

## Perdue's daunting task of protecting farmers from Trump's trade war

Trump administration officials have been promising for months that Sonny Perdue's Agriculture Department will protect farmers and ranchers from billions of dollars of tariffs imposed by China, Mexico, Canada and the EU. **Perdue has made the same promises, but in recent days he's begun walking back a timeline for that protection and trying to lower expectations of just how much USDA can help insulate producers from the mounting import tariffs on U.S. grain, oilseeds, meat, seafood, dairy, tree nuts, fruits and vegetables.**

**"President Trump has told me to assure the agricultural community across the country that he will protect them and they will not bear the brunt of the ag trade disruptions, and he will do exactly that,"** Perdue said July 2 in a televised interview on an NBC affiliate in Spokane, Wash. Perdue also vowed to have a tariff "mitigation" program up and running by Labor Day that would compensate producers for their losses.



Secretary Sonny Perdue

But providing that kind of protection is a daunting task that will require access to a lot of money and a means to distribute relief to everyone from walnut farmers in California to pork producers in Iowa. The enormity of the task may have also caused Perdue to rethink the timeline for the program.

The day after the NBC interview, Perdue told a gathering of American Farm Bureau Federation members that it may take longer.

**"That Labor Day (deadline) was self-imposed by me,"** Perdue said. **"We don't – I don't want to be held to it necessarily."**

**He also warned that he doesn't want people to think that USDA's mitigation will completely protect producers from the effects of the new tariffs.**

China announced last Friday it was hitting the U.S. with tariffs on \$34 billion worth of mostly agricultural products – everything from soybeans to cucumbers – in retaliation for U.S. tariffs

meant to punish the country for the theft of intellectual property. That's on top of the retaliation for new U.S. steel and aluminum tariffs, which Mexico, Canada and the EU are also retaliating against.

**The Trump administration on Tuesday evening announced that it is preparing to hit China with new tariffs on an additional \$200 billion of goods. [For more on that story, click here.](#)**

“I don't want to leave the impression that mitigation is going to leave people whole,” Perdue told the gathering of Farm Bureau members last week. **“I don't know that's the expectation I want to leave here because that's difficult to accomplish.”**

But any program of the magnitude being promised by the Trump administration will be difficult, and details are being closely-held. Several high-level officials tell *Agri-Pulse* that they have no idea how Perdue hopes to manage it because producer groups have not been consulted.

**“We don't know how this would be implemented,” said Kent Bacus, international trade director at the National Cattlemen's Beef Association. “We don't know when.”**

USDA spokespersons have refused to comment when asked for details of the mitigation program, but Perdue revealed at least part of the plan last week when he was pressed by Mark Powers, president of the Northwest Horticultural Council.

“We're scratching our head as to how that might work,” Powers said.

Perdue's partial answer was that USDA was going to start relying more heavily on [Section 32](#) of the Agricultural Adjustment Act Amendment of 1935, which allows USDA to take money from customs duties and use it for a wide variety of things like disaster payments and purchasing surplus commodities.

**“We have used Section 32 money, which allows us to buy products that are in high supply and low-price areas, to provide food banks and school nutrition programs to take these things off the market to support prices,” Perdue said. “We'll continue to look at that ... aggressively in this period of time when we're seeing these tariffs imposed.”**

The USDA's Agricultural Marketing Service used Section 32 and other authorities to buy about \$2.2 billion worth of plums, pasta, apples, rice, carrots, peaches, beef, raisins, eggs and many more products in fiscal year 2017. That's slightly less than the \$2.6 billion of food it bought in FY 2016.

Because USDA's purchase authority under Section 32 is tied to customs receipts, the billions of dollars in new tariffs being levied by the administration will likely boost the funds available, but it's unclear by how much.

**The problem with Section 32, says Bob Young, president of Agricultural Prospects and former chief economist for the American Farm Bureau Federation, is that once USDA has purchased the commodities, it has to either store them or distribute them in a way that does not impact the domestic market.** That's a much easier problem to deal with for a product like cherries, which can go to food banks or nutrition programs. Bulk commodities like soybeans, wheat and corn present a much bigger problem.

**“Once you’ve got it, what do you do with it?” Young said.**

Joe Glauber, senior research fellow at the International Food Policy Research Institute and a former USDA chief economist, agrees that would be a problem.

**“With soybeans you would have to hold them in stockpiles - something I doubt very seriously is being contemplated,” he told *Agri-Pulse*.**

USDA also has access to billions of dollars as the sole proprietor of the Commodity Credit Corporation (CCC), which has broad authority to dole out money for loans, payments and commodity purchases.

**The [CCC Charter Act](#) says USDA can use up to \$30 billion per year to “support the prices of agricultural commodities (other than tobacco) through loans, purchases, payments, and other operations.”**

The ability to just write checks to farmers and ranchers would solve the problem of storing bulk commodities, but it’s unclear if USDA would have the authority to compensate a farmer because a Chinese importer canceled a purchase rather than pay the new 25 percent tariff, said Glauber.

**“I believe (the Office of Management and Budget) would have to approve the use of funds, but the authorities are quite broad,” Glauber said. “The question is whether USDA could make cash payments to producers under the Charter Act ... Giving cash payments to farmers wouldn’t support prices but obviously would compensate for income drops.”**

Even if USDA does figure out a system to compensate all the farmers and ranchers for damage under the administration’s trade conflicts, producers are not likely to be happy about it.

**“If the government is going to pay for something, that means the taxpayers are going to pay for it, and we already have a tremendous spending problem,” NCBA’s Bacus said. “We would much rather sell our product to foreign consumers at a competitive price than rely on the government for any kind of assistance.”**

## **Farm bill negotiators face sharp differences on conservation**

When House and Senate negotiators sit down in coming days to start writing the final version of a new farm bill, they will find that many of their sharpest differences will be over how far they should reshape and fund conservation programs.

