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# AgMag

The Magazine of Minnesota Agriculture in the Classroom

## Agriculture Is Everywhere



Photo Courtesy Minn-Dak Farmers Cooperative

### What's the Crop?

Clue: Chances are you've eaten its product today.



### Mystery Word:

Sesquicentennial

I think it means: \_\_\_\_\_

### Can you live without agriculture?

When you woke up in your bed this morning, you already had your first meet-up with agriculture. Somewhere in your bedding were materials made of fibers from cotton plants.

- Did you wash or shower with soap? That soap is made from fat from cattle and oil from corn and soybeans.
- Did you have cereal, eggs, milk, bacon, pancakes, buttered toast or juice for breakfast? Thank agriculture again!
- Did you pack a lunch in a paper bag, or finish today's math by writing on paper? That paper comes from another agricultural crop—trees. Corn and soybean **by-products** help hold the ink on the paper.

How did you get to school? Did you walk in shoes of leather? Did you pass a city park, a golf course, an orchard or nursery? Did you see a windbreak or a sod farm? All of these are agriculture, too.

Can you have an ag-less day?  
There's just **NO** way!

# What is Agriculture?

Maybe you said agriculture is farming. You thought of planting and harvesting crops and forests, or raising **livestock** and poultry. Maybe you said it was milking cows or selling fruits and vegetables. It's all this and more.

Agriculture is the industry that grows, harvests and brings us food, fiber, forests, turf and landscaping materials.

What is the only industry we need in order to survive?

Name it

If you said agriculture, you're right. And if you eat, wear clothes or have a home, you can see how you depend on agriculture yourself!

- **Food** comes from plants and animals.
- **Fiber** is the raw material from plants and animals that we use to make cloth and clothing, rope and more. Cotton, linen, silk, wool, sisal and hemp are fibers.
- **Forests** give us tree fiber that becomes lumber, furniture and pencils; pulp for paper; and wood for hundreds of other things.
- **Turf and landscaping** materials include flowers, ornamental plants and turf (sod) for beauty, pleasure and recreation.

Agriculture brings us almost everything we eat, wear or use each day.

## Agriculture is more than farming!

Agriculture is our nation's largest industry. More than 20 million Americans work in agriculture. They have jobs in:

### Production:

growing and harvesting.

### Processing:

changing raw materials into forms we can use.

### Distribution:

getting the products to us.

Which part of agriculture does each group of workers below fit into? Label the three groups: production, processing, distribution. Circle a career that interests you. How can you find out more about it?

A

- Rancher
- Forester
- Seed grower
- Veterinarian
- Dairy farmer
- Farm equipment dealer
- Greenhouse manager
- Animal genetics researcher
- Soil scientist
- Plant biologist
- Sod farmer
- Gardener

B

- Food safety inspector
- Cereal chemist
- Sawmill worker
- Corn canning factory worker
- Food biosecurity specialist
- Woolen mill engineer
- Fashion designer
- Leather tanner
- Nutritionist
- Carpenter
- Butcher

C

- Exporter
- Truck driver
- Train engineer
- Restaurant server
- Greenhouse sales clerk
- Grocer
- Barge captain
- Ad writer
- Pizza delivery driver
- Farmers' market vendor
- Food store inspector

By each photograph, write the letter of the list it fits into.



Photos Courtesy: University of Minnesota Agricultural Experiment Station





# Celebrating Minnesota Agriculture!

Agriculture is Minnesota's leading industry. Agriculture represents thousands of jobs and millions of dollars in our state. Whether you live in the city or country, it's a sure bet many of your friends or neighbors and maybe even you rely on agriculture for jobs. About one in every five Minnesota workers (20%) has a job connected to agriculture.

What food, fiber, turf/landscape or forest businesses are in your community? Do you know anyone who works for an ag business or on a farm?

Match each company/organization to the raw (direct from the farm or soil) and processed products.

A **logo** is a sign or symbol that stands for a company. Circle the ag business logos you might see in your kitchen.



**Land O'Lakes, Inc.**



American Crystal Sugar Company

Hey, that's me!

Try your hand at designing a logo that stands for you! Start with your initials.

## Company/Organization

1. Cargill
2. Hormel
3. American Crystal Sugar
4. John Deere
5. Boise
6. Schwan's
7. Land O' Lakes
8. Old Dutch
9. Malt-O-Meal

## Raw Product

- hogs
- trees
- oats
- corn
- steel
- sugarbeets
- milk
- potatoes
- milk

## Processed Product

- corn syrup (for pop and juices)
- sugar
- paper
- cereal and snacks
- pepperoni and ham
- farm machinery
- ice cream
- potato chips
- cheese and butter

## Minnesota AgBrag

- Minnesota is ahead of other states in requiring the use of ethanol and **biodiesel** in our vehicles. These cleaner-burning new fuels are made from our own Minnesota corn and soybeans.
- The U.S. is the world's largest exporter of farm products. Can you name Minnesota's three biggest ag customers? (HINT: These are their flags.)
- In 1800 it took 373 human hours to produce 100 bushels of wheat. In 1987, it took less than 3 labor-hours. The reason is modern machinery.



