

# Texas FFA Association

## Farm Facts



**2019 Senior FFA Quiz Material**

**2019-20 Officer Candidate Testing Program**

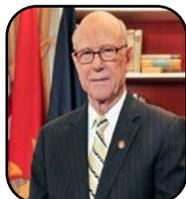
## 2019 Texas Farm Facts

### WHO'S WHO IN AGRICULTURE

#### Six agricultural policy makers Texas ought to know



U. S. Secretary of Agriculture:  
Sonny Perdue, (Republican)



Chairman, U.S. Senate Agriculture, Nutrition and Forestry Committee:  
Senator, Pat Roberts, R-Kansas



Chairman, U.S. House of Representatives Agriculture Committee:  
Mike Conaway, R-Texas



Texas Commissioner of Agriculture:  
Sid Miller, (Republican)



Chairman, Texas Senate Committee on Agriculture, Water and Rural Affairs:  
Senator, Charles Perry, R-Lubbock



Chairman, Texas House of Representatives Agriculture and Livestock Committee:  
Representative, Tracy O. King, D-Batesville

# 1. GENERAL INFORMATION

## Where does this information in this guide come from?

The United States Constitution mandates a census of the population every ten years for the purpose of allocating representation in Congress. The first population census was conducted in 1790 and counts continue to be taken at the beginning of every new decade. As a result of the gathering of this information, in 1840 the economic census was created and focused on manufacturing, trades, mining, commerce, navigation & agriculture, as an extension of the sixth decennial population census. The Census of Agriculture (COA) remained part of the United States population census until August 6, 1996, when President Clinton signed the Appropriations Bill which enacted a transfer of the COA from the United States Census Bureau (which is part of the United States Department of Commerce) to the United States Department of Agriculture's National Agricultural Statistics Service (USDA NASS). Today, the COA is taken every five years and is taken in years ending in "2" or "7" (ex: 2007, 2012, 2017). The majority of data in this guide comes from census and survey results.

Legislative authority for the COA comes from the Census of Agriculture Act of 1997. The Act does not mandate what data the COA will collect. The Act:

- Requires that the Secretary of Agriculture conduct a COA in 1998 and every fifth year thereafter to collect data relating to the year immediately preceding the year in which the Census is taken;
- Provides for penalties for refusing to respond to the Census or for giving fraudulent answers;
- Identifies the area to be covered as all fifty states, the District of Columbia, Puerto Rico, the Northern Mariana Islands, the United States Virgin Islands and Guam;
- Mandates cooperation between the Secretary of Agriculture and the Secretary of Commerce; and
- Requires protection on confidentiality of any data provided by individuals and firms.

According to the 2002 Census of Agriculture, "Data is routinely used by farm organizations, businesses, state departments of agriculture, elected representatives and legislative bodies at all levels of government, public and private sector analysts and colleges and universities." COA data is used to:

- Evaluate, change, promote and formulate farm and rural policies and programs that help agricultural producers;
- Study historical trends, assess current conditions and plan for the future;
- Formulate market strategies, provide more efficient production and distribution systems and locate agriculture-related enterprises;
- Make energy projections for geographic areas and forecast needs for agricultural producers and their communities;
- Allocate local and national funds for farm programs. Example: agricultural research, soil conservation program and land grant colleges and universities; and
- Plan for geographic-specific operations during drought and emergency outbreaks of diseases or infestations of pests.

The 2012 Census of Agriculture Farm Topology Report classifies all farms into unique categories based on three criteria: who owns the operation, whether farming is the principal operator's primary occupation, and gross cash farm cash income (GCFI). GCFI includes not just crop and livestock sales receipts, but also fees for delivering commodities under product contracts, government payments, and farm related income.

- Small Family Farms - 88% of United States farms (GCFI <\$350,000). This includes three subcategories:
  - *Retirement*: Farm whose principal operator is retired but continues to farm on a small scale
  - *Primary occupation off-farm*. Farms whose principal operator has a primary occupation other than farming
  - *Primary occupation on-farm*. Farms whose principal operator's primary occupation is farming. These can be either low-sales farms (GCFI <\$150,000) or moderate-sales farms (GCFI \$150,000 to \$349,999)
- Midsize Family Farms - 6% of United States farms (GCFI \$350,000 to \$999,999)

- Large-scale Family Farms - 3% of United States farms (GCFI \$1 million or more). This includes two subcategories:
  - *Large family farms* (GCFI \$1,000,000 to \$4,999,999)
  - *Very large family farms* (GCFI is \$5 million or more)
- Non-Family Farms: 3% of United States farms whose principal operator and persons related to the operator do not own a majority of the business.

### **Agricultural Facts:**

- 2.1 million farms dot America's rural landscape and in Texas, there are about 240,000 farms.
- In 2017, the average farm in the United States occupied an area of 444 acres. A recent low for the average United States farm size was in 2007, when the average area was 418 acres per farm.
- In 2014, farms in the United States occupied a total area of approximately 913 million acres. By 2017, this amount decreased to 910 million acres.
- In 2016, the total United States cropland area was about 253.1 million acres, and is expected to be 253.7 million acres by 2018.
- About 99% of United States farms are operated by families – individuals, family partnerships or family corporations.
- The millennial generation (people aged 34 and under) includes 257,454 farmers.
- More than 20% of all farmers are beginning farmers (in business less than 10 years).
- Farming accounts for about 1% of the United States gross domestic product.
- Farm programs account for less than one-half of 1% of the total United States budget.
- About 25% of United States farm products by value are exported each year.
- One United States farm feeds 165 people annually in the United States and abroad.
- The global population is expected to increase to 9.7 billion by 2050, which means the world's farmers will have to grow about 70% more food than what is now produced.
- Farmers and ranchers receive only 19 cents out of every dollar spent on food at home and away from home. The rest goes for costs beyond the farm gate: wages and materials for production, processing, marketing, transportation and distribution. In 1980, farmers and ranchers received 31 cents.
- Farm and ranch families comprise just 2% of the United States population.
- The number of farm operators of Spanish, Hispanic or Latino origin is higher than ever, up 21% to 99,734.
- There also are more African American (44,629, up 12%) and American Indian (58,475, up 5%) farm operators. Women make up 30% (969,672) of the total number of United States farm operators.
- About 8% of United States farms market foods locally, through direct-to-consumer or intermediated sales.

*Source: USDA NASS, <https://www.statista.com/statistics/196114/top-10-us-states-by-number-of-farms/>*

*Source: USDA NASS, 2012 Census of Agriculture*

What cost is added by each supply chain industry group to the food dollar?

2016 Food dollar: Industry Group (nominal)



The industry group dollar demonstrates that the cost of food equals the sum of value added by all supply chain establishments.

Supply chain establishments are categorized into 12 industry groups.

Other includes:

- Agribusiness
- Legal & accounting

## Americans Pay the **LEAST** for Food

U.S. consumers spend just **10 PERCENT** of their disposable income on food each year, while those in other countries spend much more.



©2017 American Farm Bureau Foundation for Agriculture® Graphics  
Source: USDA-ERS

## 2. TEXAS AGRICULTURE

- Texas leads the nation in cattle, cotton, hay, sheep, goats and mohair production.
- Texas leads the nation in number of farms and ranches, with 248,800 farms and ranches covering 130.2 million acres.
- Texas has 120,758 women working in agriculture; the most of any other state in the nation.
- Texas leads the nation in value of farm real estate.
- Rural lands, including privately owned forest, total 142 million acres, 84% of the state's total land area.
- 12% of Texas' population resides in rural areas.
- 1 of every 7 working Texans (14%) is in an agriculture-related job.
- 98.6% of Texas farms and ranches are family farms, partnerships or family-held corporations.
- The average age of Texas farmers and ranchers is 58 years.
- The economic impact of the food and fiber sector totals more than \$100 billion annually.
- Agricultural cash receipts, including timber, average \$20 billion annually.
- Texas Agricultural exports to foreign countries totaled \$6.5 billion in 2012.
- Texas ranks fourth overall in value of agricultural exports.

Source: Texas Department of Agriculture, <http://www.texasagriculture.gov/About/TexasAgStats.aspx>

### Top 15 commodities from Texas in terms of cash receipts in 2017:

Commodity	Cash Receipts
1. Cattle	\$8.83 billion
2. Cotton Lint, Upland	\$3.17 billion
3. Broilers	\$2.23 billion
4. Milk & Dairy Products	\$2.21 billion
5. Miscellaneous Crops	\$1.81 billion
6. Corn	\$1.17 billion
7. Cottonseed	\$444 million
8. Hay	\$442 million
9. Chicken Eggs	\$392 million
10. All Other Animals & Products	\$383 million
11. Sorghum	\$319 million
12. Wheat	\$198 million
13. Hogs	\$197 million
14. Peanuts	\$166 million
15. Rice	\$146 million

### Top 5 agriculture exports in Texas, estimates, 2017:

1. Cotton	\$2.6 billion
2. Other Plant Products*	\$1.1 billion
3. Beef and Veal	\$952 million
4. Dairy Products	\$314 million
5. Feeds and other Feed Grains**	\$294 million

\* Includes sweeteners and products, other horticulture products, planting seeds, cocoa, coffee, and other processed foods

\*\* Includes processed feeds, fodder, barley, oats, rye, and sorghum

Source:

[https://data.ers.usda.gov/reports.aspx?StateFIPS=48&StateName=Texas&ID=17854#Pe18dcb58594544869d59d3823413d9b0\\_2\\_586iT21R0x0](https://data.ers.usda.gov/reports.aspx?StateFIPS=48&StateName=Texas&ID=17854#Pe18dcb58594544869d59d3823413d9b0_2_586iT21R0x0)

**Texas' national rank for selected commodity exports in 2012\*:**

Texas National Ranking	Commodity	Value of Export
1	Cotton & Cottonseed	\$1.6 billion
1	Beef	\$855 million
1	Hides & Skins	\$431 million
2	Seeds for Planting	\$244 million
4	Tree Nuts	\$66 million
4	Rice	\$119 million
6	Broilers	\$323 million
6	Milk & Milk Products	\$248 million
9	Wheat	\$286 million
10	Feeds & Fodders	\$172 million
10	Grain Products	\$171 million
11	Fresh Fruits	\$54 million
13	Corn	\$157 million
13	Sugar	\$27 million
15	Fresh Vegetables	\$39 million

*\*2012 data being used for reference since 2017 data has not been published at this time*

### 3. UNITED STATES AGRICULTURE

There is a wide array of crops grown on United States farms, including vegetable farms, row crop farms, and tree nut operations, among many others. According to USDA Economic Research Service (ERS).

