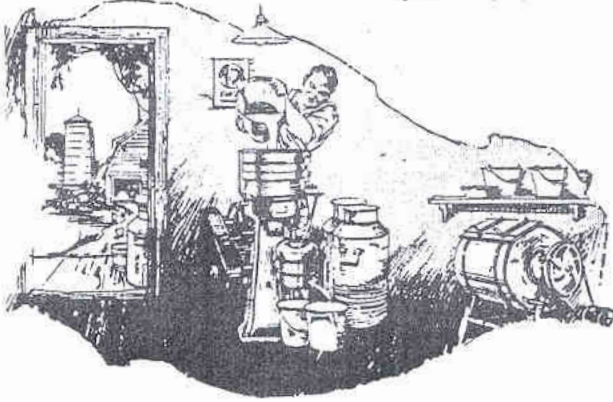
One night a farmer's wife living near Elmer, New Jersey, noticed a suspicious light near her home. She suspected chicken thieves. Going to her telephone, she called the operator at Elmer. The operator notified a number of people attending a grange meeting there. A constable and posse went at once to the farm and caught the thief. He had nearly 3000 stolen chickens penned up near his place of residence. He was convicted and sent to prison.

The telephone serves the farmer in a thousand emergencies. Runs errands to town. Finds out when and where to sell at the best price. Brings the doctor in case of accident or sickness. Reaches the homes of relatives and friends. Pays for itself in money and convenience many times over.

The modern farm home has a telephone.


June 27, 1924



### Push-the-button farms

They call them "push-the-button farms" out through the wheat belt.

Electricity pumps the water, does the washing, churns the butter, dusts the carpets, threshes the wheat, cuts the ensilage—at the touch of a button.



The General Electric Company is cooperating with electric service companies to devise machines and methods that will enable more farmers to enjoy the benefits of electric light and power.

More than half a million farmers have turned over the tiresome chores and hard jobs to this tireless worker.

Millions of farmers need the same efficient help.

## GENERAL ELECTRIC

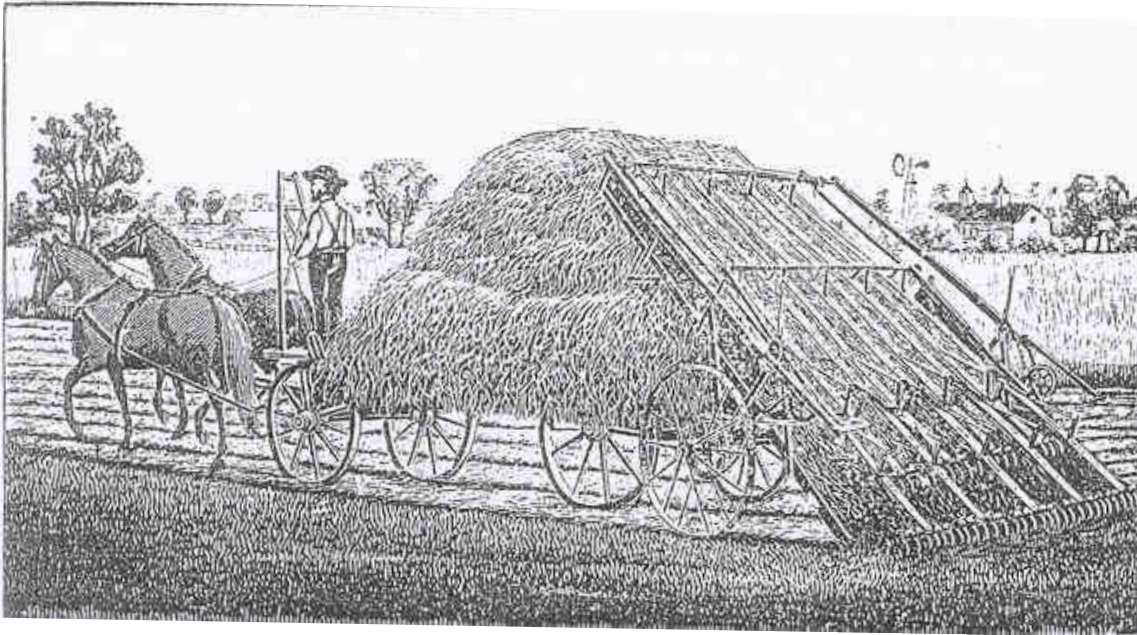
TELEPHONES AND ELECTRICITY reached farms and farm homes last. So during the 1920's, Hoard's Dairyman

contained several ads extolling the benefits of these modern wonders. Today, farms no longer are isolated.