Millions of tons of wheat, corn, soybeans, oats, sunflowers and other grains are shipped overseas each year from the Port of Duluth. Docks for oceangoing ships line 49 miles of harbor in Duluth/Superior.

Photo Courtesy University of Minnesota Agricultural Experiment Station

Do you know which Minnesota city **leads North America** in soybean processing?

Now turn the page to see what grows where in Minnesota!

# 4 Minnesota Grown

What makes Minnesota such a terrific state for agriculture? It starts with a great variety of **soil types** and **terrain** that's good for farming. Add the right weather pattern. That means the right amount of rainfall at the right time in the right place during our **growing season**. All of this makes our state tops in many crops!

What grows where? Check out the map and clues. You'll discover Minnesota's four main growing areas. In which do YOU live?

Match these clues with the names of the areas.  
Write the name of each area in its region on the map.

## Clues

1. Flat land with fertile prairie soils. Enough moisture to be a big producer of cash grains: wheat, oats, soybeans, barley, sunflowers, sugarbeets, dry beans and potatoes.
2. Fertile soils, more moisture. Location farther south gives longer growing season. Big producer of crops and livestock. Corn, soybeans, cattle and hogs are examples.
3. Hilly region dotted with hay and pasture lands. Leading area for dairy cattle. Other livestock and crops, too.
4. Rough, rocky areas and less fertile forest soils. Few field crops, but many pine and hardwood forests.

### AQ Talk

**Livestock and Crops:**  
Agricultural animals and the crops farmers raise mainly to feed them.

**Cash Grains:** Crops farmers raise to sell for money.



Northeast

A.



Southwest

B.



Northwest

C.



Central/Southeast

D.

Unscramble the letters to name the Minnesota county that leads the nation in sugarbeet production.

**OKPL**

Circle it on the map



After Tail County leads the state in bison (buffalo) production. Circle it on the map.

Martin County has the most hogs of any county with 700,000! Circle it on the map.

**OCTOBER** is National **Pork** Month.



The Mississippi River transports 66% of all grain exported from the United States.

**Find it on the Map!**



Marshall - wheat  
Redwood - soybeans  
Brown - green peas  
Clay - sugarbeets  
Stearns - dairy

Martin - hogs  
Morrison - beef cows  
Otter Tail - bison  
Anoka - sod

Koochiching - paper  
Aitkin - bluegrass seed  
Kandiyohi - turkeys  
Lincoln - sheep

Jackson - corn  
Roseau - canola  
Sherburne - potatoes  
Norman - sunflowers

St. Louis - wood products  
Renville - tilapia (fish)  
Dakota - farmers' market  
Winona - hay

1. Find each county. Use this code to put colored dots on the map: green for forest products; blue for field crops or cash grains; red for dairy and livestock.

2. Look at your dots. What do you notice about where things grow in Minnesota? Unscramble the letters to discover five things that make each growing area different from the others.  
Hint: All the words appear somewhere on pages 4 and 5.

iosl yptes \_\_\_\_\_  
thwaeer \_\_\_\_\_  
llafinar \_\_\_\_\_  
rraiten \_\_\_\_\_  
gingow saseno \_\_\_\_\_

## Northwest



### Question

One of these crops makes your food sweeter. The other is a tasty snack. What are the crops?

Your Answer \_\_\_\_\_

## Northeast



### Question

You'll find this crop in lakes, marshes and water-filled paddies. It's also Minnesota's state grain. What is it?

Your Answer \_\_\_\_\_

## Southwest



### Question

Both of these crops are big businesses in Minnesota and are exported throughout the world. What are the crops?

Your Answer \_\_\_\_\_

## Central/Southeast



### Question

Livestock of many kinds are raised here. These animals give us milk and meat. What are they?

Your Answer \_\_\_\_\_

## Think & Discuss

Why don't the same crops grow equally well across Minnesota?

Why is the growing season shorter in northern Minnesota than in southern Minnesota?

Why do we find lots of corn and soybean crops in major livestock areas?

TOP 10

Where do we stand?

