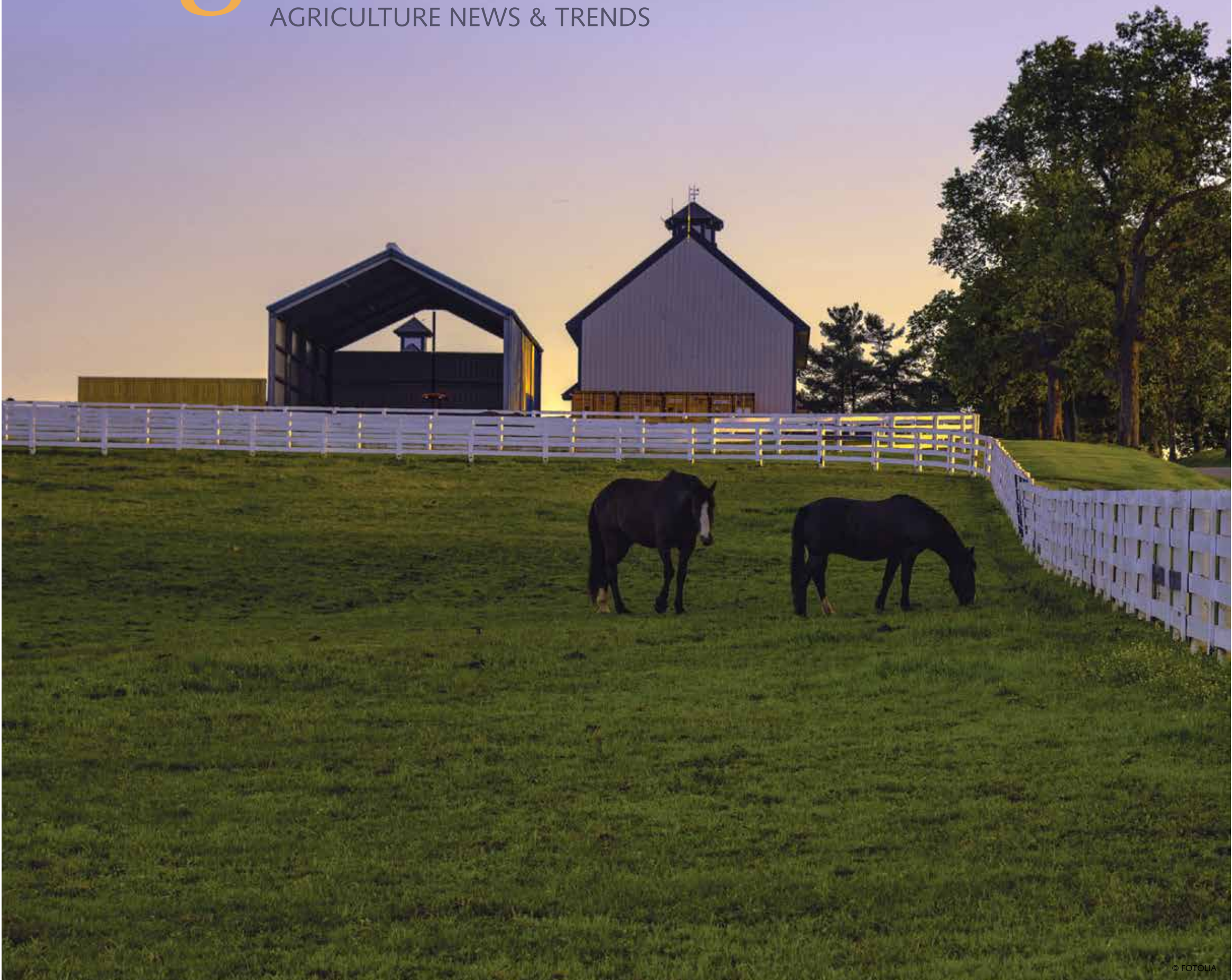


# AgGUIDE

AGRICULTURE NEWS & TRENDS



# Food Storage

On-site storage is essential for farms to keep food safe and fresh after it's harvested but before it's taken away to be processed or sold. Unfortunately, these facilities and materials can be quite expensive.

The Farm Service Agency, through the United States Department of Agriculture, offers Farm Storage Facility Loans to help farmers finance building, upgrading or purchasing materials for on-farm or mobile storage. Eligible resources include:

- Packing sheds;
- Walk-in coolers;
- Food safety equipment;
- Graders, sorters, conveyers;
- Washers and drying tunnels; and
- Storage and handling trucks.

