

The Kentucky Corn Growers Association presents

# CORN:

## The Amazing Grain

When we hear the word “corn” we may see images of eating hot, buttered corn-on-the cob, or fields and fields of corn plants growing along the highways. But did you know that corn is around you everywhere? In fact, you are using corn right now! There are more than 3,500 uses for this popular crop and scientists are discovering new ways to use corn every day. Read on to find out why corn is such an a”maize”ing grain.

**MAIZE** is the more specific term for the plant we know as corn in America. It’s scientific name is *Zea mays*.

### Corn is Rooted in Our History

Since ancient times, corn has played an important role in human history. Corn is a grass native to the Americas. Evidence suggests that corn was first grown in central Mexico 7,000 years ago; tiny ears of corn have been discovered at ancient village sites and in tombs of Native Americans. Corn was a staple of Native American diets and also used as tools and decorations. Corn was so important and sacred that some groups even worshiped it. Native American mythology is rich with stories involving corn in important religious events.

Many eastern American tribes shared their knowledge of corn production with the early settlers, an act which saved many of these pioneers from starvation. Corn is now grown all over the world, in every continent except Antarctica. The United States produces more corn than any other country.

#### Corny Humor

Q: What is worse than finding a worm in your corn?

A: Finding only half a worm.

Q: Why did the corn get mad at the farmer?

A: Because he kept pulling its ears.

For more information, visit [www.kycorn.org](http://www.kycorn.org) or call 1-800-326-0906.



# Corn: A Valuable, Renewable Resource

Americans would be hard-pressed to live without corn, so it's fortunate that U.S. farmers plant a new corn crop each spring. That is why it is called a "renewable resource." When harvested, approximately 60% of the crop is fed to livestock and 25% is exported to other countries. The industrial use of corn co-products is increasing every year. Ethanol, corn sweeteners, degradable plastics, and starch for recycled paper are examples of just a few new uses.

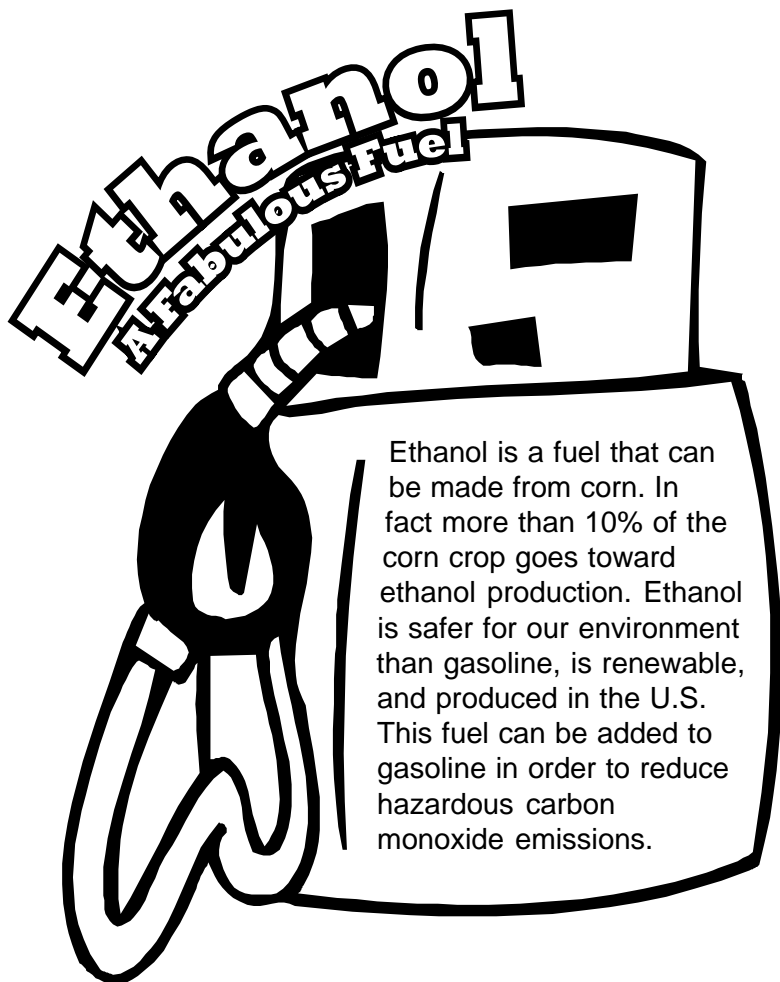
There are thousands of uses for corn. Its biodegradable characteristics and the fact that it is a renewable resource make it extremely valuable to the United States.



Find the items in the wordsearch below that contain corn. Words can be found from left to right, top to bottom or diagonally. If you need help, the words are listed at the bottom of the page.

