



Friday Notes is designed to enhance communication among various agricultural sectors, educators, students, and the public who are interested in a variety of plant, animal, food, and environmental issues. Friday Notes advocates the pursuit of credible, unbiased, science-based information. Material contained in linked articles is from the original authors and does not necessarily reflect the views of CAST.

In This Issue....

Animal Agriculture News
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Announcements



The Sustainable Agronomy Conference looked at issues about [creating valid and transparent carbon markets](#).

Click [here to access](#) the CAST Commentary *The Role of Agricultural Science and Technology in Climate 21 Project Implementation*.

Check [here for information](#) about the [Ag Innovation Showcase](#), September 13-14, hosted by the Larta Institute and the North Carolina Biotechnology Center.

The [Cornell Alliance for Science](#) site provides research articles and credible comments about misinformation. [Sarah Evanega](#) (2021 BCCA) is the Director.

A virtual session—[Sustainable Solutions for Zero Hunger by 2030: A Vision for Animal Agriculture](#)—is scheduled for September 14.

The International Food Information Council will present its inaugural [Agricultural Technology and Food Production Salon](#) virtual event October 6-7.

August 27, 2021

Academic Year Begins with Opportunities and Challenges

On campuses nationwide, the fall term brings friends, activities, and academic opportunities. The diverse universities in CAST's [Education Program](#) offer stimulating courses and engage in important science/ag research (see links throughout Friday Notes editions).



However, universities also face a host of challenges. This regularly updated site outlines how [schools are dealing with masks, vaccines, and other pandemic issues](#), and this page gives [updates on campus vaccine requirements](#). A story from The Ohio State University explains why it is among those institutions [requiring that all students must be vaccinated](#). And this link says the [University of Nebraska-Lincoln](#) will begin the academic year with a mask mandate for all indoor spaces.

Also, land-grant universities throughout the United States—such as [UC Davis](#) and [Texas A&M](#)—are [trying to help their workers and partners in farmer outreach programs](#) in Afghanistan.

The CAST community wishes health and safety to all schools as the new term begins.

News and Views

USDA Updates: The department announced 1) plans to purchase produce, beef, pork, poultry, fish, and dairy products for the [Emergency Food Assistance Program](#), 2) funds for the [American Rescue Plan Act](#) to prevent the next global pandemic, and 3) the acceptance of 2.8 million acres for the [Conservation Reserve Program](#)—well below the department's goal.

COVID-19 News: This ACSH commentary says [COVID-19 vaccines are effective](#); the number of [vaccinations administered in rural America](#) has been increasing; and scientists are using [artificial intelligence to find COVID-19 "solutions"](#)

Farm Worker Health: Jayson Lusk (2017 BCCA) reports an

CAST College Corner

[North Carolina State University](#) will enhance its plant science research with a new genomics facility.

[Tuskegee University's](#) "Eat Healthy Be Active" workshops are part of the school's efforts to promote a broad range of health practices for families.

[North Carolina A&T State University](#) specialists received grants from the USDA to increase ag and STEM literacy.

CAST Social Media

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CAST [welcomes ideas](#) for future publications and projects.

update to the [Purdue Food and Ag Vulnerability Dashboard](#) that shows estimates of farm worker illness for each state.

Fires in the West and Midwest: The government approved a [disaster declaration for areas affected by fires](#) in Northern California and Nevada where [many are under evacuation orders](#). Also, a [wildfire in Minnesota](#) produced pyrocumulous clouds and forced [closure of the popular Boundary Waters](#) Canoe Area Wilderness.

Far Side of the Barn

Miracle Cub Birthday (video): These film clips celebrate the [panda cub that recently turned one-year-old](#). The social media star joined its mother to eat a special frozen cake.



False Start (video): A 2-year-old filly—named [Bold and Bossy](#)—got loose before a race at a Kentucky track and ran onto a highway alongside cars before being safely caught.

Another Reason to Avoid Hot Dog Eating Contests (video): A university study says eating hot dogs takes time off one's life—but not to worry, [eating a PB&J sandwich adds it back on](#).