Minnesota ranks in the **top ten** producers in the nation in these products! (2006 ag commodities)  
**1st** in sugarbeets, turkeys, sweet corn and green peas for processing  
**4th** in corn, sunflowers, dry edible beans, flax, American cheese and mink pelts  
**7th** in all hay and ag exports  
**8th** in all wheat  
**10th** in eggs and cattle/calves on feed

Photos Courtesy University of Minnesota  
Agricultural Experiment Station







# The Mighty Mississippi: Linking Northern and Southern Agriculture

The great Mississippi River starts in Minnesota. Do you know in which state it ends? Or what agriculture might be like in that state?

Welcome to Louisiana! It's hot and humid most of the year. The Mississippi River ends its journey here as it empties into the Gulf of Mexico. Water and lowlands are everywhere in the Pelican State.

The mighty Mississippi River at New Orleans.



- The state's elevation ranges from approximately eight feet below sea level in New Orleans to 535 feet above sea level at Driskill Mountain.
- Louisiana has the longest coastline of any state—15,000 miles. Louisiana has 5,000 miles of navigable waterways.
- Louisiana is home to 41% of the nation's wetlands.

But what about the agriculture of Louisiana? How is it different from Minnesota's? The climate, culture, wetlands and water access to the world make Louisiana's agriculture quite different from the corn, soybeans, sugarbeets, wheat, dairy cows, hogs and turkeys found in Minnesota. Think about it:

- Forestry is the #1 agriculture industry in Louisiana, covering 14 million acres.
- Seafood is big business. The state ranks #1 in the nation in producing crawfish, shrimp, alligators and oysters.
- Louisiana ranks #2 nationally in sugar cane and sweet potatoes, #3 in rice, and #5 in cotton and pecans.

The next time you eat some shrimp or rice, know that it just might have come from our farming friends at the other end of the Mighty Mississippi!



Crawfish are raised in ponds and harvested in traps.

*Photos Courtesy Aggie*

## FARMERS KNOW

# "Mother Nature" Rules!

Each year farmers plant their fields with hopes of a good harvest that they can take to market or use on their own farms to feed their animals. They also realize each year is a gamble. They know that 'Mother Nature' controls the weather and they must simply watch and hope for the best. The summer of 2007 seemed a little different for every farmer across the state.

All summer farmers in central Minnesota watched the skies, hoping for rain. Day after day, no rain fell. By August, farmers near Pierz, MN, had received less than two inches of rain on their land the entire growing season. Even the irrigated crops were half their normal size. Along with the drought, high winds and hail further damaged crops in the field. At least 24 counties were declared agricultural disaster areas.



Flood waters and mud buried this farm near Stockton, MN.



Drought in central Minnesota. Normally in August this corn should be green and at least six feet tall.



Notice the stream and where it overflowed and destroyed crops.

*Photos Courtesy Agri News*

In southeastern Minnesota crops were looking pretty good until the now-famous flash floods on August 18-19, 2007. Some areas received up to 17 inches of rain within 24 hours, and the rains kept coming. Hillsides washed away and fences were destroyed. Horses, sheep, cows and other livestock were missing or drowned. Field crops were under water, towns flooded, homes and businesses destroyed. Grain storage sites were ruined and river channels completely changed overnight. Millions of dollars of damage were caused by nature's forces. As one farmer stated, "It's an odd feeling as you watch it happen. There's nothing you can do."

Steele, Dodge, Olmsted, Wabasha, Winona, Fillmore and Houston Counties all received heavy water damage, and have been declared agricultural disaster areas. Federal and state governments are working together to help farmers, businesses and towns that were heavily damaged in the floods.



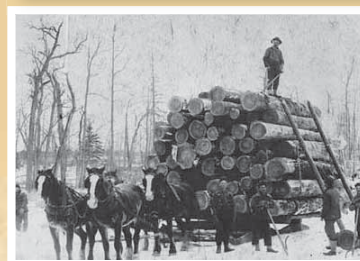
**Sesquicentennial**  
**1858-1908**  
**1908-1958**  
**1958-2008**

# MINNESOTA AGRICULTURE THROUGH 150 YEARS OF STATEHOOD

**D**uring this school year, Minnesota will turn 150 years old. This milestone is called a Sesquicentennial, and it's something to celebrate! Your AgMag will look back at Minnesota's great agricultural heritage in 150 years of statehood.

Long before white settlers arrived and long before statehood, who was here? The answer: Minnesota's first farmers. For hundreds of years the Ojibwe (Anishinabe) and the Dakota Indians had fished, hunted, gathered or tended crops along Minnesota's lakes and rivers. In the early 1820s Fort Snelling was built on the hill where the Mississippi and Minnesota Rivers meet. The troops needed food, so soldiers became farmers who tilled 200 acres of nearby land for crops.

