TEXAS FFA ASSOCIATION

LEADERSHIP DEVELOPMENT EVENTS

2024 Senior Quiz Material

FARM FACTS

2024 Texas FFA Farm Facts

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WHO'S WHO IN AGRICULTURE

Five agricultural policy makers Texas ought to know

U. S. Secretary of Agriculture:
Tom Vilsack, (Democrat)

Chairman, U.S. Senate Agriculture, Nutrition and Forestry Committee:
Senator Debbie Stabenow, D-Michigan

Chairman, U.S. House of Representatives Agriculture Committee:
Glenn "GT" Thompson, R-Pennsylvania

Texas Commissioner of Agriculture:
Sid Miller, (Republican)

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

Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources and the Environment, United States, 2020-2025 - By J. Marcos Fernandez, Allan D. Goecker, Ella Smith, Emma R. Moran and Christine A. Wilson

Opportunities - We expect that in the United States between 2020 and 2025, employment opportunities will remain strong for new college graduates with interest and expertise in food, agriculture, renewable natural resources, and the environment. An average of approximately 59,400 openings annually (Fig. 1a) reflects a slight (2.6%) improvement in open positions over the past five years (Goecker et al., 2015), but at half the rate of growth predicted in the previous edition of this report (5% job growth between 2015 and 2020).

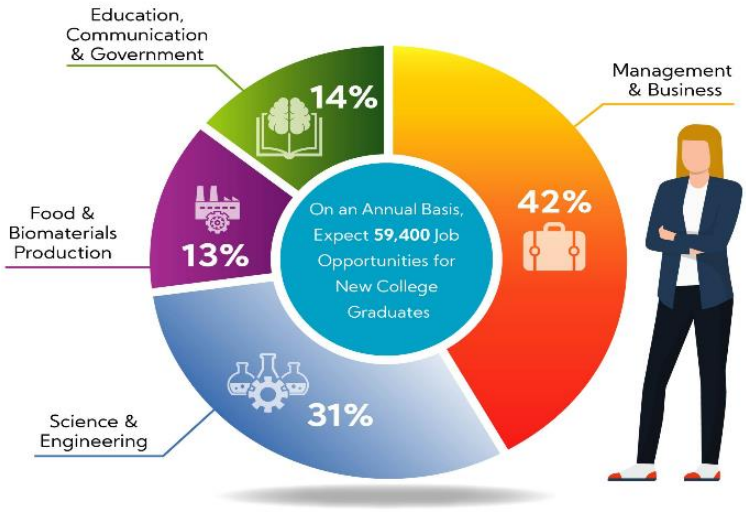
We project the major employment areas for new college graduates will be in Management and Business (approx. 24,700 positions) and in Science and Engineering (approx. 18,400 positions), making up 42% and 31%, respectively, of anticipated openings (Fig. 1b).

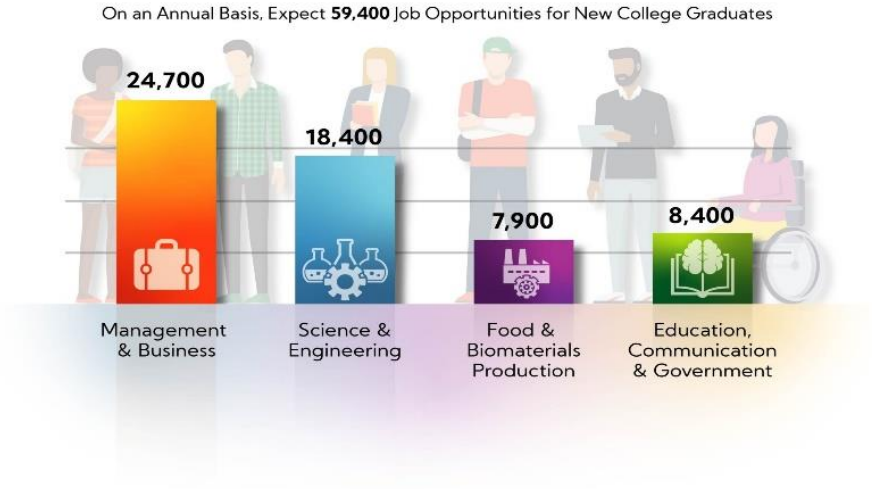
Employment opportunities in Food and Biomaterials Production (approx. 7,900 positions) and the Education, Communications and Government Services sectors (approx. 8,400 positions) account for 13% and 14%, respectively, of jobs available for new college graduates in food, agriculture, renewable natural resources, and the environment.

Compared with the previous five-year report (Goecker et al., 2015), we project a decline in the proportion of job openings in Management and Business (42% vs. 46%), and an increase in job opportunities for college graduates with expertise in Science and Engineering (31% vs. 27%) and in the relative proportion of job openings in Education, Communication, and Government Services (14% vs. 12%).

The projections for demand of college graduates reported in this report are primarily based the U.S. Bureau of Labor Statistics (BLS). Projections of available college graduates are derived from the National Center for Education Statistics (NCES) of the U.S. Department of Education. The BLS forecasts a 5.2% increase in the U.S. labor force between 2018 and 2028 due to job growth and openings from retirement or other replacements. We expect employment opportunities in occupations related to food, agriculture, renewable natural resources, and the environment to grow 2.6% between 2020 and 2025 for college graduates with bachelor's or higher degrees.

[Figures 1a and 1b. Expect 59,400 Annual Employment Opportunities in Food, Agriculture, Renewable Natural Resources, and the Environment for College Graduates]



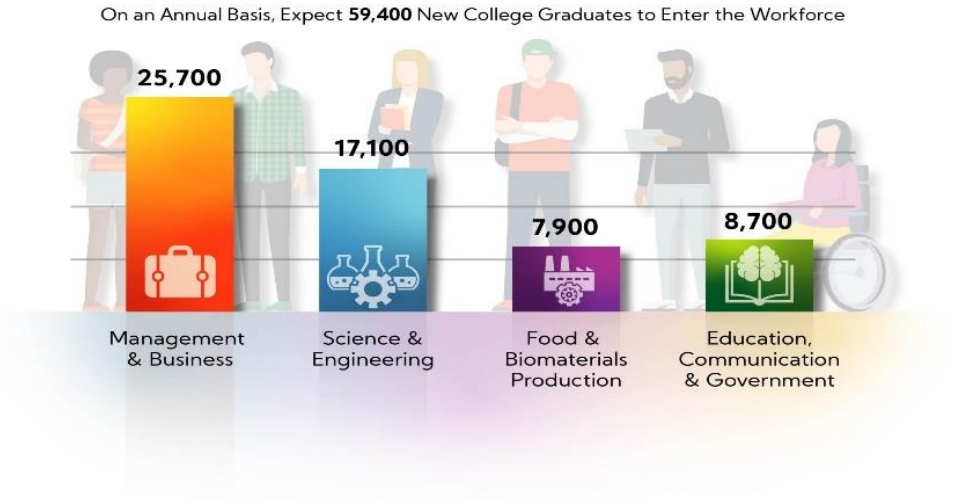


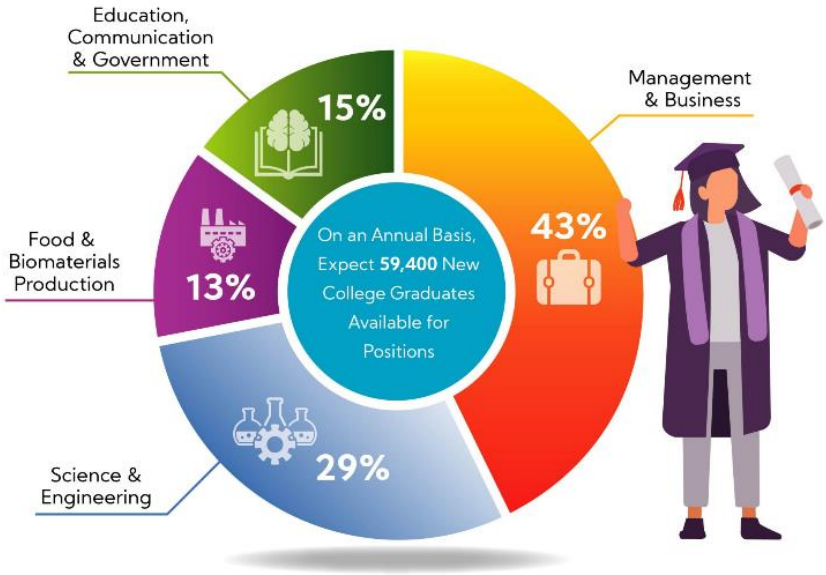
Graduates - In the United States, between 2020 and 2025, the number of new college graduates annually seeking employment opportunities in food, agriculture, renewable natural resources, and the environment will remain strong (approx. 59,400). Graduates from degree programs in food, agriculture, renewable natural resources, and the environment will comprise approximately 61% (36,100) of the new graduate pool. Graduates with allied degrees – degree specializations offered by public and private non-profit higher education programs in biological sciences, engineering, health sciences, business, communication, etc. – who are expected to compete for employment with higher education graduates in food, agriculture, renewable natural resources, and the environment, will comprise 39% (23,300) of the new graduate supply pool (Figs. 2a and 2c). These figures include graduates with baccalaureate and post-graduate and professional degrees.

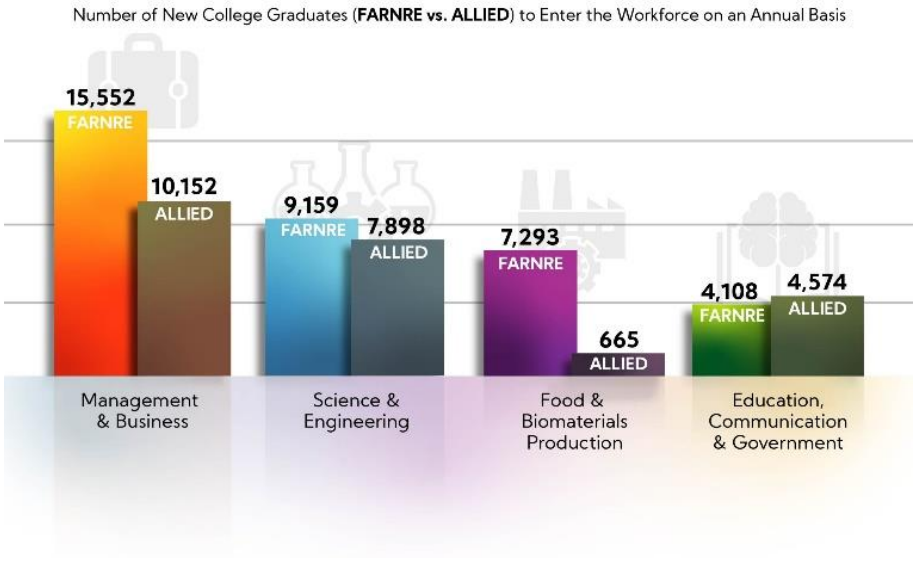
Expect the largest pool of new college graduates to be in Management and Business (25,700 graduates per year, 43% of the total); followed by Science and Engineering (17,100 graduates per year, 29% of the total); Education, Communications and Government Services (8,700 graduates per year, 15% of the total); and Food and Biomaterials Production (7,900 graduates per year, 13% of the total) (Figs. 2a and 2b). Compared to allied majors, new graduates with degrees in food, agriculture, renewable natural resources, and the environment will comprise approximately 61% of Management and Business graduates (15,600 vs. 10,100); 54% of Science and Engineering graduates (9,200 vs.

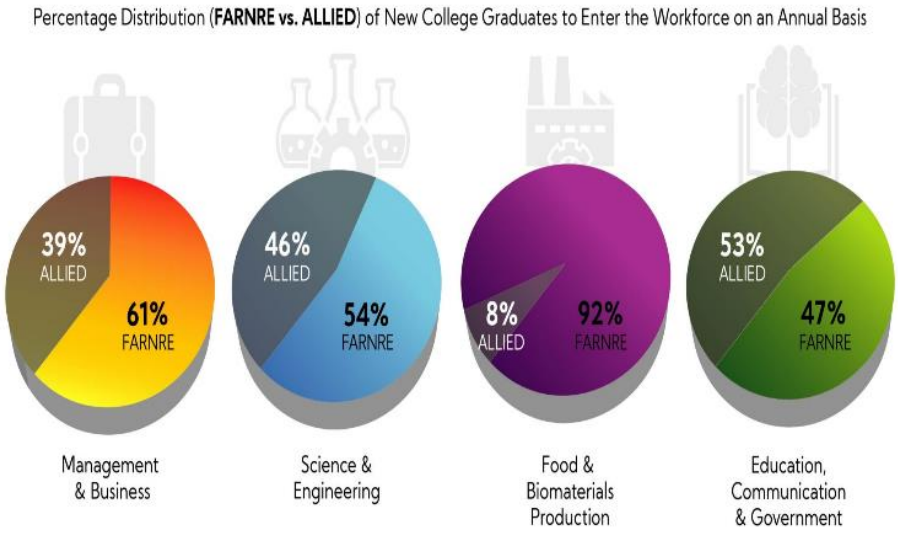
7,900); 47% of Education, Communications and Government Services graduates (4,100 vs. 4,600); and 92% of Food and Biomaterials Production graduates (7,300 vs. 600) (Figs. 2c and 2d).

[Figures 2a, 2b, 2c, and 2d. Anticipate 59,400 New College Graduates Annually Available for Positions in Food, Agriculture, Renewable Natural Resources, and the Environment (FARNRE)]



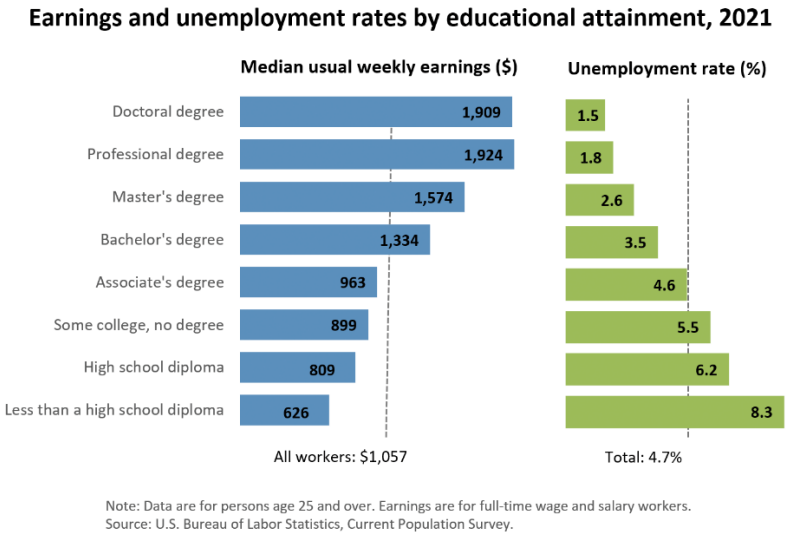




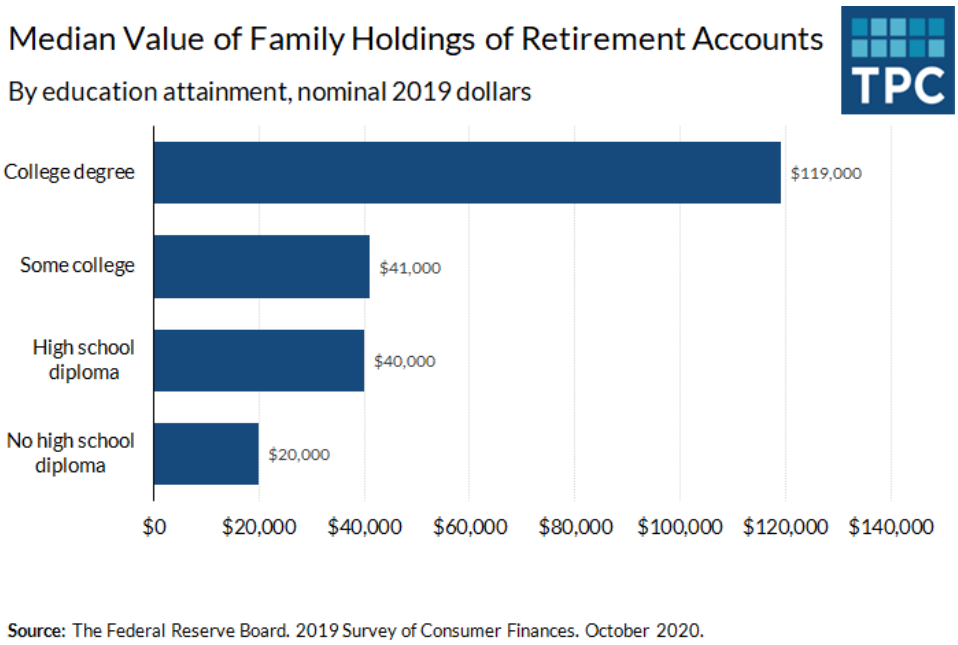


Source: https://www.purdue.edu/usda/employment/

Education Pays



Source: https://www.bls.gov/careeroutlook/2014/data-on-display/education-still-pays.htm



Source: https://www.taxpolicycenter.org/

Agriculture Industry Grows Texas Farms, Ranches Cultivate the State's Economy - By Lisa Minton and Astrid Alvarad - Published October 2022

Agriculture existed in Texas long before European settlers arrived. Caddo tribes in the eastern part of the state grew corn, beans, and squash, as detailed by the Texas State Historical Association. Pueblo tribes in the west not only cultivated food crops but also grew cotton and developed irrigation techniques. Early Spanish settlers introduced hogs, goats, sheep, and cattle. As other settlers arrived,

they established a variety of farming and ranching operations, ranging from small family farms to large cotton plantations and cattle ranches.