CAST Updates

World Water Week

August 23-27 is World Water Week. In 2019, CAST released the following two publications on water:

Aquifer Depletion and Potential Impacts on Long-term Irrigated Agricultural Productivity: [This issue paper](#) reviews the causes and consequences of groundwater depletion, with a focus on impacts to agriculture as the largest sector of groundwater use. This understanding can aid in developing effective policies and practices for groundwater development, use, and management.



Reducing the Impacts of Agricultural Nutrients on Water Quality across a Changing Landscape: [This issue paper](#) provides an overview of the processes, conservation practices, and programs that influence the impact of agriculture on surface and groundwater quality. It also covers complexities and difficulties associated with nutrient cycling and transport processes, management decisions and practice trade-offs, and how the federal conservation program's effectiveness can create immense challenges to achieving and measuring water quality improvement goals.

Agriculture and the Microbiome Impact Report Available



On August 25, 2020, CAST released the issue paper on *Agriculture and the Microbiome*. Crop yields must continue to increase and the gap between plant productivity and consumption must be bridged. Expanding the use of crop microbiomes to improve plant production is that next agricultural revolution. Science is ready to take advantage of microbial research to advance agriculture. In the 1800s, farmers could feed 26 people per acre—by the 1900s, farmers could feed 265 people per acre. By 2050, farmers will need to produce enough food to feed a world that has 9.7 billion people.

The impact report, publication, Ag quickCAST, student study guide, webinar Q&A, and webinar recording are [all available to view on the CAST website](#).

Animal Agriculture and Environmental News

Beef and Sports Nutrition: This Beef Checkoff report explains [Build Your Base](#), a comprehensive sports nutrition program that showcases beef for athletes.

Packers and Stockyards Act: The USDA issued new guidance on [the Packers and Stockyards Act](#) and various farm groups reacted.

ASF and U.S. Pork: According to officials, if the African swine fever (ASF) makes it to Puerto Rico, countries around the globe will be [entitled to ban U.S. pork](#).

ASF Announcement: The USDA announced its intent to designate Puerto Rico and the US Virgin Islands as [African swine fever "protection zones."](#)

ASF Vaccine? By using genetic modification, USDA/ARS researchers developed another [experimental vaccine](#) offering possible protection against ASF.

Pollinator Risk Index: A [global risk index](#) for pollinator species declines and effects on humanity has been released.

Manure Pit Awareness: This article discusses ways to prevent deaths from the [invisible risks of poisonous gases](#).



Poultry Science celebrates its 100th year in publication; this site shares its [information and research](#).

USPOULTRY-funded research looked at the contribution of broiler genetics on [gut health and immune response](#) when challenged with *Salmonella typhimurium*.

Food Science and Safety News

Cellular Food: Penn State researchers say [cellular agriculture—food grown in factories from cells or yeast](#)—has the potential to either accelerate socioeconomic inequality or provide beneficial alternatives to the status quo.

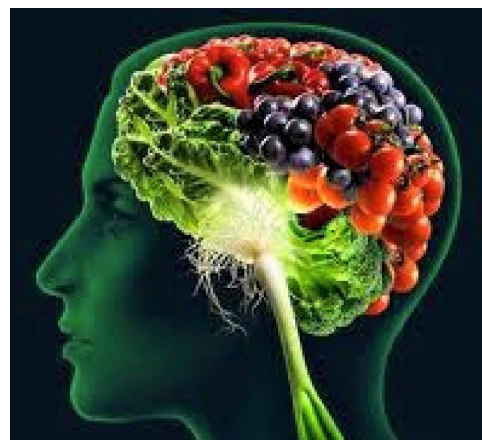
Food Delivery Robots: This article looks at the [pros and cons of the growing use](#) of these “food workers.”

Trying to Boost Sales: The National Pork Board is [promoting ground pork](#) in meat departments throughout Iowa, Wisconsin, Minnesota, and Nebraska.

Prepping a Tasty Piece of Meat: Some say a low, slow oven roast, followed by a quick trip through a hot skillet, is a [practically foolproof way to prepare meat](#).

Using Enzymes and Ultra-mild Cultures: Manufacturers of high-protein yogurt drinks are [working with challenges](#) such as excessive viscosity, off-tastes, and sandy textures.