The conservation sections (Title IV) of the bills that passed the House and Senate last month are likely to be the most difficult parts of the legislation for negotiators to resolve outside of the nutrition title, said Dale Moore, vice president for public affairs with the American Farm Bureau Federation.

The House bill would increase the acreage limit on the Conservation Reserve Program by more than 20 percent, a top priority for hunters and the House Agriculture Committee’s top Democrat, Collin Peterson. The bill also would eliminate the Conservation Stewardship Program to bolster other conservation programs and programs outside the conservation title.

**The Senate bill, on the other hand, is “more evolutionary,” said Moore. It would trim but preserve CSP and the Environmental Quality Incentives Program while increasing CRP modestly, from 24 million acres to 25 million acres.**

Senate Agriculture Committee member John Thune, R-S.D., tried unsuccessfully to increase the CRP limit in the Senate bill closer to the House bill and now says he hopes to work with the House negotiators to get a higher cap than the Senate has.

The Senate authors kept all the savings from CSP and EQIP within the conservation title, mainly to shore up two other programs, the Agricultural Conservation Easement Program and Regional Conservation Partnership Program.

Beyond those broad differences the bill’s conservation titles also diverge on many important details.



Sen. John Thune

The Senate bill, for example, would make weather variability a rationale for funding under both EQIP and CSP, and the measure includes several enhancements to CSP designed to improve water quality. **For example, the bill would increase CSP payment levels for cover crops, resource-conserving crop rotations and rotational grazing, and provide assistance to farmers for developing comprehensive conservation plans.**

The House bill adds a limited version of the current CSP contract to EQIP and eliminates the current requirement that 60 percent of EQIP funding go toward livestock operations.

Both bills also provide new funding for RCPP, which matches federal dollars with funding from state and local governments and private sources to address regional resource concerns.

The House bill would provide more money for RCPP than the Senate version, but the Senate version would provide more flexibility for new projects, said Callie Eidberg, senior policy manager for the Environmental Defense Fund. EDF is currently partnering with Smithfield Foods in a RCPP-funded project aimed at improving the sustainability of pork producers’ grain supply. “The House and the Senate both do good things for RCPP. The Senate just does a lot more,” she said.

Among other things, the Senate bill would make land trusts and conservation districts eligible for RCPP projects. Both bills would allow exceptions to the five-year limit on RCPP projects.

The House bill would increase funding for Voluntary Public Access, which helps state and local government provide access to private land for hunting, fishing and hiking. The program, which was funded at \$40 million over five years under the 2014 farm bill, would get \$50 million over the next five years under the House bill. The Senate bill would earmark \$40 million from EQIP for the program.

There also are some key differences between the House and Senate bills outside the conservative title that deal with the environmental impact of farming practices.



Sen. Amy Klobuchar

**The Senate bill includes provisions of the Ag Data Act cosponsored by Thune and Amy Klobuchar, D-Minn., that would require USDA to make data available to researchers on farming practices and crop yields.** The idea is to produce research that can show what impact practices such as cover crops or crop rotations have on crop production.

The provisions are intended to protect the confidentiality of individual farmers' data, but House negotiators will likely have to be convinced the data can't be used against producers.

The Senate bill also would authorize USDA to provide crop insurance premium discounts to farmers for adopting conservation practices that are shown to reduce risk. The House bill doesn't have that provision.

Here is a comparison of key conservation provisions in the House and Senate bills.

## CONSERVATION RESERVE PROGRAM

**Acreage limit:** The House bill increases the CRP acreage limit to 29 million acres by fiscal 2023 from the current cap of 24 million acres, and requires a minimum enrollment rate per state based on historic enrollments. To pay for the increased enrollment, the bill would cap CRP payments at 80 percent of the local rental rate and reduce cost-share assistance. Cost-share payments would be limited to 40 percent of the cost of establishing a practice, and assistance for purchasing seed would be capped at 25 percent of the cost.

The Senate bill would raise the CRP cap to 25 million acres by capping rental payments at 88.5 percent of local land rental rates.

**Permanent easements.** The Senate bill would create a new Conservation Reserve Easement Program which would allow expiring CRP contracts to be enrolled as permanent easements.

**Haying and grazing.** Both bills would allow more haying and grazing of CRP land. CRP contract holders could harvest acreage for hay every three years.

## CONSERVATION STEWARDSHIP PROGRAM

**House bill.** Merges CSP into the Environmental Quality Incentives Program but provides for a more limited version of the existing CSP contract, which would be limited to 50 percent of EQIP Funding. Eliminating CSP as a standalone program would save \$12.6 billion over 10 years, with nearly \$7.7 billion being used to expand EQIP. Another \$3.5 billion would go into RCPP and the Agricultural Conservation Easement Program.

**Senate bill.** Reduces the acreage cap on CSP to 8.8 million acres a year, down from the existing limit of 10 million acres, saving \$1 billion over 10 years. The bill incorporates elements of the GROW Act, cosponsored by Sens. Joni Ernst, R-Iowa, and Sherrod Brown, D-Ohio, to provide more incentives for addressing water quality problems. The bill would increase payment levels for cover crops, crop rotations and rotational grazing. The bill also would authorize payments to help with the cost of developing comprehensive conservation plans.

## ENVIRONMENTAL QUALITY INCENTIVES PROGRAM

**Funding:** The House bill, which folds CSP into EQIP, would increase EQIP funding from \$2 billion in fiscal 2019 to \$3 billion by FY23, up from the \$1.75 billion provided for FY18. The Senate bill would reduce EQIP to \$1.47 billion in FY19 and increase funding to just under \$1.6 billion by 2023. The Senate bill's cut would save \$1.5 billion over 10 years. The Senate bill carves \$40 million from EQIP for Voluntary Public Access.

**Livestock operations.** The House eliminates the 60 percent set-aside in current law for livestock operations. The Senate bill would lower livestock producers' share of EQIP spending to 50 percent.