Since those early days, Texas agriculture has changed significantly. Advanced cultivation practices, improved seed varieties, mechanization and the introduction of electricity and paved farm roads have contributed to the modernization and expansion of the state's agricultural industry, which produced $24.9 billion in cash receipts in 2021 — about 5.7 percent of the U.S. total and the fourth highest among all states

According to the U.S. Department of Agriculture (USDA), Texas has 247,000 farms — 12.3 percent of the U.S. total and by far the most of any state (Exhibit 2). (The USDA defines ranches as types of farms and includes them in the count.) Our 126 million acres of farmland (PDF) is 14.1 percent of the U.S. total and more than twice that of second-ranked Montana.

One of the reasons that Texas has so much more farmland than other states is that the USDA defines ranches as farmland — nearly 70 percent of Texas' farmland belongs to our state's ranches. The USDA's 2017 Census of Agriculture, a survey conducted every five years, estimates the percentage of Texas farmland acreage by use [Pastureland, 69.8%; Cropland, 23.3%
Woodland, 5.8%; Other, 1.1%]. California has bigger receipts than the top five, despite fewer farms, mainly because its top crops — including grapes, tomatoes, lettuce, citrus fruits, nuts, and berries — tend to be very profitable per acre, and California is one of the few states in the U.S. with suitable conditions to grow them.

The 2017 USDA census also estimates that of the 408,506 Texas agriculture producers, 61.8 percent were male, and 38.2 percent were female. The average age of all Texas agriculture producers is 59.2 years old, 1.7 years older than the national average.

Top Commodities and Exports - As might be expected, cattle are Texas' top agricultural commodity with a 40.4 percent share of cash receipts — more than three times that of milk, the second highest. Texas' top three agricultural commodities — cattle, milk, and broilers — represented nearly two-thirds of the state's total agricultural cash receipts in 2021. The USDA valued Texas agricultural exports at $5.8 billion in 2020, the sixth highest total in the U.S., following California, Iowa, Illinois, Minnesota, and Nebraska (ranked first through fifth, respectively). Texas' top five agricultural exports were: 1) Cotton ($1.7 billion; ranked No. 1 among all states); 2) Beef and veal ($1.0 billion; ranked No. 2); 3) Other plant products ($520.9 million; ranked No. 7); 4) Dairy products ($437.8 million; ranked No. 4); 5) Feeds (corn, sorghum, barley, and oats) and other feed grains (such as hay and alfalfa) ($320.1 million; ranked No. 9).

According to a 2019 study (PDF) by the Center for North American Studies at Texas A&M University, Canada and Mexico were the top foreign markets for Texas agricultural products in 2018. Total economic activity for Texas agricultural exports to Canada and Mexico was valued at more than $3.7 billion and supported 22,972 jobs.

Texas agricultural exports to Canada in 2018 totaled $903.3 million ($234.0 million in animal products and $669.3 million in plant products). The top three agricultural exports from Texas to Canada were: 1) Other horticultural products, such as cut flowers, live trees and other ornamental

plants ($266.6 million); 2) Beef and veal ($97.7 million); 3) Food preparation products, such as cake mixes, gravy packets and dried pasta ($69.0 million).

In 2018, Texas exports to Mexico totaled $863.3 million ($344.1 million in animal products and $519.2 million in plant products). The top three agricultural exports from Texas to Mexico were: 1) Cotton ($139.4 million); 2) Beef and veal ($138.7 million); 3) Other horticultural products ($82.8 million).

Economic Impact - The agriculture industry in Texas involves more than just growing crops and raising animals; it includes many other economic activities that form the supply chain between farm and consumers. Called the "food and fiber system," it is the sector of the U.S. economy that comprises all economic activities supporting or utilizing agricultural production.

The food and fiber system includes machinery repair, fertilizer production, food processing and manufacturing, transportation, wholesale distribution, retail sales and eating establishments. It also includes fabric, clothing and footwear that are produced from plant and animal fibers or hides. Certain financial, real estate, warehouse, transportation, and other services related to agriculture, as well as labor, also are included in the wide array of inputs used to measure agriculture's contribution to the economy.

It is estimated that in 2019 the Texas food and fiber system contributed $159.3 billion, about 8.6 percent of the state's total GDP. Nationwide, the food and fiber system's share of the economy is less than in Texas. According to SelectUSA, agriculture, food and related industries contributed $1.1 trillion — a 5.2 percent share — to the U.S. GDP in 2019.

Challenges and Opportunities - Agriculture once required an enormous amount of labor to sustain production, but with modern capital-intensive practices and the increasing use of technology, agriculture has become much more productive while requiring a much smaller share of the labor force. While this economic transformation has resulted in greater food security and improved nutrition, today's farmers and ranchers still face many challenges.

Broadband Access - Agriculture increasingly relies on technology in its business operations, and in today's high-tech world, having access to broadband connections is more important than ever. Broadband is essential to the practice of "precision agriculture," in which farmers use technology such as variable-rate input applications, GPS systems and remote sensors to perform soil mapping; operate irrigation systems; run autonomous machinery; and assist with data collection. These innovative techniques allow higher quality yields and increased efficiency of production.

Technology also helps some farmers reduce fuel and water usage, allowing for more sustainable operations. Additionally, an increasing number of farmers and ranchers are using wireless trackers to manage cattle and other livestock. This use of technology in agriculture, however, depends on access to a reliable broadband connection, and much of rural Texas remains without access.

According to a 2019 USDA study (PDF), 24 million Americans live in households without access to broadband, and 80 percent of them live in rural areas. In Texas, 25 percent of farms don't have internet access. The USDA noted that adequate broadband infrastructure and other digital technologies in agriculture could add $47 billion to $65 billion annually to the U.S. economy.

The Texas Broadband Plan developed by the Broadband Development Office (BDO) includes the need to reach agriculture as an essential part of the effort to expand affordable, high-quality internet service statewide. The BDO, created by the Legislature in 2021, is in the Comptroller's office.

Drought and Wildfire - Over the past year, most of Texas — 245 of its 254 counties at one point — has been struggling with the worst drought since 2011, significantly affecting agriculture. Cotton crops in the High Plains region, for example, have suffered tremendous losses: the entire production of dryland cotton and a significant portion of the irrigated crops. An August 2022 study (PDF) by Texas Tech's International Center for Agricultural Competitiveness anticipates a 65 percent loss of total cotton production in the region, costing $1.2 billion in losses in economic activity, even with crop insurance.

With so much of Texas under drought conditions, wildfires pose a serious threat to the state's farms and ranches, damaging or destroying crops, livestock, agriculture production facilities, barns and homes. Between December 2021 and August 2022, Texas A&M Forest Service crews responded to 1,725 wildfires burning nearly 600,000 acres. At time of writing, 118 counties have implemented burn bans, according to the Texas A&M Forest Service.

Food Security - Roughly one in every eight Texans faces food insecurity (limited or uncertain access to adequate food, as defined by the USDA), and the growth of Texas' population highlights the need to address this issue. The state is expected to reach a population approaching 50 million people by 2050, and farmers will continue to play a crucial role in providing affordable and accessible food to Texans.

Over that timeframe, the USDA estimates that the global demand for food will increase by 70 to 100 percent, taking into account growth in population and a rise in incomes.

Tradition of Agriculture - Thousands of Texans run farms and ranches that have been in their families for generations. The 2017 Census of Agriculture (PDF) found that 97 percent of Texas farms were family farms.

In 2021, the Texas Department of Agriculture honored 57 family farms and ranches that have been in continuous agricultural production for a century or more. Many Texas families who have owned their farms for generations cite dedication to their community as a driving factor for their perseverance.

While farming can be demanding, Texas farmers cite resilience, responsibility, and humility as values of working in agriculture. Additionally, some Texas farmers say farming has given them a greater appreciation for the land and the labor that provide crops and resources year-round. Farmers with these values and work ethic will continue expanding and adapting their businesses to meet the changing needs of the public.

Outlook for Texas Agriculture - Today's farmers and ranchers must be adaptable to changing conditions, including droughts, new technologies and the demand for more food as our population grows. They work hard to boost production (using often-limited resources) while meeting consumers' changing tastes and expectations — and it is not an easy balancing act.

Farmers face many challenges. As more of the population moves to urban areas, affordable farm labor becomes more difficult to find. Water availability and soil conservation remain ongoing issues as do issues related to property rights and eminent domain. Texas farmers have remained resilient through it all, however, and their hard work as stewards of our land has made Texas a leader in agriculture and food exports.

CENSUS OF AGRICULTURE

HISTORY - The 2017 Census of Agriculture is the 29th Federal census of agriculture and the fifth conducted by the U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS). The U.S. Department of Commerce, Bureau of the Census conducted the census of agriculture for 156 years (1840-1996). The 1997 Appropriations Act contained a provision that transferred the responsibility for the census of agriculture to NASS.

The history of collecting data on U.S. agriculture dates back as far as President George Washington, who kept meticulous statistical records describing his own and other farms. In 1791, President Washington wrote to farmers requesting information on land values, crop acreages, crop yields, livestock prices, and taxes. Washington compiled the results on an area extending roughly 250 miles from north to south and 100 miles from east to west which today lies in Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia, where most of the young country's population lived. In effect, Washington's inquiry was an attempt to fulfill the need for sound agricultural data for a nation that was heavily reliant on the success of agriculture. Such informal inquiries worked while the Nation was young but were insufficient as the country expanded.

In 1839, Congress appropriated $1,000 for "carrying out agricultural investigations, and procuring agricultural statistics." The first agriculture census was taken in 1840 as part of the sixth decennial census of population. As the country expanded and agriculture evolved, the decade between censuses became too long an interval to capture the changes in agricultural production. After the 1920 census, the census interval was changed to every five years resulting in a separate, mid-decade census of agriculture that was conducted in 1925, 1935, and 1945. The agriculture census continued as part of the decennial census through 1950. From 1954 to 1974, the census was taken for the years ending in 4 and 9. In 1976, Congress authorized the census of agriculture for 1978 and 1982 to adjust the data reference year so it coincided with other economic censuses. This adjustment in timing established the census of agriculture on a 5-year cycle collecting data for years ending in 2 and 7.

USES OF CENSUS DATA - The census of agriculture provides a detailed picture of U.S. farms and ranches every five years. It is the leading source of uniform, comprehensive agricultural data for every State and county or county equivalent. Census of agriculture data are routinely used by agriculture organizations, businesses, State departments of agriculture, elected representatives and legislative bodies at all levels of government, public and private sector analysts, the news media, and colleges and universities.

Census of agriculture data are frequently used to:
• Show the importance and value of agriculture at the county, State, and national levels;
• Provide agricultural news media and agricultural associations benchmark statistics for stories and articles on U.S. agriculture and the foods we produce;

• Compare the income and costs of production;
• Provide important data about the demographics and financial well-being of producers;
• Evaluate historical agricultural trends to formulate farm and rural policies and develop programs that help agricultural producers;
• Allocate local and national funds for farm programs, e.g. extension service projects, agricultural research, soil conservation programs, and land-grant colleges and universities;
• Identify the assets needed to support agricultural production such as land, buildings, machinery, and other equipment;
• Create an extensive database of information on uncommon crops and livestock and the value of those commodities for assessing the need to develop policies and programs to support those commodities;
• Provide geographic data on production so agribusinesses will locate near major production areas for efficiencies for both producers and agribusinesses;
• Measure the usage of modern technologies such as conservation practices, organic production, renewable energy systems, internet access, and specialized marketing strategies;
• Develop new and improved methods to increase agricultural production and profitability;
• Plan for operations during drought and emergency outbreaks of diseases or infestations of pests;
• Analyze and report the current state of food, fuel, and fiber production in the United States; and
• Make energy projections and forecast needs for agricultural producers and their communities.

LEGAL AUTHORITY - The 2017 Census of Agriculture is required by law under the "Census of Agriculture Act of 1997," Public Law 105- 113 (Title 7, United States Code, Section 2204g). The law directs the Secretary of Agriculture to conduct a census of agriculture every fifth year. The census of agriculture includes each State, Puerto Rico, Guam, the U.S. Virgin Islands, the Commonwealth of Northern Mariana Islands, and American Samoa.

FARM DEFINITION - The census definition of a farm is any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year. The definition has changed nine times since it was established in 1850. The current definition was first used for the 1974 Census of Agriculture and was used in each subsequent census of agriculture. This definition is consistent with the definition used for current USDA surveys. The farm definition used for each U.S. territory varies. The report for each territory includes a discussion of its farm definition.

Source: Introduction – USDA NAAS Full Report
https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_US/usintro.pdf

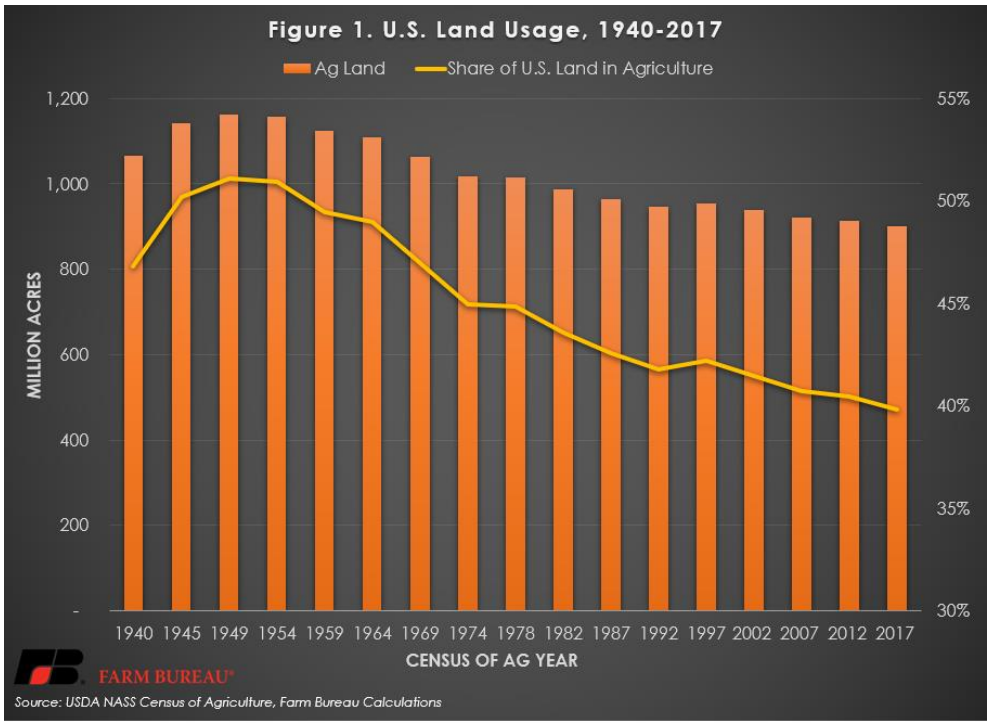
THE 2017 CENSUS OF AGRICULTURE, OUR FIRST TAKE:

The 2017 Census of Agriculture was released last week to much-deserved fanfare. The Census of Ag is a herculean effort undertaken by USDA every five years by a staff of dedicated professionals intent on asking the right questions, in the right way, in order to paint the most accurate picture of U.S. agriculture at the time the data is collected. One small point of reference to highlight how seriously USDA takes the Census of Agriculture - the response rate for the 2017 Census of Agriculture was 71.8 percent. Many studies have been conducted regarding survey response rates. The following response rates are common, according to the Center for Innovation in Teaching and Research:

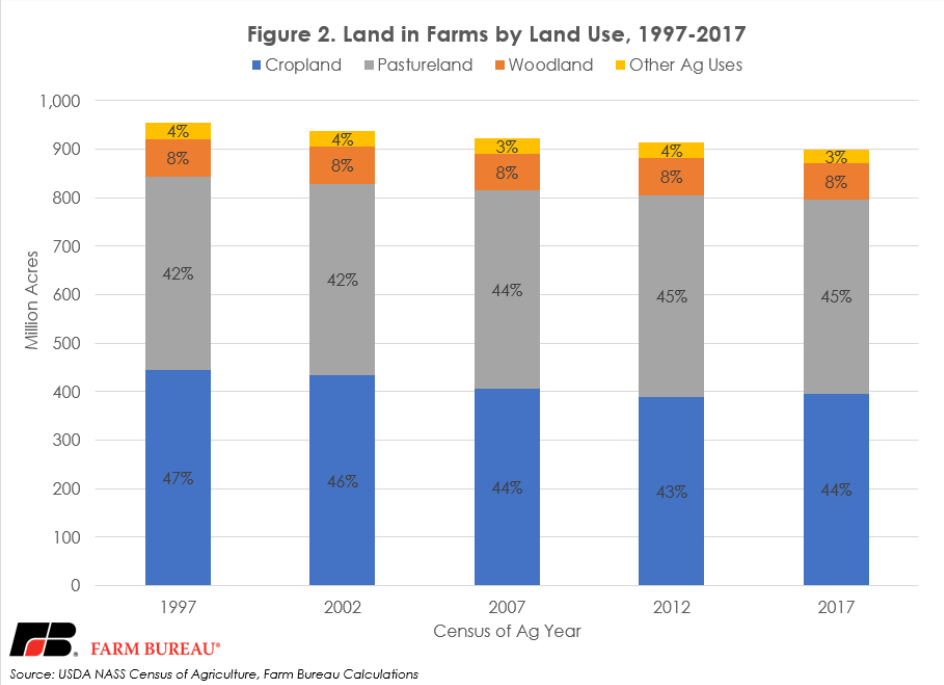
customer and member surveys – 5 to 40 percent; general public – 1 to 20 percent. The Census of Agriculture would likely be described as a hybrid of these two types. But by either definition, USDA's doggedness for collecting responses is clearly impressive. The survey results will be the source of research and discussion for years to come; we dig into some of the high-level results here.

Number of Ag Acres

There are 2.26 billion acres in the United States. Between 2012 and 2017, the number of acres of land in farms fell by 14.3 million acres or 1.6 percent to 900 million acres. That means that in 2017, 40 percent of land in the U.S. was producing food and fiber for U.S. and non-U.S. citizens alike. This is the lowest share of U.S. land dedicated to agricultural use since the 1910 Census of Agriculture. For those who will inevitably wonder which year had the highest share of land dedicated to agricultural use – it was 1950, with 51.1 percent of land in farms. (In 1935, the Census reported that 55.4 percent of land was dedicated to agriculture, but this data point is excluded because it occurred before the United States was remeasured in 1940.)