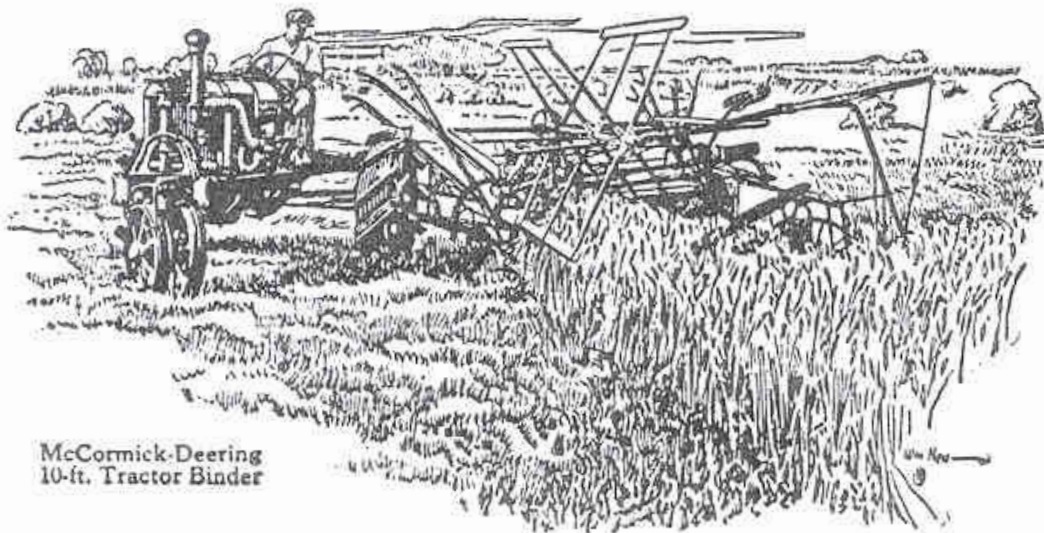


Shown at left is the advertisement for milk in the motion picture *Milk For You and Me*. Walter Johnson holds a milk bottle and straw at American League Ball Park, New York, April 1925. (Taken from the USDA Bureau of Dairy Industry Records, Special Collections, National Agricultural Library.)

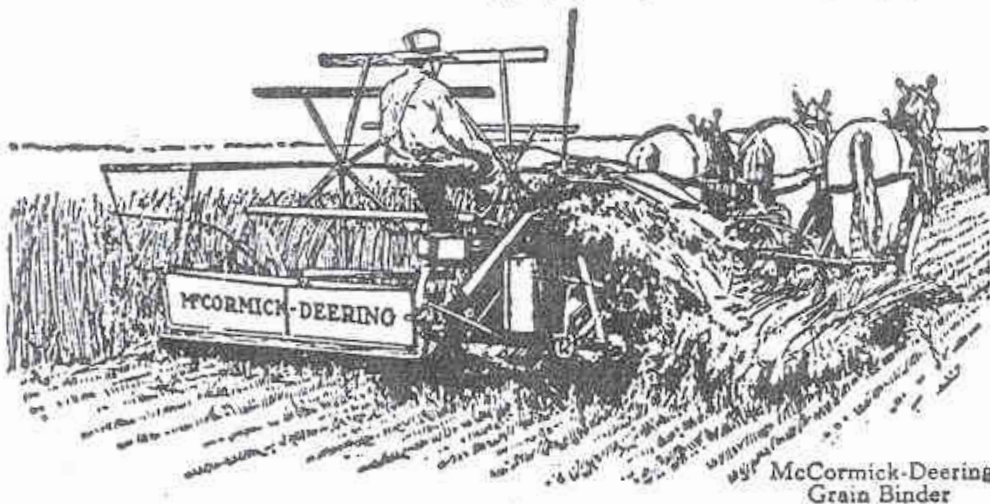
## Moo-ving Through the Ages Primary Source Images



This 1902 photo was printed in Hoard's Dairyman.