Source: <https://agamerica.com/power-of-10-top-10-produce-crops-in-the-u-s/>

**Top 10 United States Crops Produced in 2017:**

1. Corn	6. Soybeans & Oil Crops
2. Cotton	7. Sugar and Sweeteners
3. Fruit	8. Vegetables
4. Tree Nuts	9. Pulses
5. Rice	10. Wheat

**Top United States Agricultural Exports in 2017:**

Commodity	Value of Export
1. Soybeans	\$126 billion
2. Corn	\$9.1 billion
3. Tree Nuts	\$8.5 billion
4. Beef	\$7.3 billion
5. Pork	\$6.5 billion
6. Wheat	\$6.1 billion
7. Prepared Food	\$5.9 billion
8. Cotton	\$5.8 billion
9. Dairy	\$5.4 billion
10. Fresh Fruit	\$4.7 billion

Source: <https://www.fas.usda.gov/data/top-us-agricultural-exports-2017>

## 4. ANIMAL AGRICULTURAL COMMODITY FACTS

### **BEEF**

#### **Beef Production Facts:**

- In Texas, cattle are ranked first in terms of cash receipts with a value of \$8.83 billion.
- Beef is ranked as the fourth commodity exported from the United States with a \$7.3 billion value.
- Texas leads the nation in beef exports with a valuation of \$855 million.
- Each year, over 5 million calves are born on more than 130,000 cow-calf operations in Texas.
- The nearly 1 million beef cattle operations in the United States producing over 24 billion pounds of beef which generates about \$80 billion in retail beef sales.
- Production per cow has increased from about 400 pounds in the mid-1960s to almost 600 pounds today.
- Most cattle farms and ranches are family owned. For many producers, cattle raising is a family tradition passed down through generations.
- Cattle have a nine-month gestation period.
- Calves are weaned from cows at six to 10 months of age.
- Weanling cattle are typically “backgrounded” in stocker cattle operations before going to a feedlot at 12-18 months of age
- Growth promotants are often administered in the form of a small pellet placed under the skin behind the animal’s ear. Most growth promotants are naturally occurring hormones like estrogen. These products are approved by the Food and Drug Administration after rigorous scientific tests, similar to those required to approve human medications.
- Cattle spend four to six months in a feedlot. Feedlot pens typically allow about 125 to 250 square feet of room per animal. Rations are 70 to 90% grain.
- According to the USDA, there are about 815 fixed auction facilities in the United States.
- Cattle are usually slaughtered at 18 to 20 months of age and weigh between 1,100 and 1,250 pounds.
- The Humane Slaughter Act (passed in 1958 and updated in 1978 and 2002) dictates strict animal handling and slaughtering standards for packing plants. These facilities are under continuous federal inspection, with Food Safety and Inspection Service (FSIS) personnel present in plants to ensure compliance with all regulations.
- The FSIS, a public health agency in the United States Department of Agriculture, is responsible for ensuring compliance with slaughter regulations and that the nation’s commercial supply of meat, poultry, and egg products is safe, wholesome, and correctly labeled and packaged.
- The Agricultural Marketing Service of the USDA grades the carcasses by evaluating characteristics including marbling (distribution of internal flecks of fat, contributing to tenderness and taste) and the age of the animal. Grading is voluntary.
- Beef cattle are now much leaner than just a decade ago as a result of the consumer demand for products with less fat.
- Consequently, there are now 29 cuts of beef that meet government guidelines for lean, such as the tenderloin, sirloin and 95% lean ground beef.
- The hide from one beef animal can be made into: 20 footballs or 12 basketballs or 18 soccer balls or 12 baseball gloves or 18 volleyballs or 144 baseballs
- Beef byproducts allow 99% of every beef animal to be utilized.

## **Beef Choices:**

Beef producers offer a variety of beef choices to meet the changing lifestyles and nutritional needs of consumers. While each offers something different, they all share three common values: taste, nutrition and safety.

- **Grain-fed Beef** – The most widely produced and tends to be less expensive. The cattle spend most of their lives eating grass in a pasture before moving to a feedlot where they are fed a high-energy, grain diet.
- **Grass-finished Beef** – The cattle are raised on grass pastures their entire lives. Producing in large volumes is difficult in North America where few regions have the growing season to make it possible.
- **Certified Organic Beef** – The cattle must be fed 100% organic feed and must be certified through the USDA's Agricultural Marketing System. In addition, these cattle cannot be given hormones to promote growth or antibiotics. If antibiotics are needed they are not withheld but the animal must be permanently removed from the program.
- **Natural/Branded Beef** – By definition, most beef is natural. According to the USDA "natural" may be used on a beef label if the beef does not contain artificial flavoring, coloring, chemical preservatives or any other artificial or synthetic ingredient. Producers raising cattle for beef marketed with a "natural" label may follow different production practices in order to brand their beef.

## **Beef Cattle Production Systems:**

- **Cow-calf** – Ranchers produce the cattle for the stocker market or feedlot (commercial operations) or other breeding herds (purebred operations).
- **Stocker** – Ranchers graze weaned calves until they weigh as much as 900 pounds, and then market them to the feedlots.
- **Feedlot** – Raises calves until they weigh 900 to 1,400 pounds and market them to packer operations.

## **Beef Checkoff Program:**

*What is the beef checkoff?* The Beef Checkoff Program is a producer-funded marketing and research program designed to increase domestic and/or international demand for beef. This can be done through promotion, research and new product development, and a variety of other marketing tools. The Cattlemen's Beef Board and USDA oversee the collection and spending of checkoff funds.

*How can checkoff dollars be used?* As mandated by law, checkoff dollars must be invested in programs to increase consumer demand for beef and create opportunities to enhance producer profitability. The Beef Research and Information Act defines six program categories: promotion, research, consumer information, industry information, foreign marketing and producer communications. The law does not allow beef checkoff dollars to be invested in production research that is not aimed at improving the end beef product.

## **POULTRY**

### **Poultry Facts:**

- In Texas, broilers are ranked third in terms of cash receipts with a value of \$2.23 billion.
- In Texas, egg commodities are tied for tenth in terms of cash receipts with a value of \$439 million.
- The value of broilers exported from Texas farms is \$323 million.
- There are approximately 280 million hens in the United States laying 50 billion eggs each year.
- Chickens begin laying eggs at 20 weeks old.
- Hens lay approximately 286 eggs per year (about an egg every 1.5 days).
- It takes 21 days for chicks to hatch.
- Most eggs are laid between 8-11 a.m.
- Shell color has no effect on nutrient content as nutrient content is determined by the hen's feed.
- The most common white egg layer is the White Leghorn

- At an average of just 20 cents per piece, eggs are one of the most affordable source of high quality protein.
- Eggs are a nutritional powerhouse, with one egg containing six grams of high-quality protein and all 9 essential amino acids, for 70 calories.
- Each year in the United States, 250 eggs are consumed by the average American.
- The United States consumed 8 billion chickens each year.
- More than 244 million turkeys are raised yearly with more than 226 million turkeys consumed in the United States.
- It is estimated that 46 million turkeys are eaten at Thanksgiving, 22 million at Christmas, and 19 million at Easter.

Source: Texas Poultry Organization: <http://www.texaspoultry.org/Information/WorldEggDayEggFacts2015.pdf>

Source: Turkeys Feed America: <http://www.turkeyfeedsamerica.org/>

### **The Egg: From Hatchery to Table:**

1. Laying Houses: At a modern egg farm, hens are kept in large laying houses where the light and temperature are controlled and the hens are safe from predators. Inside the houses the hens are kept in cages. The hens are fed a balanced diet high in vitamins and minerals.
2. Laying & Collecting: When a hen lays an egg, it rolls down onto a conveyor belt with all the other eggs that carries them to the processing facility. Hundreds of eggs can be moving along the conveyor belt at any time.
3. Cleaning: First, the eggs are washed to remove dirt and debris, and then sanitized to remove bacteria from the shell. A light coating of mineral oil is sprayed on the egg to seal the tiny pores in the shell. This process slows down aging and prevents bacteria from entering the pores.
4. Candling and Grading: The eggs are passed over a very strong light called candling. The strong light allows a worker, called the Candler, to inspect the exterior and contents without cracking the shell. The Candler grades the eggs AA, A or B, based on the quality of the interior and exterior. Eggs that don't meet the guidelines are removed.
5. Sorting: Next, a machine automatically sorts the eggs according to size.
6. Sizing: Eggs can be Jumbo, Extra Large, Large, Medium, Small or Peewee. Generally, a hen lays larger eggs as she gets older. The breed of the hen also is a factor in egg size, along with nutrition, and environment.
7. Packing: A special machine carefully places the eggs, small end down, in cartons that protect them from breakage. The cartons are marked with the grade and size.
8. Cooling: After packing, the eggs are placed in a large refrigerated room where they are cooled to 45 degrees F to maintain quality and freshness.
9. Shipping: The eggs are shipped to grocery stores in refrigerated trucks. Typically, an egg reaches the grocery store shelf just 3 to 4 days after it was laid.
10. Marketing: To maintain freshness and quality, the grocery store keeps the eggs in a refrigerated display case where they are purchased by the consumer.

### **Meat Food Safety:**

All poultry products found in retail stores are inspected by the USDA for evidence of illness. Turkeys and chickens are hormone and steroid free, only antibiotics are provided to the birds to prevent disease to ensure that consumers receive a healthy product. A withdrawal period is required therefore assuring that no residues are present in the bird's system at time of processing.

## **MILK & MILK PRODUCTS**

### **Milk & Milk Products Facts:**

- In Texas, milk and milk products is ranked fourth in terms of cash receipts with a value of \$2.21 billion.
- Dairy (milk & milk products) is ranked as the ninth commodity exported from the United States with a \$5.4 billion value.
- The value of milk and milk products exported from Texas farms is \$248 million.
- In an average day, a dairy cow will eat about 90 pounds of feed, drink a bathtub full of water (about 80 gallons) and produce 5 to 6 gallons of milk. That's about 80 glasses of milk!
- Cows spend up to 8 hours of their day eating.
- A dairy cow can't produce milk until she's had a calf.
- About 500 gallons of blood need to pass through the udder to produce 1 gallon of milk!
- It takes approximately 350 squirts to make a gallon of milk.
- How much MILK does it take?
  - 39 cups of milk to make 1 pound of butter
  - 1 cup of milk to make 8oz. of yogurt
  - 11 cups of milk to make ½ gallon of ice cream

### **History of the Dairy Industry:**

In the early 1600s, immigrants brought cattle with them from Europe to supply their families with dairy products and meat. In rural America, milk and milk products were made primarily for home or local use. However, with the movement of population from the farms to the cities, it became necessary to mass produce and improve the quality of milk. Significant inventions such as commercial milk bottles, milking machines, tuberculin tests for cattle, pasteurization equipment, refrigerated milk tank cars, and automatic bottling machines all contributed towards making milk a healthful and commercially viable product.

In addition to education, regulations were necessary to ensure a safe food supply. With the passage of the Meat Inspection Act of 1890 and its amendment in 1906, Congress authorized USDA inspectors to enforce standards of sanitation and hygiene in the meat and dairy industries. Today, dairy farming uses the latest scientific research to provide consumers with a safe product while also boosting efficiency, taking care of their animals, and protecting our environment and natural resources.