USDA further breaks down ag land into four different uses: cropland, woodland, pastureland and other including farmsteads, homes, buildings, livestock facilities, ponds, roads, wasteland, etc. Here we see interesting shifts. Between 2012 and 2017, acreage in cropland was the only segment to increase, up 6.7 million acres. The largest decline was in pastureland/rangeland, which was down 14.5 million acres. Acreage in woodland and other ag uses also declined, by 3.9 million acres and 2.5 million acres, respectively. However, despite these changes, the share of ag land dedicated to different uses has remained fairly consistent over the last 20 years, as highlighted in Figure 2.



Moving into state-by-state analysis, figure 3 visualizes the number of acres in ag land in each state, while figure 4 demonstrates the change in ag land by percentage between 2017 and 2012. Texas (-3.1 million), New Mexico (-2.5 million), Montana (-1.6 million), Wyoming (-1.3 million) and California (-1 million) lost the largest number of farmland acres. Five states in the Northeast saw the largest declines in ag land on a percentage basis. Between 2017 and 2012, Rhode Island lost 18 percent of its ag land, followed by Connecticut (-13 percent), New Hampshire (-10 percent), Maine (-10 percent) and Massachusetts (-6 percent). Meanwhile, other states added ag land. Georgia (+332 thousand), Indiana (+249 thousand), Nevada (+214 thousand), Florida (+183 thousand) and Louisiana (+96 thousand) gained the largest number of farmland acres.

Figure 3. Land in Farms, 2017

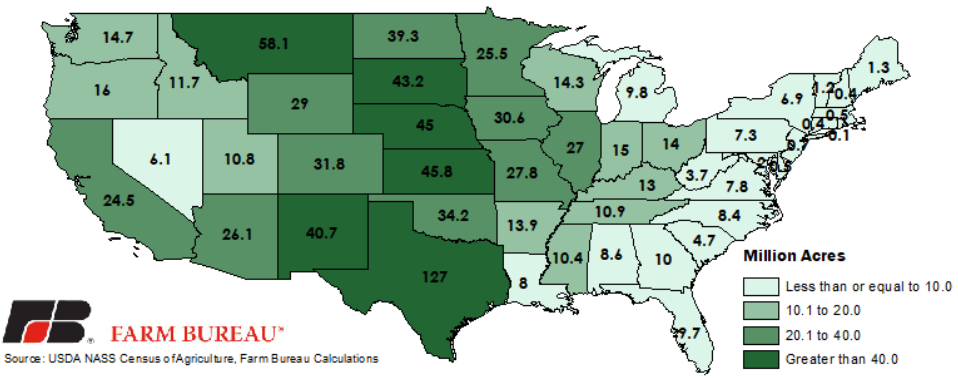
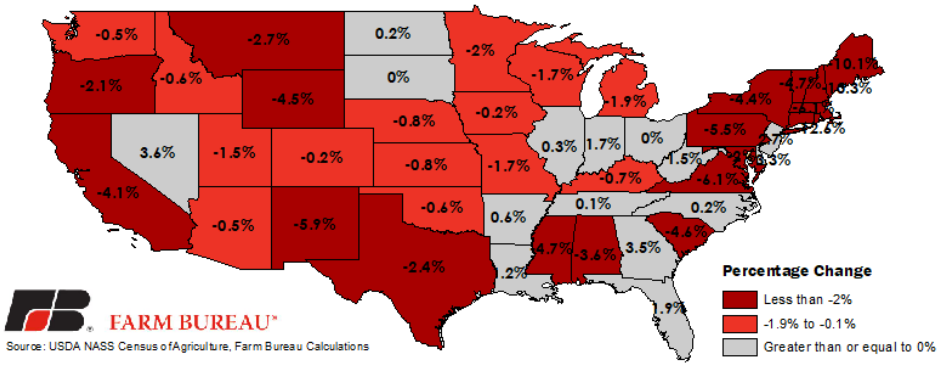


Figure 4. Percentage Change in Land in Farms, 2012 to 2017



When the data by category is further disaggregated it is easy to see that different trends impacted the number of acres in different states. Within the cropland category, North Dakota (804 thousand), South Dakota (666 thousand), Nebraska (645 thousand), Kansas (622 thousand) and Oklahoma (436 thousand) had the largest increase in crop acreage. Montana (-615 thousand), New Mexico (-150 thousand), Mississippi (-114 thousand), Arkansas (-105 thousand) and Tennessee (-43 thousand) experienced the largest number of declining crop acreage. On a percentage basis, Rhode Island, New Mexico, Montana, Mississippi, and Vermont had the largest decline, while West Virginia, Arizona, New Hampshire, Hawaii, and Wyoming had the largest percentage increase.

Figure 5. Change in Cropland, 2012 to 2017

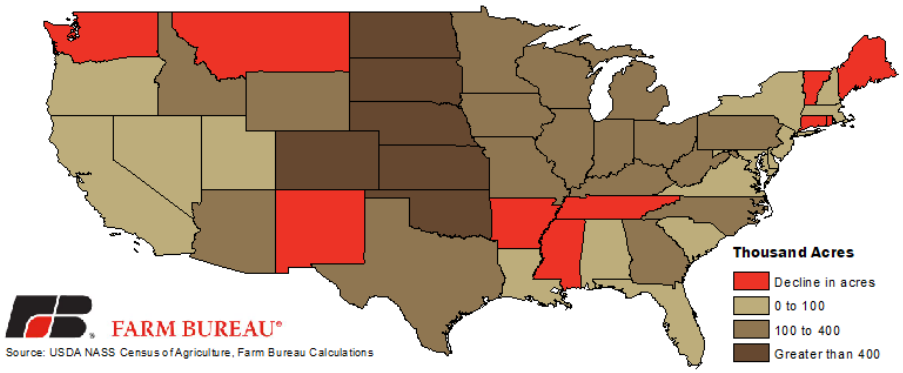
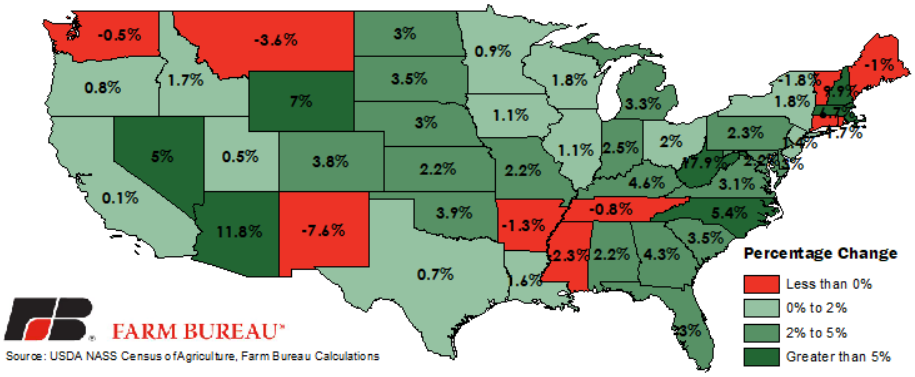


Figure 6. Percentage Change in Cropland, 2012 to 2017



Within the pasture and rangeland category, Texas (-2.3 million), New Mexico (-1.8 million), Wyoming (-1.5 million), California (-1.4 million) and New Mexico (-0.8 million) experienced the largest number of declining permanent pasture acreage. On a percentage basis, Massachusetts, Maine, New York, Connecticut and Vermont showed the largest declines. Nevada (171 thousand), Washington (110 thousand), Arkansas (65 thousand) and Alaska (18 thousand) had the largest increase in pasture and rangeland on both an acreage and percentage basis.

Figure 7. Change in Permanent Pasture and Rangeland, 2012 to 2017

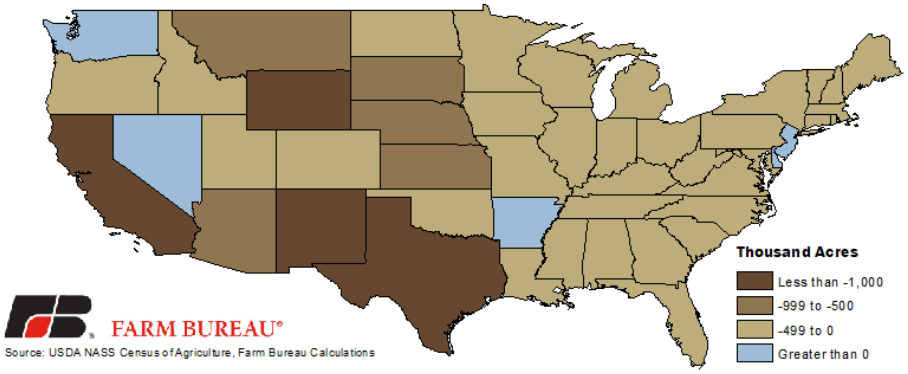
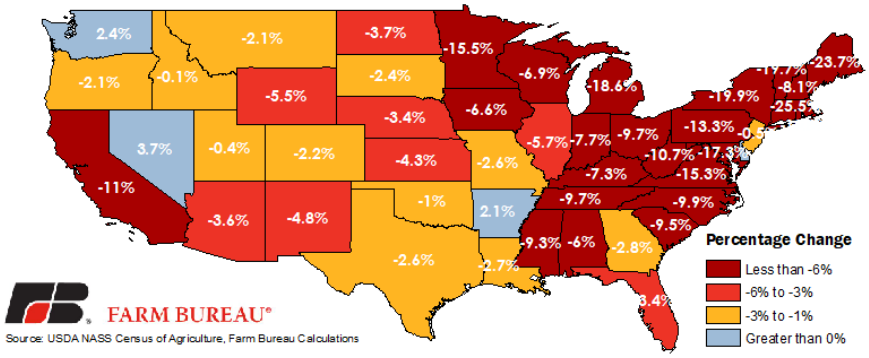
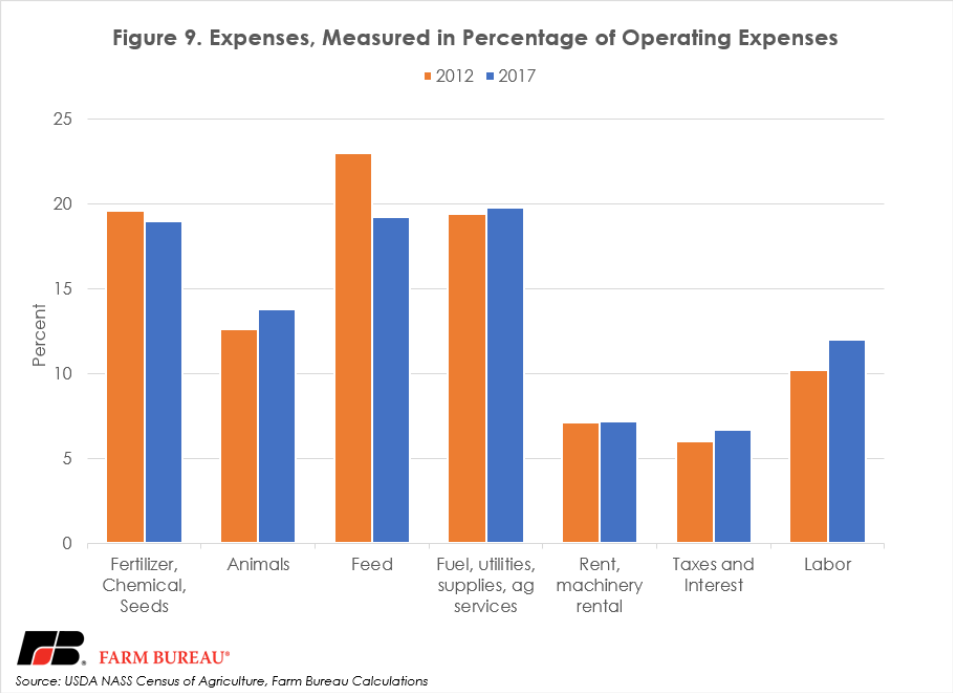


Figure 8. Percentage Change in Permanent Pasture and Rangeland, 2012 to 2017



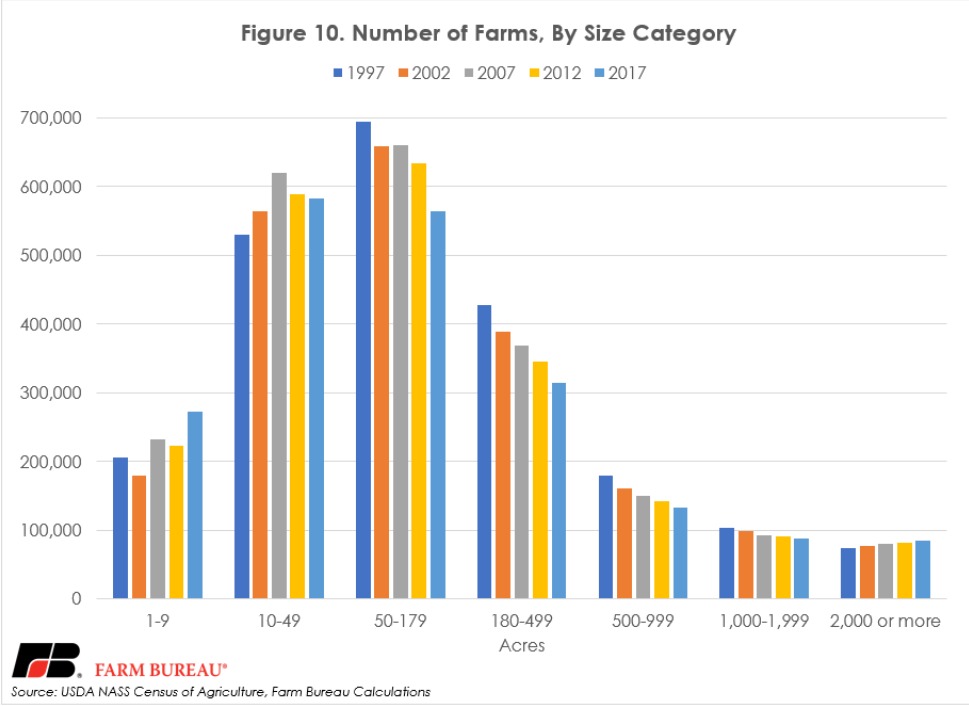
Farm Production Expenses

Overall farm production expenses decreased by $2.5 million, a decline of 0.8 percent. This figure was primarily driven down by a 17 percent decline in feed costs, a 19 percent decline in fuel costs and an 18 percent decline in fertilizer costs. However, not all expense areas trended in the same direction. Hired labor expenses increased by $4.7 million, an increase of 17 percent; taxes increased by nearly $1.9 million, an increase of 25 percent and animal prices increased by almost $3.6 million, a 9 percent increase. In figure 9 we group the 17 Census of Ag categories into seven categories.



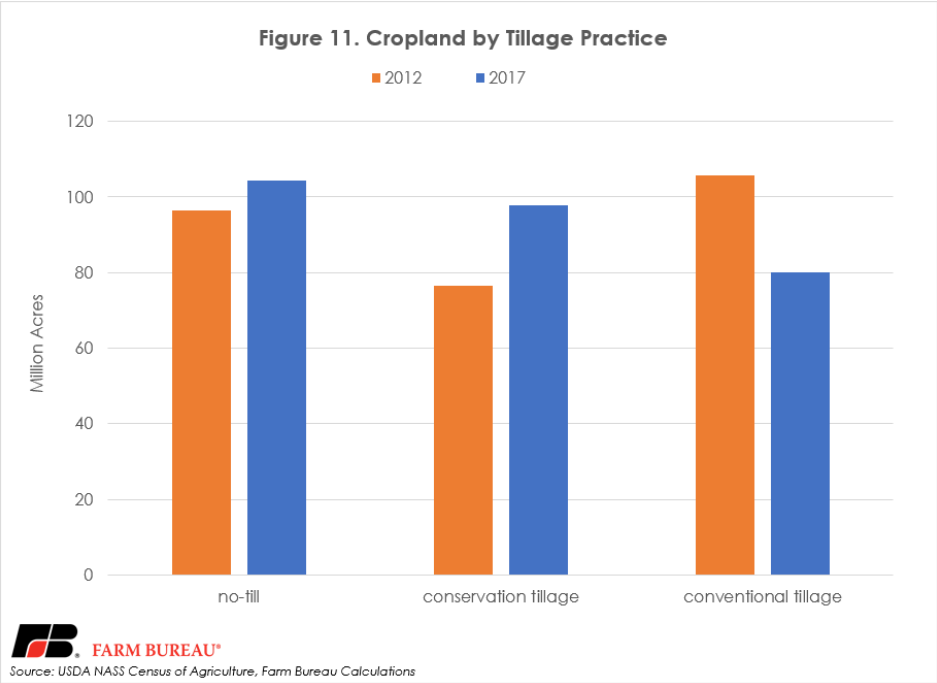
Number of Farms by Size Category

The number of farms declined in every size category except 1-9 acres and 2,000 acres or more in the 2017 Census of Agriculture. And while the number of farms that were 2,000 acres or more only increased by 2,920 farms, an increase of 3.6 percent, the role of those larger operations continues to grow. The fewest number of farms, accounting for 75 percent of the market value of agricultural products sold in 2017, fell to a little over 105,000 farms. To put that number in context, there were 2.04 million farms identified in the 2017 Census.



Environmental

No-till practices are now the most common tillage technique on cropland in the United States, after an 8 percent increase in 2017 as compared to 2012. Following are no-till are conservation tillage techniques, increasing by 28 percent. Finally, conventional tillage practices were utilized on nearly 25 percent fewer acres in 2017.