Printed in Hoard's Dairyman.



**BOTH TRACTORS AND HORSES** were common in 1935, as can be seen from the illustrations of a McCormick-Deering ad.

## Moo-ving Through the Ages Primary Source Images

Early forage harvester advertisement from March 10, 1940, Issue



# THE EASIEST WAY TO HARVEST HAY

## WINDROW PICK-UP HAY CUTTER

**WHY** make hay the dusty, sweaty, old fashioned way when the modern, up-to-date FOX will do the work for you, and do it much faster, too?

It is the perfect machine for making hay and grass silage — the original and only pick-up cutter. Picks up green or dry windrowed hay — chops all the leaves. One man can pick up, cut and load 1 1/4 tons of dry hay in 7 minutes.

The FOX is used, too, as a silo filler or hay chopper and recutter mill. Equipped with Automatic Knife Sharpener — Motor or Power Take-off Drive — Blower or Side Delivery Carrier. Write for complete information — and name of FOX distributor near you.

Also Manufacturers of FOX Silo Fillers and Hay Cutters

**FOX RIVER TRACTOR CO.**  
1020 N. RANKIN STREET  
APPLETON WISCONSIN



Advertisement which appeared in Hoard's Dairyman on March 10, 1940 for a silage chopper.

Advertisement which appeared in Hoard's Dairyman on August 26, 1910 for a silage chopper.

Aug. 26, 1910

— SEE —

# THE "SILBERZAHN"

## ENSILAGE CUTTERS

At the Coming State Fairs



*Celebrated for its :*

Reversible Feed Rollers      Safety Lever

Most Accurate Knife Adjustment

Safety Fly Wheel and Pulley

Three Main Shaft Bearings    Greatest Capacity

Three Blower Shaft Bearings

Lightest Running

Sold Under Positive Guarantee

Thousands in use; everyone giving the best of satisfaction. It has all the improvements on any of the other cutters besides a great many that no others have. Write for our FREE Trial OFFER and FREE CATALOG.

**GEHL BROS. MFG. CO.,**  
101 S. Water St.,      West Bend, Wis.

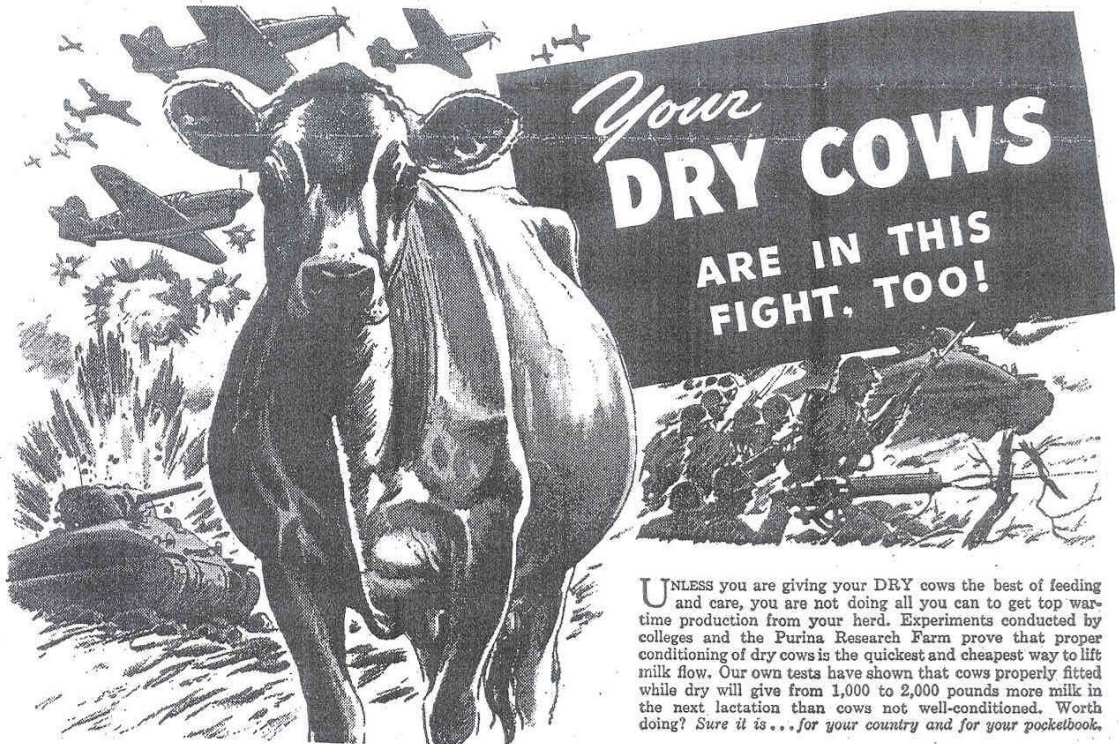
# Moo-ving Through the Ages Primary Source Images