### **Breeds of Dairy Cows:**

There are six main breeds of dairy cows:

- Ayrshire: Originated in Scotland and is known for strength and efficiency of milk production.
- Brown Swiss: Originated from Switzerland and is known for being hearty and rugged, having superior feet and legs, as well as its very quiet behavior.
- Guernsey: Originated in the English Channel and is known to be hearty and adaptable and for the yellow color of their milk.
- Holstein: Originated in Europe and has the highest milk production of all dairy breeds.
- Jersey: Originated in the Island of Jersey (off the coast of France) and is known to produce more butterfat than any other dairy breed.
- Milking Shorthorn: Originated in England and is known for high levels of fertility, grazing efficiency, and ease of management.

### **Nutrition:**

Milk contains 16 essential nutrients:

1. Calcium: Aids in the formation and maintenance of strong bones and healthy teeth.
2. Folate: Aids in red blood cell formation.
3. Magnesium: Factor in bone and teeth health, conversion of food into energy and tissue formation.
4. Niacin: Aids in normal growth, and is a factor in the conversion of food into energy and tissue formation, including bones.

5. Pantothenic acid: Factor in the conversion of food into energy and tissue formation, including bones.
6. Phosphorus: Factor in the formation and maintenance of strong bones and healthy teeth.
7. Potassium: Aids in the correct functioning of nerves and muscles.
8. Protein: Helps build and repair body tissues, including muscles and bones, and plays a role in the creation of antibodies which fight infection.
9. Riboflavin: Factor in the conversion of food into energy and tissue formation.
10. Selenium: Factor in the correct functioning of the immune system, due to its antioxidant effect.
11. Thiamine: Releases energy from carbohydrate and aids normal growth.
12. Vitamin A: Aids bone and tooth development. Also aids in the maintenance of night vision and healthy skin.
13. Vitamin B12: Aids in red blood cell formation.
14. Vitamin B6: Factor in the conversion of food into energy and tissue formation, including bones.
15. Vitamin D: Enhances calcium and phosphorus absorption, on which strong bones and teeth depend.
16. Zinc: Factor in tissue formation, including bones, and conversion of food into energy.

## **PORK**

### **Pork Facts:**

- In Texas, pork is ranked as the thirteenth commodity in terms of cash receipts with a \$197 million value.
- Pork is ranked as the fifth commodity exported from the United States with a \$6.5 billion value.
- The United States is the third top pork producing country in the world, as well as the largest pork exporter.
- The United States produces approximately 21,077,595 pounds of pork a year.
- The pork industry supports more than 800,000 jobs in the United States
- On average, a market hog weighing 265 lbs will produce 371 servings of lean pork.
- Pigs do not have sweat glands, so they use water or mud to cool off.

### **Pharmaceutical Facts:**

- Pig pancreas glands are an important source of insulin hormone used to treat diabetes. Pig insulin is especially important because its chemical structure most nearly resembles that of humans.
- Specially selected and treated hog skin, because of its similarity to human skin, is used in treating massive burns in humans, injuries that have removed large areas of skin and in healing persistent skin ulcers.
- Hog heart valves, specially preserved and treated, are surgically implanted in humans to replace heart valves weakened by disease or injury. Since the first operation in 1971, tens of thousands of hog heart valves have been successfully implanted in human recipients of all ages.

### **History:**

Pigs were originally domesticated in China around 4900 BC and by 1500 B.C. they had spread and were being raised in Europe. Although Christopher Columbus took eight pigs on his voyage to Cuba in 1493, it was Hernando de Soto who should be dubbed “the father of the American pork industry” since he introduced America to its first 13 pigs in Tampa Bay, FL., in 1539. By the time of de Soto’s death three years later, his pig herd had grown to 700 head, not including the ones his troops consumed.

Pig production spread throughout the new colonies and as time passed, pioneers who headed west would take their herds with them. As western herds grew, so did the need for pork processing facilities. Packing plants began to spring up in major cities and were first commercially harvested in Cincinnati. Refrigerated railroad cars transformed the meat industry when it was introduced shortly after the Civil War. It enabled packing plants to be centrally located near points of production instead of near points of consumption.

### **Breeds:**

There are over 180 species of pigs in the world, found on every continent except Antarctica. Some major swine breeds are:

- Berkshire
  - Characteristics: Black with white on legs, snout and tail; Erect ears
  - The Berkshire breed originated in England and was brought to America in 1823.
- Chester White
  - Characteristics: White; Drooped ears
  - The Chester White breed originated in Chester County, Pennsylvania during the mid-1800s. At first it was called the Chester County White, but later the "county" was dropped.
- Duroc
  - Characteristics: Red; Drooped ears
  - This hog originated in the eastern United States and in the Corn Belt during in the early 1800s.
- Hampshire
  - Characteristics: Black with white belt; Erect ears
  - The Hampshire breed originated from the "Old English Breed" which originated in southern Scotland and Northern England. The breed was imported to America between 1825 and 1835.
- Landrace
  - Characteristics: White; Drooped ears
  - The American Landrace breed derives from the Danish Landrace of 1859 Danish origin.
- Poland China
  - Characteristics: Black with white on legs, snout and tail; Drooped ears
  - The origin of the Poland China breed has its beginning in the Miami Valley, Butler and Warren counties of Ohio during the early 1800s.
- Spot
  - Characteristics: Black and white spots; Drooped ears
  - Spots descend from the Spotted hogs which trace a part of their ancestry to the original Poland China. This breed was developed during the late 1800s.
- Yorkshire
  - Characteristics: White; Erect ears
  - The Yorkshire breed was developed in England in the county of York. The first Yorkshires in the United States were brought to Ohio around 1830.

*Source: Texas Pork Producers*

## **SHEEP & GOATS**

### **Sheep and Goat Facts:**

- There are over 7,000 sheep and lamb operations in Texas and over 68,000 in the United States. They produce over 194 million pounds of lamb and mutton (meat) per year worth nearly \$175 million.
- There are two kinds of goats raised for fiber. The Angora goat (mohair) and the Cashmere goat (cashmere).
- Cabrito is meat from young goats, usually less than one month old.
- Chevon is meat from mature goats.
- Goat meat is the most highly consumed meat in the world.
- More goats' milk is consumed worldwide than cow's milk.
- Lamb is the meat of a sheep under one year of age. Mutton is the meat of a sheep over one year of age.
- Wool is categorized into four major types: long wool, fine wool, medium wool and carpet wool.
- One pound of wool can make 10 miles of yarn.
- Most medium wool breeds have been selected for meat production rather than wool quality.
- Sheep and goats are adaptable to a wide range of climates and management systems and they can produce food and fiber by utilizing land that is otherwise unsuitable for other types of agriculture.

**Ruminants:**

Sheep and Goats are called ruminants because they are hooved, cud-chewing animals that lack upper incisor teeth and have a four-compartment stomach. These compartments are the rumen, the reticulum, the omasum, and the abomasum. Other ruminants include cattle, buffalo, deer, elk and giraffes.

**Grazing for Hire:**

In Texas, landowners are using sheep and goats to control unwanted vegetation and brush, such as broadleaf weeds and cedar. This helps the environment by controlling wildfires, improving grass pastures, and adding fertility to the soil. Goats can be pastured with sheep and cattle because each species prefers different plants. Goats prefer brush, tree leaves, and rough browse plants, while cattle and sheep prefer grass.

**Goat Breeds:**

In the United States, there are three primary breed types and over 60 recognized domestic breeds of goats in the world. Those breeds commonly found in Texas are:

- Angora/Mohair Goats - The Angora goat is a fiber breed that originated in the district of Angora in Asia Minor. The Angora dates back prior to early biblical history. Both sexes are horned and the ears are heavy and drooping. The most valuable characteristic as compared to other goats is the value of the mohair that is clipped. The average goat in the United States shears approximately 5.3 pounds of mohair per shearing and is usually sheared twice a year. The Angora goat is a browsing animal, which has made it very adaptable to certain agriculture sections. They have often been able to provide economic returns to land that is unsuitable for usual agriculture pursuits.
- Boer Goats - The Boer goat is a meat breed that originated in South Africa and was imported into the United States in 1993. The Boer goat is a very hardy animal, has a high resistance to disease, adapts well to various climates. It is a horned breed with lop ears and shows a variety of color patterns. The predominant color pattern is a white body with a red head and ears. The Boer goat is primarily being used to cross on the Spanish, Angora and dairy goats to improve meat production.
- Cashmere Goats - The Cashmere goat fiber breed that originated in China and it has a fine, soft-handling down undercoat. In the last few years the United States has been developing a cashmere growing industry by breeding selected cashmere goats to short-haired goats
- Dairy Goats - Dairy goats are hardy, gentle, intelligent animals with a lifespan is 8 to 12 years. Dairy goats are kept successfully in all climates. While dairy goats will graze grass pastures, they prefer to browse brush lands and a varied selection of pasture plants, including non-noxious weeds. On a worldwide basis, more people drink the milk of goats than any other single animal. Goat milk has a more easily digestible fat and protein content than cow milk. Many dairy goats, in their prime, average 6 to 8 lbs. of milk daily (roughly 3 to 4 quarts) during a ten-month lactation, giving more soon after freshening and gradually dropping in production toward the end of their lactation. The milk generally averages 3.5% butterfat.
- Spanish Goats - When the Spanish explorers came to America, they brought goats as a meat source. Some of these goats either escaped or were released when alternate meat sources were discovered. These feral goats became known as "Spanish" or "brush goats." Although not of a specific breed ancestry, they have developed through natural selection. Size varies greatly due to climate, terrain and available breeding stock. Body shape, ear shape, horns, hair and color are non-consistent.

**Sheep Breeds:**

Sheep were among the first animals domesticated. An archeological site in Iran produced a statuette of a woolled sheep which suggests that selection for woolly sheep had begun to occur over 6000 years ago. The common features of today's sheep were already appearing in Mesopotamian and Babylonian art and books by 3000 B.C. There are well over 100 breeds of sheep found world-wide. When selecting breeding sheep you have a choice of woolled breeding sheep, medium wool breeding sheep, and hair breeding sheep.