Beyond tillage techniques, the 2017 Census highlights that farmers are embracing a wide variety of environmental practices. Farmers increased the number of acres of cropland planted to a cover crop by nearly 50 percent. Further, the number of operations with renewable energy devices increased by 132 percent. This huge increase was driven by large increases in the number of operations with solar panels, wind turbines, methane digesters and geo-exchange systems.

Source: Farm Bureau - https://www.fb.org/market-intel/the-2017-census-of-agriculture-our-first-take

THE REVISED ERS FARM TYPOLOGY: CLASSIFYING U.S. FARMS TO REFLECT TODAY'S AGRICULTURE:

The USDA definition of a farm covers a broad range of places--from farms with no sales to multimillion dollar enterprises--and statistics portraying the characteristics of the "average farm" are not representative of most farms. ERS originally developed its farm typology in 1998 to group individual farms into more homogeneous categories for which average characteristics might be more meaningful.

Since the release of the farm typology nearly 15 years ago, the U.S. agricultural sector has changed in a number of ways. ERS recently updated the typology to reflect three important trends: commodity price increases, a shift in production to larger farms, and the rapid growth of the use of production contracts among livestock producers.

The farm topology focuses on the "family farm," or any farm where the majority of the business is owned by the operator and individuals related to the operator, including relatives who to no live in the operator's household. USDA defines a farm as any place that produced and sold – or normally would have produced and sold – at least $1,000 of agricultural products during a given year.

Gross cash farm income = GCFI

- Small family farms (GCFI less than $350,000). This includes three subcategories:
  - Retirement farms. Small family farms whose operators report they are retired, although they continue to farm on a small scale. These operations sell enough farm products to quality under the current USDA farm definition.
  - Off-farm occupations farms. Small family farms whose operators report a primary occupation other than farming. This category also includes farms – 12 percent of the group in 2010 – whose operators are not in the labor force but are not retired.
  - Farming-occupation farms. Small family farms whose operators report farming as their primary occupation.
    - Low-sales farms. GCFI less than $150,000
    - Moderate-sales farms. GCFI between $150,000 and $349,000.
- Midsize family farms (GCFI between $350,000 and $999,999)
  - Family farms with GCFI between $350,000 and $999,000)
- Large-scale family farms (GCFI greater than $1,000,000)
  - Large family farms. Family farms with GCFI between $1,000,000 and $4,999,999.
  - Very large family farms. Family farms with GCFI of $5,000,000 or more.
- Nonfamily farms
  - Any farm where they operator and persons related to the operator do not own a majority of the business.

Source: This article is drawn from Updating the ERS Farm Topology by Robert A. Hoppe and James M. MacDonald, USDA, Economic Research Service, April 2013.
Source: https://www.ers.usda.gov/amber-waves/2013/may/the-revised-ers-farm-typology-classifying-us-farms-to-reflect-todays-agriculture/

ABOUT THE U.S. DEPARTMENT OF AGRICULTURE:

What We Do - We provide leadership on food, agriculture, natural resources, rural development, nutrition, and related issues based on public policy, the best available science, and effective management.

We have a vision to provide economic opportunity through innovation, helping rural America to thrive; to promote agriculture production that better nourishes Americans while also helping feed others throughout the world; and to preserve our Nation's natural resources through conservation, restored forests, improved watersheds, and healthy private working lands.

Who We Are - The U.S. Department of Agriculture (USDA) is made up of 29 agencies and offices with nearly 100,000 employees who serve the American people at more than 4,500 locations across the country and abroad.

USDA Mission Areas and Agencies

Farm Production and Conservation - Farm Production and Conservation (FPAC) is the Department's focal point for the Nation's farmers and ranchers and other stewards of private agricultural lands and non-industrial private forest lands. FPAC agencies implement programs designed to mitigate the significant risks of farming through crop insurance, conservation programs, farm safety net programs, lending, and disaster programs.

- **Farm Service Agency (FSA) -** The Farm Service Agency implements agricultural policy, administers credit and loan programs, and manages conservation, commodity, disaster, and farm marketing programs through a national network of offices
- **FPAC Business Center -** The FPAC Business Center is a first-of-its-kind organization at USDA, combining the talent of employees from all three FPAC agencies into specialized teams that serve employees and customers across the Farm Service Agency (FSA), the Natural Resource Conservation Service (NRCS) and the Risk Management Agency (RMA).
- **Natural Resources Conservation Service (NRCS) -** NRCS provides leadership in a partnership effort to help people conserve, maintain and improve our natural resources and environment.
- **Risk Management Agency (RMA) -** RMA helps to ensure that farmers have the financial tools necessary to manage their agricultural risks. RMA provides coverage through the Federal Crop Insurance Corporation, which promotes national welfare by improving the economic stability of agriculture.

Food, Nutrition, and Consumer Services - Food, Nutrition, and Consumer Services works to harness the Nation's agricultural abundance to reduce food insecurity and improve nutrition security in the United States. Its operating agency, the Food and Nutrition Service, administers federal domestic nutrition assistance programs and includes the Center for Nutrition Policy and Promotion, which links scientific research to the nutrition needs of consumers through science-based dietary guidance, nutrition policy coordination, and nutrition education.

- **Food and Nutrition Service (FNS) -** FNS increases food security and reduces hunger in partnership with cooperating organizations by providing children and low-income people access to food, a healthy diet, and nutrition education in a manner that supports American agriculture and inspires public confidence.

Food Safety Food Safety and Inspection Service is the USDA public health agency responsible for protecting the public's health by ensuring the safety of meat, poultry, and egg products. FSIS ensures food safety through the authorities of the Federal Meat Inspection Act, the Poultry Products Inspection Act, and the Egg Products Inspection Act, as well as humane animal handling through the Humane Methods of Slaughter Act.

- **Food Safety and Inspection Service (FSIS) -** FSIS enhances public health and well-being by protecting the public from foodborne illness and ensuring that the nation's meat, poultry, and egg products are safe, wholesome, and correctly packaged.

Marketing and Regulatory Programs - Marketing and Regulatory Programs (MRP) facilitates domestic and international marketing of U.S. agricultural products, protects U.S. plant and animal health, regulates genetically engineered organisms, administers the Animal Welfare Act, and carries

out wildlife damage management activities. MRP agencies are active participants in setting national and international standards.

- **Agricultural Marketing Service (AMS)** AMS facilitates the strategic marketing of agricultural products in domestic and international markets while ensuring fair trading practices and promoting a competitive and efficient marketplace. AMS constantly works to develop new marketing services to increase customer satisfaction.
- **Animal and Plant Health Inspection Service (APHIS) -** APHIS provides leadership in ensuring the health and care of animals and plants. The agency improves agricultural productivity and competitiveness and contributes to the national economy and the public health.

Natural Resources and Environment - The mission of Natural Resources and Environment is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. We carry out our mission in partnership with States, Tribes, and communities across the country who steward our nation's forest and grasslands.

- **Forest Service (FS) -** FS sustains the health, diversity and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

Research, Education and Economics - Research, Education and Economics is dedicated to the creation of a safe, sustainable, competitive U.S. food and fiber system, as well as strong communities, families, and youth through integrated research, analysis, and education.

- **Agricultural Research Service (ARS) -** ARS is USDA's principal in-house research agency. ARS leads America towards a better future through agricultural research and information.
- **Economic Research Service (ERS) -** ERS is USDA's principal social science research agency. Each year, ERS communicates research results and socioeconomic indicators via briefings, analyses for policymakers and their staffs, market analysis updates, and major reports.
- **National Agricultural Statistics Service (NASS) -** NASS serves the basic agricultural and rural data needs of the country by providing objective, important and accurate statistical information and services to farmers, ranchers, agribusinesses, and public officials. This data is vital to monitoring the ever-changing agricultural sector and carrying out farm policy.
- **National Institute of Food and Agriculture (NIFA) -** NIFA's mission is to invest in and advance agricultural research, education, and extension to solve societal challenges. NIFA's investments in transformative science directly support the long-term prosperity and global preeminence of U.S. agriculture.
- **Office of the Chief Scientist** - The Office of the Chief Scientist (OCS) was established in accordance with the Food, Conservation, and Energy Act of 2008 to provide strategic coordination of the science that informs the Department's and the Federal government's decisions, policies and regulations that impact all aspects of U.S. food and agriculture and related landscapes and communities.

Rural Development - Rural Development fosters opportunity and economic security for people and communities in rural America through a broad range of investments. These investments open doors to better jobs, create access to innovation and technology, while promoting the promise of rural prosperity, equity, and climate resilience. The mission area is a catalyst for locally driven economic development strategies that build on the diverse assets and needs of rural places, including improving high-speed internet access; providing affordable rural housing; connecting rural skill sets to jobs of

the future; modernizing roads, bridges, and water systems; and ensuring communities have access to health care. Rural Development provides tools and resources such as loans, grants, and strong community partnerships that ensure rural families, businesses, and communities can prosper today and in the future. The Rural Business-Cooperative Service (RBS) - RBS offers programs to help businesses grow as well as job training for people living in rural areas. These programs help provide the capital, training, education and entrepreneurial skills that can help people living in rural areas start and grow businesses or find jobs in agricultural markets and in the bio-based economy.

- **Rural Development (RD) -** RD helps rural areas to develop and grow by offering Federal assistance that improves quality of life. RD targets communities in need and then empowers them with financial and technical resources.
- **Rural Utilities Service (RUS) -** RUS provides financing to build or improve infrastructure in rural communities. This includes water and waste treatment, electric power, and telecommunications services. These services help expand economic opportunities and improve the quality of life for rural residents.
- **Rural Housing Service (RHS) -** RHS offers a variety of programs to build or improve housing and essential community facilities in rural areas. RHS offers loans, grants, and loan guarantees for single- and multi-family housing, childcare centers, fire and police stations, hospitals, libraries, nursing homes, schools, first responder vehicles and equipment, housing for farm laborers and much more.

Trade and Foreign Agricultural Affairs - Trade and Foreign Agricultural Affairs' (TFAA) role is to provide our farmers and ranchers with opportunities to compete in the global marketplace. TFAA is the Department's lead on trade policy with the primary responsibility of ensuring USDA speaks with a unified voice on international agricultural issues domestically and abroad. Within TFAA, the Foreign Agricultural Service is the lead U.S. agency tasked with promoting exports of U.S. agricultural products through market intelligence, trade policy, trade capacity building, and trade promotion programs. This work is carried out by staff in Washington, D.C., as well as a global network of 95 offices covering 177 countries. Also, within TFAA, the U.S. Codex Office coordinates U.S. participation in the Codex Alimentarius Commission, a United Nations body that sets international food standards while protecting consumer health and ensuring fair trade practices.

- **Foreign Agricultural Service (FAS) -** FAS works to improve foreign market access for U.S. products. This USDA agency operates programs designed to build new markets and improve the competitive position of U.S. agriculture in the global marketplace.
- **U.S. Codex Office** - The U.S. Codex Office (USCO) is housed in the USDA's Trade and Foreign Agricultural Affairs mission area. The USCO is composed of a small yet effective team that conducts international outreach and provides education to promote and support the development of a sustainable global agricultural system and improved international nutrition efforts.

Source: https://www.usda.gov/our-agency/about-usda
Source: https://www.usda.gov/our-agency/agencies

FAST FACTS ABOUT U.S. AGRICULTURE & FOOD:

- 2 million farms dot America's rural landscape, and 98% are operated by families – individuals, family partnerships or family corporations (America's Diverse Family Farms, 2020 Edition).
- One U.S. farm feeds 166 people annually in the U.S. and abroad. The global population is expected to increase by 2.2 billion by 2050, which means the world's farmers will have to grow about 70% more food than what is now produced.
- About 11% of U.S. farmers are serving or have served in the military.
- Cattle and calves, corn, and soybeans are the top three U.S. farm products.
- 86% of U.S. agricultural products are produced on family farms or ranches.
- Farming accounts for about 1% of the U.S. gross domestic product.
- After accounting for input costs, farmers and ranchers receive only 8 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 2018, $139.6 billion worth of American agricultural products were exported around the world. The United States sells more food and fiber to world markets than we import, creating a positive agricultural trade balance.
- 25% of all farmers are beginning farmers (in business less than 10 years); their average age is 46.
- About 8% of U.S. farms market foods locally through direct-to-consumer or intermediated sales.
- Americans enjoy a food supply that is abundant, affordable and among the world's safest, thanks in large part to the efficiency and productivity of America's farm and ranch families.
- The pounds of feed (grain, forage, etc.) a dairy cow needs to eat to produce 100 pounds of milk has decreased by more than 40% on average in the last 40 years.
- One acre of land can grow a variety of crops, including 50,000 pounds of strawberries or 2,784 pounds (46.4 bushels) of wheat.
- Farm programs typically cost each American just pennies per meal and account for less than one-half of 1% of the total U.S. budget.
- Compared to 2012, the number of farm operators of Spanish, Hispanic or Latino origin is higher, up 13% to 112,451. There also are more Black farm operators (45,508, up 2%) today compared to 2012.
- More than half of America's farmers intentionally provide habitat for wildlife. Deer, moose, birds and other species have shown significant population increases for decades.
- One day's production for a high-producing dairy cow yields 4.8 pounds of butter, 8.7 gallons of ice cream or 10.5 pounds of cheese.
- Careful stewardship by America's food producers has spurred a 34% decline in erosion of cropland by wind and water since 1982.
- On any given day, one in eight Americans will eat pizza.
- Americans throw away about 25% of the food they purchase for at-home consumption.
- Farm and ranch families comprise less than 2% of the U.S. population.
- A whopping 40% of all food grown and produced in the U.S. is never eaten.
- Total U.S. corn yield (tons per acre) has increased more than 360% since 1950.
- About 25% of U.S. farm products by value are exported each year.

- Of the 10% of disposable income Americans spend on food each year, 46% is for food eaten at home and 54% is for food eaten away from home.
- Women make up 36% of the total number of U.S. farm operators; 56% of all farms have at least one female decision-maker.
- Many Americans celebrate holidays with food, spending a total of nearly $14 billion each year.

Source: American Farm Bureau Foundation - https://www.fb.org/newsroom/fast-facts
Source: USDA – Economic Research Service – U.S. and State Fact Sheets – Data updated December 13, 2022
Source: https://data.ers.usda.gov/reports.aspx?ID=17854

U.S Population
2021 – Rural population – 46,082,589
2021 – Urban population – 285,811,156
2021 – Total population – 331,893,745

Texas Population
2021 – 29,527,941 [change from 2020-2021 = +1.3%]

UNITED STATES AGRICULTURE – CASH RECEIPTS BY COMMODITY:

Top 20 commodities in terms for cash receipts in 2021

Rank	Commodity	Cash Receipts
1.	Cattle and calves	$72,873,644,000
2.	Corn	$71,082,495,000
3.	Soybeans	$49,156,013,000
4.	Dairy products, Milk	$41,756,381,000
5.	Broilers	$31,520,148,000
6.	Hogs	$28,020,468,000
7.	Miscellaneous Crops	$21,609,424,000
8.	Wheat	$11,924,141,000
9.	Chicken eggs	$8,677,335,000
10.	Hay	$8,628,163,000
11.	Floriculture	$6,430,424,000
12.	Cotton lint, Upland	$6,224,322,000
13.	All other animals and products	$6,096,740,000
14.	Turkeys	$5,891,373,000
15.	Grapes	$5,530,652,000
16.	Almonds	$5,028,320,000
17.	Potatoes	$3,676,246,000
18.	Strawberries	$3,422,240,000
19.	Rice	$3,264,147,000
20.	Apples	$3,032,674,000

UNITED STATES AGRICULTURE – TOP 5 EXPORTS BY CASH RECEIPTS:

Top 5 agriculture exports, estimates, 2021

Rank	Exports	Exports in Million dollars
1.	Soybeans	$27,394.5
2.	Other plan products[1]	$20,330.3
3.	Corn	$18,629.2
4.	Feeds and other feed grains[2]	$11,539.3
5.	Beef and veal	$10,523.9

[1] Includes sweeteners and products, other horticulture products, planting seeds, cocoa, coffee, and other processed foods

[2] Includes processed feeds, fodder, barley, oats, rye and sorghum

TOP 10 PRODUCE CROPS IN GROWN IN THE UNITED STATES:

1. Corn. It is the most widely produced feed grain in the United States, the majority of which goes towards feeding livestock. Over 90 million acres of corn are grown for feed, industrial products, and food and beverage products like cereal, alcohol, and sweeteners.
2. Cotton. The U.S. is the world's third largest producer of cotton, one of the most important textile fabrics. The U.S. 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.
3. Fruit. Many different fruits are grown in the U.S., including apples, berries, citrus, and melons. Together with the tree nut industry, the fruit industry contributes over $25 billion in farm cash receipts.
4. Tree Nuts. Tree nuts like almonds, pecans, walnuts, hazelnuts, and pistachios are grown many different places in the U.S. Along with the fruit industry, the tree nut industry makes up 13 percent of the total receipts for all agricultural commodities and 7 percent for all crops. However, both the fruit and tree nuts industries face competition from foreign imports.
5. Rice. Rice is grown exclusively in the southern U.S. and California with three different types of rice grown, short-, medium-, and long-grain. The U.S. exports approximately half of its rice sales volume to global markets.
6. Soybean and Oil Crops. The U.S. is the leading soybean producer and exporter in the world. Soybeans account for about 90% of U.S. oilseed production, but we also produce other oilseeds, such as peanuts, sunflower seed, canola, and flax.
7. Sugar and Sweeteners. The U.S. 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, sugarbeets and high fructose corn syrup.
8. Vegetables. 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.
9. Pulses. Pulses include beans, peas, legumes, and peanuts. Along with the vegetable industry, pulses account for approximately 14 percent of U.S. cash crop receipts.

10. Wheat. Wheat is the third largest field crop in the U.S., both in acreage and gross farm receipts. About half of the U.S.'s wheat production is exported.