Don't Fear the "Ugly": The *Farmers' Almanac* says [imperfect produce is often more "normal and natural"](#) than grocery store specimens that are supposedly perfect.



This study indicates that eating colorful fruits and vegetables [may be good for your brain](#).

Plant Agriculture and Environmental News

USDA Regs: The USDA is proposing a regulatory review process for determining [when genetically engineered plants need department approval](#) for commercialization.

Corn Protein: The Foundation for Food & Agriculture

Research is funding Purdue University to study the [viscoelasticity of a corn protein](#) to develop a meat substitute.

Crop Report: According to this U.S. crop report, [corn and soybean conditions](#) have fallen slightly.

Protecting Humans and Pets from Algae: A University of Nevada-Reno researcher is [studying riverbed blue-green algae—cyanobacteria—and its toxic nature](#).

Timber Tools: A researcher in Mississippi State's Department of Forestry is leading a team in creating a [precision tool to increase profits for timber producers](#)

Crop Self Defense: A University of Florida graduate student is helping [crops use their natural defense mechanisms](#) to fight diseases.



Advocating prevention and mitigation, researchers say [eroding streambanks contribute a third or more of the phosphorus export](#) from the state of Iowa, and this site looks at [various types of soil erosion](#) that cause agricultural production challenges.

International News

Tree Tsunami to Fight Climate Change: Pakistan hopes to [plant 10 billion trees across the country](#).

Grinch in the Supply Chain: KFC in England announces shortages, and British poultry producers warn that there are [not enough turkeys to go round this Christmas](#).

Drought and Water Woes: Tensions rise as Iranian [dams cut off Iraqi water supplies](#).

No Crew, No Problem: A Norwegian company created a [zero-emission, autonomous cargo ship](#).

CRISPR Fish: Israeli scientists used CRISPR-Cas9 genome editing tools to [create a new strain of tilapia](#)

Machinery Down Under: It has been a record year for sales of [second-hand agricultural machinery](#) in Australia.



The [nomadic reindeer herders of Mongolia](#) are being forced to make difficult decisions about their traditions and their future.

General Interest News

Deadly Floods: Extreme weather took the form of [deadly flash floods in Tennessee](#)—the government approved a disaster declaration.

Ag Tech: The Iowa State University [AI Institute for Resilient Agriculture](#) will use high-powered computers, robots, drones, field sensors, and more to improve agricultural production.

Land Ownership: Ultra-rich individuals are [purchasing thousands of acres](#) of American farmland.

T. rex Studies: Studies of body size and bite force show that the predators, from babies to adults, [filled many niches in their environment](#).

Ant Tunnels (video): Researchers are using [3D X-ray imaging and computer simulations](#) of ant colonies to develop robotic mining machines.



Indoor [farming is helping an isolated NASA crew thrive in Antarctica](#), and the process could reap benefits for space explorers.

Page one tractor pic from morningagclips.com and panda pic from WUSA9.com. Page two pic from BGSU world water week Facebook. Food Sec. brain graphic from eatrightvirginia.org. Plant Sec. erosion pic from farmprogress.com. Inter. Sec. reindeer pic from nytimes.com. Gen. Sec. greenhouse pic from thecounter.com. Unless otherwise noted, photos courtesy of the USDA Agricultural Research Service or CAST.

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- * American Seed Trade Association
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- * CropLife America
- * Crop Science Society of America
- * Innovation Center for U.S. Dairy
- * Bayer
- * National Cattlemen's Beef Association, a Contractor to the Beef Checkoff
- * National Corn Growers Association/Iowa Corn Promotion Board
- * National Milk Producers Federation
- * National Pork Board
- * North Central Weed Science Society
- * Northeastern Weed Science Society
- * Poultry Science Association
- * Rural Sociological Society
- * Society for In Vitro Biology
- * Soil Science Society of America
- * Syngenta Crop Protection
- * The Fertilizer Institute
- * Tuskegee University
- * United Soybean Board
- * University of Nevada-Reno
- * U.S. Poultry and Egg Association
- * Weed Science Society of America
- * Western Society of Weed Science

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The Science Source for Food,
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