**Wildlife.** The Senate bill would require 10 percent of EQIP funding to go toward practices that benefit wildlife, up from 5 percent in current law and in the House bill.

### **AGRICULTURAL CONSERVATION EASEMENT PROGRAM**

Both bills would boost funding for ACEP, which was created by the 2014 farm bill to merge the old Wetlands Reserve Program, Grassland Reserve Program, and Farm and Ranch Land Protection Program.

ACEP, which is funded at \$250 million in FY18, would get \$500 million a year under the House bill. Under the Senate version, funding would increase to \$400 million in FY19-21 and then to \$425 million in FY22 and \$450 million in FY23.

### **REGIONAL CONSERVATION PARTNERSHIP PROGRAM**

**Funding.** The Senate bill would provide \$200 million per year for RCPP, double the existing funding level, and requires USDA to make available 7 percent of the funding from CSP, EQIP and ACEP each year. The House bill would increase RCPP funding to \$250 million a year but eliminate the earmark from other programs.

Both bills provide some additional flexibility to RCPP agreements but the Senate bill would go farther than the House measure. The House bill would expand eligibility activities to include resource-conserving crop rotations and protection of drinking water sources. The Senate bill includes drinking-water source protection as well as soil health and drought resilience. Conservation districts also would become eligible partners for projects under the Senate bill.

Both bills would provide some flexibility in the five-year limit for RCPP agreements and would allow for renewal of agreements. There is currently no provision in RCPP for renewals.

## **Farm groups hope for ag labor debate after House misfire**

House Republican leaders are promising to put a bill on the floor this month to address farmers' demand for more workers but the fractious immigration debate in June suggests that passing an ag labor measure won't be easy.

**The bill the House will debate hasn't been released yet, but it's expected to include a replacement for or expansion of the existing H-2A visa program, plus a requirement that all employers, including farms, start using the E-Verify system to check the legal status of their workers.**

Last month, supporters of a compromise immigration bill that would have provided legal status to Dreamers - adults who were brought to the country illegally as children - considered adding the E-Verify and ag labor provisions to the measure to attract Republican support. GOP leaders got critical backing from the American Farm Bureau Federation for the strategy.

But GOP lawmakers say the provisions, which included House Judiciary Chairman Bob Goodlatte's proposal for a new H-2C ag labor visa program, were ultimately kept out of the Dreamer legislation because they would have cost the bill as many votes as they would have gained. On June 27, the bill failed badly on the floor, 121-301.



Rep. Dan Newhouse

**“It didn’t change the numbers dramatically,” Rep. Dan Newhouse, R-Wash., said of the ag/E-Verify provisions. The strategy “brought conservative (votes) but it lost moderates,” said Rep. Mark Meadows, a North Carolina Republican who chairs the House Freedom Caucus.**

A leading backer of the Dreamer bill, Rep. Jeff Denham, R-Calif., noted that the ag labor provisions didn’t have the backing of either the California Farm Bureau Federation or the Western Growers Association.

Goodlatte’s H-2C program, which would require all foreign workers who are in the country illegally to apply for visas, is considered too restrictive by farm groups the way it is written. The program, among other things, would require all workers to have health insurance and to return to their home countries for periods of time.



Rep. Jeff Denham

“We’re looking forward to negotiating something that can actually pass on the floor,” Denham said of the coming ag labor debate.

The problem faced by farms groups on a standalone bill is that Democrats oppose the H-2C plan as too harsh and Republicans aren't united on the issue. Some conservatives have long argued that foreign workers are unnecessary and they worry that workers will overstay visas. Goodlatte was able to get a H-2C bill out of committee last fall only because some of panel’s most conservative members stayed away from the vote.

But Newhouse believes there is still a good chance of passing an ag labor bill in the House. “This may be our best chance that we’ll have in a long time. All my Republican friends need to recognize that and really seize this opportunity, because I’m not sure it’s going to get any better,” he said.

Dale Moore, vice president of public affairs for the American Farm Bureau Federation, acknowledged that “there’s a pretty steep hill to climb” to pass an ag labor bill. But he said, “We can’t simply give up because it looks too tough.”

#### **Farm labor pay on the upswing?**

In an effort to attract and retain a skilled workforce, [Christopher Ranch](#), the nation's premier garlic company, raised its corporate minimum wage to \$15/hour on July 2, up from \$13/hour last year. The higher hourly rate affects over 600 full-time employees based at the company's operation in Gilroy, California. On an annual basis, entry-level employees at Christopher Ranch will now make about \$8,000 more than state mandates, the family-owned agribusiness reported.

Ken Christopher, Executive Vice President at Christopher Ranch, said the higher rate not only “feels right” but “has proven to be a smart business decision.” With reduced turnover, Christopher says the company can “maintain consistently high levels of quality and safety,” which translates into “better products for our customers, tangible bottom line savings for our company, and a better quality of life for our workers and their families.”

## Glyphosate lawsuits advance, but judge suggests close call

Plaintiffs alleging that exposure to glyphosate caused their non-Hodgkin lymphoma face a “daunting challenge” in holding Monsanto responsible for their illnesses, a federal judge said Tuesday in a ruling that clears the way for the next phase of litigation against the chemical company.

Although the plaintiffs won – U.S. District Judge Vince Chhabria said their lawsuits can proceed – the judge said it was a close call.

“The question at this early phase in the proceedings – the ‘general causation’ phase – is whether a reasonable jury could conclude that glyphosate ... can cause non-Hodgkin lymphoma (NHL) at exposure levels people realistically may have experienced,” Chhabria said. “If the answer is yes, the case moves to the next phase, which addresses whether each particular plaintiff’s NHL was caused by glyphosate. If the answer is no, none of the plaintiffs’ cases may proceed.”