Source: USDA Economic Research Service [ERS] - https://www.ers.usda.gov/topics/crops.aspx
Source: https://agamerica.com/blog/power-of-10-top-10-produce-crops-in-the-u-s/

TEXAS AGRICULTURE – CASH RECEIPTS BY COMMODITY:

Top 20 commodities in terms for cash receipts in 2021

Rank	Commodity	Cash Receipts
1.	Cattle and calves	$10,053,767,000
2.	Dairy products, Milk	$2,833,922,000
3.	Broilers	$2,518,594,000
4.	Cotton lint, Upland	$2,216,929,000
5.	Corn	$1,398,208,000
6.	Miscellaneous crops	$820,260,000
7.	Hay	$795,547,000
8.	Sorghum	$601,701,000
9.	Chicken eggs	$494,210,000
10.	Wheat	$480,666,000
11.	Cottonseed	$406,542,000
12.	All other animals and products	$384,090,000
13.	Hogs	$360,054,000
14.	Floriculture	$253,220,000
15.	Rice	$193,831,000
16.	Peanuts	$140,977,000
17.	Potatoes	$95,018,000
18.	Onions	$94,296,000
19.	Turkeys	$87,631,000
20.	Watermelons	$69,214,000

Source: https://data.ers.usda.gov/reports.aspx?ID=17843#P0113ee139ec04daa8d6ef55af282ce3f_2_17iT0R0x43

2021 TEXAS STATE AGRICULTURE OVERVIEW:

Farms Operations†

Farm Operations - Area Operated, Measured in Acres / Operation	510
Farm Operations - Number of Operations	247,000
Farm Operations - Acres Operated	126,000,000

Livestock Inventory †

Cattle, Cows, Beef - Inventory (First of Jan. 2022)	4,475,000
Cattle, Cows, Milk - Inventory (First of Jan. 2022)	625,000
Cattle, Incl Calves - Inventory (First of Jan. 2022)	12,700,000
Cattle, On Feed - Inventory (First of Jan. 2022)	2,930,000
Goats, Angora - Inventory (First of Jan. 2022)	61,000
Goats, Meat & Other - Inventory (First of Jan. 2022)	750,000
Goats, Milk - Inventory (First of Jan. 2022)	24,000
Sheep, Incl Lambs - Inventory (First of Jan. 2022)	700,000
Hogs - Inventory (First of Dec. 2021)	1,090,000
Chickens, Broilers - Production, Measured in Head	706,600,000

Milk Production †

Milk - Production, Measured in Lb / Head	25,079
Milk - Production, Measured in $	2,839,018,000
Milk - Production, Measured in Lb	15,599,000,000

TEXAS – CROPS RANKED BY VALUE OF PRODUCTION:

1. Cotton	9. Pecans	17. Spinach	25. Sugarcane
2. Hay & Haylage	10. Watermelons	18. Oats	26. Bedding Plants, Herbaceous Perennial
3. Corn	11. Grapefruit	19. Cucumbers	27. Bedding Plants, Annual
4. Sorghum	12. Soybeans	20. Mushrooms	28. Foliage Plants
5. Wheat	13. Cabbage	21. Propagative Material	
6. Peanuts	14. Pumpkins	22. Flowering Plants, Potted	
7. Rice	15. Oranges	23. Haylage, Alfalfa	
8. Potatoes	16. Sunflowers	24. Cut Flowers	

Source: 2021 State Agriculture Overview - https://www.nass.usda.gov/Quick_Stats/Ag_Overview/state_Overview. php?state=TEXAS

TEXAS AGRICULTURE FACTS:

- The economic impact of the Texas food and fiber sector totals about $100 billion.
- Each U.S. farmer grows enough food and fiber for 155 people in the United States and abroad.
- 86% of the land in Texas is in some form of agricultural production.
- 98.5% of Texas' agricultural operations are still run by individuals or families.
- Agriculture employs one out of every seven working Texans.

• Texas ranks first in the nation in the number of cattle and calves, accounting for 13% of the U.S. total.
•Texas also ranks first in the number of cattle operations and the value of all cattle and calves.
• Texas is the top producer of cotton, hay, sheep, goats, mohair and horses.
• Some of the state's top crops include; vegetables, citrus, corn, wheat, peanuts, pecans, sorghum and rice.
• Texas is one of the leading exporters of agricultural commodities.
Some of Texas' top agricultural exports are live animals and meat, cotton and cottonseed, feed grains and products, hides and skins, wheat and products, and feeds and fodder.
• The Texas Department of Agriculture's Family Land Heritage Program has recognized more than 4,700 farms and ranches in 232 counties for being maintained in continuous agricultural operation by the same family for 100 years or more.

Source: https://www.texasagriculture.gov/Portals/0/DigArticle/1930/Ag%20Week%20Fact%20Sheet%203%2013%2013.pdf
Source: https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=TEXAS

BEEF FACTS:

• In Texas, cattle are ranked first in terms of cash receipts with a value of over $10 billion.
• Texas leads the nation in beef exports.
• Beef is ranked as the 4th commodity exported from the United States with a $72.9 billion valuation.
•The largest three exports markets for U.S. Beef are: 1) South Korea; 2) Japan, and; 3) China.
•The top U.S. Beef Variety Meats Export Markets:

Mexico: Tripe	Egypt: Liver	Peru: Livers
Japan: Togues	South Africa: Livers and Kidneys	China and Hong Kong: Tripe

•Twelve percent (13%) of the cattle in the United States are in Texas.
•Texas has more cattle than 43 states have people.
•Texas has the 14th largest cattle inventory in the world.
•Texas accounts for 15.5% of the cash receipts for cattle in the United States.
•Texas and Nebraska are the only 2 states with $10 billion in cash receipts for cattle.
•Texas has had 11 million head of cattle or more every year since 1967 until 2014.
•The largest cattle inventory ever recorded in Texas was in 1975 at 16.6 million head.
•Texas has more cattle on feed than Australia and Canada COMBINED.
• 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.

Beef Choices - Beef producers offer a variety of beef choices to meet the changing lifestyles and nutritional needs of consumers. While each offer something different, they all share three common values: taste, nutrition and safety.
• **Grain-fed Beef** – Grain-finished cattle, like grass finished, spend most of their lives eating grass and forage in pastures. When beef is grain-finished, cattle are free to eat a balanced diet of grain,

local feed ingredients, like potato hulls or sugar beets, and hay or forage at the feedyard. Similarly, grain-finished cattle may or may not be given FDA-approved antibiotics to treat, prevent or control disease and/or growth-promoting hormones.

• **Grass-finished Beef** – Grass-finished cattle spend their entire lives grazing and eating from pastures. These cattle may also eat forage, hay, or silage at the feedyard. As well, grass finished cattle may or may not be given FDA-approved antibiotics to treat, prevent or control disease and/or growth-promoting hormones.

• **Certified Organic Beef** – Certified organic beef, designated by the official label, comes from cattle that have never received any antibiotics or growth-promoting hormones. These cattle may spend time at the feedyard and can be either grass-finished or grain-finished if the USDA's Agriculture Marketing Service certifies the feed as 100% organically grown.

• **Naturally Raised Beef**- Naturally raised beef comes from cattle that have never received antibiotics or growth-promoting hormones. This beef may spend time at a feedyard and can be either grain-finished or grass-finished.

Source: https://www.beefitswhatsfordinner.com/cuts/grass-vs-grain
Source: https://tscra.org/2021-beef-exports-shatter-previous-records-2/
Source: https://data.ers.usda.gov/reports.aspx?ID=17843#Pda94f3f0510f4851836c6fa668ca3df1_2_17iT0R0x43

DAIRY PRODUCTS – MILK INDUSTRY FACTS:

• A dairy cow produces an average of 6.3 gallons of milk daily and 350,000 glasses of milk in a lifetime.
• Cows eat about 100 pounds of food every day and drink 50 gallons of water.
• To get the amount of calcium in an 8-ounce glass of milk, you'd have to eat one-fourth cup of broccoli, seven oranges or six slices of wheat bread.
• Farmers measure milk in pounds, not gallons.
• A cow will produce an average of 6.3 gallons of milk each day and more than 2,300 gallons yearly.
• U.S. dairy farms produce roughly 21 billion gallons of milk annually.
• The average American consumes almost 25 gallons of milk a year.
• June is National Dairy Month.
• The greatest amount of milk produced in one year was 59,298 pounds by a Holstein cow named Robthom Sue Paddy.
• A cow is more valuable for its milk, cheese, butter, and yogurt than for its beef.
• Home delivery of milk (i.e., the milkman) started in 1942 as a war conservation measure.
• More than 1,000 new dairy products are introduced each year.
• 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!
• 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.
• 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.

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:
• Ayshire: 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 diary 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.

Source: https://farmflavor.com/lifestyle/dairy-fun-facts/
Source: https://www.nal.usda.gov/exhibits/speccoll/exhibits/show/the-american-dairy-industry/early-history

POULTRY INDUSTRY – FACTS:

• In Texas, broilers and eggs are the second-largest agricultural commodity produced in the state.
• Total market value of all poultry and eggs sold in Texas in 2017 was $2.991 billion.
• Overall U.S. poultry and egg sales in 2017 were $49.2 billion.
• TX ranks 6th in the nation in broiler production, with most of the chicken farms East and Central TX
• According to the National Chicken Council and USPOULTRY, Texas' chicken industry created 38,237 direct jobs in the state and an additional 107,698 jobs through related services and industries.
•The economic impact from companies that grow and process chicken in Texas totaled $38.72 billion, generating about $1.78 billion in federal taxes and $994 million in state and local taxes.
• According to USPOULTRY and United Egg Producers, businesses such as banks, real estate firms, accountants and printing derive income from the egg industry.
• Texas egg-laying farms and related companies employ more than 3,400 people and create an economic impact of $1.134 billion.
• The egg industry generates $20.74 million in federal taxes and an additional $13.20 million in state and local taxes.
• Overall, the poultry and egg sectors employ as many as 40,508 people across the state and an additional 121,249 related jobs.
• The estimated economic impact is more than $43 billion and supports more than 161,000 jobs, poultry, and egg production in Texas.
• 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, and 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
• 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.
• 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.
• 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.
• Turkey meat production in the United States during January-September 2022 was 3.91 billion pounds, down about 7 percent from a year earlier.

• In 2021, more than 216 million turkeys were raised on about 2,500 farms across the United States.
• The Broad-breasted White is the most commonly, domesticated breed of turkey.
• On average, it takes 75-80 pounds of feed to raise a 38-pound tom turkey.
• A turkey hen usually takes 14 weeks and weighs 15.5 pounds when processed.
• A turkey tom takes roughly 18 weeks to reach a market weight of 38 pounds.

Source: Poultry significantly impacts U.S., Texas economy, By Jennifer Dorsett
Source: https://texasfarmbureau.org/poultry-significantly-impacts-u-s-texas-economy/
Source: https://www.eatturkey.org/raising-turkeys/

COTTON FACTS:

• Texas leads the U.S. in cotton production, and it is our leading cash crop, ranking only behind the beef and nursery industries in total cash receipts. Texas annually produces about 25% of the entire U.S. crop and plants over 6 million acres! That's over 9,000 square miles of cotton fields.
• When accounting for everything from the cotton farms to the textile mill, the cotton industry in the U.S. alone is a $25 billion annual market and supports about 400,000 American jobs.
• American cotton farmers receive a subsidy of $230 per acre of cotton crop. To put that into perspective, that is about five times as much as farmers receive per acre of cereal crop.
• The top states for cotton production were Texas, Georgia, Mississippi, California, Arkansas, North Carolina and Louisiana.
• In 2006, cotton farmers in the U.S. produced the third largest crop in history, even though there was a severe drought that year. The record crop is attributed to advances in genetic modification, as well as improvements in cotton pickers and cotton picker parts.
• The U.S. produces 20 percent of the world's cotton. We are second only to China, which produces about 24 percent.
• Cotton is typically measured in 500-pound bales.
• U.S. currency is not actually made from paper. In fact, it is about 75 percent cotton, and 25 percent linen.
• All the cotton the U.S. produces is grown on 3,500 different farms, most of which are located in 14 key cotton-growing states.

One Bale of Cotton Can Make:

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

History of Cotton - No one knows exactly how old cotton is. Scientists searching Open Cotton Boll caves in Mexico found bits of cotton bolls and pieces of cotton cloth that proved to be at least 7,000 years old. They also found that the cotton itself was much like that grown in America today.

In the Indus River Valley in Pakistan, cotton was being grown, spun, and woven into cloth 3,000 years BC. At about the same time, natives of Egypt's Nile valley were making and wearing cotton

clothing. Arab merchants brought cotton cloth to Europe about 800 A.D. When Columbus discovered America in 1492, he found cotton growing in the Bahama Islands. By 1500, cotton was known generally throughout the world.

Cotton seed are believed to have been planted in Florida in 1556 and in Virginia in 1607. By 1616, colonists were growing cotton along the James River in Virginia.

Cotton was first grown in Texas by Spanish missionaries. A report of the missions at San Antonio in 1745 indicates that several thousand pounds of cotton were produced annually, then spun and woven by mission craftsmen

Eli Whitney, a native of Massachusetts, secured a patent on the cotton gin in 1793, though patent office records indicate that the first cotton gin may have been built by a machinist named Noah Homes two years before Whitney's patent was filed. The gin, short for engine, could do the work 10 times faster than by hand. The gin made it possible to supply large quantities of cotton fiber to the fast-growing textile industry.

Cotton By-Products - There are three primary products derived from cotton production: cotton lint, linters, and cottonseed.
• 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.
• Linters - Short fibers that cling to the seed. Provide cellulose for making items like plastics, paper products and cosmetics.
• Cottonseed - About 2/3 of harvested crop is composed of the seed, which is crushed to separate its three products: oil, meal, and hulls.
1) 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;
2) 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; and,
3) Hulls - Cotton hulls are used for feed, fertilizer, fuel, and packing.

Source: http://cotton.tamu.edu/funfacts.html#:~:text=Texas%20annually%20produces%20about%2025, square%20miles%20of%20cotton%20fields.
Source: https://certipik.com/2015/12/01/ten-interesting-facts-about-the-cotton-industry/

CORN FACTS:

• Texas corn growers plant more than 2 million acres annually, with a yield an average of 105 bushels per acre and averaged more than 285 million bushels annually in the past 5 years.
• Corn typically takes approximately 120 days to reach maturity; however, different corn hybrids take different lengths of time to reach maturity. Once corn reaches maturity, it is then harvested. Similar to planting season, harvest season varies from region to region and greatly depends on weather conditions. Depending on geographical location, farmers typically begin harvesting corn as early as July and as late as November in the state of Texas.

• Field, or dent, corn is the most widely grown corn in the U.S. and makes up 99% of corn production. Field corn is harvested after the ear reaches physical maturity. Products such as livestock feed, ethanol, plastics, cornstarch, and many more are made with field corn.
• Sweet corn is the full-kerneled product that we all love to eat and see on the shelves of our grocery stores. This corn is harvested before it reaches physical maturity to retain the sweet flavor and juice. Out of all corn produced in the U.S., only 1% is made for human consumption.
• Specialty and white corn are typically grown for specific purposes. White corn contains higher levels of starch, which make it perfect to be used in corn chips, tortillas, and other popular food products.
•Other types of specialty corn include: High-starch Corn, High-oil Corn, Waxy corn, and High-lysine Corn – all of which are designed for certain uses.
• Domestic ethanol producers are turning corn into environmentally-friendly, renewable fuel that people use in cars and other engines. Ethanol is a low-carbon based fuel that is blended with gasoline for use in many different vehicles. Ethanol production does more than produce a clean-burning fuel – it also produces a co-product called distillers grains, which is commonly fed to animals. Wet or dried distiller grains are packed with nutrients and can then be fed to livestock.
• Nearly all of the corn used to create ethanol in Texas is actually railed in from other states.
• A bushel of corn is measured by weight: 56 pounds.
• Corn is a vegetable, fruit, and grain - Corn is a starchy vegetable similar to potatoes, but its kernels are considered grains and can be milled into flour. But one of the less-known corn facts is that it's also technically a fruit because it comes from the seed or flower of a plant, similar to tomatoes. And like many fruits, due to its sugar content, corn can be turned into syrup as well.
• Corn comes in many different colors - Color is one of the most fun facts about corn. Although we're used to the golden yellow corn that gives our breakfast cornflakes the irresistible color, the full range of shades corn comes in is enough to create a rainbow: red, blue, purple, black, brown, pink and so many others. One of the most amazing varieties is called Calico corn and it looks like a multi-colored gem with red, yellow and brown kernels.
• Corn is a great gluten-free food if you're avoiding gluten.

History of Corn - Corn as we know it today would not exist if it weren't for the humans that cultivated and developed it. It is a human invention, a plant that does not exist naturally in the wild. It can only survive if planted and protected by humans. People living in central Mexico developed corn at least 7000 years ago. It was started from a wild grass called teosinte. Teosinte looked very different from our corn today. The kernels were small and were not placed close together like kernels on the husked ear of modern corn. Also known as maize Indians throughout North and South America, eventually depended upon this crop for much of their food.

From Mexico maize spread north into the Southwestern United States and south down the coast to Peru. About 1000 years ago, as Indian people migrated north to the eastern woodlands of present- day North America, they brought corn with them. When European explorers, made contact with people living in North and South America, corn was a major part of the diet of most native people. When Columbus "discovered" America, he also discovered corn. But up to this time, people living in Europe did not know about corn.