In the past few years, the food storage loan has been expanded by the FSA to include meats, dairy, eggs, honey and maple syrup and even aquaculture.

To see a complete list of eligible products, visit <http://bit.ly/NSAC-FSFL>. The expansion of this FSA loan serves a more complete range of farming operations. Any farmer with adequate credit and proof of crop insurance, who can demonstrate his ability to pay back the loan is encouraged to apply.

## MAINTAINING QUALITY

It is extremely important to maintain



quality standards with on-farm food storage. This requires constant and consistent checks of equipment related to food storage and the atmosphere around all food storage areas.

Humidity can wreak havoc on food storage areas. Air that is too dry or too damp for fresh foods can lead to mold

growth. Mold can wreck havoc on food and storage materials, so it is imperative to eradicate it if any appears in your facilities.

Air that is too damp can cause machinery to rust, which will weaken the metal and could cause it to malfunction. Because of this, airflow is an

important factor to keep in mind.

Air flow is affected by the types of containers food is packed in, as well as how these containers are packed together. Speak with a local farming consultant or check in with the FSA for tips on how to avoid these potentially damaging issues.

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# Climate Change

**A**griculture in the United States is critical to supplying food, not only domestically, but around the world. According to a 2014 report published by the United States Global Change Research Program, the crops, livestock and seafood produced in the United States supply more than \$300 billion to the economy every year.

The United States Climate Change Science Program (CCSP), along with other organizations, have made significant efforts to assess the potential impacts climate change will have on agriculture both nationally and globally.

Below is a brief overview of their assessments and predictions.

## THE CHANGES

- The United States has

become wetter over the 20th century. While most of the North has warmed significantly, parts of the South have cooled.

- While the country as a whole receives significantly more precipitation than it did 100 years ago, the Southwest receives much less.

- NASA stresses that the level of CO<sub>2</sub> in our atmosphere has surpassed 400 parts per million for the first time in record-

ed history. For perspective, we breached 300 parts per million in the late 1940s, and before that, the CO<sub>2</sub> level stayed below the 300 ppm threshold for hundreds of thousands of years.

## IMPACT ON CROPS

- The rise in temperature is expected to lead toward the northern migration of weeds.

- Rising CO<sub>2</sub> levels can stimulate plant growth; it also

decreases the nutritional value of many food crops.

- No place on Earth grows more corn than the midwestern United States. According to the Food Policy Research Institute and National Geographic, by 2050 the region will experience a 20 percent drop in production.

## IMPACT ON LIVESTOCK

- Changes in climate also will increase the range and

survivability of livestock pests, parasites and pathogens.

- More attention will need to be paid to livestock shelter, as rising temperatures cause stress on animals and can contribute to livestock deaths through increased vulnerability to disease and reduced fertility.

- Increased temperatures also impact livestock indirectly through reduced quality of their food supply.



# Work Safe From the Sun

Working on a farm is a career that requires a significant amount of time in the sun. It is important to keep in mind that with its cheery rays, the sun brings with it certain dangers that farmers should protect themselves against: namely, skin cancer.

In fact, one in five Americans will develop skin cancer in the course of their life. The Skin Cancer Foundation asserts that approximately 90 percent of skin cancers and premature aging are a result of ultraviolet exposure.

Taking protective measures, however, is easy.

## SUNSCREEN

Not only can sunscreen decrease a person's likelihood of developing skin cancer, but it can prevent brown spots and discoloration of the skin and slow the development of wrinkles and premature aging skin.

Using a spray sunscreen as opposed to a lotion can provide better coverage and is great for re-application (which you should do every two hours), because it's quick and leaves your hands without a greasy feeling. This is crucial to continuing to get your work done on the farm while remaining protected from the sun's rays.

Just make sure any sunscreen used is not expired. Even if it looks fine and smells fine, expired sunscreen is broken down chemically and cannot effectively do its job.

## SUN-PROTECTANT CLOTHING

The Skin Cancer Foundation asserts that clothing can be the most effective and safe defense



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against the sun. Blue jeans are excellent at blocking ultraviolet rays. A white T-shirt, however, is not.

The good news is that the fashion industry is taking measures to make purchasing sun-protectant clothing easier by clearly labeling the ultraviolet

protection factor (UPF). Dickies and Duluth Trading Company are just two of many companies that offer garments with high UFP ratings and moisture wicking technology. Don't forget a wide-brimmed hat to protect your nose and ears, where the skin is thinner

and more fragile.