Poster from June 10, 1943, issue



The advertisement at left in the June 10, 1943 issue and the one at the bottom in the September 10, 1943 issue of Hoard's Dairyman.

From September 10, 1943, issue



UNLESS you are giving your DRY cows the best of feeding and care, you are not doing all you can to get top war-time production from your herd. Experiments conducted by colleges and the Purina Research Farm prove that proper conditioning of dry cows is the quickest and cheapest way to lift milk flow. Our own tests have shown that cows properly fitted while dry will give from 1,000 to 2,000 pounds more milk in the next lactation than cows not well-conditioned. Worth doing? Sure it is... for your country and for your pocketbook.

Published in the Interest of Increased Food Production by  
PURINA MILLS, St. Louis, Missouri, Makers of

## PURINA CHOWS

AND SANITATION PRODUCTS

"FOOD WILL WIN THE WAR AND WRITE THE PEACE"



# Moo-ving Through the Ages Primary Source Images

Ad from March 10, 1952, Issue

**FIRST CHOICE...**

# Steinhorst



**BULK MILK COOLING TANK**

Specially designed to give fast cooling and low temperature storage . . . has removable and interchangeable stainless steel covers and multiple-circuited evaporator! All parts in contact with the milk are highly polished (18-8) stainless steel—sanitary and easy to clean!



**SPRAY-TYPE, SIDE OPENING MILK COOLER**

You don't lift the milk . . . you slide it . . . and it cools to 50° in less than an hour! See the Steinhorst complete line before you buy!



Write for full information!

**EMIL STEINHORST & SONS, INC.**  
Since 1908  
UTICA, NEW YORK

**OTHER FAMED STEINHORST PRODUCTS**  
MILK COOLERS      FREEZERS



IMMERSION-TYPE      All Popular Sizes!

The advertisement at left was taken from the March 10, 1952 issue of Hoard's Dairyman showing a bulk milk cooling tank which held the 8-gallon milk cans.



The advertisement at right shows a milk scale used to weigh milk on the farm.

# MILK SCALE.

Capacity 30 lbs.  
EVERY . . .

Dairyman,  
Farmer, or  
Breeder

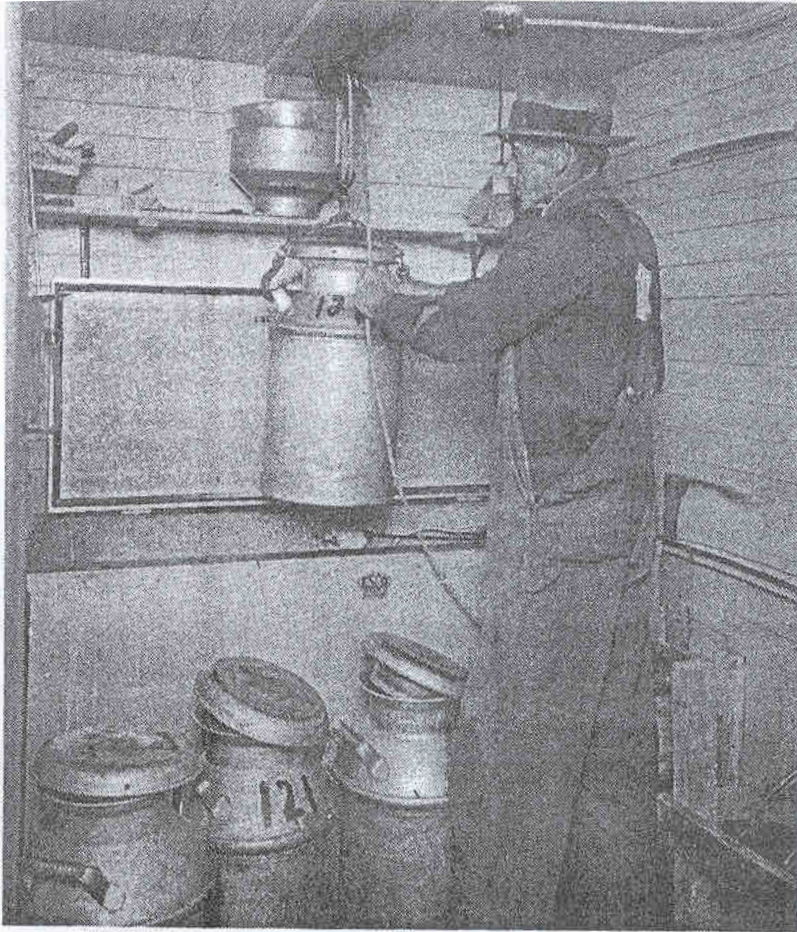
Should have one as it enables you to keep an

