

# GRAINS

Agriculture is the United States' largest industry. More than 20 million Americans work in agriculture. They might grow or raise the product (**production**), change the raw products into different things (**processing**) or get the products to us (**distribution**). We are all consumers of agricultural products.

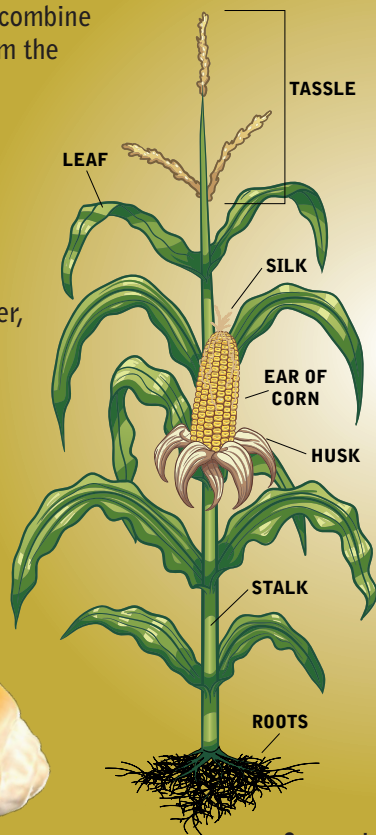
When you drive through Missouri, you'll see some areas growing crops and others raising livestock. This makes Missouri a diverse agricultural state.

Corn is grain plant. It is planted in the spring and harvested in the fall. A combine is used to separate the kernels from the ear and the rest of the corn plant.

Corn is mainly used for food items and to feed livestock such as cows, pigs and chickens. There are more than 4,200 products that contain corn and new uses are being found every day. Corn is used in sweetener, antibiotics, paints, plastics, glue, chewing gum, fabrics, packing peanuts, wallpaper and as fuel.

## Corn

A kernel of corn is mostly starch.



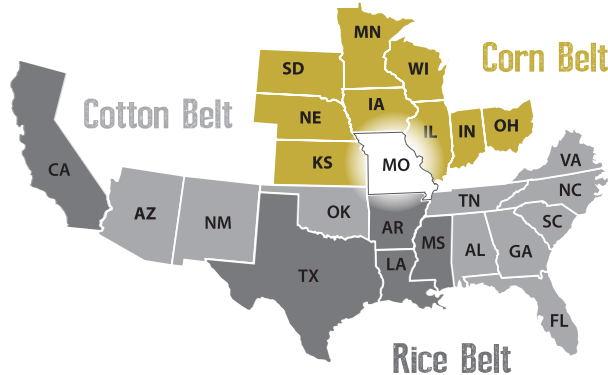
At the top of a mature corn plant is the tassel, the male part of the plant.

Along the stalk are the leaves and the ear of corn, wrapped closely in husks.

Hundreds of filaments, called silk, protrude from the top of each ear. These are female flowers.

Corn roots spread deep into the soil.

Missouri's unique location makes it possible to grow a variety of crops. The southeastern part of the state grows cotton and rice making it part of the cotton and rice area. The remainder of the state is part of the group of states known as the corn belt.



A bushel of corn weighs about 56 pounds.

## Soybeans

A soybean is a small round seed that grows on a plant. Soybeans are **legumes** and help to improve the soil. Soybeans are planted in the late spring and harvested in the fall. It takes 80-120 days from planting to harvesting.

Soybeans and products made from them are used in many food items, animal feed, candles, inks, paints, cosmetics, furniture and biodiesel. Soybean oil is the only ingredient in vegetable oil.

Each soybean has a **hilum**, a small brown spot where the seed was attached. The soybean has three basic parts. The outside covering protects the seed. The **cotyledon** is the first leaf or pair of leaves within the embryo that stores food. The **embryo** is the part of the seed that develops into a new plant including the stem, leaves and roots.

A bushel of soybeans weighs about 60 pounds.