## SUNGLASSES

The sun's rays can also have serious adverse effects on your eyes. Extended sun exposure can lead to vision loss, cataracts and macular degeneration. Sunglasses can block 99

to 100 percent of UVA and UVB light.

You also can purchase thin rubber or nylon strapping that secures the sunglasses to your head with little to no restriction, so there is no chance of them falling off while you work.

# New, At-Risk Farmers

According to the National Sustainable Agriculture Coalition, there are nearly six times as many farmers over 65 than under 35. It is more important than ever to invest and support the next generation of farmers.

While any farmer has many challenges to face — including the rising cost of farm land, availability of training or technical assistance, and financing — farmers just starting out and socially disadvantaged farmers face these same challenges, but most often experience them to a greater extent.

Socially disadvantaged farmers include farmers of color, military veterans and women. These groups historically have not participated in many federal programs due to inadequate outreach, lack of help and even discrimination, according to the FSA.

Below is a brief overview of key federal programs focused on serving the underserved.

## MICROLOANS

The FSA's microloan program is specifically designed for young, small or socially disadvantaged farmers by offering a simplified loan process for their (typically) smaller credit needs. Since the program's introduction in 2013, the FSA has funded more than 20,000 farmers across the nation with more than \$470 million.

## WHOLE FARM REVENUE PROTECTION

Whole Farm Revenue Protection is an insurance policy designed to protect a



farmer's entire farm (including livestock) — not just one crop. It is specifically designed for diversified farms that might not have access to crop insur-

ance for each crop they grow.

## RISK MANAGEMENT EDUCATION PROGRAM

This program provides

funding through four regional centers and one digital center to help farmers learn how to minimize risk on their farms. By minimizing risk, farmers

can increase both the financial stability and future sustainability of their farms.

## DOWN PAYMENT LOAN PROGRAM

This is a joint-financing loan program between the FSA and a commercial lender to enable the purchase of farm land. Only beginning or socially disadvantaged farmers are eligible for this program.

## LAND CONTRACT GUARANTEE PROGRAM

This program helps retiring farmers sell their farms to farmers who are just starting out by providing a federal guarantee in case buyers run into trouble making payments.

## INDIVIDUAL DEVELOPMENT ACCOUNTS

This program is designed to help beginning and socially disadvantaged farmers finance their needs through agribusiness training, as well as matched savings accounts. In the matched savings account, the federal government (through local partners) will match any amount deposited by the farmer by 100 percent.

For full details on any of these programs, visit [www.fsa.usda.gov](http://www.fsa.usda.gov).

# Agricultural Science

**T**hose thinking about a college education would do well to consider agriculture as a major. According to a joint report by Purdue University and the United States Department of Agriculture, more than 57,000 jobs will be available annually over the next five years for graduates with expertise in food, agriculture, renewable natural resources or the environment.

Graduates also are more likely to be hired if they have had internships or job-related work experience. University farms can be a great way to build hands-on work experience while completing a degree.

Best College Reviews surveyed more than 50 higher-ed institutions to gauge which schools offered the best college farm — ranging from the small, student-run organic farm to agribusiness farm models.

Their criteria included farm size and sustainability, the farm's integration with the main campus and the community, if courses were taught at the farm, as well as students' utilization of the farm.

Here are their top four (they may surprise you):

## WARREN WILSON COLLEGE

**The What:** Warren Wilson is one of seven federally recognized work colleges in the nation, where daily operations are partially completed by students. Students must work through “the triad” of work, service and academics.

**The Why:** The farm is located on 275 acres divided into 25 fields in the Swannanoa Valley.

**The Wow:** In addition to traditional crops and livestock, the farm boasts a bee crew, an heirloom apple orchard and a medicinal herb garden from which medicines are prepared.

## COLLEGE OF THE OZARKS

**The What:** College of the Ozarks provides a Christian education, tuition free, to accepted students who work on campus.

**The Why:** The farm operates through numerous agricultural work stations, including a beef farm, dairy farm, hog farm,

horticulture lab, a feed mill, a farmer's market, an orchard, processing plant and the agronomy station.

**The Wow:** The college's largest project is a yearly educational workshop hosted by the Future Farmers of America, with nearly 2,000 attending members.

## DEEP SPRINGS COLLEGE

**The What:** Deep Springs College is a two-year, all-male liberal arts school located on an alfalfa farm and cattle ranch in the California desert. Students are taught through the guiding notions of academics, labor and self-governance.

**The Why:** The farm-based locations for the notion of labor include the organic Deep Springs Garden — with fruit orchard, greenhouse, chicken coop and vegetable beds — a 300-head cattle ranch and 152 acres of alfalfa fields.