**ACCURATE RECORD**  
of the milk produced by each cow. Price with record blanks \$5.00.

Address—  
**BORDEN & SELLECK CO.,**  
CHICAGO, ILL.



## Moo-ving Through the Ages Primary Source Images



This photo shows a farmer lifting an 8-gallon milk can into a bulk milk cooling tank which was provided by Hoard's Dairyman.

**WHEN ELECTRICITY REACHED THE FARM**, dairymen had a more reliable way to cool milk, which still was kept in cans.



A butter churn above and a cream separator at right provided by Hoard's Dairyman.





## Moo-ving Through the Ages Primary Source Images



Modern day milking machine shown in use in a milking parlor.



This picture shows a modern bulk tank used to store milk on the farm.

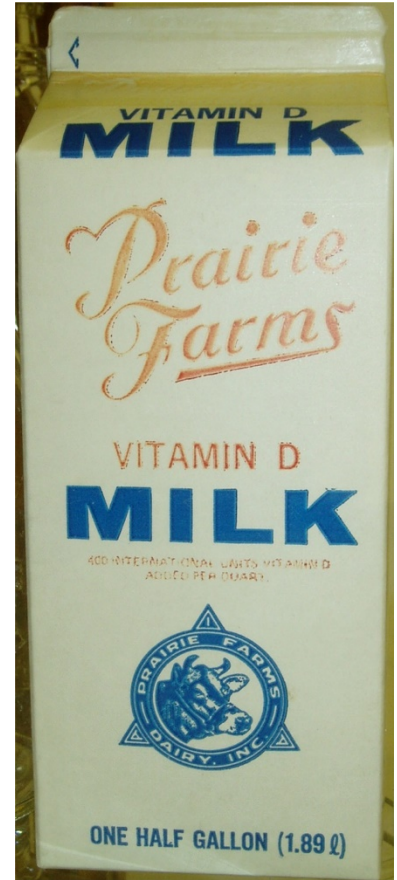
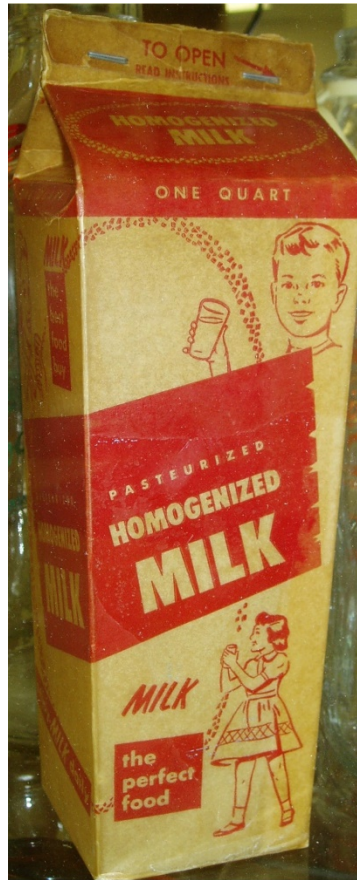


Pictured above is an automated milking system using a robotic milker.



The "REAL" Seal provides easy recognition of real dairy products. The Seal's ability to establish quick visual identity has a substantial impact on consumer awareness, recognition and appreciation of real dairy foods.