- Barbado Sheep - The origin of the Barbados Blackbelly has been widely accepted as African, however, there is compelling historical evidence that the Barbados Blackbelly as a breed originated and evolved on the island of Barbados. The Barbados Blackbelly breed was originally introduced into the United States by the USDA in 1904. Descendants of the Barbados Blackbelly are found in Texas and are known as Barbados.
- Columbia Sheep - Columbia, the first breed originated in the United States, was developed in 1912 from Lincoln X Rambouillet crosses. Columbias are prolific, hardy, gregarious and good mothers with good milking ability. They are large with white faces and wool on the legs, useful in crossbred market lamb production, and yield heavy medium wool fleeces with good length, free of black fiber.
- Delaine-Merino Sheep - The closely related Delaine-Merino and Texas Delaine were developed from the Spanish Merino having an unbroken line of breeding 1200 years old. The modern Delaine-Merinos produce well in extremely warm climates under relatively poor feed conditions, breed year round, and produce a high quality fine-wool fleece.
- Dorper Sheep - The Dorper was developed in South Africa in the 1930's. The breed has the characteristic black head (Dorper) as well as the white heads (White Dorper). The Dorper is primarily a mutton sheep that was developed for the arid extensive regions of South Africa. As a strong and non-selective grazer the Dorper can advantageously be incorporated into a well-planned range management system.
- Hampshire Sheep - The Hampshire was developed in England and imported into the United States in the 1880's. A popular meat breed, Hampshires are crossbred with white-faced ewes for market lamb production. Hampshires are large sized with black faces and wool on the legs, adaptable to varied and wet climates, used in farm flock production, and prolific with good maternal instincts and milking ability. The fast-growing breed has excellent carcass merit and a medium, easy-to-spin wool.
- Rambouillet Sheep - Developed from the Spanish Merino in France, the Rambouillet is the foundation of most western range flocks. The Rambouillet is large, white-faced with wool on the legs, fast-growing, long-live, gregarious, adaptable to various climatic and forage conditions, considered one of the best sheep for breeding year-round, and produces a high quality, fine-wool fleece.
- Southdown Sheep - One of the oldest breeds of sheep, the Southdown originated in England where it contributed to the development of other breeds. Imported into the United States in 1803. It is medium to small sized with gray to mouse-brown face and wool on the legs. This early maturing breed has good lambing ability and excellent crossing ability to produce meaty lamb carcasses at light weights and hot-house lambs. The Southdown is adaptable to varied and wet climates, and yields a medium, easy-to-spin wool.
- Suffolk Sheep - The Suffolk originated in England and was imported into the United States in 1888. The breed is highly adapted to farm flock production and crossbred with commercial white-faced ewes for market lamb production. The Suffolk is large sized with bare head, black face and bare, black legs. Hardy, highly prolific Suffolks have excellent growth rates, milking ability and lambing ability, adapt well to heat and cold, and produce high quality meat carcasses and a medium, easy-to-spin wool.

### **Separating the Sheep from the Goats:**

- Two distinct species and genus
  - Sheep have 54 chromosomes
  - Goats have 60 chromosomes
- Look at their tails
  - Sheep tails hang down
  - Goat tails point up
- What do they eat?
  - Sheep are grazers, preferring to eat short, tender grass and clover. They like weeds and can graze very close to the soil surface.
  - Goats are browsers, preferring to eat leaves, twigs, vines and woody shrubs. They will stand on their hind legs to eat vegetation.
- Watch their behavior

- Sheep have a strong flock mentality that provides the best defense against predators.
- Goats are very curious and independent.

Source: Texas Sheep & Goats Raisers Assoc.: <http://www.tsgra.com/livestock.php>

Source: <https://www.livescience.com/52540-goat-facts.html>

Source: <https://tshaonline.org/handbook/online/articles/atg01>

## **EQUINE**

### **Equine Facts:**

- Full-time equivalent employment across the Texas horse industry exceeds 96,000 people.
- Horse owners have \$13 billion invested in barns, towing vehicles, trailers, tack and related equipment.
- Owners spend \$2.1 billion annually just to maintain their horses.
- In showing and racing alone, nearly 300,000 owners, family members and volunteers spend \$3 billion per year attending competitive events, which involves more than 250,000 horses.
- Texas horses are valued at \$4.2 billion. The total impact of the horse industry to the Texas economy exceeds \$11 billion annually.
- Horses can sleep both lying down and standing up and spend approximately 90% of their life on their feet.
- You can tell how old a horse is by its teeth.
- Adult horses have 12 incisors and 24 molars.
- Horses can drink up to ten gallons of water per day.
- A 1,000-pound mare produces four gallons of milk per day for her foal.
- Domestic horses have a lifespan of around 25 years.
- Horses have around 205 bones in their skeleton.
- Horses are herbivores (plant eaters).
- Horse's eyes are on the side of their head AND they are capable of seeing nearly 360 degrees.
- Horses gallop at around 27 mph (44 kph).
- The fastest recorded sprinting speed of a horse was 55 mph (88 kph).
- A male horse is called a stallion.
- A female horse is called a mare.
- A young male horse is called a colt.
- A young female horse is called a filly

### **Uses in Equine Industry:**

- Horse Racing - A competition for horses ridden by jockeys within a given area and over a prescribed distance, under the control of appointed officials. Thoroughbreds are the most popular horse breed in the racing industry, but other breeds also race on Texas racetracks such as: Quarter Horses, Paint Horses, Arabians, and Appaloosas. There are currently five racetracks in Texas and more than 950,000 industry participants.
- Therapeutic Riding - An equine-assisted activity that improves balance, joint mobility, coordination, muscle tone and posture. It can ease symptoms of a wide variety of disabilities including brain injuries, multiple sclerosis, hearing or visual impairments, muscular dystrophy, cerebral palsy, learning disabilities, Down syndrome, and cardiovascular disease. Plus, it's great for helping students improve motor skills, self-esteem, concentration and problem-solving abilities.
- Ranching - Cattle have been raised and herded in Texas by men on horseback since the Spanish conquistadors introduced cows and horses to the area around 1541. Today they are still used on ranches to gather and work cattle, check fences, and various other labor-intensive jobs. A good ranch horse must be versatile and perform activities such as herding, cutting, roping, and reining. They should have keen cow sense, high endurance, and a gentle disposition. Most of the competitive sports performed on horseback today are based on activities that are performed on a working ranch.

- Recreational Riding - A popular pastime that strengthens your body and mind while exploring the great outdoors on the back of your horse. Almost 4 million horses are used for recreation—more than any other use. Trail riding is an ever-growing industry with many of our state and federal parks, forests, and wilderness areas becoming available to be explored on the back of a horse for a unique adventure. It has also become a potential income for landowners who may want to diversify their ranching operation by allowing trail riders to come in and ride and experience the country.
- Cutting Horse Competition - The cutting horse has always been and will continue to be a ranch necessity with the objective being to separate a particular cow from the herd. In competition the objective is the same except for the rider and horse are being judged on the agility and athleticism of the horse and how well they demonstrate their ability to control the cow, maintaining proper position with the cow, and keeping it from getting back to the herd. Once the cow is cut from the herd the reins are no longer used and the horse is guided only from the rider's leg pressure. Horses move from side to side, swinging both front feet from the left side to the right side, never moving their hind legs at times.
- Horse Show Competition - Probably the most common competitive riding activity because there is something for every rider, from beginner to the advanced. Horse Shows have a variety of classes such as Western which can include pleasure, horsemanship, trail, reining, cutting, working cowhorse, versatility, and various speed events. English classes can include hunter, equitation, jumping, pleasure driving, and dressage to name a few. Also, there are halter and equestrians with disabilities classes. The rider usually has a predetermined pattern of maneuvers with emphasis placed on ability to ride with quality and precise control of the horse. The horse is usually evaluated on his conformation, balance, structural correctness, and degree of muscling. The horse should be guided with little or no resistance.
- Rodeo Events - Consist of two types of competition: rough stock events and timed events. In rough stock events the contestant's score is equally dependent upon his performance and the animal performance during an 8 second ride. A perfect score is 100 points. In timed events contestants compete against the clock, as well as against each other.
  - Rough Stock Events
    - Bareback Bronc Riding
    - Saddle Bronc Riding
    - Bull Riding
  - Timed Events
    - Steer Wrestling
    - Team Roping
    - Tie-Down Roping
    - Barrel Racing

## **HIDES & SKINS**

### **Hides & Skins Facts:**

- Texas is the leading hides and skins exporting state, adding \$431 million to the economy.
- Over 60 breeds of cattle are produced in the United States all of which add to the hides and skins market.
- The largest buyer of cattle hides is China, with Italy, South Korea, Mexico, Taiwan and Vietnam ranked as the next largest buyers.
- United States pigskin exports rose 48% in value to \$48.6 million for the year.
- Mexico was the largest market for United States pigskins in 2017, with Thailand and Taiwan rounding out the top three destinations.
- Goat and sheep hides and skins markets have the most opportunity for growth.
- Boer, Angora, Merino and Dorper skins are always in demand overseas.
- Game skins such as White-Tailed Deer, Ostrich, Kudu, Springbok, Impala, Blesbok and other exotics have a growing demand with farmers, ranchers and taxidermists developing skills in preparation, marketing and tanning.

## **Tanning Industry:**

United States hides and skins companies – including producers, processors, brokers and dealers – regularly export more than 90% of total United States production of these products and are one of the top raw materials suppliers to the global leather manufacturing industry. The value of industry exports is nearly \$3 billion dollars annually.

Tanneries usually carry out their processes between slaughterhouses and the leather processing plants or leather merchants. In most cases, the tannery buys the rawhides from rawhide dealers. The prices of raw materials fluctuate, but the processing industries and leather traders want long-term stable prices. Therefore, the art of the management of a tannery is not only in the production of marketable leather, but also in making important commercial decisions. These include sourcing high-quality raw materials and establishing long-term customer loyalty to the leather merchants and leather processing plants by offering a good quality product and maintaining stable prices. Increasingly, modern tanneries are also required to be transparent about their various production practices and ensuring they follow good environmental procedures in manufacturing.

*Source: U.S. Hide, Skin and Leather Association: <https://www.ushsa.org/>*

*Source: Meat+Poultry: <https://www.meatpoultry.com/articles/17925-us-hide-skin-and-leather-industry-thrives-in-2017>*

*Source: Farmers Weekly: <https://www.farmersweekly.co.za/bottomline/hides-and-skins-trade/>*

*Source: Tannery: <https://www.leather-dictionary.com/index.php/Tannery>*

## **5. CROP AGRICULTURAL COMMODITY FACTS**

### **CORN**

#### **Corn Facts:**

- Corn is the number one crop in the United States producing an estimated 14.4 billion bushels in 2018.
- Corn is the second ranked commodity exported from the United States with a \$9.1 billion value.
- In Texas, corn is ranked sixth in terms of cash receipts with a value of \$1.17 billion.
- The value of corn exported from Texas farms is \$157 million, ranking Texas thirteenth in the nation.
- Depending on conditions, around 22,000 to 25,000 individual corn plants are grown on one acre.
- The majority of corn grown in Texas is “dent” corn used for animal feed.
- Texas corn farmers plant around two million acres of corn each year.
- Depending upon the type equipment used, Texas farmers plant 150-300 acres of corn per 12-14 hour day.
- A single corn seed produces a plant that yields about 800 kernels of corn per ear.
- The average corn ear has 16 rows. Corn ears always have an even number of rows.
- A bushel of corn is measured by weight: 56 pounds.
- The Northern High Plains accounts for almost two-thirds of the total Texas corn production.
- The statewide average yield for corn is around 140 bushels per acre.
- Texas corn farmers produce over 230 million bushels of corn each year.