**Chhabria answered yes, but not without offering some criticism of the plaintiffs’ case. He excluded two of the plaintiffs’ six experts from presenting testimony and said one could only offer testimony at individual trials, if the case gets that far.**

**As for the three experts who were cleared to offer testimony, Chhabria called their opinions “shaky,” but admissible.**

“We’re pleased with the result,” Monsanto Vice President Scott Partridge said in a brief telephone interview Tuesday after the decision was released. He could not say whether the company would appeal, noting that the opinion had just been released and there was “much to digest.”

Partridge said the plaintiffs’ burden at this early stage of the case was “extremely light” and the plaintiffs’ experts were able to provide “a bit more than a scintilla of evidence” to support their arguments that glyphosate causes cancer in humans.



Judge Vince Chhabria

**In a statement, Partridge pointed to Chhabria's opinion, which said that "the evidence of a causal link between glyphosate exposure and NHL in the human population seems rather weak." Chhabria also said that the federal government's Agricultural Health Study "suggests no link at all."**

Plaintiffs’ attorney Robin Greenwald of Weitz & Luxenberg, one of three co-lead counsel, said she is “extremely happy that (the plaintiffs) are going to be able to present their case.”

**“I’m very thankful that the judge is letting us do that. This is very important for our clients,” she said.**

Plaintiffs’ attorney Brent Wisner of Baum Hedlund said, “Many of our clients are actively suffering from cancer so we are going to aggressively pursue their claims in the (federal litigation) and in state court.”

Greenwald said she's confident that her clients will win once they are able to present specific evidence that glyphosate caused their NHL. "I think that we will prevail in these cases," she said.

**What happens next is unclear, said Greenwald, who was loath to speculate about the next steps, which are up to the judge. There will be more motions, more discovery and more discussions between the lawyers and the judge to determine the best way to handle the more than 450 individual complaints consolidated before Chhabria.**

In his opinion, Chhabria said the conclusion of the International Agency for Research on Cancer – an arm of the World Health Organization – in 2015 that glyphosate probably causes cancer in humans did not provide enough evidence for the case to get to the next phase.

"Throughout much of this case, the plaintiffs seem to have operated under the assumption that they can clear the general causation hurdle simply by showing that IARC's decision to designate glyphosate a probable human carcinogen is scientifically sound," he said.

**But IARC's inquiry was conducted "at a higher level of generality than what the court must do here," Chhabria said. "Here, although there is no need to specify precisely the circumstances under which each plaintiff was exposed to glyphosate, only evidence supporting the conclusion that glyphosate causes NHL in doses within the realistic realm of actual human exposure can get the plaintiffs past summary judgment."**

Chhabria did not exclude any of Monsanto's experts, who he said "reasonably consider" the most recent Agricultural Health Study publication showing no association between glyphosate and NHL, "to be the most powerful evidence regarding the relationship."

The decision came out a day after a trial began in California state court involving a former landscaper who alleges exposure to glyphosate caused his NHL. Thousands of people have sued Monsanto in state court.

Glyphosate is the active ingredient in Monsanto's Roundup, the most widely used weedkiller in the world.

## **Ag scientists draw a road map for gene editing**

To consumers trying to get their heads around what's good or bad about the new crop and animal gene-editing techniques, and to scientists and farm policy stalwarts racing to stay abreast of that frontier in biotechnology, a task force of scientists with the Council for Agricultural Science and Technology ([CAST](#)) this week offered a [comprehensive update](#).

The report's authors made every effort to be **"factual, not speculative, and . . . provide insights but not opinions,"** [Adam Bogdanove](#), a Cornell University plant scientist who headed the task force, said at a presentation of the report. To ensure such a result, he said, the CAST group was formed of "people who feel strongly" but hold varied and divergent views on gene editing. **"That way we were able to sort of expunge the (slanted) language from the paper," he said.**

Still, the report encourages future use of gene editing in agriculture. While it wades through the complexities of controversies around the techniques, it also summarizes the technology thusly:

“Genome editing is a powerful new method that enables unprecedented control over genetic material and offers the opportunity to make rapid advances in basic and applied biology.”

The report says the demands for improved genetics to foster animal health and crop production are great, and Bogdanove declared, **“We have a backlog of genes just crying out to be edited.”** However, he said, **“the jury’s out still on how the public will view genome editing.”**

The report’s 18 pages (plus research citations) cover the waterfront. They describe the types and tools of gene editing, compare gene editing with other types of genetic modification (see table), and summarize the varied and conflicting ways that the U.S. and other nations are approaching regulation. The report also describes scientists’ and the public’s views along with the dilemma of achieving coherent public policies on gene editing, and discusses the outlook for future adoption on the farm.



Adam Bogdanove, Cornell Univ.

**“But unlike conventional breeding,”** the report says, **“genome editing requires delivery of reagents into cells” in making what’s called “site-directed nuclease” (SDN) modifications.** The reagents – such as bits of RNA and nucleases (enzymes) – are the tools that researchers use to cut the double strands of DNA in chromosomes and thus delete genes or paste new ones within a cell nucleus.

Meanwhile, the editing toolbox is expanding quickly. Indeed, while news stories about advances in the techniques have dwelt largely on just two processes – TALENs (transcription activator-like effector nucleases) and CRISPR/Cas9 – the report describes an array of emerging cut-and-paste processes and techniques. It subdivides the main gene editing methods into three categories of SDN changes, based in part on degree of complexity. Also new, for example, is a version of the Cas9 process called “base editing.” In a process nicknamed “dead Cas9,” the tool that severs the DNA to make an edit is partially deactivated, and thus the process does its genetic modification without even severing both DNA strands at the editing site.

### **Why the rapid growth in new editing techniques?**

Bogdanove’s perspective: “In the ever expanding tools and approaches that are getting lumped into this topic of gene editing . . . the competition for intellectual property is driving discovery.” After describing yet another gene editing technique, he suggests, “tomorrow there may be a completely different system that’s even easier to use.”

At the interface of the technology with public policy and regulation, one crucial question has been whether scientists can even tell whether editing was used, thus making the policing of the technique possible. The question arises because the genetic material added or altered is within the same cell, or from within the same species, and the reagents used to make the edits are typically bred back out of the cells.