## Moo-ving Through the Ages Primary Source Images



The top left graphic is an old milk bottle pictured in an early issue of Hoard's Dairyman which reads, "This bottle to be washed and returned." The other photos on this page were provided by Prairie Farms Dairy. In the top row are pictures of an old glass milk bottle and two old milk cartons. The photos in the second row show old containers for ice cream and cottage cheese.

## Moo-ving Through the Ages Primary Source Images



a gallon glass milk bottle from the early years



a plastic jug from the early years



current half pint cartons



current 14oz milk bottles



current gallon plastic jugs

## Changes in Dairy Farming through the Eyes of a Farm Family

The dairy industry has gone through many changes over the years. My family members have experienced those changes on our dairy farm. There was a time many, many years ago when farmers all had a few cows, chickens, hogs, horses, a garden and a little acreage to farm. They raised what they needed to feed and support their family. Today, farms are larger and usually not as diversified. Most dairy farmers do not raise a large number of hogs, chickens, and other livestock besides their dairy cattle. While my family farms the same land as my grandparents, they increased the number of acres they farm.

My grandparents both grew up on farms and had many chores to do to help out. When they got married in 1931, they started their own farming operation with 132 acres. Each of their parents gave them a couple cows to get started. They built their herd from there for they would be too expensive to buy. My 98-year-old Grandma shared that they had 10-12 cows they milked by hand every day in the morning and again at night. Grandpa would milk half and then Grandma would milk half. One of them wouldn't have the strength to milk them all. The milk was filtered into 8-gallon milk cans that were kept cold with cool water. The milk man came to pick up the milk cans everyday as he traveled from one farm to the next to take them to the bottling plant. They had to heat the water to clean the milk cans out really good before refilling the cans with fresh milk. Grandma said, "When electricity came out, we thought we were in seventh heaven." Then, they had a cooler to store the 8-gallon milk cans in. "We went along with the times," Grandma said as she talked about all the new inventions that came along. When they began a family, they got an electric milker so one person could milk all the cows when need be. They drank the milk they produced. In the early years, they had to heat the milk first and

then cool it down. After refrigeration came, they didn't have to do that anymore. Grandma said, "Those were the good old days; but, I don't want those back either. It was hard labor. Everybody had their work cut out for them." They grew and baled their own hay. They grew some corn and soybeans too. They raised lots of chickens. In the earlier years, Grandma said they hatched their chicks on the farm; however, in later years, they would take the eggs to a hatchery a hundred at a time. They butchered their own animals to provide meat for their family. They raised all their own calves for they would be too expensive to buy replacement cows. While there wasn't much sickness with the animals, there was a veterinarian they could call upon.

When Grandma was growing up, they learned both German and English in school. Could you imagine as young child having to learn ABC's in two languages? About half of her studies were in German and the others in English. They had two teachers - one for each language. Her parents spoke both languages. The preacher offered two church services each week - one in German and one in English. She and her siblings walked to school unless the weather was too bad. Just as today, they had a couple months off during the hot Summer months from school. They didn't have any outside or extracurricular activities like they do today. High schools were not common at the time either. Grandma told me, "Those were the hard days. You're living in the best of days."

My Dad was born and raised on this farm. When he was young, his family quit using the milking machine and went back to milking by hand due to problems with infections. Dad and his three sisters all had chores to do to help Grandma and Grandpa with the farm work. They would bring the

cows into the stanchion barn at night where they were milked and fed. The cows would stay in the barn overnight until after the morning milking when they were turned out into the pasture when the weather was good. Then at night the process would start all over by bringing them back in and tying them up. Until Dad was a teenager, they also raised some hogs. They grew corn, hay and oats. They only fed a little grain at the time. In the fall, they would cut up some of the ears of corn when it was still in the milky stage to feed the cows. The hay was mostly fed in the wintertime. Before they bought a round baler, the hay was stored loose in the barn loft. In 1951, they bought a tractor to use instead of horses for cutting hay. They began growing soybeans in the 1950's. Dad shared that one summer in the 1950's, the creek went dry from the heat and lack of rain. Then they had to water all the animals from the wells. They rotated between three different wells. At this time, they were shipping what was called manufactured milk. This was milk used to make various dairy products such as butter. As the dairy herd grew, they milked the cows in shifts because all the cows did not fit in the barn at the same time. All the milk was still being stored in milk cans in a milk cooler at this time. The milk in the cans had to be stirred periodically throughout the day to keep the cream from separating. Dad said they drank some of the milk their cows produced and sold the rest. Sometimes they even skimmed the cream off the top to eat on their cereal. Dad bought his first tractor, a 550 Oliver in 1961.

