



TEXAS FARM BUREAU'S  
**BE AG SMART**

# SORGHUM CONNECTION

*Be Ag Smart! The Sorghum Connection* has been developed and produced by Texas Farm Bureau Agriculture in the Classroom.

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Teachers - For lesson plans, videos and other resources for your classroom, go to [texasfarmbureau.org/aitc](http://texasfarmbureau.org/aitc)

## WHAT IS SORGHUM?

*Sorghum*, also known as *milo*, is a cereal crop grown worldwide. A cereal crop is a type of grass that is grown to be used as a grain, such as corn, wheat, and rice. The plant originated in Africa, where it was cultivated more than 8 millenniums ago. That's over 8,000 years!

Benjamin Franklin, a Founding Father of the United States and an experimenter with lightning, contributed to the first known record of sorghum production in the U.S. In 1775, Franklin wrote a letter to Samuel Ward, sharing the "excellent uses" of Sorghum, then known as whisk corn, and how it could be used to make brooms, thatch, bread, and animal feed. Today, over 250 years later, sorghum is used for food and beverage products, animal feed, biofuels, and many other industrial uses.

## TYPES OF SORGHUM



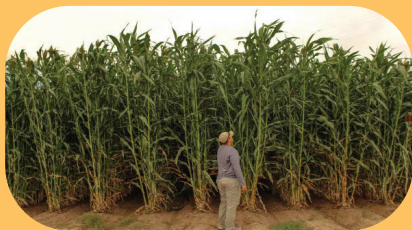
### Grain

Grown mostly for its kernel production, grain sorghum is used mainly in animal feed, food production, and sometimes ethanol.



### Forage

Forage sorghum is a tall, leafy plant grown for livestock feed, grazing, hay, or silage. It typically grows 7-14 feet tall



### Biomass

The tallest type of sorghum that grows up to 20 feet. Biomass sorghum does not produce kernels and is used to produce bioenergy, such as ethanol.



### Sweet

Grown for its tall stalks which store sugar that is often processed into syrups for animal and human consumption.



## DID YOU KNOW?

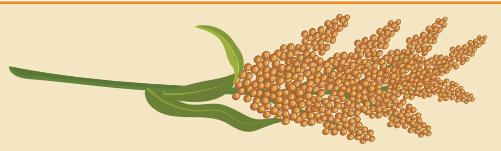
Sorghum is a naturally gluten-free and celiac-safe grain.



Word Search Answer Key

# SORGHUM SELECTION!

What type of sorghum should be grown to produce the products below?



## PARTS OF THE PLANT

Use context clues to label the parts of a sorghum plant.



Wild for Sorghum Answers (Left to Right): Pheasant, Dove, Duck, Turkey, Quail

**Stalk** – The longest part of the plant that holds the *leaves* and *panicle* upright while transporting food and water throughout the plant.

**Leaves** – The flat and green part of the plant that grows out of the stalk and uses sunlight to convert energy to food.

**Seed** – The small, round edible grains that can be used to grow more plants.

**Roots** – The part located below the ground that soaks up nutrients and water, allowing the plant to grow.

**Panicle** – Located at the top of the plant. It holds up groups of small flowers that contain hundreds of seeds.



## WHAT'S POPPIN'?

Just like popcorn, sorghum will pop due to the starch trapped inside the kernels. When heat is added, the moisture that is trapped inside the kernels turns to steam, making it POP!

### POPPED SORGHUM RECIPE

#### Materials

- Measuring Cups
- Small Paper Bag
- Microwave

#### Ingredients

- 1/2 cup popping sorghum
- Butter (optional)
- Salt (optional)

#### Directions

1. Place sorghum in a small paper bag and fold the top down.
2. Lay the bag flat in the microwave with the fold face down.
3. Heat on high for 2-3 minutes (depending on the microwave) or until there are more than 10 seconds between pops.
4. Remove from microwave and sprinkle lightly with salt or toppings of choice.

Recipe courtesy of Sorghum Checkoff

## SEED SIZE



VS.



**Popped Sorghum**

**Popcorn**

## MEASURE ME!



# FUELING THE BODY

Did you know sorghum contains a variety of nutrients, proteins, and other properties that benefit your body? Explore the information below to learn more!



## Strength

Complex carbohydrates allow for slow release of energy, keeping you going all day.



## Heart

Vitamin B6 promotes heart health, and antioxidants lower the risk of heart disease.



## Bones

Calcium and manganese are minerals that boost bone health.



## Digestion

Fiber works to promote a healthy digestive system.



## Brain

Manganese, Vitamin B6, and Polyphenols promote brain health.



## Blood

Iron and copper are necessary for blood health and are critical for red blood cell production.

*Sorghum Selection Answers: Sweet, Grain, Biomass, Forage*

# SORGHUM SEARCH DOWN!

Search the soil to find all the words below!