Corn is the most widely produced feed grain in the United States accounting for more than 95% of total production and use. The other three major feed grains are sorghum, barley, and oats. Most of the corn crop provides the main energy ingredient in livestock feed. Corn is also processed into a wide range of food and industrial products including cereal, alcohol, sweeteners, and byproduct feeds.

#### **Where does Texas corn end up?**

- The great majority of Texas corn production goes to feed livestock.
- Nearly all the feed corn produced on the High Plains goes to local feed yards.
- Low Plains and Cross Timbers feed corn is sold to elevators for merchandising or fed locally to livestock.
- Elevators handle most of the feed corn produced in the Blacklands and Edwards Plateau.

- East Texas and South Texas feed corn is marketed through grain elevators with some used by local livestock and poultry feeders.
- Local and port elevators are the primary destinations of the feed corn produced in the Upper Coast, Coastal Bend and Lower Valley.

## **COTTON & COTTONSEED**

### **Cotton Facts:**

- Cotton is the number two crop in the United States producing an estimated 18.4 million 480-pound bales in 2018.
- Cotton is the eighth ranked crop commodity exported from the United States with a \$5.8 billion value.
- In Texas, cotton lint is ranked second in terms of cash receipts with a value of \$3.17 billion and cottonseed is ranked seventh with a value of \$444 million.
- The value of cotton and cotton seed exported from Texas farms is \$1.6 billion, ranking Texas first in the nation.
- Texas leads the nation in cotton and cotton seed exports.
- The United States is the world's third largest producer of cotton, one of the most important textile fabrics.
- The United States is the world's leading exporter of cotton, and the industry contributes \$21 billion a year to the economy and generates over 125,000 jobs.
- About 31% of the United States cotton supply is exported, that's 6 to 9 million bales of raw cotton.
- Every year, approximately 8 to 9 million bales of cotton are used by United States textile industries
- Cotton can grow continuously without hurting the soil.
- The cotton industry in the United States provides jobs for more than 440,000 Americans.
- The first T-shirts were elbow and hip length undershirts issued to sailors in the United States navy in 1880. The shirt resembled a perfect "T" when laid on a flat surface, which is how it got its name.
- United States paper currency is made up of 75% cotton and 25% linen. This means there is 3/4 of a pound of cotton in each pound of dollar bills!

Cotton is a fiber, feed and food crop. About 2/3 of the harvested crop is composed of the seed, which is crushed to separate its three products: oil, meal and hulls. Cottonseed oil is a common component of many food items, used primarily as a cooking oil, shortening and salad dressing. The oil is used extensively in the preparation of snacks such as crackers, cookies and chips. The meal and hulls are used as livestock, poultry and fish feed, and is also used as fertilizer.

### **Cotton Production:**

The Cotton Belt spans the southern half of the United States, stretching from Virginia to California. Cotton production covers more than 14 million acres, or about 22,000 square miles of the United States. Cotton contributes over \$1.6 billion to the Texas economy. Texas produces about 25% of the entire United States crop and plants over 5 million acres annually. That's over 8,000 square miles of cotton fields! Currently, there are about 245 active cotton gins in Texas. Of those gins, approximately 65% are in West Texas, 20% are located along the Texas coast, and the remaining gins are in Central Texas.

Eli Whitney invented the cotton gin in 1793. This cotton gin consisted of cranks, pulleys and hooks and maintained an output of 50 pounds per day. Prior to this invention, it took about 20 hours of work to produce 1 kilogram of cotton. Improvements have been made to the original design of the gin. The cotton gin increased cotton production and lowered costs, resulting in cotton becoming the cheapest and most widely used textile fabric in the world. Today, the ginning process removes trash, dries, moisturizes & sorts the cotton. During the final process, the fiber is compressed into a bale, with a total weight of about 480 pounds. Once the cotton is harvested and baled, it is stored in modules for protection against the weather. On average, a module can hold 13 to 15 bales of cotton.

## Cotton By-Products

There are three primary products derived from cotton production: cotton lint, linters and cottonseed.

### 1. Cotton Lint

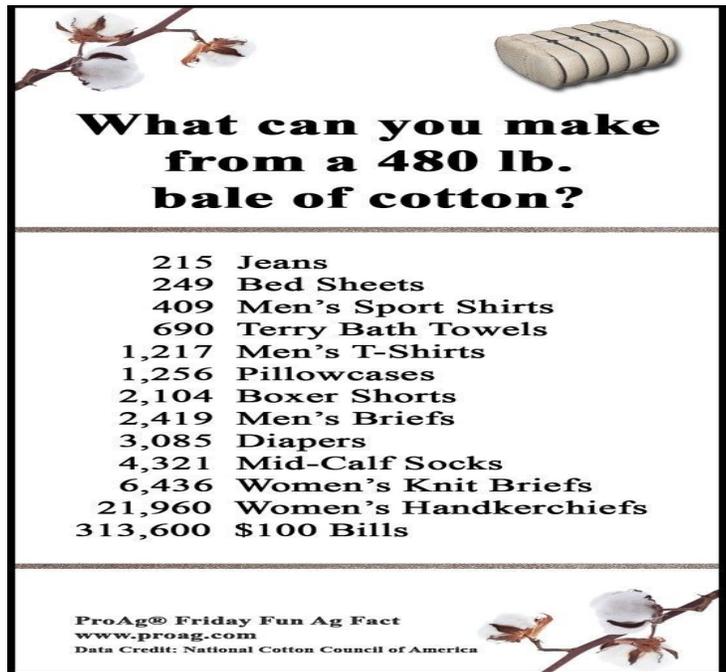
- Raw fiber from the cotton plant which is pressed into bales at the cotton gin
- Bales are purchased by textile mills and processed in stages into yarn and cloth

### 2. Linters

- Short fibers that cling to the seed
- Provide cellulose for making items like plastics, paper products and cosmetics

### 3. Cottonseed - About 2/3 of harvested crop is composed of the seed, which is crushed to separate its three products: oil, meal and hulls.

- Cottonseed Oil
  - The oil is the cottonseed's most valuable by-product.
  - It is used in cooking oil, shortening, and salad dressing and in preparation of snack foods like chips, crackers and cookies.
  - Products such as soaps, cosmetics, pharmaceuticals and textile finishes also contain cottonseed oil.
- Meal
  - Meal is the second most valuable by-product of cottonseed.
  - The meal is high in protein and used to feed all classes of livestock and poultry.
- Hulls
  - Cotton hulls are used for feed, fertilizer, fuel and packing.



**What can you make from a 480 lb. bale of cotton?**

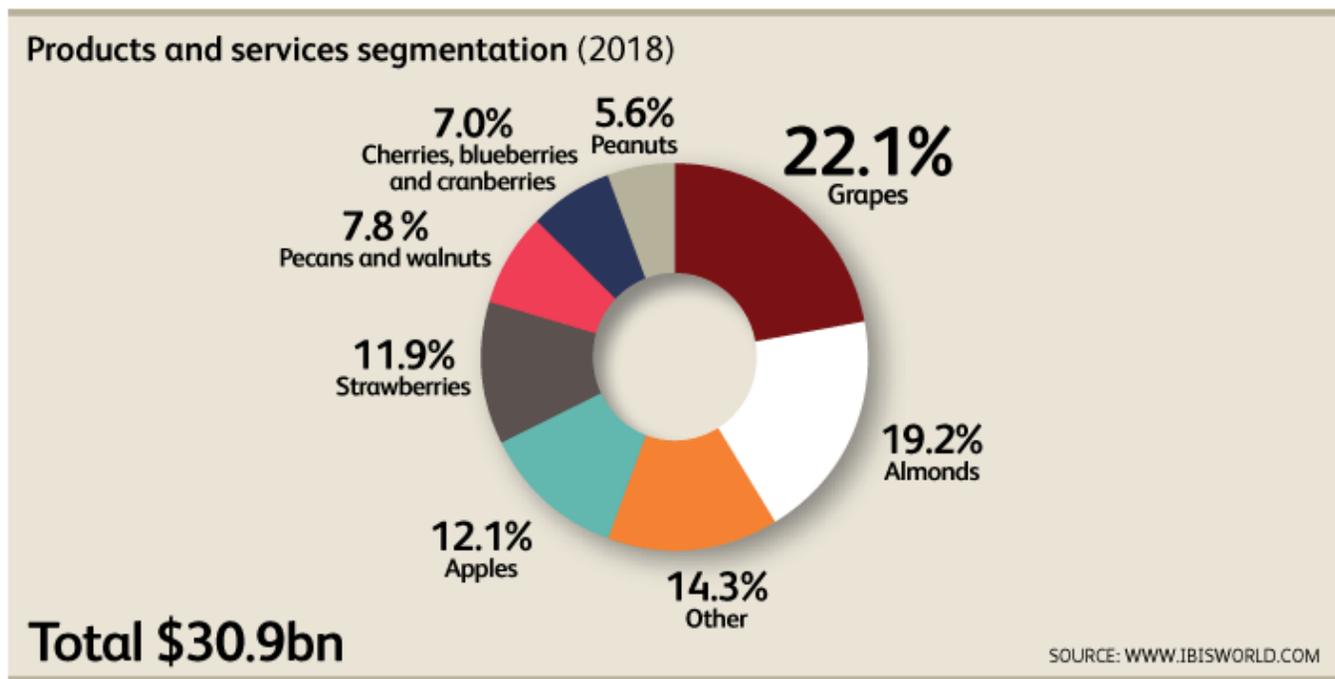
215	Jeans
249	Bed Sheets
409	Men's Sport Shirts
690	Terry Bath Towels
1,217	Men's T-Shirts
1,256	Pillowcases
2,104	Boxer Shorts
2,419	Men's Briefs
3,085	Diapers
4,321	Mid-Calf Socks
6,436	Women's Knit Briefs
21,960	Women's Handkerchiefs
313,600	\$100 Bills

ProAg® Friday Fun Ag Fact  
www.proag.com  
Data Credit: National Cotton Council of America

## FRESH FRUITS

### Fresh Fruit Facts:

- Fruit is the number three crop produced in the United States.
- Texas ranks eleventh in the nation in fresh fruit exports, adding \$54 million to the economy.
- In the United States, fresh fruits ranks tenth in agricultural exports valued at \$4.7 billion.
- Fruit production important to Texas agriculture includes, oranges, grapefruit, honeydew melons, watermelons, limes, papaya, pineapples, cantaloupes, pears, peaches, blackberries, strawberries and many others.
- Many different fruits are grown in the United States, including apples, berries, citrus, and melons. Together with the tree nut industry, the fruit industry contributes over \$25 billion in farm cash receipts in the United States.



In the United States, grapes are the largest product segment for the fruit and nut industry, accounting for 22.1% of industry revenue. Grapes are mainly sold to wine makers, which provide a large, steady market for this product. Both apples and strawberries well-established fruit varieties with several uses in different foods, such as snacks and deserts. Farmers of these fruits also increasingly sell to food processors, who in turn prepare and package them in refrigerated or frozen varieties to increase their shelf life and provide consumers' greater convenience. Nevertheless, fresh varieties of these fruits still command a premium, and organic options, which are increasing in popularity, do so even more. Cherries, blueberries, and cranberries are excellent sources of vitamins, antioxidants and other health benefits. Furthermore, dried blueberries, cranberries and cherries have increased in popularity because they make for low-calorie, low-carbohydrate snacks in an increasingly health-conscious environment. Organic cherries, blueberries and cranberries also command a premium as a result of a shift in consumer preferences.