Source: https://www.ndsu.edu/pubweb/chiwonlee/plsc211/student%20papers/articles11/A.Shanahan1/History.html
Source: https://texascorn.org/education/corn-in-texas/

Source: https://www.nestle-cereals.com/uk/blog/healthy-breakfast/top-facts-about-corn

HAY PRODUCTION FACTS:

• Texas is the leading producer of hay in the U.S. followed in rank order by Missouri, Nebraska, Montana, and Kansas.
• Hay or grass is the foundation of the diet for all grazing animals and can provide as much as 100% of the fodder required for an animal. Hay is usually fed to an animal in place of allowing the animal to graze on grasses in a pasture, particularly in the winter or during times when drought or other conditions make pasture unavailable.
• The most hay ever produced in the United States was 159.6 million tons in 1999.
• The United States first produced more than 100 million tons of hay in 1942.
• U.S. hay production has exceeded 100 million tons of hay every year since 1950.
• Hay is grass, legumes, or other herbaceous plants that have been cut and dried to be stored for use as animal fodder, particularly for large grazing animals raised as livestock, such as cattle, horses, goats, and sheep

Hay / Forage Plant Species:

Warm-Season Perennial Grasses

• Bermudagrass (Cynodon dactylon) spreads mainly by rhizomes (underground stems) and stolons (horizontal aboveground stems). There are numerous varieties of bermudagrass, both seeded (common, Cheyenne, Wrangler) and hybrid (Tifton 85, Coastal, Jiggs, etc.).
• Bahiagrass (Paspalum notatum) is established from seed. It is best used for grazing rather than hay production.
• Dallisgrass (Paspalum dilatatum) is established from seed, is palatable and has a higher level of nutritive value than bahiagrass and some bermudagrass varieties, and it can retain its nutritive value later into the summer. Dallisgrass is also subject to ergot (Claviceps spp.) infection, which can be toxic to cattle if they eat infected seed heads. Dallisgrass can be used as a hay crop as long as it is cut before seed heads develop.
• Johnsongrass (Sorghum halepense) is better suited for hay production than for grazing because it can accumulate prussic acid in its leaves and poison livestock. Once the hay has dried enough to be safely baled, prussic acid will have volatilized to nontoxic levels. Additionally, johnsongrass has a strong potential for nitrate accumulation when subjected to stress and/or high nitrogen fertilization. Unlike prussic acid, nitrate levels do not decline after cutting or baling. Proper sampling and testing are required to ensure the hay is safe to feed.
• Old World bluestems (Bothriochloa ischaemum, B.bladhii, and Dichanthium spp.) include several species of grasses introduced from Europe and Asia from 1920 to 1965. Though Old World bluestems respond to good fertility, the grasses are generally persistent with little or no fertilization.

Warm-Season Annual Grasses

• Crabgrass (Digitaria sanguinalis and D. ischaemum) has high nutritive value and is well adapted to sandy soils. Though often considered a weedy species, it is palatable and can be used for hay production.
• Pearl millet (Pennisetum glaucum) can be used for pasture, silage or hay, though making hay is usually somewhat more difficult because of the large stems. Pearl millet is known to have a strong

potential for nitrate accumulation when subjected to stress and/or high nitrogen fertilization. As noted previously, nitrate levels do not decline after cutting or baling. Proper sampling and testing are required to ensure the hay is safe to feed.
• Sorghum-sudan hybrid (Sorghum bicolor x drum- mondii) grows rapidly and produces high yields and high nutritive value hay. Similar to johnsongrass, sorghum-sudangrass also has a strong potential for nitrate accumulation when subjected to stress and/or high nitrogen fertilization and can produce prussic acid under stress conditions such as drought or frost. Again, proper sampling and testing are required to ensure the hay is safe to feed.

Cool-Season Annual Grasses
• Ryegrass (Lolium multiflorum) is used primarily for pasture, though it can be used for hay or silage. Ryegrass is sensitive to acid soil pH values below 5.5. It is a popular choice for late winter/early spring grazing and hay production.
• Oat (Avena sativa), though primarily used for grain and pasture, can also be used as a hay crop. Oat is generally more cold sensitive than other small grain species and can suffer winterkill.
• Wheat (Triticum aestivum) is primarily used for grain and pasture though it can also be used for hay. It should be harvested at the boot to early heading stage.
• Rye (Secale cereale) is generally the most winter hardy of the cool-season annual grasses. Rye is also the most productive cool-season annual grass on low- fertility, well-drained sandy soils.
• Triticale (Triticum secale) is a cross between wheat and rye. Grain from triticale is used as a feed by the livestock industry. It can be planted earlier, often produces more forage, and has a longer grazing period than many varieties of wheat or rye. Triticale tolerates drought and pests better than wheat.

Cool-Season Perennial Grasses
• Tall fescue (Festuca arundinacea) can be used for pasture, hay and/or erosion control. Tall fescue grows on a wide variety of soil types, but it performs best on loam or clay soils that have some water-holding capacity.

Cool-Season Legumes
• Alfalfa (Medicago sativa) is a perennial with high yield potential and nutritive value. Alfalfa hay is very digestible and can be high in crude protein, energy, vitamins, and minerals. Alfalfa contaminated with blister beetle may cause blister beetle poisoning, which can cause colic, urinary infections, dehydration, shock, and death, especially in horses.
• Red clover (Trifolium pratense) is a short-lived perennial that can last 2 to 3 years. It is better suited for hay production than other clovers because it grows upright and late into the season. Red clover should be reserved for well drained soils, as this legume does poorly when planted on wet soils.
• Arrowleaf clover (Trifolium vesiculosum) can be used for grazing or for hay. It can be grazed until mid-April and harvested at the early bloom stage in mid-May. Because regrowth is usually poor, you should expect only one harvest. A mower/conditioner will help this hay dry more quickly. Mixtures of arrowleaf clover and annual ryegrass can make an excellent quality hay crop.

Warm-Season Legumes
• Soybean (Glycine max) can be used for grazing or for hay. Unlike most other legume crops used for hay, soybean foliage and pods both provide digestible protein.

Source: http://forages.tamu.edu/PDF/Hay%20Production%20in%20Texas%20E-273.pdf
Source: https://hay-kings.com/blogs/top-10-lists/top-10-hay-producing-states-2020

Source: https://beef2live.com/story-us-hay-facts-0-213072

SORGHUM FACTS:

•The name "sorghum" comes from Italian "sorgo", in turn from Latin "Syricum (granum)" meaning "grain of Syria".
•Sorghum ranks fifth among the most important cereal crops of the world, after wheat, rice, corn, and barley in both total area planted and production.
•Sorghum grain is higher in protein and lower in fat content than corn but, does not contain carotene as corn does.
• Select varieties of sorghum bran have greater antioxidant and anti-inflammatory properties than well-known foods such as blueberries and pomegranates, according to a new study from the University of Georgia.
• Grain sorghum is grown in over 66 countries, and the U.S. is the largest producer in the world. In the U.S., 46 percent of the sorghum grown is used as livestock feed.
• Sorghum can be grown in a wide range of soil and climatic conditions and can thrive in arid areas.
• Sorghum produces 2.7 gallons of ethanol per bushel.
• Between 30 to 35 percent of domestic U.S. sorghum goes to ethanol production.

Types of Sorghum - In the U.S. there are three main types of sorghum: 1) Grain sorghum grows to about 5 feet and is used for livestock feed, biofuels, pet food and human consumption; 2) Forage sorghum grows 6 to 12 feet tall and produces more dry matter tonnage than grain sorghum. Because of its coarse stem, it's primarily used for silage; and 3) Sweet sorghum is harvested for its juice before the mature plant forms clusters of grain. The stalks are pressed, and the juice is fermented and distilled, for the production, of biofuels.

The History of Sorghum - The origin and early domestication of sorghum took place in northeast Africa, and the earliest known record of sorghum comes from an archaeological dig at Nabta Playa, near the Egyptian-Sudanese border and had been dated at 8,000 B.C. It spread throughout Africa and along the way adapted to a wide range of environments from the highlands of Ethiopia to the semi-arid Sahel.

The development and spread of five different races of sorghum can, in many cases, be attributed to the movement of various tribal groups in Africa. Sorghum then spread to India and China and eventually worked its way into Australia. The first known record of sorghum in the United States comes from Ben Franklin in 1757, who wrote about its application in producing brooms.
The inherent tolerance of sorghum to marginal lands and environmental conditions, its versatility as a food and feed grain, and its ability to produce high yields ensure its important role in the lives of millions of people throughout the world.

Source: https://sorghumgrowers.com/sorghum-101/

WHEAT FACTS:

• Wheat is the number ten commodities produced in Texas.

• Wheat is a member of the grass family that produces a dry, one-seeded fruit commonly called a kernel.
• Wheat is the primary grain used in U.S. grain products — approximately three-quarters of all U.S. grain products are made from wheat flour.
• Wheat is grown in 42 states in the United States.
• One acre of wheat yields an average of around 40 bushels of wheat.
• One bushel of wheat contains approximately one million individual kernels.
• One bushel of wheat weighs approximately 60 pounds.
• One bushel of wheat yields approximately 42 pounds of white flour OR 60 pounds of whole-wheat flour.
• A bushel of wheat yields 42 one-and-a-half pound commercial loaves of white bread OR about 90 one-pound loaves of whole wheat bread.
• There is approximately 16 ounces of flour in a one-and-a-half-pound loaf of bread.
• A bushel of wheat makes about forty-five 24-ounce boxes of wheat flake cereal.
• Per capita consumption of pasta in the United States was 22 pounds in 1996 and in 2005 was at 19.52 pounds.
• 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.
• 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.
• 1831: Cyrus McCormick invented the mechanical reaper. Cutting wheat increased 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.
• 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.
• 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.
• 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.

Two types of wheat planted in the U.S:
• Winter Wheat - planted in September and harvested the following summer. Winter wheat makes up 70-80% of United States production.
• Spring Wheat - 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.

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. In 1602, on one of the Elizabeth islands off the coast of Massachusetts, Bartholomew Gosnold made trial plantings of wheat. The Spaniards had earlier brought wheat to Mexico.

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.

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-
Source: https://www.jstor.org/stable/1777117#metadata_info_tab_contents
Source: https://wheatworld.org/wheat-101/wheat-facts/

PORK FACTS:

• The United States is the world's third-largest producer and consumer of pork and pork products. In recent years, the United States has been either the world's largest or second largest exporter of pork and pork products, with exports averaging over 20 percent of commercial pork production in most years.
• U.S. hog operations are heavily concentrated in the Midwest and in eastern North Carolina
• The pork industry supports more than 800,000 jobs in the United States
• On average, a market hog weighing 265 pounds 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.

Pig History - The pig dates back 40 million years to fossils, which indicates that wild pig-like animals roamed forests and swamps in Europe and Asia. By 4900 B.C., pigs were domesticated in China, and by 1500 B.C., they were being raised in Europe.

On the insistence of Queen Isabella, Christopher Columbus took eight pigs on his voyage to Cuba in 1493. However, it is Hernando de Soto who could be dubbed "the father of the American pork industry." The explorer landed with America's first 13 pigs at Tampa Bay, Fla., in 1539.

Native Americans reportedly became very fond of the taste of pork, resulting in some of the worst attacks on the de Soto expedition. 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 had consumed, those that ran away and became wild pigs (the ancestors of today's feral pigs or razorbacks) and those given to the Native Americans to help keep peace.

Pig production spread throughout the new colonies. Hernando Cortez introduced hogs to New Mexico in 1600, and Sir Walter Raleigh brought sows to Jamestown Colony, now in Virginia, in 1607. Semi-wild pigs conducted such rampages in the grain fields of New York that colonists who owned a pig 14 or more inches high had to put a ring in the pig's nose.

After the Revolutionary War, pioneers began head-ing west, taking their indispensable pigs with them. A wooden crate filled with young pigs often was hung from the axles of prairie schooners.

As western herds grew, so did the need for pork pro-cessing facilities. Packing plants began to spring up in major cities. Pigs were first commercially harvested in Cincinnati, which became known as Porkopolis. More pork was packed there than any other place in the mid- 1800s.

The refrigerated railroad car transformed the meat industry when it was introduced shortly after the Civil War. It enabled packing plants to be centralized near points of production instead of near points of con-sumption. Large "terminal markets" with railroad access developed in major cities, such as Chicago, Kansas City, St. Joseph, Mo.; and Sioux City, Iowa. Large packing plants were located adjacent to these stockyards. Live pigs were shipped via railroad to the markets, and pork was shipped, again mainly by rail, to consumers nationwide.

The 1980s and 1990s brought major technological developments in the pork industry, some of which allowed production to grow dramatically in states not known for pig production. Today the United States is one of the world's leading pork-producing countries. Also, the U.S. became the largest pork exporter in 2005 and remains so today. U.S. production accounted for 10 percent of total world supply in 2012.

There are over 180 species of pigs in the world. Some major swine breeds are:

- Berkshire
  - o Characteristics: Black with white on legs, snout and tail; Erect ears
  - o The Berkshire breed originated in England and was brought to America in 1823.
- Chester White
  - o Characteristics: White; Drooped Ears

  - o 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
  - o Characteristics: Red; Drooped Ears
  - o This hog originated in the eastern United States and in the Corn Belt during in the early 1800s.
- Hampshire
  - o Characteristics: Black with white belt; Erect Ears
  - o The Hampshire breed originated from the "Old English Breed" which originated in southern Scotland and Northern England. The breed was imported to American between 1825 and 1835.
- Poland China
  - o Characteristics: Black with white on legs, snout, and tail; Drooped Ears
  - o The origin of the Poland China breed has its beginning in the Miami Valley, Butler and Warren counties of Ohio during the early 1800s.
- Spotted
  - o Characteristics: Black and white spots; Drooped Ears
  - o 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
  - o Characteristics: White; Erect Ears
  - o 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
Source: https://www.ers.usda.gov/topics/animal-products/hogs-pork/

RICE FACTS:

- Texas is the fifth largest producer of rice in the U.S.
- The upper Texas coast, known as the Texas Rice Belt, is home to most of the state's rice production and milling industry, covering nearly 75,000 hectares (184,000 acres).
- The Texas Rice Belt plays an important environmental and agricultural role in the health of the coastal prairie.
- Rice farmers are committed to being good stewards of their resources, while rice fields offer forage and roosting habitats for resident, wintering and migrating waterfowl and shorebirds, as well as other wetland-dependent wildlife species.
- Rice provides more than 15 essential vitamins and minerals including folic acid, B vitamins, potassium, magnesium, selenium, fiber, iron, and zinc.
- Whole grains, such as brown rice, help reduce the risk of heart disease, diabetes, and certain cancers.
- Rice is gluten-free, highly digestible, and the least allergenic of all grains, making it ideal for those with food sensitivities. It's also a nutrient dense, complex carbohydrate, meaning the body will slowly digest it to help you stay energized throughout the day

Texas Rice Varieties - Texas produces mostly long grain rice, but also grows medium grain, jasmine, basmati and arborio rice varieties.

• LONG GRAIN RICE - has a long, slender kernel, three to four times longer than its width. Due to its starch composition, cooked grains are lighter, fluffier, and more separated than their medium or short grain counterparts. Long grain rice works well in pilafs, stir-fries, salads, and soups, while medium grain is ideal for dishes with a creamy consistency like paella
• MEDIUM GRAIN RICE - has a shorter, wider kernel than long grain rice, two to three times longer than its width. Cooked grains are moist and tender, with a tendency to cling together.
• TEXAS JASMINE - is an aromatic long grain rice with a distinct flavor. Cooked grains are soft, moist, and cling together. Jasmine is a major ingredient in Thai cuisine
• TEXAS BASMATI - is an aromatic long grain rice with its own distinctive aroma and flavor. While cooking, the grains become longer, not wider. Cooked grains are long, separate, and fluffy with slightly chewy texture and a savory, nutty flavor. Basmati rice is often used in Indian and Mediterranean dishes
• TEXAS ARBORIO - is a medium grain rice with a characteristic white dot at the center of the grain and a higher protein content than other medium grain varieties. This rice develops a creamy texture when cooked. Arborio rice has an exceptional ability to absorb flavors and is used primarily in risotto and desserts.

Rice History - Many cultures have evidence of early rice cultivation, including China, India, and the civilizations of Southeast Asia. However, the earliest archaeological evidence comes from central and eastern China and dates to 7000–5000 BCE. More than 90 percent of the world's rice is grown in Asia, principally in China, India, Indonesia, and Bangladesh, with smaller amounts grown in Japan, Pakistan, and various Southeast Asian nations.

The Texas rice industry owes its origins to the introduction of rice (Oryza sativa) seed from Madagascar to the Carolina colonies about 1685. Although there was early domestic cultivation of rice in Louisiana and Texas, commercial rice production began in Louisiana shortly before the Civil War and in the 1880s spread rapidly through the coastal prairies of southwest Louisiana into southeast Texas. Arkansas, California, Louisiana, and Texas now produce 90 percent of the American rice crop, with lesser production along the Mississippi River in Mississippi, Missouri, and Tennessee. The earliest form of rice cultivation in Texas involved essentially pioneering agriculture. Farmers plowed small plots with oxen, planted seed by hand, depended on rainfall for cultivation, and harvested with hand sickles.

In 1863 by David French of Beaumont is often considered the first major rice farmer in Texas. Edgar Carruthers, Louis Bordages, and Dan Wingate produced the state's first large commercial crop of rice on a 200-acre farm near Beaumont in 1886. They shipped their crop by rail to New Orleans for milling. In 1891 Joseph E. Broussard established the first rice irrigation and canal system in the state, and the following year he added rice milling machinery to an existing gristmill.

An important event in the development of the Texas Gulf Coast rice industry was the introduction of seed imported from Japan in 1904. Seed rice had previously come from Honduras or the Carolinas. At the invitation of the Houston Chamber of Commerce and the Southern Pacific Railroad, Japanese farmers were brought to Texas to advise local farmers on rice production, bringing with them seed as a gift from the emperor of Japan. The first three years' harvest, which produced an average of thirty-four barrels an acre compared with an average of eighteen to twenty barrels from native rice seed, was sold as seed to Louisiana and Texas farmers. C. J. Knapp, founder of the United States agricultural agent system, helped to overcome government regulation to bring seed rice into the

country. Japanese rice production began at Webster in Harris County under the direction of Seito Saibara, his family, and thirty original colonists. The Saibara family has been credited with establishing the Gulf Coast rice industry.