Grain  
Feed  
Health

Protein  
Export  
Bread

Syrup  
Crop  
Wildlife

Forage  
Broom  
Ancient

Biofuel  
Nutrients  
Flour

Energy  
Silage  
Sweet

Climate  
Milo

**FUN FACT**  
Sorghum helps retain water and nutrients in the soil!

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

*Regions of Texas Answers:*  
 • Top Left - Great Plains  
 • Bottom Left - Basin & Range  
 • Top Right - North Central Plains  
 • Bottom Right - Coastal Plains

# WILD For SORGHUM

Sorghum provides food and habitat for many wildlife species, including deer and game birds. Examples of game species that feed on sorghum include turkey, duck, dove, quail, and pheasants.

Specific varieties of grain sorghum are grown to benefit wildlife populations. These varieties grow to 3-5 feet tall and provide food and quality cover. Cover allows for food, protection from extreme temperatures, and safety.



# BIRD WATCHING!

Identify the game birds living in the sorghum field below:

**Word Bank:** Turkey, Duck, Quail, Pheasant, Dove



Five empty rounded rectangular boxes for labeling the birds in the illustration above.

Parts of the Plant Answers (from Top Down) Panicle, Seed, Leaves, Stalk, Roots

## MACHINERY & EQUIPMENT

Farmers rely heavily on machines throughout the entire lifecycle of their sorghum crops. Without the help of the machinery below, farmers wouldn't be able to produce over 1.5 million acres annually!



### Planting

Tractors use planter attachments, including grain drills or air seeders, for planting.



Broadcast sprayer attachments are used when applying herbicides or fertilizers.



### Harvesting

Combines with grain header attachments are used at harvest to cut the stalks and pull them through a thresher that separates the grains from the stalk.



Stalks and debris are pushed out the back of the combine while the grain is fed through a tube and transferred into a grain trailer where it will be transported to storage.



### Storage

If grains are not dried to a suitable level, driers are used to blow heated or unheated air through stored sorghum. After drying, grain can be stored in silos where it can stay for many months to a year, depending on moisture levels.



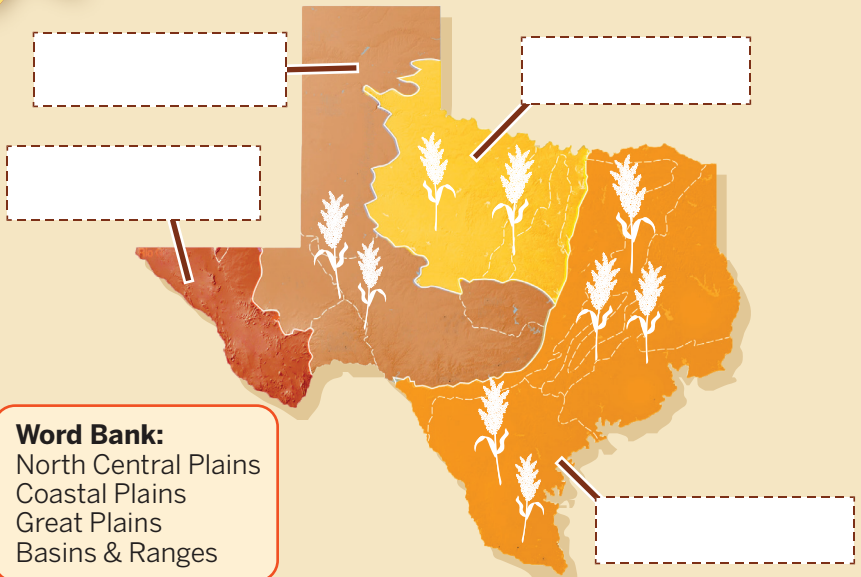
## SEASON OF SORGHUM

Sorghum is mostly grown in the Rio Grande Valley and the Panhandle of Texas but can be found on many farms in between! Texas' expansive environments allow for farmers across the state to grow sorghum through many seasons, depending on the region. There are four regions in Texas : **Coastal Plains, North Central Plains, Great Plains,** and the **Basins and Ranges.**

When planting sorghum, farmers need to be aware of multiple factors that allow for a successful growing season. Farmers in Texas plant their sorghum in the spring and summer, depending on soil temperature and moisture. After the seed has sprouted and emerged from the soil, it goes through 9 growth stages until it meets maturity and is ready for harvest.

- **North Central Plains**  
Plant March to April - Harvest July to August
- **Coastal Plains**  
Plant Late January to March - Harvest July to August
- **Great Plains**  
Plant April to June - Harvest September and into Fall

On the map below, label the four regions of Texas!



**Word Bank:**  
North Central Plains  
Coastal Plains  
Great Plains  
Basins & Ranges



TEXAS FARM BUREAU®

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