**CAST concludes: “In terms of identification, however, it is not possible to distinguish the types of modifications made by (the principal current gene editing methods) from variants that might derive from conventional breeding techniques or exist because of natural genetic variation.”**

The report points out that, in large part because an edited genome may be most often indistinguishable from one altered in nature, European Union officials are leaning toward the U.S. Department of Agriculture’s intent to leave gene editing unregulated when it does not involve transgenic changes (transferring genes between species).

**That approach eases the regulatory burden and may assist in finding a workable editing policy. But it surely doesn’t settle the matter.**

**Comparing ways to genetically modify crops and livestock**

	Precision	Time to Achieve	Changes from Original Parental Genome	Requires Genetic Transformation	Requires Genetic and Molecular Understanding of the Trait
Genome Editing	High	Months	Targeted edit(s); often no other changes, though edits at locations with sequence similarity to the target(s) may occur	Sometimes	Yes
Conventional Breeding (Crosses)	High for the trait determinant (governed by selection; typically introgresses at the same genomic location as in the donor); other donor DNA that introgresses is determined at random	Years	Introgressed gene and closely linked sequences from donor parent; after backcrossing, ~5% other donor DNA distributed at random through the genome	No	No
Random Mutagenesis	None	Months; with extensive backcrossing, years	Many and random; with extensive backcrossing, ~95% identical to parent	Sometimes	No
Conventional Genetic Engineering (Transgene Insertion)	None	Months to a few years	Presence of transgene; interruption of native DNA sequence with transgene	Yes	Yes

Source: Council for Agricultural Science and Technology

**While the CAST report looks to “successful deployment of genome editing” that is “science-informed (and) . . . promotes both innovation and transparency,” it also points to a long road of “sociocultural factors that influence risk perception and technological acceptance at the national, group, and individual levels.”**

American farm groups are still mulling over the report, but Daniel Kovich, director of science and technology for the National Pork Producers Council, complimented CAST for highlighting “the need for rational and risk-based regulation of gene editing. He said the report “concisely summarizes the applications of this technology to animal health challenges facing livestock producers – challenges that would be costly in terms of time and genetic progress to address through conventional breeding programs.” Also, he said, the report “offers compelling evidence as to how precise – and therefore safe and accurate – gene editing has become.”

## Pilot projects explore experimental drone use

Bob Brock sees big things coming in the use of drones in agriculture.

**“The possibilities are truly endless,”** said Brock, a retired Air Force pilot and the first director of Unmanned Aircraft Systems for the state of Kansas. “We talk about this routinely as analogous to the use of the iPhone. Most of us forget that’s only 11 years old and the progress with that device has been remarkable in so short a time. I think that’s fairly predictive for drone technology.”

Brock, who works for the Kansas Department of Transportation, is now overseeing a pilot program within the state that is exploring, with federal and private sector participants, the further integration of drone operations in U.S. airspace. Kansas DOT was among [10 government entities recently](#) selected by the U.S. Department of Transportation to conduct such research.

**The awardees are targeting subjects such as package delivery, autonomous vehicle interoperability, surveillance and infrastructure inspection, but Kansas DOT is one of three such entities – along with the North Dakota Department of Transportation and the Choctaw Nation of Oklahoma – where agricultural use was mentioned as a priority.** Participants in the program were given up to three years to conduct their research, which will be used to update the Federal Aviation Administration’s [rules for flying small unmanned aircraft](#) (under 55 pounds), often referred to as Part 107.

Brock and others involved with drones and agriculture see the current regulation that requires operators to maintain unaided visual contact with their drones as one of the biggest hindrances to use of the technology by farmers and ranchers. As part of the pilot program, Brock and his researchers are being allowed to experiment beyond line of sight.

“To use the technology most efficiently, a farmer needs to be able to send an aircraft out over farmland and collect data that heretofore needed to be gathered on foot, or using drones restricted to line of sight,” he said. “That’s not very practical.”

**“Industry is looking for these tools to be more proactive,”** said Brock, who noted that ranchers could be using drones to measure the temperature of individual cows to assess their health, and farmers could be employing the devices to look for hydration and pest problems over spreads large and small, “resulting in big cost savings.”

Brock said his team will also be collecting data on how to use unmanned aircraft in search and rescue missions along lonely country roads that sometimes become impassible due to snow or flooding, as well as for inspections of infrastructure including power lines and bridges.



Bob Brock, Kansas DOT

**“We’ve got 5,000 bridges in Kansas and any cost-saving we can do is important to taxpayers,”** he said. “Studies have shown the potential to save as much as \$5 million to \$10 million alone just on bridge inspections in Kansas. We’re trying to confirm that.”

Nationwide, the benefits of continued integration of unmanned aircraft systems into the economy are more than substantial. The Association for Unmanned Vehicle Systems International (AUVSI) estimates that through 2025, the industry will have created 100,000 jobs with an economic impact of \$82 billion.

Jim Robbins, a professor and extension drone specialist with the University of Arkansas System Division of Agriculture, agrees that the future of the technology is almost limitless, although he approves of the caution the U.S. government is taking in considering changes to drone regulations.

“We have to be careful,” Robbins says. “Like any emerging technology, things are changing very rapidly. We need research-based information behind what we’re doing,” and the U.S.-DOT experimental programs should provide that, he says.

Robbins predicts that five years from now, the majority of medium to large farm operations will own drones for their own use – to monitor their crops and animals, to check up on the condition of infrastructure such as irrigation equipment, and for sales and marketing, as in providing fresh images for a website.

“If your website doesn’t have this kind of imagery, you’ll be missing out,” Robbins said.

## **USDA training dogs to sniff out bird flu outbreaks**

Most of the time Squirrel is running around, playing fetch, and living like your average young dog. What makes the rescued Labrador mix special is the job he’s being trained for.