Fruit processors are purchasers and producers of juices, canned fruit, dried fruit and frozen fruit. Over the past five years these markets have been influenced by different trends. Consumption of juice has shown steady decline, reflecting growing concern about the sugar content in what was previously seen as a healthy way to consume fruits and vegetables. However, canned and frozen fruit have grown in popularity since the recession set in because canned and frozen varieties are typically less expensive than their fresh counterparts.

Source: <https://clients1.ibisworld.com/reports/us/industry/productsandmarkets.aspx?entid=25>

## **TREE NUTS**

### **Tree Nut Facts:**

- Tree nuts are the number four crop produced in the United States.
- Tree nuts are the third ranked commodity exported from the United States with an \$8.5 billion value.
- Texas ranks fourth in the United States for exporting nuts valued at \$66 million.
- Texas is the second largest producer of pecans in the United States.
- Pecan are harvested from both orchards (planted) and groves (natives).
- Some native pecan groves, typically in river and creek bottoms, have been thinned and “top-worked” (budded with improved varieties).
- Pistachio nuts are produced by less than 10 growers in Far West Texas.

- English walnuts are grown in small tracts from Wichita Falls (near Red River), southward to Corsicana and other areas. More novelty or yard crop than commercial in Texas.
- English walnuts (with their thin shell) are easy to harvest and separate easily.
- Almonds production in Texas is limited but is consistently increasing.
- Nationally, almonds are the number one tree nut when considering sales and are grown mostly in California.
- 98% of pistachios are mostly grown in California with Arizona, New Mexico, Texas and Utah combined for the remaining 2%.
- Peanuts are not truly a nut (they're legumes), peanuts are considered a nut in how they are consumed.
- Four different types of peanuts are grown in the Southeast and the Southwest, with states like Alabama, Florida, Georgia, Mississippi, South Carolina, North Carolina, Virginia, New Mexico, Oklahoma, and Texas leading the way. Georgia leads the nation in peanut production.
- Pine nuts are also called pignolias. Pine nuts are desired in cooking and other applications for their unique flavoring and pine nut oil. Pine nuts are grown in the Southwest, and with potential for expansion.

According to the Agricultural Marketing Resource Center (AgMRC), United States tree nut production in 2012 totaled 2.7 million tons. The demand for most nuts continues to grow, as they are used in both health foods and candies. California grows most of the United States' nuts, though many varieties are grown in the Southeast and Southwest as well.

#### **Top 10 Tree Nuts Grown in the United States**

1. Almonds	6. Hazelnuts
2. Walnuts	7. Chestnuts
3. Pistachios	8. Macadamia Nuts
4. Peanuts	9. Pine Nuts
5. Pecans	10. Cashews

Source: AgAmerica: <https://agamerica.com/power-of-10-us-nut-industry/>

## **RICE**

### **Rice Facts:**

- Rice is the number five crop produced in the United States.
- In Texas, rice is ranked fifteenth in terms of cash receipts with a value of \$146 million.
- The value of rice exported from Texas farms is \$119 million, ranking Texas fourth in the nation.
- Texas is one of only six states that produce rice.
- Texas is ranked fourth in the nation for rice production.
- The United States exports approximately half of its rice sales volume to global markets.
- In the United States, rice is grown exclusively in the southern states and California with three different types of rice grown: short-, medium-, and long-grain.
- Rice is cultivated in more than 100 countries and on every continent except Antarctic.
- 96% of the world's rice is eaten in the area in which it is grown.
- Wild rice is not true rice but an aquatic grass variety from a different genus.
- There are more than 40,000 varieties of cultivated rice said to exist.
- There are approximately 2.7 million acres dedicated to rice farming in the United States
- Rice planting typically begins in early March in Texas.

Rice has been produced commercially in American for more than 300 years. Today, rice farming in the United States has become a precise science and producers apply seed aerially in dry or flooded fields, or drill or broadcast seed into dry fields.

Virtually all United States rice is marked as whole-kernel milled product. Once sold, the rice is screened to remove stones, loose chaff and stalks. The rice is then slowly dried by warm air to reduce any moisture, and then screened again to remove any dust particles.

Rice is the primary staple for more than half the world's population, with Asia and Africa being the largest consuming regions. Developing countries have long depended on its versatility and high caloric value. The United States is the second largest exporter of rice, (first is Thailand). The United States now exports about half of all the rice it grows.

#### **Types of Rice:**

- **Long-grain Rice**
  - Grown almost exclusively in the South
  - Accounts for more than 70% of United States rice production
  - Commonly used in frozen dinners, canned soup, and seasoned packaged products
  - Typically cooks dry and grains remain separate, not sticky
  - Preferred by most of the United States population
- **Medium-grain Rice**
  - Grown both in California and Arkansas
  - Accounts for more than 25% of United States rice production
  - Used in cereal manufacturing
  - Typically cooks moist and clingy
- **Short-grain Rice**
  - Grown almost exclusively in California
  - Accounts for 1 to 2 % of United States rice production
  - Used in puddings and desserts
  - Cooks moist and sticky

In the United States, rice growing regions also serve as an important habitat for waterfowl and migratory birds and is an example of how properly managed agriculture can enhance the environment.

## **SOYBEANS & OIL CROPS**

#### **Soybean & Oil Crop Facts:**

- Soybeans and oil crops are the number six crop produced in the United States.
- Soybeans is the number one commodity exported from the United States with a \$126 billion value.
- The United States is the leading soybean producer and exporter in the world.
- Soybeans account for about 90% of United States oilseed production
- U.S. soybean farmers planted 83.4 million acres
- U.S. soybean production was 4.31 billion bushels
- Average yield in the U.S. was 52.1 bushels per acre.
- Soybeans represented 61% of the world's oilseed production.
- The U.S. was first in world soybean production with 4.31 billion bushels, followed by Brazil at 3.97.
- A bushel of soybeans weighs 60 lbs. and produces about 11 pounds of oil and 48 pounds of protein-rich meal.
- The soybean plant is a legume related to peas, clover and alfalfa.
- Each soybean plant generally produces 60 to 80 pods, each holding three pea-sized beans.
- The United States also produces pea other oilseeds, such as peanuts, sunflower seed, canola, and flax
- Americans eat more than 600 million pounds of peanuts each year.

- Peanuts contribute more than \$4 billion to the United States economy each year.
- The peanut growth cycle from planting to harvest is about five months.
- The average peanut farm is 100 acres.
- Sunflowers are native to the United States thought to have originated around 3,000 BC in the southwestern areas of the country of Arizona and New Mexico
- Sunflower seed husks have two major patterns: black and striped. Striped sunflower seeds, often called confectionery sunflower seeds, are eaten as snacks. Black sunflower seeds are generally pressed into oil.

### **Composition of a Soybean**

In processing, soybeans are cleaned, cracked, dehulled and rolled into flakes. This ruptures the oil cells for efficient extraction to separate the oil and meal components.

Soybean oil finds its way into food products such as margarine, salad dressings and cooking oils, and industrial products such as plastics and biodiesel fuel. Lecithin, extracted from soybean oil, is used for everything from pharmaceuticals to protective coatings. It is a natural emulsifier and lubricant. Lecithin is used, for example, to keep the chocolate and cocoa butter in a candy bar from separating.

After removal of the soybean oil, the remaining flakes can be processed into various edible soy protein products, or used to produce soybean meal for animal feeds. The dry (solid) portion of the bean provides a host of edible products.

Soy flour and grits are used in the commercial baking industry. They aid in dough conditioning and bleaching. Their excellent moisture-holding qualities also help retard staling. Soy hulls are processed into fiber bran breads, cereal and snacks

Source: <https://www.agri-pulse.com/ext/resources/AgSummit/2017-SoyStats.pdf>

## **SUGAR**

### **Sugar Facts:**

- Sugar and sweeteners are the number seven crop produced in the United States.
- The value of sugar exported from Texas is \$27 million, ranking Texas thirteenth in the nation.
- The United States is the world's largest consumer of sweeteners, including high fructose corn syrup.
- Sugarcane takes about seven months to mature in a tropical area and about 12-22 months in a subtropical area.
- 900,000 acres of sugar cane are harvested yearly in the United States, generating one billion dollars in annual revenues.
- Sugar cane is processed into raw sugar at mills shortly after harvest then transported to refineries to produce powdered, granulated and brown sugar.
- Powdered sugar, or confectioner's sugar, is granulated sugar that is very finely ground, sifted, and mixed with 3% starch to prevent caking.
- Granulated, or "regular", sugar are fine because small crystals are ideal for bulk handling and not susceptible to caking.
- Brown sugars, either light or dark, are made by mixing white sugar with various amounts of molasses. Brown sugars tend to clump because they contain more moisture than white sugar, allowing baked goods to retain moisture well and stay chewy.
- In 2017, Texas produced approximately 1.55 million tons of sugar cane.
- In 2016, it was estimated that the global production of sugar amounted to nearly 177 million tons with the United States contributing to that by producing approximately 8.5 million metric tons of sugar. Total United States sugar consumption amounted to about 11.18 million metric tons between 2017 and 2018.

- As of 2016, the United States had the highest per capita consumption of sugar, amounting to approximately 126.4 grams.
- Approximately 33.88 million tons of sugar beet were produced in the United States in 2016.
- The United States is both one of the world's largest producers of sugar and other sweeteners and one of the greatest consumers.
- Sugars can come from sugarcane, sugar beets and high fructose corn syrup.

### **Processing:**

High Fructose Corn Syrup (HFCS) is derived from corn starch. Starch itself is a chain of glucose (a simple sugar) molecules joined together. When corn starch is broken down into individual glucose molecules, the end product is corn syrup, which is essentially 100% glucose. To make HFCS, enzymes are added to corn syrup in order to convert some of the glucose to another simple sugar called fructose, also called "fruit sugar" because it occurs naturally in fruits and berries. HFCS is 'high' in fructose compared to the pure glucose that is in corn syrup.

The sugarcane is a thick, tall, perennial grass that flourishes in tropical or subtropical regions. Sugar synthesized in the leaves is used as a source of energy for growth or is sent to the stalks for storage. It is the sweet sap in the stalks that is the source of sugar as we know it. The reed accumulates sugar to about 15% of its weight. The sugar beet is a beetroot variety with the highest sugar content, for which it is specifically cultivated.