D O C A T E F T O O T H P A S T E A T M  
 M A H G V M A K E U P X U S Y X A R P E  
 I K E T C H U P Z T W Q D E R R C T A Y  
 U O W P A S D F G J H K D L U Z I X P C  
 V C I N K I B B N F M A I Q P W D Y E S  
 R H N E R C A S P I R I N T S Y U I R O  
 U O G L U E T N C R P A G O S D F D G V  
 B C G I H C T A J E K J E L L Y O L Z I  
 B O U P X R E C C W R V B N L O T I O N  
 E L M S M E R K Q O W E E R F L O U R E  
 R A T T Y A I S U R C R A Y O N S I O G  
 P T A I S M E D F K G H B L J J O K L A  
 Z E X C V C S B N S M A Q W E R U T Y R  
 U I O K F A B R I C B P A S O A P I S D  
 F S O F T D R I N K S G H P A I N T C J  
 K I V I T A M I N S O R B I T O L O X E

Answers: ACID, ASPIRIN, BABY FOOD, BATTERIES, CEREAL, CHEWING GUM, CHOCOLATE, CRAYONS, DYES, ETHANOL, FABRIC, FIREWORKS, FLOUR, GLUE, ICE CREAM, INK, JELLY, JUICE, KETCHUP, LIPSTICK, LOTION, MAKE UP, PAINT, PAPER, PUDDING, RUBBER, SNACKS, SOAP, SOFT DRINKS, SORBITOL, SOUP, SYRUPS, TOOTH PASTE, VINEGAR, VITAMINS



**CORN PROCESSING** begins by soaking the corn kernels in warm water to soften them. The water is then drawn off and the softened kernels go to mills and separators. There the germ is removed and the oil is extracted. The starch, gluten, and hulls which are left are ground and passed through screens for hull removal. After separating the starch and gluten, the starch is washed and dried to be used as starch or converted into sweeteners or ethanol.



The Commonwealth produces about 150 million bushels\* of corn each year, which ranks the state 13th for U.S. corn production. Farmers plant field corn seed in April and harvest the corn crop in September. Most of the corn is fed to livestock such as cattle, hogs, and chicken. Kentucky corn is also sold overseas, or sold to food and alcohol processing plants.

\*A bushel is a measure of volume. A bushel of corn weighs about 56 pounds.

## In the Lab!

### Make Biodegradable Corn Plastic

1. Place a tablespoon of cornstarch in a paper cup or plastic bag.
2. Add two drops of corn oil to the cornstarch.
3. Add a tablespoon of water to the oil and cornstarch.
4. Stir the mixture.
5. Add two drops of your favorite food coloring to the mixture and stir well.

#### Scientific Observations...

1. What do you notice about your biodegradable plastic?
2. Is your biodegradable plastic the same as other students' plastic?
3. What could you make with this biodegradable plastic if you let it harden?

Microwave your biodegradable plastic for 20-25 seconds on high.

1. What happens to your plastic?
2. Form your plastic into a ball and describe what it will do.

### Make Corn Putty

Play with it like clay, then watch it become liquid again.

- 1 cup cornstarch
- 1/4 cup + 1 tablespoon water
- food coloring

Blend mixture with fork. It should flow when the bowl is tipped but feel solid when you touch it. If it's too thick, add a little water. If it's too runny add a little corn-starch.

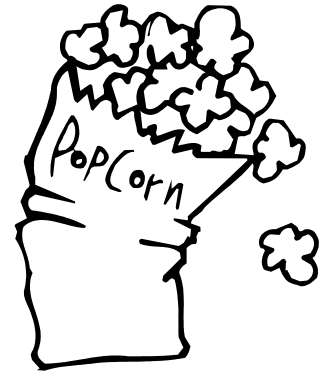


# Types of CORN



**Sweet Corn** is the type of corn people grow in their garden. Sweet corn is the corn-on-the-cob, canned, and frozen corn that people eat.

**Field Corn**, also known as commercial corn, makes up more than 90% of the corn you see growing in the fields. It has a hard outer portion, and a soft inner portion. You may not know it, but you use products made from field corn everyday! It is an invisible ingredient in thousands of food products on your grocery store's shelves. It is used to make corn syrup sweetener, as well as starch and oil. It's also found in livestock feed and industrial products. Twenty-five percent of field corn is exported to other countries.



**Popcorn** contains water that is stored in a small circle of soft starch. Whenever the kernel is heated, the water also heats and builds up pressure. This pressure causes the kernel to turn inside out and then you have hot, fluffy popcorn!

## Crazy about Cornbread

Corn is sometimes combined with other foods to create a balanced, nutritious diet. Cornbread is a treat to eat... and good for you too!

- 3/4 cup sifted flour
- 1 1/4 cups yellow or white cornmeal
- 2 1/2 tsp. baking powder
- 2 Tbls. sugar
- 3 Tbls. melted butter
- 3/4 tsp. salt
- 1 egg
- 1 cup milk

Preheat oven to 425 degrees. Grease 9" x 9" pan with spray oil and place it in the oven until sizzling hot. Sift together flour, baking powder, sugar, and salt. Add the cornmeal. In a separate bowl, beat egg. Then add butter and milk. Combine all ingredients with a few rapid strokes. Place the batter in a hot pan and bake 20-25 minutes. Serve immediately.



## The Corn is in the Can!

Every major non-diet soft drink is sweetened with high-fructose corn syrup. A bushel of corn produces enough corn sweetener to sweeten 413 cans of soda pop. High-fructose corn syrup is the leading food use of corn.

### Is corn a Vegetable or a Grain?

Technically, any plant is considered "vegetable." But if we were to put corn in the food guide pyramid, we would place it in the "grain" food category. Why? — It is the kernels, or seeds, of the corn plant that are eaten, and these seeds are full of starchy material.

### Fun Facts:

An ear of corn averages 800 kernels in 16 rows. Some corn can grow over 20 feet high.