**Squirrel is one of four dogs being trained in a government program to sniff out the presence of avian flu in the feces of waterfowl and other birds.** If the training proves successful, the dogs could be useful in winnowing out uninfected samples among thousands collected every year in the effort to get an early start in preventing bird flu outbreaks. Outbreaks of highly pathogenic avian flu in 2014-2015 resulted in the deaths of millions of chickens and turkeys on commercial farms.

The dogs are being trained at USDA’s Animal and Plant Health Inspection Service (APHIS) [National Wildlife Research Center](#) (NWRC) in Fort Collins, Colo., under the direction of Colorado State University research scientist Glen Golden.

“If the research proves to be successful, then we’re going to end up working with the USDA AHPIS Wildlife Services and the National Wildlife Disease Program to test the dogs in the field and bring them into environments that are real-world type settings,” Golden said in an interview. That would include wetlands in agricultural environments.

**The dogs, which were chosen for their “high arousal and high prey drives,” are currently being trained to detect odors such as cinnamon and will soon be asked to discriminate between cinnamon and other odors including licorice and banana.** The next step will be doing smelling exercises in the field, and after that, the dogs will be introduced to fecal samples from infected and non-infected ducks.

At this point, Golden said, the dogs are “doing very well” in alerting to the different stimulants.

Bruce Kimball, research chemist and study collaborator with NWRC, said the project originated a decade ago with work that was being done at the Monell Chemical Senses Center in Philadelphia as part of a larger study into how disease or inflammation may cause odor change in infected animals.

**“There was a point about eight or nine years ago where the question really arose: Could we apply this specifically to avian influenza?”** Kimball said. “That was because the USDA National Wildlife Research Center surveillance program was collecting tens of thousands of samples each year from waterfowl, and in general, 80 or 90 percent of those samples were from animals who were not infected with avian influenza, yet each of those samples cost about \$50 apiece for analysis. So the question was, could we find a more efficient way, and a cheaper way, to screen samples for avian influenza?”

Kimball said they started training mice to detect certain odors, and then moved on to training ferrets.

“That’s when Glen (Golden) came into the picture, and when it was successfully demonstrated that ferrets could discriminate between infected and healthy birds based on their fecal odors, it really became obvious that this could work its way into a real program using canine detectors.”

Although canines are not susceptible to avian influenza, Squirrel and his canine colleagues – Odin, Moose and Custer – are vaccinated for rabies and other diseases they may be inadvertently exposed to while in the field. Once the dogs have completed their training, they will be paired with an APHIS Wildlife Services field specialist for disease surveillance activities or, if found unsuited for surveillance work, placed in an adoptive home.



Glen Golden, Colorado State

## US dairies turning manure into 'brown gold'

A growing number of U.S. dairy producers are realizing innovative income streams from what they are calling “brown gold.” They are using digesters to turn manure into biogas, which is later converted into compressed or liquefied natural gas, electricity or other fuels. The leftover liquids and solids can then be made into scores of products including fertilizers, plastic, biodegradable flowerpots, cow bedding and a peat-moss substitute.

**“Advanced manure recovery is an entire system. You don’t always need the digester but it is an excellent platform,”** says Bruce Knight, principal and founder of Strategic Conservation Solutions. In addition to digesters, about 200 complementary technologies exist to recover the value in manure. Knight says the excitement surrounding these additional income streams can be compared to the enthusiasm generated by ethanol two decades ago.

In a biogas system, anaerobic digestion recycles manure, turning it into energy – gas and electricity – and liquids and solids. Because biogas systems recover nutrients, they also help protect the nation’s waterways. When these systems were first introduced more than a decade ago, dairies that adopted the technology primarily entered into long-term contracts to sell electricity into the grid for 7-10 cents per kilowatt hour (kwh), but that market crashed along with climbing natural gas supplies.

**“It cut the economic sustainability out of the market,”** says Jerry Bingold, vice president at Newtrient, an industry-supported firm dedicated to helping producers improve environmental and economic sustainability through the development of manure conversion technologies, products made from manure, and markets for these products. With the original long-term contracts now expiring, producers are looking to new markets, he adds.

Patrick Serfass, executive director of the American Biogas Council (ABC), says that adding just 10 percent food waste to manure can double a digester’s gas output. “Investment groups are watching this space,” Serfass says. “Several years ago, digesters were manure only. Today there is interest in building digesters that digest both food waste and manure.” According to Serfass, a dairy with as few as 200 cows could benefit from a digester that also accepts food waste.

A [2013 Informa Economics study](#) said back then that nearly 2,700 dairy operations were suited for large digester projects. The cost to build one, according to ABC, is somewhere between \$1 million and \$20 million. Traditionally, mechanical anaerobic digesters have been custom-made for each site, but that too is changing, according to Bingold. Not only are digesters becoming more portable, they are being reproduced for more than one site to fit the needs of local markets.



Ryan McCarthy, California Air Resources Board

The California market, in particular, has drawn considerable interest from producers, their co-ops, and private investors. California [Senate Bill 1383](#), passed in 2016, requires methane emissions to be reduced by 40 percent statewide by 2030 through the use of digesters and other technologies. The bill also directs the California Air Resources Board (CARB) to work with the dairy industry to implement a [Short-Lived Climate Pollutant Reduction Strategy](#), and gradually move toward regulating the industry, beginning in 2024 at the earliest, according to Ryan McCarthy, science and technology policy adviser to CARB. Methane, a short-lived but potent greenhouse gas, is believed to account for 25 percent of net global warming, McCarthy notes. For the state’s 2017-18 fiscal year, \$99 million was available to producers to participate in these programs, and the current budget includes another \$99 million.

**“About two-thirds of the completed projects and projects in the pipeline are digesters,”** McCarthy notes. “There are at least 40 projects in process or already developed in California, and we expect to see 100 or more projects funded in the next few years, both digesters and other projects.”