In the United States, harvesting of both cane and sugar beet is done primarily by machine, although in some states it is also done by hand. The harvested cane stalks and beets are loaded mechanically into trucks or railroad cars and taken to mills for processing into raw sugar. Once there, they are cleaned, washed, milled to extract juice, filtered, and purified. The result is a clear, sugar-filled juice. After being purified, the clear juice undergoes vacuum evaporation to remove most of the water. In this process, four vacuum-boiling cells are arranged in series so that each succeeding cell has a higher vacuum. The vapors from one body can thus boil the juice in the next one, a method called multiple-effect evaporation. Next, the syrupy solution is vacuum-crystallized to form sugar crystals. The remaining liquid is removed using centrifuging and drying, and the sugar is packaged.

*Source: <https://www.statista.com/statistics/191975/sugarcane-production-in-the-us-by-state/>*

*Source: <https://www.statista.com/statistics/496002/sugar-consumption-worldwide/>*

*Source: <https://www.statista.com/statistics/191913/sugarbeets-production-in-the-us-from-2000/>*

*Source: <https://www.sugar.org/sugar/types/>*

*Source: <http://www.madehow.com/Volume-1/Sugar.html>*

*Source: <https://www.fda.gov/food/ingredientspackaginglabeling/foodadditivesingredients/ucm324856.htm>*

## **FRESH VEGETABLES**

### **Fresh Vegetables Facts:**

- Fresh vegetables are the number eight crop produced in the United States.
- In Texas fresh vegetable commodities are tied for tenth in terms of cash receipts with a value of \$439 million.
- The value of fresh vegetables exported from Texas is \$39 million, ranking Texas fifteenth in the nation.

The vegetable industry is comprised of a variety of sectors. It can be split into vegetables grown for processing and those grown for fresh market sales. Upper Midwestern states like Wisconsin, Minnesota, and Michigan and Pacific states like California, Washington, and Oregon grow the most acreage of vegetables for processing, while Florida, California, Arizona, Georgia and New York have the most acreage growing vegetables for the fresh market.

## **PULSES**

### **Pulses Facts:**

- Pulses [other than soybeans] are the number nine crops produced in the United States.
- Pulses have different geographic origins:
  - Chickpea and Pea from West Asia
  - Blackeye Pea from Africa
  - Pigeon Pea and Mung Bean from India
  - Beans from Mexico
  - Soybean from China
  - Peanuts from South America
- Pulses have been grown for almost 6,000 years

USA grown pulses are an important component of the world's food supply and contribute to better human nutrition and health. While a significant portion of the pulses grown in the USA are consumed locally, the majority is exported to international markets. Pulses are nutritionally-dense, edible seeds of legumes including dry peas, black beans, pinto beans, legumes, lentils, chickpeas and peanuts. Along with the vegetable industry, pulses account for approximately 14% of United States cash crop receipts. Soybean is the largest portion of the pulses economic impact.

*Source: USA Pulses: <https://www.usapulses.org/membership/resources/growers/60-2011-us-pulse-quality-survey/file>*

## **WHEAT**

### **Wheat Facts:**

- Wheat is the number ten crop produced in the United States.
- Wheat is the sixth ranked commodity exported from the United States with a \$6.1 billion value.
- In Texas, wheat is ranked twelfth in terms of cash receipts with a value of \$198 million.
- The value of wheat exported from Texas farms is \$286 million, ranking Texas ninth in the nation.
- About half of the United States' wheat production is exported.
- Texas wheat production totaled 89.6 million bushels in 2016 as yield averaged 32 bushels per acre.
- The wheat industry in the United States is worth more than \$10 billion.
- 50% of the wheat grown in the United States is used domestically and 50% of wheat grown is exported.
- Planted acreage totaled 5 million acres, and 2.8 million acres were harvested. With an average price of \$3.55 per bushel, the 2016 wheat value totaled \$318 million.
- A modern combine can harvest 1,000 bushels of wheat per hour.
- Farmers plant wheat in the fall months and harvest wheat in late spring through the summer.
- Wheat is a member of the grass family.
- More than 17,000 years ago, people gathered the seeds, rubbed off the husks and ate the kernels raw, parched or simmered.
- Wheat is grown on more land area worldwide than any other crop and is third to rice and corn in total world production.
- More foods are made with wheat than any other cereal grain.
- Wheat is a versatile crop and is being harvested somewhere in the world every month of the year.
- One bushel weighs 60 pounds and contains approximately one million individual kernels.
- There are two types of wheat planted in the United States Winter wheat – planted in September and harvested the following summer and Spring wheat – planted in April or May and harvested in August or September
- 60 pounds of wheat (a bushel) produces:
  - 60 pounds of whole wheat flour
  - 42 pounds of white flour
  - 42 commercial loaves of white bread
  - 90 loaves of whole wheat bread
  - 42 pounds of pasta

- o 45 boxes of wheat flake cereal
- o 210 servings of spaghetti

### **The History of Wheat:**

Archaeologists have found evidence of wheat in the Fertile Crescent from 9,600 BC and ancient Egyptians were the first to use yeast to make their loaves of bread rise and the first to use a bread oven. Wheat arrived in the United States after Christopher Columbus' early voyages and American colonists began planting wheat in 1777, but only as a hobby crop.

- 1831: Cyrus McCormick invented the mechanical reaper. Cutting increases from 2 acres per day to 8 acres per day.
- 1841: the first grain drill was patented by Jethro Tull.
- 1842: The first grain elevator was established in Buffalo, New York.
- 1892: John Froelich invented the first gasoline powered tractor.
- 20<sup>th</sup> century: Yields increase due to advances in mechanization and the use of fertilizers, pesticides and herbicides.
- 1950: The National Association of Wheat Growers (NAWG) was founded.
- 1970: Norman Bourlog, father of the “Green Revolution,” wins the Nobel Peace Prize for his work in wheat breeding.
- 21<sup>st</sup> century: Advances in wheat breeding create higher yielding varieties with more resistance to external threats.
- Precision agriculture allows for production to be specialized and more efficient.
- “Digital farming” gives farmers instant information on crops and allows for more precise production decisions.

### **Changes in Production:**

How many hours of labor needed to produce 100 bushels of wheat?

- 1830: 250-300 hours
- 1890: 40-50 hours
- 1930: 15-20 hours
- 1955: 6.5 hours
- 1965: 5 hours
- 1975: 3.75 hours
- 1987: 3 hours

Wheat was first grown commercially in Texas near Sherman about 1833. The acreage expanded greatly in North-Central Texas after 1850 because of rapid settlement of the state and introduction of the well-adapted Mediterranean strain of wheat. A major family flour industry was developed in the Fort Worth–Dallas–Sherman area between 1875 and 1900. Now, around half of the state acreage is planted on the High Plains and about a third of this is irrigated. Most of the Texas wheat acreage is of the hard red winter class. Because of the development of varieties with improved disease resistance and the use of wheat for winter pasture, there has been a sizable expansion of acreage in Central and South Texas.

Most all wheat harvested for grain is used in some phase of the milling industry. The better-quality hard red winter wheat is used in the production of commercial bakery flour. Lower grades and varieties of soft red winter wheat are used in family flours. By-products of milled wheat are used for feed.

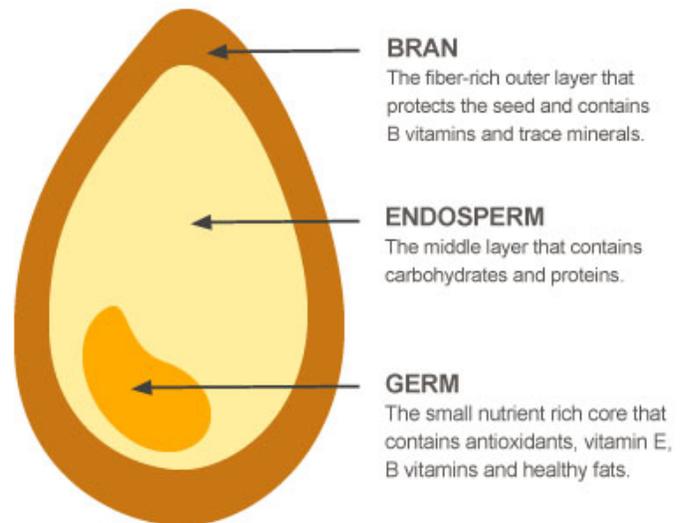
*Source: Texas Almanac: <https://texasalmanac.com/topics/agriculture/principal-crops-texas>*

*Source: Texas Wheat Organization: <http://texaswheat.org/wp-content/uploads/2018/01/Wheat-Fact-Handout-Updated.pdf>*

### Wheat Kernel:

The wheat kernel is the seed from which the plant grows. Each tiny seed contains three distinct parts that are separated during the milling process to produce flour.

- **Germ** – 2.5% of the kernel weight
  - o Embryo of the seed
  - o Separated from white flour
  - o Included in whole wheat flour
  - o Available separately
- **Endosperm** – 83% of the kernel weight
  - o Source of white flour
- **Bran** – 14.5% of the kernel weight
  - o Included in whole wheat flour
  - o Available separately
  - o Separated from white flour



### Varieties of Wheat:

There are two types of wheat planted in the U.S:

- Winter wheat is planted in September and harvested the following summer. Winter wheat makes up 70-80% of United States production.
- Spring wheat is planted in April or May and harvested in August or September.

There are several hundred varieties of wheat produced in the United States, all of which fall into one of six recognized classes. Classes are determined by time of year they are planted and harvested, hardness, color and shape of kernels.

- Hard Red Winter and Hard Red Spring - Produces high-grade flour used to make bread, hamburger buns and biscuits.
- Hard White and Soft White - Soft wheat that produces flour used for cereals, cookies and cakes.
- Durum - Contains the most protein and produces a course, golden amber product called semolina that is used to make premium pasta products like spaghetti noodles and macaroni.
- Soft Red Winter - Produces flour that is desirable for baked goods that have a tender, flaky or crisp texture, like cakes, doughnuts, cookies and crackers.

Texas produces Hard Red Winter and Soft Red Winter Wheat. Hard Red Winter is the dominant class in United States exports and the largest class produced each year. On average, in the United States, one acre yields 37.1 bushels of wheat.

### Wheat and Livestock:

- Much of the wheat used for livestock and poultry feed is a by-product of the flour milling industry.
- The green forage may be grazed by livestock or used as hay or silage.
- In many areas, wheat serves a dual purpose —grazed by livestock in the fall and early spring and then harvested as a grain crop when it matures.
- Wheat straw is used for livestock bedding.

# **GRAIN SORGHUM**

## **Grain Sorghum Facts:**

- In Texas grain sorghum is ranked seventh in terms of cash receipts with a value of \$594 million.
- Grain Sorghum, also called milo, is a member of the grass family.
- The round starchy seed's tolerance for heat and drought plays a critical role in agriculture production throughout the state of Texas.
- It is also very important as a forage, hay, and silage crop.

## **History:**

Grain Sorghum is one of the oldest known grains originating in Africa and India. Benjamin Franklin is credited with introducing the first crop to the United States in the 1700s. Before the 1940s, most grain sorghums were 5 to 7 feet tall, which created harvesting problems. Today, sorghums have two or three dwarfing genes in them and are 2 to 4 feet tall.