Source: https://www.texasagriculture.gov/Portals/0/forms/MKT/TDA%20Rice%20Commodity%20Card.pdf
Source: https://www.tshaonline.org/handbook/entries/rice-culture
Source: https://www.britannica.com/plant/rice

PEANUT FACTS:

• Texas is the only state to grow all four varieties and organic peanuts!
• Texas is the fourth largest peanut growing state in the nation!
• Peanuts are not nuts. They are legumes like beans, peas, and lentils.
• The peanut plant originated in South America.
• Peanuts account for two-thirds of all snack nuts consumed in the U.S.
• One acre of peanuts will make 30,000 peanut butter sandwiches.
• Peanut butter is the leading use of peanuts in the U.S.
• It takes almost 850 peanuts to make an 18 oz jar of peanut butter!
• Two peanut farmers have been elected President of the United States: Thomas Jefferson and Jimmy Carter.
• Americans eat 3 pounds of peanut butter per person every year. That's about 700 million pounds, or enough to coat the floor of the Grand Canyon!
• The average American child will eat 1,500 peanut butter sandwiches by the time he or she graduates from high school.
• March is National Peanut Month!
• November is National Peanut Butter Lovers' Month!

Types of Peanuts
• Runner Peanuts - The most widely consumed variety, Runner peanuts have delicious flavor, great roasting characteristics, and high yields. This medium-sized peanut is an ideal choice for use in peanut butters. Runner peanuts are grown in Texas, Georgia, Alabama, Florida, and Oklahoma due to their need for a warm climate and sandy, well-drained soil.
• Spanish Peanuts - Spanish peanuts are used mostly in peanut candies, peanut snacks and peanut butter. This peanut is easily identified by its smaller kernels and its reddish-brown skin. It also has a high oil content, which makes it an excellent choice for extracting oil. Spanish peanuts are grown mostly in Texas and Oklahoma.
• Valencia Peanuts - Valencia peanuts are a sweet peanut with a bright red skin. This peanut usually contains three or more kernels in a longer shell. Valencia peanuts are mostly served roasted and sold in-shell or boiled. While grown less frequently in the United States, its primary production region is in West Texas and New Mexico.
• Virginia Peanuts - Often called "cocktail nuts," Virginia peanuts are considered large-kernelled. Its size makes it great for processing, particularly for salting, confections, and in-shell roasting. Virginia peanuts are primarily grown in Texas, southeastern Virginia, and northeastern North Carolina.

The History of Peanuts - The peanut plant probably originated in Peru or Brazil in South America. No fossil records prove this, but people in South America made pottery in the shape of peanuts or decorated jars with peanuts as far back as 3,500 years ago.

As early as 1500 B.C., the Incans of Peru used peanuts as sacrificial offerings and entombed them with their mummies to aid in the spirit life. Tribes in central Brazil also ground peanuts with maize to make a drink.

European explorers first discovered peanuts in Brazil. Peanuts were grown as far north as Mexico when the Spanish began their exploration of the new world. The explorers took peanuts back to Spain, and from there, traders and explorers spread them to Asia and Africa. Africans were the first people to introduce peanuts to North America beginning in the 1700s.

Records show that it wasn't until the early 1800s that peanuts were grown as a commercial crop in the U.S. They were first grown in Virginia and used mainly for oil, food and as a cocoa substitute. At this time, peanuts were regarded as a food for livestock and the poor and were considered difficult to grow and harvest.

Peanut production steadily grew in the first half of the nineteenth century. Peanuts became prominent after the Civil War when Union soldiers found they liked them and took them home. Both armies subsisted on this food source high in protein.

Around 1900, labor-saving equipment was invented for planting, cultivating, harvesting and picking peanuts from the plants, as well as for shelling and cleaning the kernels. With these significant mechanical aids, demand for peanuts grew rapidly, especially for oil, roasted and salted nuts, peanut butter and candy.

In the early 1900s peanuts became a significant agricultural crop when the boll weevil threatened the South's cotton crop. Following the suggestions of noted scientist Dr. George Washington Carver, peanuts served as an effective commercial crop and, for a time, rivaled the position of cotton in the South.

Source: https://www.nationalpeanutboard.org/peanut-info/history-peanuts-peanut-butter.htm
Source: https://texaspeanuts.com/consumers-and-educators/peanut-types/

POTATO FACTS:

• Potato is a vegetable.
• The potato is made up of 80% water and only 20% of solid.
• Potato varieties have grown over the centuries, and there are around 100 of the edible kind.
• Potato is also known as a spud.
• China is the world's largest potato producer and exporter, while the countries India, Germany, Ukraine, Russia, Poland, and the United States are leading producers as well.
• All fifty U.S. states grow the tuber crop, with Idaho and Washington being the largest ones. Idaho is coined as the Potato State.
• The potato plant is part of the Solanaceae, or the nightshade family.

• Potato a.k.a. near-perfect food is 99.9% fat-free and contains vitamins B6, C, E, K, and minerals like potassium, magnesium and phosphorous.
• In 1995, potato plants were taken into space with the space shuttle Columbia. This marked the first time any food was ever grown in space.
• The "French fry" was allegedly served in the U.S. for the first time by Thomas Jefferson at a presidential dinner.
• August 19th and October 27th are National Potato Day.
• Average Texas potato yield is 30,400 pounds per acre for a total production of 441,000,000 pounds in the state.
• About 70 percent of the Texas potato crop goes to fresh market and 30 percent goes to processing (mostly potato chips).

Potato Varieties:
Russet varieties are: Russet Norkotah, Norgold M, and Century Russet.
White varieties are: Atlantic, Gemchip, Chipeta, and Kennebec.
Yellow Flesh varieties: Yukon Gold
Red varities: Red LaSoda and Viking.

Three Potato Production Regions in Texas
• High Plains Region - Nearly 50% of the potatoes grown in Texas are in the High Plains region of Texas is located north and south of Lubbock, Texas between the Caprock and the New Mexico border. This area consists of 27 counties that produce a majority of the state's cotton crop.
• The Lower Rio Grande Valley (LRGV) is located between McAllen and Brownsville, adjacent to the Mexico border. This area produces roughly ten percent of the state's crop.
• The Texas Wintergarden includes The South Texas Brush Country and is an inland region extending from slightly north of San Antonio south to the Mexican border. Approximately forty percent of Texas potatoes are grown in this production region.

The History of Potatoes - The vegetable's existence is quite old age as its domestication dates approximately between 8000 and 5000 BC in Peru or Bolivia. The earliest verified tuber was found in 2500 BC at the Ancon coastal site and the Incas cultivated it as early as 1800 years ago.

Potato comes from the Spanish word "Patata". In 1532 conquistadors from Spain came sailing onto the scene searching for vast riches to bring back to Europe. The potato was first introduced in Europe by Spain in 1536, and the Spanish claim that that Gonzalo Jimenez de Quesada was the first to introduce the potato to Europe. Potatoes were not accepted at once in Europe because clerics said they were not mentioned in the bible, while others believed potatoes can cause some diseases.

The 1600s saw the spread of potatoes through Spain, Italy, Belgium, Holland, Switzerland, Austria, France, Germany, Ireland, and Portugal, but people were hesitant to cook with them. Many people were incredibly suspicious of potatoes, because of their resemblance to plants in the nightshade family. In the 1700s, the aristocracy in France and Prussia recognized how easy it was to grow potatoes, and how they could better feed their population with them.

The ever-exploring Europeans brought the potato into North America in the 1620s when the British governor in the Bahamas made a special gift of them to the governor of Virginia. They spread slowly through the northern colonies. It wasn't until Thomas Jefferson served up some fresh spuds during a

White House dinner to some of his distinguished guests that potatoes were seen in a whole new light. From there, potatoes were able to gain steady popularity.

Source: https://ipmdata.ipmcenters.org/documents/cropprofiles/TXpotatoes2009.pdf
Source: https://facts.net/potato-facts/
Source: https://mobile-cuisine.com/did-you-know/potato-fun-facts/
Source: https://www.littlepotatoes.com/blog/origin-of-potatoes/

ONION FACTS

• Texas ranks 6th in U.S. production of onions.
• Grown on 16,000 acres and generates $94.3 million.
• Texas state-wide economic impact exceeds $134 million annually.
• The Lower Rio Grande Valley and Winter Garden plant early short day mild-flavored white and yellow granotype onions for market windows in March to June.
• High Plains and Far West Texas produce intermediate day onions for fresh markets and East Texas produces for local sales.
• Onion breeding focuses on quality, earliness, shipping ability, and host plant resistance. Texas 1015 "super sweet" is one of the superior mild onions for consumers.
• Onions are very healthy to eat. They are filled with complex sugars that keep our metabolism healthy, vitamins, minerals, dietary fiber, beta carotene, folate (one of the B vitamins), and they have no fat.
• One average sized onion has 30 calories.
• Onions are currently 6th most popular vegetable crop in the world, judging only by its production.
• Consumption of onions in the United States rose 50% in the last 20 years. Currently, average
• American eats 8.5 kg of fresh onions each year.

Onion History - The origin of onions like the origin of garlic is buried in antiquity. It is known that onions were grown in Ancient Egypt and that eventually they arrived in Rome. It was in Rome that they were given the name unio, which means large pearl. Unio became *unyon* in Middle English when the Romans introduced the onion into the British Isles. The status of the onion rose substantially after French Onion Soup was made popular by Stanislaus I, the former King of Poland.

The Bermuda onion was first listed by Peter Henderson & Co. in 1888 as the White Bermuda. In 1890 a catalog it said that although shipped as White Bermuda it really "had quite a yellowish character" and, although known as a product of Bermuda, is of Italian origin.

Sweet onions originated in Texas after Bermuda onion seed from the Canary Islands was introduced into South Texas in 1898. In 1899, onions that grew from the seeds planted in 1898 were shipped to Milwaukee, Wisconsin where they were so enthusiastically received that the following year the small garden plot, which had been the source of the first onions was expanded to 500 acres.

In 1952, the Granex onion, later to be claimed as Vidalia onion, was introduced in Texas. That same year Granex tranplants from Dixondale Farms (Carrizo Springs, Texas) were shipped to Georgia to a man named Mose Coleman. Coleman discovered that these onions were not hot like other onions planted in Georgia, instead they were remarkably sweet. Coleman was able to sell these sweet onions

for $3.50 per 50-pound bag, a fortune in the post-Depression years. Soon almost every farmer in Georgia was growing Vidalia onions.

Onions come in three distinct colors: white, yellow and red. The varieties can be classed into three important groupings: short day, intermediate day and long day varieties. These groupings refer to the number of hours of sunlight required to get the onion to bulb. Short Day onions require 10-12 hours of sunlight and are used in the South for winter production. Because Short Day onions have a higher concentration of water as opposed to solid fiber content, they do not store well and should be eaten fresh. Intermediate Day onions require 12-14 hours of sunlight and are ideal for almost all growing areas in the United States. Long Day onions require 14-16 hours of sunlight and grow better in northern states where there are extended hours of daylight during the summer months. Long Day varieties typically have more pungent flavor and store better than other varieties.

Source: https://www.onehundreddollarsamonth.com/10-fun-facts-about-onions/
Source: http://www.vegetablefacts.net/vegetable-facts/onion-facts/

WATERMELON FACTS:

• Watermelons are both a fruit and a vegetable. Watermelons are most commonly considered a fruit. And they do grow like fruit, originating from flowers that have been pollinated by bees, and, from a botanical perspective, they're fruits because they contain seeds. But many gardeners think of them as vegetables since they grow them in their gardens alongside other summer veggies like peas and corn. Not to mention, watermelon is classified as part of a botanical family of gourds that includes other culinary vegetables like cucumber, squash, and pumpkin.

• While we tend to focus on the melon's succulent flesh, watermelon rinds are also edible—as well as full of nutrients with surprising health benefits. In China, the rinds are often stir-fried or stewed, while in the South, cooks like to pickle them. And, across the Middle East and China, the seeds are dried and roasted (similar to pumpkin seeds) to make for a light, easy snack.
• Watermelons are 92 percent water.
• There are 1200 different varieties of watermelons. To make classification a little easier, however, watermelons tend to be grouped into four main categories: seeded (or picnic), seedless, icebox (also known as mini, or personal size) and yellow/orange. One of the most popular varieties is the Crimson Sweet, a seeded melon with deep red, sweet flesh. Some of the more unusual varieties include the Golden Midget, whose rind turns yellow when it's ripe, and the Cream of Saskatchewan, whose flesh is cream-colored.
• Seedless watermelons are not genetically engineered.

Watermelon History – Watermelons date back 5000 years to southern Africa where the tough, drought-tolerant ancestor of watermelon thrived. Soon thereafter, watermelon found its way to Egypt where it was first improved. Both seeds and paintings of watermelon have been discovered in Egyptian tombs more than 4,000 years old. Some tomb paintings depict an oval-shaped watermelon, indicating the round wild type must have been improved by ancient plant breeders.

From Egypt, the historical trail of watermelon must be gleaned from the likes of medical books, recipe collections, and religious codices. The Greeks and Romans considered watermelon to have

medicinal properties. Notable Greek physicians Hippocrates and Dioscorides praised its healing properties and used it as a diuretic as well as a treatment for children who suffered a heatstroke.

Watermelon was being cultivated in India by the 7th century, and by the 10th century it had found its way to China. The Moors introduced watermelon into the Iberian Peninsula in the 13th century and, from there, it spread throughout southern Europe. By the 17th century watermelon was widely planted throughout Europe and had become a familiar garden crop in warmer parts of the continent.

European colonists are thought to have introduced watermelon to the New World. It was found growing in Florida as early as 1576 and in Massachusetts by 1629. Thomas Jefferson grew watermelon at Monticello, and by the early part of our nation's history, it was being grown by Native Americans from the Mississippi Valley south to Florida.

Watermelon improvement via selection (saving the seeds of superior melons) began almost as soon as the crop was cultivated. However, it was during the 20th century that significant progress was made in the United States where the USDA funded a watermelon breeding project at its Charleston, SC facility. One product of this research was a large, oblong light green melon that locally became known as "the grey melon from Charleston." Nearly 70 years later, 'Charleston Grey' still is a widely planted variety known for its high yields, disease resistance and table quality.

Source: https://www.mentalfloss.com/article/81904/10-refreshing-facts-about-watermelon
Source: https://ipm.missouri.edu/MEG/2020/7/watermelon-DT/

SHEEP 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.
• Sheep have rectangular pupils. Rectangular pupils allow for a wide field of vision, around 270 to 320 degrees. This means that sheep can see almost everything around them, except for what's directly behind them, without having to turn their heads! As prey species, this helps sheep stay aware of their surroundings and watch for predators, even when their head is down grazing.
• Sheep have an upper lip that is divided by a distinct groove. This groove is called a philtrum. Sheep are selective grazers and prefer to eat vegetation close to the soil surface. The philtrum allows them to get close to the ground and only select the grasses and other vegetation that they like.
• Sheep do not have top front teeth. Sheep have a hard upper palate that the lower teeth press up against to breakdown food.
• 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 Breeds - Sheep were among the first animals domesticated. An archeological site in Iran produced a statuette of a wooled 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 wooled 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 hothouse 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.

The History of Sheep - Sheep were domesticated 10,000 years ago in Central Asia, but it wasn't until 3,500 B.C. that people learned to spin wool. Sheep helped to make the spread of civilization possible. Sheep production was well-established during Biblical times.

In 1493 on his second voyage to the New World, Columbus took sheep with him as a "walking food supply." He left some sheep in Cuba and Santo Domingo.

In 1519, Cortez began his exploration of Mexico and the Western United States. He took with him sheep that were offspring of Columbus' sheep. These sheep are believed to be descendants of what are now called "Churros." The Navajo Churro is the oldest breed of sheep in the U.S. Despite efforts by the U.S. government to eradicate the breed, Navajo Churros are still raised by the Navajo.

The Gulf Coast (or Florida) Native is another breed of sheep believed to be directly descended from sheep brought to the New World by Spanish and French explorers. Feral until the early 20th century, Gulf Coast Native sheep are known for their natural resistance to worm parasites.

It is known that George Washington raised sheep on his Mt. Vernon estate and that Thomas Jefferson kept sheep at Monticello. Presidents Washington and Jefferson were both inaugurated in suits made of American wool. James Madison's inaugural jacket was woven from wool of sheep raised in his home in Virginia. President Woodrow Wilson grazed sheep on the White House lawn.

Separating the Sheep from the Goats - 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.

- 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: https://www.tshaonline.org/handbook/entries/sheep-ranching
Source: https://spca.bc.ca/news/fun-facts-about-sheep/
Source: Texas Sheep & Goats Raisers Assoc.: http://www.tsgra.com/livestock.php
Source: http://www.sheep101.info/history.html

GOAT FACTS:

- Goats were one of the first animals to be tamed by humans and were being herded 9,000 years ago.
- Goat meat is the most consumed meat per capita worldwide

• Goats can be taught their name and to come when called
• The life span of a goat is about that of a dog
• Goats have a gestation period (pregnancy) of five month and the average birth rate for goats is 2.2 kids per year.
• Baby goats (kids) are standing and taking their first steps within minutes of being born.
• Goats are very picky eaters. They have very sensitive lips, which they use to "mouth" things in search of clean and tasty food. They will often refuse to eat hay that has been walked on or lying around loose for a day.
• Goats are herd animals and will become depressed if kept without any goat companions.
• Goats' pupils (like many hooved animals) are rectangular. This gives them vision for 320 to 340 degrees (compared to humans with 160-210) around them without having to move and they are thought to have excellent night vision.
• Goats are foragers, NOT grazers. It is unnatural to graze a goat on grass and increases the likelihood of them picking up harmful parasites. In their natural habitat, they roam mountaintops and reach up as high as possible to pick out choice bits of forage around them.
• Goats are ruminants. Their food moves first into the rumen (from which it is periodically regurgitated for more "cud chewing"), then to the reticulum, later to the omasum, and finally to the abomasum (which is most like a more sensitive human stomach).

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. 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.