[California Bioenergy LLC](#) (CalBio) has been working to develop large-scale projects using covered lagoon digesters. Both capital and operating costs are much lower with these digesters than for traditional systems, but the gas volume harvested is also lower. CalBio and Land O’Lakes Inc., one of the nation’s largest agricultural cooperatives, recently announced a first-of-its-kind collaboration to support the financing, installation, and management of on-farm covered lagoon methane digesters to generate renewable compressed natural gas for the California market. Land O’Lakes is also offering its dairy members up to \$3 million in financing to build methane digesters.

“There are a lot of incentive programs in California,” McCarthy says. “Out-of-state dairies in some instances can participate in these programs and are already building projects and selling into the California market.”

The 2019 farm bill is expected to retain several programs that offer incentives to producers to adopt advanced manure recovery strategies including digesters. In addition to the [Environmental Quality Incentives Program](#) (EQIP), which was retained in both the House and Senate versions of their recently passed farm bills. The energy title included in the Senate measure contains the [Rural Energy for America Program](#), which provides incentives to help producers connect to the electrical grid.

In addition, each year, the Environmental Protection Agency sets the amount of renewable fuel that energy companies must buy. In June, the agency proposed another 30 percent increase for biogas-related fuels, putting the target for cellulosic biofuel at 381 million gallons for 2019. EPA estimates that 358 million gallons of that will be derived from renewable biogas.

“There is no shortage of manure, and that manure has to be dealt with. The need to manage nutrients and odors on farms will drive the construction of new biogas systems,” says ABC’s Serfass. “Dairies are not going to see a market saturation. Each project takes 12-18 months to develop, and EPA knows what is coming on line and increases its projections.”

## News Briefs

**OECD sees rising farm output, lower income.** World agricultural production is increasing and demand growth weakening, causing lower real farm prices for the next decade, according to the Organization for Economic Cooperation and Development. But the projections don’t account for likely disruptions attributed to President Trump’s trade policies, several experts said Tuesday at an OECD forum in Washington. Realignment of trade caused by new tariffs will mean higher costs and less efficiency, said OECD analyst Jonathan Brooks. “The biggest and longest-lasting problem is the discrediting of institutional bilateral and multilateral trade rules” under the World Trade Organization (WTO), said Farm Foundation President Constance Cullman. “It’s hard to hold China to the WTO rules if we want to blow up the WTO.” She likened the potential outcome to the Soviet oilseed and grain embargoes of the 1970s, adding, “We never got that market back.” Recent trade disruptions “could not have come at a worse time,” she said, in the face of the slowdown in demand and lower farm prices. “They exacerbate a growing crisis in rural, agricultural communities. We are going to have to be prepared for it.” The changes in trade policy “may impede projected trade growth” incorporated in the [outlook](#) published last week by the OECD and the UN Food and Agriculture Organization (FAO), said USDA Chief Economist Rob Johansson. “We may see some short-term adjustments” as trade flows realign to adapt to market changes, he said. “The question is how long it will take to develop new marketing patterns.”

**CAST seeks suggestions for ag studies.** Have an agricultural subject that you think needs investigation? The Council for Agricultural Science and Technology is inviting suggestions from its own members, farmers and others for possible in-depth studies by a task force of agricultural scientists. CAST Executive Vice President Kent Schescke said this week that two of CAST's current investigations sprang from this type of open-ended invitation for ideas. Launched in 1972, CAST is a nonprofit 501 (c)(3) organization composed of scientific societies and many individual, student, company, nonprofit, and associate society members. Click [here](#) to suggest a CAST study.

**Time to nominate NAREEE Advisory Board members.** USDA's National Agricultural Research, Extension, Education and Economics (NAREEE) Advisory Board seeks approximately eight new members to begin duties after Sept. 30. During a three-year term, advisory board members will represent the view of various national stakeholder groups, serving under a specific affiliation category. Categories include: farming or ranching, food production and processing, forestry research, crop and animal sciences, land-grant institutions, non-land-grant college or university with a historic commitment to research in the food and agricultural sciences, food retailing and marketing, rural economic development, and natural resources and consumer interest groups, among others. The Secretary of Agriculture appoints board members from a pool of nominations submitted by congressmen, organizations, associations, societies, councils, federations, groups, and companies that fit the category criteria. More information on submitting nominations is available [here](#). For a list of current board members, [click here](#).

**Farm equipment sales up in all categories.** There is at least one sign of strength in the farm economy: Sales of combines, tractors and other farm equipment have risen this year, in some cases significantly. The Association of Equipment Manufacturers says sales of self-propelled combines are up more than 20 percent this year, compared to the first half of 2018. Sales of 4-wheel-drive and 2-wheel drive tractors have risen 5 percent and 6.5 percent respectively. "We view 2018 as a rebuilding year for agriculture; we've experienced a steadily improving economy, tax reform provides incentives and machines need to be replaced," said Curt Blades, AEM senior vice president for agricultural services.

## **Farm Hands on the Potomac...**

Growth Energy will soon have a new vice president of communications and public affairs. She's **Jennifer Morris**, who previously served as senior vice president of corporate and public affairs at Edelman. Before that she was the head of global public affairs and financial literacy for Visa Inc. and has had previous communications experience on Capitol Hill. Growth Energy also has hired **Leigh Claffey**, former press secretary to Sen. **Joni Ernst**, R-Iowa, as its communications director.

**Caroline Booth** is taking a new job on Capitol Hill. Formerly the communications director for the House Rules Committee, she is now chief of staff to the panel's chairman, **Pete Sessions**, R-Texas. Taking Booth's job on the Rules Committee is **Laura Peavey**, who has been serving as deputy press secretary for Sen. **Joni Ernst** of Iowa. And filling the empty post of press secretary in Ernst's office is **Kelsi Daniell**, who is moving over from EPA where she held a similar position. Daniell starts the new job on Monday.