Mom also grew up on a livestock and grain farm where they had dairy cattle, chickens and hogs in the early days. In the later years, they raised beef cattle and chickens. Mom's family was unique in that when her parents got married, they moved in with her mom's parents. So, for many years, three generations lived and worked under the same roof. Mom said they had a windmill

on their well that pumped water to the cows. In the early years when the milk inspector wanted her family to modernize their operation, they decided to quit milking for it would be very expensive to make those changes. Then, they began raising white-faced Hereford beef cattle. Mom said they butchered their own meat and processed it all right there on the farm. It took a lot of work.

My parents bought the dairy farm from my grandparents when they got married in 1967. They decided to make some improvements to the operation and switch to Grade A milk which was sold as fluid milk. Grade A milk was worth more money. Some of the improvements they had to make included pouring more concrete (no cracks allowed), liming the floor every day, keeping everything much cleaner, putting in a wash vat, hot water heater, screens on the doors and windows. A milk inspector periodically came to the farm for surprise inspections to ensure the quality standards were being met. They also went back to using a milking machine. The milking machine had to be dipped in chlorine water to sanitize (clean and kill bacteria) it before putting it on the next cow. The buckets of milk had to be carried to the milk house where they were poured through a filter into the milk cans. Then the milk cans were stored in the milk cooler. Some cows had to have kickers put on before they were milked to keep the farmer from being kicked. It could be dangerous at times working with the cattle. My parents kept handwritten records on the production of each cow once a month by weighing the bucket of milk before pouring it into the milk cans for storage. Each cow wore a chain with a number on around their neck like a necklace. The second year they were married they built a 60-foot concrete silo. The silo was used to store silage for the cows in. Many years later they extended the silo another 10 foot. In their third year,

they built a large pond where three smaller ponds once were. By now they were milking about 30 cows and putting the milk in a bulk tank. So, the buckets of milk were carried and poured into the large tank instead of several milk cans. In 1975, my parents decided to build a milking parlor to make the whole operation quicker, safer, more convenient, and keep the cows cleaner. With the parlor came more milking machines and a pipeline to carry the milk to the bulk tank. All these improvements allowed them to continue expanding their herd. They began using artificial insemination in the 1980's to improve their herd through breeding. This provided them with better bull choices. It also improved the safety on the farm when the bulls left. Holstein bulls often got very mean and dangerous when they got more than 3 or 4 years old. Before artificial insemination, they had to be careful when they were around the bull and be sure to sell him before he got mean. In the early 1980's, my parents began buying a couple registered dairy cattle which my brother and I showed at the county fair.

Growing up on a dairy and grain farm was wonderful. I learned many things that make me the person I am today as a result. My parents, brother and I all worked together to get the work done that needed to be done. It had to be a team effort. Dairy farming is a different lifestyle than most people ever know. Our lives and schedules revolved

around the dairy farm. The cows had to be milked twice a day at regular intervals every day of the year. It did not matter what the weather was, how you felt, or where you wanted to go for the work still had to be done. On holidays, we gathered with family members between and/or after milking times. There were only a few times that I remember our family taking a vacation. When we did, we had to hire and train someone to run the operation while we were gone. Besides milking cows, we worked in the fields growing alfalfa hay, corn, soybeans and wheat. Life on the farm was never dull. There was always something to do. It taught me a valuable work ethic. I learned that you worked until the job was done. You give anything you do 100% effort and do it the best you can. When my family decided to quit milking in 1997, I learned more about the lifestyle that many other people live. While the decision to quit was based on many reasons, one of the main reasons was that the dairy operation had reached the point at which expansion requiring lots of money was needed if it was to continue. We were milking about 65 cows at the time and had over a hundred calves and heifers. However, most dairy operations were expanding to 100-300+ cows in order to make a living. As a result of the changing times, the county I grew up in that once had quite a few dairy farms only has a few left today.