The History of Goats - Goats were first domesticated in the Fertile Crescent and then spread throughout the world. Goats were brought to North America into the southwestern U.S. in the 17th century by early Spanish explorers and clergy. These goats are the ancestors of the Spanish goat of Texas and the Lamancha breed of California. English and other European settlers also brought their goats as they moved into the eastern U.S in the 18th century. Angora goats were first imported in the U.S. in the mid19th century and the earliest importation of officially recognized dairy goat breeds occurred in the late 19th century and early 20th century. Most recently the Boer and Kiko goats were imported into the United States in the late 20th century. The numbers of goats have fluctuated over the years but generally, have increased. However, Angora numbers have plummeted precipitously after the repeal of a production incentive program.

Source: https://www.livescience.com/52540-goat-facts.html
Source: https://tshaonline.org/handbook/online/articles/atg01
Source: https://livelyrun.com/from-the-farmer/goat-fun-facts/
Source: https://tuspubs.tuskegee.edu/cgi/viewcontent.cgi?article=1144&context=pawj

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.
• There are 7.2 million horses in the United States.
• You can tell how old a horse is by its teeth. Adult horses have 12 incisors and 24 molars.
• 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 can see nearly 360 degrees.
• Horses gallop at around 27 mph (44 kph).
• There are currently five racetracks in Texas and more than 950,000 industry participants.

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.
• 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.
• 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.
• 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.
• 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.
• Rodeo Events - Consist of two types of competition: Rough Stock Events [Bareback Bronc riding and Saddle Bronc Riding and Timed Events [Roping, Team Roping, Break-way Roping and Barrel Racing.

Equine History - Today, the only extant true "wild horse" is the Przewalski's horse, native to Mongolia. The genus Equus in North America died out at the end of the last ice age, possibly due to a changing climate or the impact of newly arrived human hunters.

Horses first returned to the Americas with the conquistadors, beginning with Columbus, who imported horses from Spain to the West Indies on his second voyage in 1493. Domesticated horses came to the mainland with the arrival of Cortés in 1519. By 1525, Cortés had imported enough horses to create a nucleus of horse-breeding in Mexico. Horse populations north of Mexico originated in the mid-1500s with the expeditions of Narváez, de Soto or Coronado, but it has been refuted. Horse breeding in sufficient numbers to establish a self-sustaining population developed in what today is the southwestern United States starting in 1598 when Juan de Oñate founded Santa Fe de Nuevo México. From 75 horses in his original expedition, he expanded his herd to 800, and from there the horse population increased rapidly.

While the Spanish also brought horses to Florida in the 16th century, the Choctaw, and Chickasaw horses of what is now the southeastern United States are believed to be descended from western mustangs that moved east, and thus Spanish horses in Florida did not influence the mustang.

Native American people readily integrated use of the horse into their cultures in the 17th and 18th century. They quickly adopted the horse as a primary means of transportation.

By 1659, settlements reported being raided for horses, and in the 1660s the "Apache" were trading human captives for horses. The Pueblo Revolt of 1680 also resulted in large numbers of horses coming into the hands of Native people, the largest one-time influx in history.

From the Pueblo people, horses were traded to the Apache, Navajo, and Utes. The Comanche acquired horses and provided them to the Shoshone. The Eastern Shoshone and Southern Utes became traders who distributed horses and horse culture from New Mexico to the northern plains.

West of the Continental Divide, horse distribution moved north quite rapidly along the western slopes of the Rocky Mountains, skirting desert regions such as the Great Basin and the western Colorado Plateau. Horses reached what today is southern Idaho by 1690. The Northern Shoshone people in the Snake River valley had horses in 1700. By 1730, they reached the Columbia Basin and were east of the Continental divide in the northern Great Plains. The Blackfeet people of Alberta had horses by 1750. The Nez Perce people became master horse breeders and developed one of the first distinctly American breeds, the Appaloosa. By 1769, most Plain Indians had horses.

The Spanish brought horses to California for use at their missions and ranches, where permanent settlements were established in 1769. Horse numbers grew rapidly, with a population of 24,000 horses reported by 1800.

In the upper Mississippi basin and Great Lakes regions, the French were another source of horses. As early as 1675, the Illinois people had horses. French-Canadian horses were also allowed to roam freely, and moved west, particularly influencing horse herds in the northern plains and inland northwest.

Although horses were brought from Mexico to Texas as early as 1542, a stable population did not exist until 1686, when Alonso de León's expedition arrived with 700 horses. From there, later groups brought up thousands more, deliberately leaving some horses and cattle to fend for themselves at various locations, while others strayed. By 1787, these animals had multiplied to the point that a roundup gathered nearly 8,000 "free-roaming mustangs and cattle." West-central Texas, between the Rio Grande River and Palo Duro Canyon, was said to have the most concentrated population of feral horses in the Americas. Throughout the west, horses escaped human control and formed feral herds, and by the late 1700s, the largest numbers were found in what today are the states of Texas, Oklahoma, Colorado, and New Mexico.

In 1839, the numbers of mustangs in Texas had been augmented by animals abandoned by Mexican settlers who had been ordered to leave the Nueces Strip. When the area was finally ceded to the U.S. in 1848, these horses and others in the surrounding areas were rounded up and trailed north and east, resulting in the near elimination of mustangs in that area by 1860.

In the early 1900s, thousands of free-roaming horses were rounded up for use in the Spanish-American War and World War I.

Source: https://horsecouncil.org/resources/economics/
Source: https://equinebusinessassociation.com/equine-industry-statistics/

HIDES, SKINS AND LEATHER FACTS:

• The U.S. meat industry generated 31.1 million cattle hides in 2016, along with 4.4 million pig skins and 2.3 million goat and sheepskins. The leather industry purchases these hides and skins – which otherwise would go to waste – and transforms them into leather.
• There is no better alternative to using discarded hides and skins than to make leather. The presence of large volumes of perishable animal waste would have serious consequences on solid waste systems and place tremendous pressure on the environment.
• In the U.S., the hide, skin, and leather industry, was able to make use of more than 30 million cattle hides in 2016, resulting in nearly 908,000 tons (more than 2 billion pounds) and $40 million saved in waste management in just one year.
• The hide, skin, and leather tanning industry – which treats the raw skins and hides of animals to produce leather – adheres to a comprehensive system of federal regulations covering clean water, clean air, waste disposal, and contaminated land cleanup.
• "Reduce, reuse, recycle" is a widely adopted strategy in leather tanning. Some hide processors and leather tanners are moving toward renewable energy sources, as well as renewable vegetable dyes and renewable tanning chemicals.
• While there are alternatives to leather products, most are made from non-renewable sources (oil), which are environmentally depleting, while leather is a readily available by-product that would otherwise be wasted.
• In the U.S., research is underway to improve the quality of animal hides and reduce environmental impacts of hide and leather processing. Specifically, new commercial methods are being explored for curing hides and skins that reduce salt usage, which traditionally has been used to preserve the tissue while in transit.
• As a by-product of the meat industry, the demand for meat and dairy consumption is the primary driver behind the supply and availability of hides and skins for leather production, rather than the consumption needs of the leather sector.
• As demand for meat around the world continues to grow, the leather industry provides an important service to society and constitutes a lucrative part of the economy.
• The U.S. Hide, Skin and Leather Association (USHSLA) estimates that more than 26,000 people in the U.S. are involved in the processing of hides and wet blue (semi-finished) tanning. This includes those employed at hide plants, tanneries, exporters, agents, and others.
• The U.S. exports 95% of all hide and wet blue leather products it produces.
• In the past few years, U.S. hides, skins and wet blue leather exports doubled in value from $1.39 billion in 2009 to a record high of $2.85 billion in 2014.
• Texas is the leading hides and skins exporting state, adding $431 million to the economy.
• The largest buyer of hides and skins is China then following by South Korea, Mexico, European Union, Thailand and Cambodia in rank order.

Source: U.S. Hide, Skin and Leather Association: https://www.ushsla.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
Source: https://www.fas.usda.gov/commodities/hides-skins

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, ranking Texas fourth in the nation.
• Texas is the second largest producer of pecans in the United States.
• Texas leads the nation with 75% of the pecan production, followed by Georgia and New Mexico.
• 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.
• Almond 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.
• Hazelnuts are grown primarily in Oregon.
• Chestnuts are grown primarily in Michigan, Florida, California, Oregon, Virginia, and Iowa.
• Macadamia nuts originated in Australia and production is primarily found in Hawaii, California, and Iowa.
• 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.
• Cashews are tropical nuts produced primarily in southern Florida, Hawaii, and Puerto Rico.
• 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	3. Pistachios	5. Pecans	7. Chestnuts	9. Pine Nuts
2. Walnuts	4. Peanuts	6. Hazelnuts	8. Macadamia Nuts	10. Cashews

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

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.
• Revenue in the Fresh Vegetables segment amounts to US$55.35bn in 2023. The market is expected to grow annually by 1.58% (CAGR 2023-2027).
• In global comparison, most revenue is generated in China (US$89.09bn in 2023).
• In relation to total population figures, per person revenues of US$164.40 are generated in 2023.
• Fresh Vegetables segment is expected to show a volume growth of 1.2% in 2024.
• The average volume per person in the Fresh Vegetables segment is expected to amount to 45.3kg in 2023.

Source: https://www.usfarmdata.com/us-farm-market-stats.aspx?ps=vegetables&msclkid=d2edec3e7cbb1b7a782c8f8d439cde1b
Source: https://www.grandviewresearch.com/industry-analysis/us-fruit-vegetables-market
Source: https://www.statista.com/outlook/cmo/food/vegetables/fresh-vegetables/united-states

PULSES including SOYBEANS & OIL CROPS FACTS:

• Pulses [other than soybeans] are the number nine crops produced in the United States.
• Pulses have different geographic origins:
  o Chickpea and Pea from West Asia
  o Blackeye Pea from Africa
  o Pigeon Pea and Mung Bean from India
  o Beans from Mexico
  o Soybean from China
  o Peanuts from South America
• Pulses have been grown for almost 6,000 years
• 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
• The United States also produce other oilseeds, such as peanuts, sunflower seed, canola, and flax
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

FRESH FRUITS FACTS:

• The top export market for U.S. Fresh Fruits is Canada, then followed by Mexico, South Korea, Japan, and Taiwan in rank order.
• Texas ranks eleventh in the nation in fresh fruit exports, adding $54 million to the economy.
• In the United States, fresh fruits rank 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.
• Cherries, blueberries, and cranberries are excellent sources of vitamins, antioxidants, and other health benefits.
• 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 resulting from 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.
• 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
Source: https://www.fas.usda.gov/fresh-fruits-and-vegetables-2021-export-highlights

GREENHOUSE, NURSERY & FLOWER FACTS:

• The USDA's Economic Research Service reports that the nursery and greenhouse industry comprise the fastest-growing segment of U.S. agriculture. Over the past two decades, the number of nursery and greenhouse farms has seen a steady increase.
• The most commonly produced greenhouse/nursery crops vary, but often include trees, shrubs, flowers, fruits and vegetables

• The Agricultural Marketing Resource Center indicates that greenhouse crops are the top five commodities grown in 27 states, and the top 10 commodities in 42 states. In addition, 10 states account for more than two-thirds of all the nursery crop output in the U.S. with California producing the most – 20 percent – followed by Florida, North Carolina, Texas, Ohio, Oregon, Michigan, Pennsylvania, Oklahoma, and New York.
• In Texas greenhouse and nursery commodities are ranked fifth in terms of cash receipts with a value of $1.3 billion.
• The greenhouse, nursery and flower 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-unitedstates/
Source: https://agamerica.com/blog/greenhouse-nursery-industry/

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 have nearly 12.1 million acres of forest land of which 11.9 million acres are classified as productive timberland and produce nearly all 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.

Public 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.

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

THE 10 MORE INFLUENTIAL PEOPLE IN AGRICULTURAL HISTORY

10. George Harrison Shull – (April 15, 1874 - September 28, 1954) - Considered the father of hybrid corn, Shull devoted 30 years of his life to corn breeding. A botanist by training, Shull began his famous experiments at Cold Spring Harbor, Long Island New York. His experiments began in 1905 and centered on inheritance in corn. Although Shull was not the only geneticist/botanist to make contributions in hybrid corn, he made critical observations on the reduction in vigor on inbreeding corn and the improved vigor on crossing corn. Although this was groundbreaking research, hybridized corn would not be made commercially available until 1922.

9. Henry A Wallace – (October 7, 1888 – November 18, 1965) - Wallace accomplished a LOT in his life. He served as Vice President of the United States, Secretary of Agriculture, and Secretary of Commerce. His Department of Agriculture oversaw the creation and development of the food stamp program and the school lunch program. He supported government intervention and implemented regulations of production in American farming with government planning designed to battle overproduction and low prices. He ordered pigs to be slaughtered and cotton fields in rural America to be plowed to drive the price of these commodities back up in order to improve the economic situation of American Farmers.

In 1934 Wallace published a book about the economic turbulence of the depression and it's repercussions on farmers, "New Frontiers". A firm supporter of government economic intervention, he vigorously implemented the controversial measures of the Agricultural Adjustment Act of 1933.

8. Rachel Carson – (May 27, 1907 – April 14, 1964) - Carson's book Silent Spring published in 1962 was a landmark event in the history of the environmental movement. Carson focused the book on pesticides and their use in agriculture and argued that those chemicals were dangerous to the environment, wildlife, and humans. Carson was adept at presenting thorough documentation to make her point and concluded that the effects were akin to pesticide poisoning. The book is not without great controversy and is cited as making erroneous cause-and-effect relationships one of which led to severe use restrictions and bans of DDT. It has been suggested that the subsequent ban of DDT has

led to the resurgence of malaria and other fatal diseases. Regardless of which side of the argument you fall, what cannot be disputed is the powerful impact this book has on the agricultural world.

7. Robert Fraley – (born January 25, 1953) – Fraley helped develop the first genetically modified plants from Monsanto which achieved widespread success were soybeans resistant to glyphosate herbicide. Fraley has contributed to years of agricultural development through a number of significant activities, including authoring more than 100 publications and patent applications relating to technical advances in agricultural biotechnology. He retired from Monsanto in June 2018.

6. John Deere – (February 7, 1837 – May 17, 1886) - The plow is one of the most important inventions to advance our society. John Deere did NOT invent the plow - plows had been around for 50 years or more. Instead, he developed and improved on the plow by making it out of steel in 1837. This plow was superior to the cast-iron plow in many soil types, his plow unlocked the vast food producing ability of the Midwest.

5. Eli Whitney – (December 8, 1765 – January 8, 1825) - Considered an all-around ingenious inventor and mentioned with other American greats like Thomas Edison. His best-known invention is the cotton gin, a machine that is used to pull cotton fibers from the cotton seed. His cotton gin had an enormous effect on the economies of the southern states, but it also had an equally important impact on slavery in this country. Raising cotton was hard work, labor intensive and only large plantations could raise it for a profit. After the cotton gin, cotton became a widespread, lucrative, and less labor-intensive crop. The availability of cotton fibers also gave rise to the textile industry in this country.

4. Cyrus McCormick – (February 15, 1809 – May 13, 1884) – McCormick worked feverishly and well into the nights over the course of several months to develop the world's first mechanical reaper in 1831. A mechanical reaper was needed, as harvesting crops in McCormick's day required numerous men to cut and gather. McCormkick's reaper was able to replace manpower for machine power and is often cited as a key driver for the westward expansion of the United States. In 1851, the reaper won the highest award of the day, the Gold Medal at London's Crystal Palace Exhibition. Cyrus McCormick became incredibly famous and was literally a worldwide celebrity. Cyrus McCormick is referred to as the 'Father of Modern Agriculture.' A footnote to this story is that Cyrus did not work alone. Jo Anderson, a slave, is cited to have worked with McCormick in development of the mechanical reaper.

3. George Washington Carver – (1864 – January 5, 1943) - Carver single-handedly improved the lives of thousands of poor southern farmers by providing information on crops, cultivation techniques, and recipes for meals. He is best known for research into and promotion of alternative crops to cotton, particularly focusing on peanuts and sweet potatoes. Carver was a progressive agricultural thinker, encouraging farmers to submit soil samples for analysis to determine causes of poor yield. Beyond crops and soils, Carver also taught livestock care and food preservation techniques. Carver was a great agricultural educator, researcher, and humanitarian, and has gained worldwide acclaim for his lifetime of achievements to agriculture.

2. Norman Borlaug – (March 25, 1914 – September 12, 2009) - His obituary read "… he taught the world to feed itself." Borlaug is credited with saving hundreds of millions to as many as a billion lives from starvation. Awarded the Nobel Peace Prize in 1970 for his work on the world's food

supply, Borlaug is known the world over for his highly successful wheat breeding and wheat research programs in Mexico. He created the World Food Prize in 1986 to recognize the achievements of individuals who have advanced human development by improving the quality, quantity, or availability of food in the world. Borlaug championed an adequate food supply for every human being and spent his lifetime working on improving food production to feed an ever-growing world population.

1. Fritz Haber – (December 9, 1868 – January 29, 1934) - In 1908 Haber developed the technique still used today to take the vast amount of nitrogen available in the atmosphere and convert it into nitrogen that plants can use. In 1918 Haber won the Nobel Prize for this discovery. Although nitrogen fertilizer had been previously available, this major leap forward allowed for the relatively inexpensive production of nitrogen fertilizer which ultimately led to its widespread availability. Today, people the world over rely on the Haber-Bosch process to produce nitrogen fertilizer which helps raise food. Without the Haber-Bosch process, we would not be able to feed our global population–Haber's discovery has helped feed countless billions of humans. I liken Haber's achievement somewhat to that of Henry Ford. Ford was able to mass produce automobiles inexpensively and Haber developed the process to mass produce nitrogen fertilizer inexpensively. Ironically, Haber also contributed to human destruction by playing a role in warfare with his involvement in chemical agents during World War I.

Source: https://ksenam.com/the-10-most-influential-people-in-agriculture-history/