## Fun Facts!

- \* Soybean oil accounts for 80 percent of all the vegetable oils and animal fats consumed in the U.S.
- \* Soy inks are derived from soybeans and are biodegradable.
- \* Both rice and corn are grown on every continent except Antarctica.
- \* An ear of corn has, on average, 800 kernels in 16 rows.
- \* Cotton is baled as it's harvested so it can be moved to the cotton gin for processing.



An **Agronomist** researches and monitors plants, soils and the environment.

An **Entomologist** helps farmers to grow healthy crops and livestock.

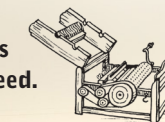
**Agricultural engineers** design farm equipment such as tractors, combines, buildings, irrigation systems and storage.

A **Food Safety Specialist** inspects food for safety and quality.

This special Newspaper In Education supplement is brought to you by Missouri Farm Bureau, Missouri Press Foundation and your newspaper.



Eli Whitney invented the cotton gin in 1794. This machine could separate the cotton lint from the seed.



A farmer grows crops, livestock and is a steward of the land.

Cotton is an important part of our day – the towels we use to dry after a bath; our T-shirts, jeans and socks; the sheets we sleep on, even the paper money we use to buy things is made with cotton.

Cotton is a crop that gives us both food and fiber. We wear it but we also eat it. The cottonseed is crushed and then separated into three parts: oil, meal and hulls. The oil is used for shortening, cooking oil, baked goods, salad dressings, other food products and also cosmetics. Cotton is used to stuff furniture and make linoleum, plastics and insulation. The meal and hulls can be used to feed livestock, poultry or fish.

Cotton grows best in warm climates. Missouri farmers grow cotton in the southeast part of the state. The counties growing the most cotton are Dunklin, New Madrid, Pemiscot and Stoddard.

## Cotton



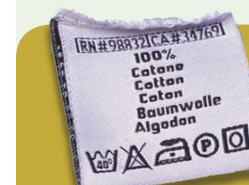
Cotton is planted in the spring and harvested in the fall. One acre can grow about 1,000 pounds of cotton.

Years ago, cotton was harvested by hand. Today, farmers use machines called a "cotton picker" to remove the cotton from the plant.

A bale of cotton that has been ginned weighs about 480 pounds.

### ONE BALE OF COTTON CAN MAKE ONE OF THESE

- |                        |                      |
|------------------------|----------------------|
| 215 pairs of jeans     | 1,256 pillowcases    |
| 249 bed sheets         | 2,104 boxer shorts   |
| 409 large sport shirts | 2,419 briefs         |
| 690 terry cloth towels | 3,085 cloth diapers  |
| 765 dress shirts       | 4,321 mid-calf socks |
| 1,217 large T-shirts   | 6,436 underwear      |
| 313,600 \$10 bills     | 21,960 handkerchiefs |



## ACTIVITY

Look at the tags on your clothes, sheets and towels. Do you see the word cotton? Try to find five things in your house that contain cotton.

Rice is the main diet of more than half the world's population. The United States exports about half of the rice it grows to other countries. Rice is used in other food products like cereals, snack foods, cake mixes, baby food and pet foods. Oil from rice can be used for cooking oil and is cholesterol-free.

Rice is grown in southeast Missouri, which ranks 5th in rice production in the U.S. More than 200,000 acres of rice are planted in Missouri each year. Other states that grow rice include Arkansas, California, Louisiana, Mississippi and Texas.

## Rice

Rice is a warm season plant. It takes 100-180 days from planting to harvest, depending on the variety and location. Rice is low in calories and an excellent source of complex carbohydrates, B vitamins and protein.

Rice hulls are removed from outside the kernel as it is processed and can be used in products from soap to steel beams.



One seed of rice yields more than 3,000 grains making it the highest yielding cereal grain.

A bushel of rice weighs about 45 pounds.



### NEWSPAPER ACTIVITY

Use your community newspaper to make an agricultural collage. Find pictures, stories, words and ads that feature agriculture production, legislation and products.

Correlates with MO Learning Standards Grades 2-5