**The Wow:** The school has only 26 students but provides each with a full scholarship valued at more than \$50,000 per year.

## HAMPSHIRE COLLEGE

**The What:** Hampshire College is a prestigious experimental school established in 1965. Students focus on building portfolios, and narrative evaluations take the place of letter grades.

**The Why:** The farm is more than 100 acres, offers work study programs, independent study opportunities, as well as internships.

**The Wow:** Largely due to the campus farm, Hampshire College is nearing its goal of sourcing 100 percent of its food locally. The farm also serves as a Community Supported Agriculture (CSA) to the local community.



# Agriculture Gets Mobile

Farming with digital applications can both elevate success and alleviate stress for farmers. Just like any other industry, farming is complex and technology is forever evolving to help those in the field do their jobs better.

With the number of farming applications currently available, it can be hard to tell them apart, or get familiar with each app's unique features. The good news is, with a little basic information, you'll be downloading your new favorite farming app in no time. This is where we have you covered.

Here are just a few of the many farming apps available, and a brief overview of what makes each one great. Remember to find out if there are versions available from your phone's app store. Also take into consideration whether each is paid or free. This may help you make your decision about which apps to integrate into your work flow.

## EFARMER APP

EFarmer is a free record-keeping system in your phone. It will allow you to easily capture and document all field activities through electronic maps.

You can record the history of cropping, field investigation, crop planning, field tasks and so much more. The best part is that you can make notes directly on the map.

## AGRISYNC APP

When a problem strikes, time is always of the essence. AgriSync — a mobile-based



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program that connects you to service advisors — is there to help. Whether the issue is machine related or agricultural, farmers can communicate in real time with an expert advisor; because advi-

sors can see what farmers are seeing through live video, issues can be resolved quickly.

## AGVAULT APP

AgVault is a photo applica-

tion designed to keep track of the “where,” “when” and “why” behind every photo.

A new addition to the app offers autonomous unmanned aerial vehicle (UAV) route planning. The UAV launches

from the app, flies the predetermined route and comes home once the flight plan is complete — all the while taking high-quality imagery that can be useful to farmers' decision-making processes.



# By the Numbers

Farming is one of the most numbers-based professions on the planet. Without accurate tracking of statistics and key data, farmers will be ill equipped to efficiently order new inventory, plan their planting season and buy equipment.

Here are a few statistics showcasing the importance of farming to the country and world as a whole:

## LOOKING BACK

- In 2010, soybeans represented 56 percent of the world's oilseed production. According to the Agriculture Council of America, 33 percent of those soybeans were produced by American farmers.
- In 2012, U.S. farms spent \$329 billion to produce \$388 billion in goods, according to Farm Policy Facts.
- In 2007, just over 187,000 of the 2.2 million farms in the

U.S. accounted for 63 percent of sales in agricultural products, according to the United States Environmental Protection Agency. This marks a trend toward a concentration in ag production.

- In 2006, the average American farmer grew enough food to feed 144 people, according to the Center for Food Integrity. In 1940, the average farmer grew enough food to feed half that.

## LOOKING FORWARD

- The United States Department of Agriculture projects that farmers will plant

more than 84 million acres of soybeans in 2017 — a record number.

- Alternatively, USDA economists project only 1.9 billion bushels of wheat in 2017, making it the smallest wheat crop since 2006.
- According to the Purdue/CME Group Agriculture Economy Barometer (based on a monthly survey of 400 agricultural producers from across the country), American farmers are the most optimistic about the future of farming since the barometer was introduced in October 2015.
- There are 71.5 million hogs

and pigs on U.S. farms currently, up 4 percent from last year, according to a report by the USDA's National Agricultural Statistics Service. Of those 71.5 million, 22.4 million are from Iowa — making it the largest producer among the states.

## BET YOU DIDN'T KNOW

- Soy beans are one of the main ingredients of crayons. According to Farm Flavor, one acre of soybeans can produce more than \$82,000 in crayons.
- The National Cattlemen's Beef Association reports that more than 97 percent of beef cattle farms and ranches are

classified as family farms.

- According to the American Egg Board, approximately 60 percent of eggs produced in the United States are used by consumers, whereas only 9 percent are used by the food service industry.
- No other animal provides society with more products than the pig, according the National Pork Board. Besides food products, parts of the pig are used in diabetic treatments, their heart valves can be used as replacements in humans, and their skin can be used to treat severe burn victims.