**Jake Wilkins**, a deputy press secretary at USDA and a former press assistant at the Republican National Committee, says he's leaving D.C. "temporarily" for "an exciting opportunity in North Dakota that will last through November." His last day at USDA is Friday.

Good luck to **Jameson Cunningham**, who is leaving his post as communications director for Rep. **Randy Hultgren**, R-Ill., for a job with Americans for a Free Syria. Cunningham says he'll be working in a communications and policy capacity "to advocate for human rights, the rule of law and democracy for the Syrian people."

Former U.S. Agriculture Secretary **Mike Johanns** and former Cargill CEO **Greg Page** have **joined** the advisory committee for its Corteva Agriscience division. The committee will support

the DowDuPont leadership team as it moves toward separating its agriculture, materials science and specialty products divisions following Dow's year-old merger with DuPont.

**Matthew Daigler** has joined the Commodity Futures Trading Commission as senior counsel to Chairman **J. Christopher Giancarlo**. Daigler most recently was an associate at Allen & Overy.

Agriculture Secretary **Sonny Perdue** appointed four producers to serve three-year terms on the United Sorghum Checkoff Program Board. They are: **Craig A. Poore**, Alton, Kan.; **Boyd Funk**, Garden City, Kan.; **Jim Massey IV**, Robstown, Texas; and **Adam Schindler**, Reliance, S.D. (at-large). The 13-member [board](#) is composed of nine sorghum farmers who represent Kansas, Texas and Oklahoma, the three states with the largest sorghum production, and four at-large national representatives.

President Trump plans to nominate **Martin J. Oberman** to be a member of the Surface Transportation Board for the remainder of a five-year term expiring at the end of 2023. Oberman currently serves on the Board of the Chicago Metropolitan Agency for Planning.

**Robert F. Powelson** plans to resign as a member of the Federal Energy Regulatory Commission in mid-August to take on the role of president and CEO of the National Association of Water Companies. Powelson, a Republican, was nominated to the FERC position in May 2017 and confirmed by the Senate in August 2017. He came to FERC from the Pennsylvania Public Utility Commission, where he was chairman from 2011 to 2015. Powelson also is past president of the National Association of Regulatory Utility Commissioners.

Five USDA Foreign Agricultural Service employees were sworn in as Foreign Service officers this week during a ceremony at USDA headquarters in Washington. They will begin their Foreign Service careers serving as agricultural attachés at U.S. embassies and diplomatic missions across the globe. The new officers are: **Ryan Bedford**, from Ogden, Utah (Manila, Philippines); **Barrett Bumpas**, from Jacksboro, Texas, (Tokyo); **Rhiannon Elms**, from Martinsburg, W. Va. (Mexico City); **Lindsay Malecha**, from Fort Worth, Texas (Guangzhou, China); and **Evgenia Ustinova**, from Syracuse, N.Y. (Brasilia, Brazil).

FLM Harvest added **Jeff Nawn** to the agency's board of advisors. Nawn most recently worked for Corteva Agriscience, formerly DuPont Pioneer, as its global grain trade and biotech affairs lead. Before joining DuPont Pioneer in 2012, Nawn spent a decade with USDA's Foreign Agricultural Service. From 2009-2012, he was the senior agricultural attaché at the U.S. Embassy in Tokyo, where he was responsible for agricultural trade policy and market access issues, including the 2012 renegotiation of the American beef access agreement with Japan.

The American Feed Industry Association hired **Louise Calderwood** as its new director of regulatory affairs. Calderwood joined AFIA from the Northeast Agribusiness and Feed Alliance where she served as government relations director. Calderwood also operated an agricultural consulting firm and a maple syrup farm in Vermont.

The Minnesota Turkey Growers Association presented its Allied Lifetime Achievement Award to **Tom Bruin**, of Ralco, a global supplier of livestock nutrition and animal health products. Bruin has been involved in the turkey industry for more than 40 years. In 2013, he joined Ralco, where he conducts research, provides technical support and performs poultry business development.

**Rafael Chapman**, a senior-level executive with over 20 years of non-profit financial and operational experience in and around Washington, has joined the National Association of State Foresters as director of finance and administration. Chapman takes over for **LouAnn Gilmer**, who retired late last month after more than 10 years of service with NASF.

**Sterling Liddell**, vice president of global data for Rabo AgriFinance in St. Louis, died on July 4 at the age of 48 after a long battle with cancer. He was known professionally for his expertise in markets in a variety of commodity sectors including grains and livestock, as well as ag policy, macroeconomics and more.

**L. Gene Lemon** passed away on June 30, at the age of 78. Born and raised on an Illinois farm, Lemon began his career as a lawyer for the American Farm Bureau Federation in Chicago after graduating from law school in 1964. In 1969 he began working for Armour & Co. and relocated to Phoenix when the company was acquired by The Greyhound Corporation in 1971. He became general counsel in 1977 and remained with the same company in its many incarnations until his retirement in 1998.

**Paul Hammes**, who served as a trustee of the Farm Foundation from 2005 to 2014, died July 5 following a long battle with T-cell lymphoma. He was 62. At the time of his retirement in 2014, Hammes was vice president and general manager of agricultural products at the Union Pacific Railroad, where he worked for 11 years. Prior to joining the Union Pacific, Paul worked at Cargill for 25 years in various merchandising, asset management and transportation roles.

Our condolences go out to the family of former Iowa Governor **Robert Lee Ray**, who died July 8 at the age of 89. Ray served as Iowa's chief executive from 1969 to 1983, a period that included the social upheaval of the late 1960s and the post-Watergate period of decreased trust in government. David Oman, his former chief of staff, said Ray built the modern state governorship and provided "ethical, moral and strategic leadership" that was recognized nationally and internationally. Ray was noted for his empathy and for his defense of the individual. In 1972, for example, he grounded all Iowa Air National Guard planes until the Pentagon paid damages to a pair of Iowa families whose homes had been destroyed by separate military jet plane crashes.

**Best Regards,**

**Sara Wyant**  
**Editor**

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