## **Varieties:**

Grain Sorghum is a drought-tolerant, versatile grain with many varieties. Some varieties can be used in the cereal, snack food, baking and brewing industries. These varieties contain a white berry, and tan glumes on a tan plant. Other varieties are used in the United States for livestock feed, pet food, industry and ethanol. These may include yellow, red and bronze sorghums.

## **Sorghum's Food Characteristics and Uses:**

- Health Food: Gluten Free & Antioxidant Dense
- Attributes: Absorbs & Enhances Flavors and is Environmentally Friendly
- Processing Possibilities: Baked Goods, Popped, Malting, Grits & Couscous, and Chips

## **Grain Sorghum Uses:**

- Livestock Feed:
  - The seed can be ground or mixed into feed for dairy cattle.
  - The entire plant can be made into high-moisture grain silage when cut at 25-30% moisture.
  - After grain has been harvested, livestock can be pastured on sorghum stubble utilizing both roughage and dropped seed heads.
  - Pet food manufacturers include this highly digestible carbohydrate grain to their feed formulations.
  - Distillers grain, an ethanol by-product, is a valuable feed for both feedlot cattle and dairy cows.
- Industry:
  - Used as a substitute for wood to make wallboard for the housing industry.
  - Used in biodegradable packaging material that does not conduct static electricity. This is beneficial for the shipping of electronic equipment.
- Fuel:
  - About 15% of the United States grain sorghum crop currently is used for ethanol production with one bushel producing the same amount of ethanol as one bushel of corn.
  - Sorghum is the only crop that can effectively be utilized into starch, sugar, and cellulose ethanol production.
- Human Consumption:
  - Worldwide, sorghum is a food grain for humans.
  - Used in snack foods in the United States and Japan such as granola bars and cereals, baked products, dry snack cakes, and more.
  - Replaces wheat flour with a gluten-free flour for use in a variety of baked goods.
  - Worldwide, about 49% of the sorghum consumed is for food.

- Sorghum provides an important part of the diet for many people in the world in the form of unleavened breads, boiled porridge or gruel, malted beverages, and specialty foods such as popped grain and beer.

## **FEEDS & FODDERS**

### **Feeds & Fodders Facts:**

- The value of feeds and fodder exported from Texas farms is \$172 million, ranking Texas tenth in the nation.
- The latest United States Department of Agriculture (USDA) statistics indicate that hay harvested in the United States was worth approximately \$18.8 billion, third in overall value among crops grown in the United States Only corn and soybeans exceeded the value of hay.
- Hay crops used in feed and fodder production include Bermudagrass, Bahiagrass, Dallisgrass, Johnsongrass, Old World bluestems, Crabgrass, Pearl millet, Sorghum-sudan, Rye, Triticale, Oats, Tall fescue, Alfalfa, Red Clover, Wheat, Arrowleaf Clover, Soybeans, and many others.
- Forage crops used in feed and fodder production include alfalfa, barley, millet, oats, red wheat, ryegrass, sorghum and many others.

### **Feeds and Fodder Highlighted Crops:**

- Alfalfa - an important forage crop in the United States and across the world. It is frequently used as hay, silage and grazing pasture. Its nutritional benefits are available in hydroponically grown fodder as well. Alfalfa is a highly palatable legume that has been grown as livestock feed since the fourth century. It is valued for its high nutritional quality and is an excellent source of essential vitamins, minerals and amino acids
- Barley - a cereal grain that is commonly used in the finishing rations of cattle in the United States and Canada. These sprouts are high in protein and fiber, and are naturally balanced in protein, fat and energy. Compared to corn, barley fodder has 95% of the energy and higher digestibility. Barley fodder is one of the most nutritious sprouts and is full of essential nutrients, vitamins and minerals. Feeding barley fodder will improve the overall health and wellbeing of your animals.
- Millet - provides similar benefits as oats and barley, and is an option for fodder production. Proso millet is most popularly utilized as cattle, sheep and swine feed. Millet is a grass that is rich in B vitamins and high in fiber. It has been grown as a staple feed for thousands of years and is one of the world's most important cereal crops. Millet fodder sprouts are highly digestible and nutritious. They are high in minerals and essential amino acids. Millet is similar to corn and is low in protein compared to other feedstuffs. Millet is also fairly starchy. It is commonly mixed with other seeds, such as oat or barley, to provide a more complete ration.
- Oats - a good source of carbohydrates that provide energy for domesticated animals and is typically fed as rolled grain or dried hay. Oats is a cereal grain that is one of the most important sources of livestock and animal feed in the world. It is commonly fed to horses and ruminants due to its excellent nutritional qualities that aid with maintaining optimal rumen and hindgut function. Oats is also rich in nutrients and essential minerals and is one of the richest sources of protein compared to other feedstuffs.
- Red wheat - widely used as a livestock feed due to its natural protein and fiber levels. This cereal grain has garnered attention over the last couple of years as an alternative to feedstuffs with fluctuating prices that are used in livestock rations, such as corn. Of all the classes of wheat available in the United States, red wheat has the highest protein composition. It is also high in energy and the starches in wheat ferment quickly in ruminant digestion.
- Ryegrass - ryegrass pastures and hay are important grasses in livestock rations, so it makes a premium fodder option. Ryegrass is a highly palatable and protein-rich grass that is grown primarily for pasture and silage. It is valued for its high nutrient composition and digestibility. Due to its excellent nutritional quality it is commonly used as pasture for lactating dairy cows.

- **Sorghum** - also known as milo, is similar to corn in nutrient content, providing up to 90% of the nutritional benefits. Sorghum is a grass that is rich in antioxidants and high in fat. There are numerous varieties of sorghum and it is grown all over the world as a staple for humans and livestock. In the United States, sorghum is grown primarily for its grains that are used in livestock rations.

Source: Soil Testing Lab: <http://soiltesting.tamu.edu/publications/E-273.pdf>

Source: Fodder Systems: <http://www.foddersystems.com/fodder-feed.html>

## 6. OTHER AGRICULTURAL COMMODITY FACTS

### SEEDS FOR PLANTING

#### Seeds for Planting Facts:

- Texas ranks second in the nation for planting exports, adding \$244 million to the economy.
- Texas is a major producer of planting seeds or vegetative parts of more than 40 crops, ranging from alfalfa to zoysia.
- Production exceeds 540,000 acres, including 220,000 acres of small grains, 200,000 acres of agronomic crop seeds, 70,000 acres forage grasses, nearly 3,000 acres forage legumes, and 2,300 acres of vegetable, flower and other miscellaneous crops.
- 1,200 acres of Barley is planted for seed production with 50% as certified seed for resale.
- 24,000 acres of Oats are planted for seed production with 22% as certified seed for resale.
- 4,200 acres of Rye is planted for seed production with 200 acres certified for seed resale.
- 3,800 acres of Triticale is planted for seed production with most all be certified for seed resale.
- Agronomic crops produced for seed sales are Castor, Corn, Cotton-upland, Millets, Peanuts, Rice, Sorghum for grain, Sunflowers and Soybeans.
- Forage grasses produced for seed include in part, Bermuda Sprigs, Bufflegrass, Gammagrasses, Sorghum-Sudan Grass, and Pearl Millet.
- Forage legumes produced for seed include Alfalfa, Burr Medic, Clovers and Vetch.
- Miscellaneous crops produced for seed include, Peas, Guar, and Wildflower seeds.

Source: <https://aggie-horticulture.tamu.edu/vegetable/guides/the-crops-of-texas/commercial-seed-production/>

### GREENHOUSE & NURSERY

#### Greenhouse & Nursery Facts:

- In Texas greenhouse and nursery commodities are ranked fifth in terms of cash receipts with a value of \$1.3 billion.

The greenhouse and nursery industry is comprised of two major segments: the floricultural product segment and the environmental horticulture product segment. Environmental horticulture products (primarily nursery crops, turfgrass, and bulbs) account for about 58% of total expenditures. Floricultural products (comprised of cut flowers, cut cultivated greens, potted flowering and potted foliage plants, and bedding and garden plants), account for about 42% of total expenditures.

Source: <https://aggie-horticulture.tamu.edu/ornamental/economic-fact-sheets/trends-of-the-nursery-industry-in-texas-and-the-united-states/>

# **FORESTRY**

## **Forestry Facts:**

- In Texas, forestry commodities are ranked ninth in terms of cash receipts with a value of \$520 million.
- 43 counties in East Texas has nearly 12.1 million acres of forest land of which 11.9 million acres are classified as productive timberland and produce nearly all of the state’s commercial timber.
- 63% of Texas timberland are individual/family owned.
- 18.4% of Texas timberland are owned by management groups and real estate investment trusts.
- 10.2% of Texas timberland are owned by industry.
- 8% of Texas timberland is managed by the state and national forest services.

## **Forest Types:**

Six major forest types are found in the East Texas Piney Woods. Two pine-forest types are most common. The loblolly-shortleaf and longleaf-slash forest types are dominated by the four species of southern yellow pine. In these forests, the various pine trees make up at least 50% of the trees.

Oak-hickory is the second most common forest type. These are upland hardwood forests in which oaks or hickories make up at least 50% of the trees and pine species are less than 25%. Oak-pine is a mixed-forest type in which more than 50% of the trees are hardwoods, but pines make up 25% to 49% of the trees.

Two forest types, oak-gum-cypress and elm-ash-cottonwood, are bottomland types that are commonly found along creeks, river bottoms, swamps, and other wet areas. The oak-gum-cypress forests are typically made up of many species including blackgum, sweetgum, oaks, and southern cypress. The elm-ash-cottonwood bottomland forests are dominated by those trees but also contain many other species, such as willow, sycamore, and maple. Other forest types found in East Texas include small acreages of mesquite, exotic hardwoods, red cedar, and unproductive lands that are considered forested but do not meet stocking requirements.

## **Pubic Forests:**

The Federal Government predominantly owns public forest lands in the West and State and county governments own most of the public lands in the East. Of all public forest acres in the United States, 75% are in the West. Most protected forests are in public ownership while most production forests are in private ownership.

## **Private Forests:**

Private ownership of forests in the United States accounts for 56% of total forest land. More than 10 million individual and family forest landowners own 42% of total forest land, representing a diverse group of people who have many reasons for owning their forest land. Most of this family-owned forest is used for the aesthetics that forests provide, as habitat for wildlife, and as part of a family legacy. Corporations, partnerships, and tribes own most of the remaining 14% of privately owned United States forests.



Data listed is reported regionally, but in some cases North and South are combined into a category labeled “East”.

Source: <http://www.texasforestry.org/docs/forestry-facts.pdf>

Source: <https://texasalmanac.com/topics/environment/forest-resource>

Source: [https://www.fia.fs.fed.us/library/brochures/docs/2012/ForestFacts\\_1952-2012\\_English.pdf](https://www.fia.fs.fed.us/library/brochures/docs/2012/ForestFacts_1952-2012_English.pdf)