In 1849 Minnesota Territory was established, stretching west to the Missouri River in what would become North and South Dakota. On May 11, 1858, Minnesota was admitted into the Union as the 32nd state. Newspapers proclaimed a glorious future for the new state. Here are some key events of our first 50 years of statehood when agriculture—food, fiber, forest—led the way!



More than two-thirds of Minnesota was covered with trees when the state's first industry, logging, began. Waterpower from St. Anthony Falls was used for sawmills from the 1840s on, and later for textile and flour mills. By 1880 the power of the Falls—and Minnesota wheat—made Minneapolis the Flour Milling capital of the nation. A year later, Pillsbury's new A Mill was the largest flour mill in the world. Where is St. Anthony Falls?

The Homestead Act of 1862 opened up millions of acres of free land for settlement. To qualify for 160 free acres, settlers had to live on and farm the land for five years. The act brought 75,000 people to Minnesota within three years. Many of the early homes were built of prairie sod. What else can you discover in the photo?

Minnesota's first shipment of spring wheat reached Chicago in 1859—the start of an agricultural export that by 1875 became King. Production grew wildly as new railroads connected farms to inland markets. Between 1875 and 1890 the booming wheat market led to huge farms, especially in the Red River Valley. Investors grew wheat on a grand scale. Their "bonanza farms" covered thousands of acres. Bonanza farms became highly profitable through the use of two things seen in this photo. What are they?

In 1873 grasshoppers darkened the skies of southwestern Minnesota. For the next five summers they stripped the land bare! Charities and the state provide some relief, but many farmers lost everything. *On the Banks of Plum Creek* by Laura Ingalls Wilder describes what it was like for the family. Find and share that passage in class.

George Hormel opened his meatpacking company at the right time: 1891. Corn replaced wheat in some southern Minnesota fields, creating plenty of hog feed. The result was a boom in hog farming and meatpacking. This horse-drawn carriage shows early Hormel products. By 1920, Hormel surpassed the South St. Paul stockyards to lead the state's meatpacking industry. Where is the state's Hormel headquarters?

In 1900, lumbering ruled! Minneapolis was the sawmill capital of the world, cutting enough lumber to fill 65,000 freight cars. Over 40,000 lumberjacks were cutting timber in the north woods. But Minnesota was running out of pine; within twenty years the pine ran out and the lumber industry was all but dead in Minneapolis.



# GRAB BAG

A. Monopoly and Mar-bulls: like to play?  
Country Corn Q. What games do little calves like to play?

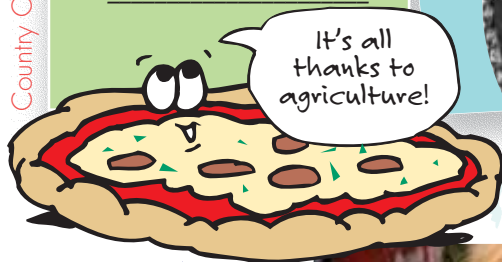
## Acres of Pizza

Americans eat 75 acres of pizza every day.

An acre is about the size of a football field.

Name the things from agriculture in your favorite pizza.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_



## CALLING IT HOME

When people settled, they named their new communities. Sometimes they chose names from the old country. Some names described the land or place. Other communities were named after people and many places had Indian names.

Find examples of each type of name on a Minnesota map. The Minnesota Historical Society makes it easy to find out more about the meaning of the names of Minnesota people, towns and villages, lakes and streams. Go to: [mnplaces.mnhs.org/upham/](http://mnplaces.mnhs.org/upham/)



### Minnesota Territory: 1849-1858



How and when did settlers first arrive where you live? How was your community named? Trace three rivers that help define Minnesota's borders. Mark Fort Snelling with an X.

## On the WEB



Pioneer Oliver H. Kelley learned about farming by reading books and ag journals. His farm, still operating today in Elk River, is a National Historic Landmark and State Historic Site. Jump on the Web and visit the Kelley farm!

[www.mnhs.org/kelleyfarm](http://www.mnhs.org/kelleyfarm)

Photos Courtesy Minnesota Historical Society



In 1885 the State Fair got a permanent home in the Midway area of St. Paul. How many years has the Fair been at this location?

## Did you know?

Nearly one million fairgoers took time to learn more about animal agriculture at the Fair's new birthing center. During the 12 days of the Fair, 191 newborns were born. That included 128 piglets, 12 dairy calves and 51 lambs.

- ★ During a typical year, about 20,000 gallons of milk are served at the all-you-can-drink booth.
- ★ An average 500,000 corn dogs are eaten at the Fair each year.
- ★ Of all food items available, the fried candy bars have the most calories.
- ★ 22,000 rolls of toilet paper are used at the State Fair each year. Thank a tree!!