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After outbreak, California grapples with traceability and blockchain

The ability to trace a head of lettuce, a piece of fruit or other type of food from the field or orchard to the fork could speed food safety investigations and potentially prevent illnesses and even deaths.

Many farms can already provide the tracking, but incompatible tracking systems and food industry gaps create critical weaknesses in the chain, sources say.

Case in point: After a three-month investigation, the Food and Drug Administration in February [pinpointed](#) the source of the 2018 E.coli outbreak in romaine lettuce to poorly sanitized water on a farm in Santa Barbara County, with more sources likely. The investigation drew in top U.S. and Canadian agencies, including the Centers for Disease Control and multiple state ag and health authorities. After six weeks, the international coalition of researchers [declared](#) that the contamination likely came from one of the top counties in the nation for producing romaine lettuce.



FDA Commissioner Scott Gottlieb plans to leave next month, after nearly two years leading the agency.

California has made strides in food safety standards following major outbreaks in the past. National traceability initiatives have also gained a strong foothold in recent years. And in a state driven by the tech industry, data sharing tools like blockchain offer exciting possibilities for instant traceback. None of those were involved in this outbreak.

Yet this episode with romaine lettuce could be the needed linchpin for sweeping changes in supply chain management and regulation.

“From a grower perspective, it’s been frustrating because we have great traceability,” said a Monterey County romaine grower who asked not to be named. **“At any given moment I could tell you exactly where a pack of romaine came from—what crew harvested it, when, what field location, what time of day, what truck number hauled it to the cooler.”**

Our source pointed to restaurants and grocers in “the last mile” of the supply chain. Produce boxes are tracked to the store but then torn down, with individual packages put on shelves. It is typical for a month to go by before an illness is reported. By that point, the lettuce bag is long gone, along with a possible RFID tag on the box it came in and any tracking records.



Others have pointed criticism at the processor for combining romaine from multiple farms into the bags. The FDA also [took heat](#) for shutting down the entire industry, despite states like Alabama not producing romaine lettuce at the time.

It is still too early to quantify the economic impact from the voluntary recall. One recent [study](#) focusing on the 2018 romaine lettuce outbreak from Yuma, Ariz., estimated costs for fast food restaurants alone to be as high as \$2 million. The 2006 E.coli outbreak in spinach, meanwhile, resulted in an immediate [20 percent loss](#) of revenue for those retailers.

The story has also been a touchy subject for victims. The E. coli O157:H7 contaminations led to at least 62 illnesses across 16 states and Washington, D.C.

Growers throughout the industry [were blamed](#). In a [statement](#), the Leafy Greens Marketing Agreement (LGMA) pointed out that - had that farm joined the voluntary agreement - it would have been subject to inspection at least five times per year. The organization said food retailers could have avoided this by sourcing from the agreement’s certified members, who represent 90 percent of the lettuce and leafy greens grown in the U.S. The agreement also preemptively satisfies the FDA’s new produce safety requirements under the Food Safety Modernization Act.

Blockchain is new. Traceability isn’t.

The LGMA began as a response to the 2006 spinach outbreak. Likewise, regulators, retailers, growers, processors and distributors have come back to the table to [hash out new standards](#) in the wake of the recent outbreak. One buzz phrase coming from this discussion has been blockchain technology.

The encryption tool is a digital ledger in which all points in a system get the same data at the same time, with no one entity holding the keys. This means that when a head of lettuce is tagged, bagged and tracked on its journey through the supply chain, all parties have access to that information the moment it is inputted. The platform can be a single, unified blockchain or a stream of chains across the supply chain, with many companies or even governments having their own blockchains.

The technology is already out there. Wyoming has [welcomed a beef cattle test](#), turkeys [got the digital treatment](#) for Thanksgiving and Driscoll's, Walmart and IBM have [been touting the success of a pilot](#) project that may serve as a test case for larger grocers.

“What this did was enable Driscoll’s and Walmart to truly align,” said Brendan Solan, who leads supply chain platforms for Driscoll's, during a panel discussion at the USDA Agricultural Outlook Forum last month. “It gives us both the ability to see what’s going on in the supply chain.”



Brendan Solan, Driscoll's

He said that, for the first time ever, they successfully tracked a tray from field to consumer. And now the companies want to leverage more IBM tech prowess to commercialize and scale this up to cover thousands or even millions of trays. As the leading grocery retailer by market share, Walmart would set an industry standard for blockchain. It already took a bold step in September [when it declared](#) that all of its direct suppliers must be “on the blockchain network” by Jan. 31, 2019. It’s unclear how many are currently on that network.

“What are we trying to do with blockchain? It’s simple: radical transparency,” said Robin Kalsbeek, the “value chain engineer” for the Sweetgreen restaurant chain, in the same panel discussion. “The possibilities are endless.... It’s in-field sensors, the farms, understanding when they harvest the food, how they grew it, what fertilizers they applied, the temperature within warehouses and trucks, all the way to a Sweetgreen bowl.”

Kalsbeek spoke at length about [the many possibilities](#) for customer feedback and integrated marketing.

Yet food safety experts caution that blockchain is just one tool and not a solution in itself to the issue of traceability. In fact, blockchain could cause more problems if the software that a roaming harvest crew uses doesn’t talk to the software the grocery store implements, or if a grower is the only one in the chain to invest in the technology.

This is where standards like the [Produce Traceability Initiative](#) (PTI) are challenging institutional cultures and policies around food safety. If each company along the chain can ensure the same tracking standards, the technology won’t be an issue.

And that leads to more finger pointing as it [revives old issues](#) with data collection. **Building a blockchain system for all companies across the supply chain takes careful negotiation over how much information is enough to still meet the traceback requirements without giving away valuable trade secrets.**

An upgrade through crisis management

Ideally, these outbreaks would never happen in the first place. But when they do, regulators and the industry need to know the source can be traced quickly and accurately. The technology and strategy to do so are already available.

After the 2006 outbreak, spinach groups set their own standards for traceability. It's also a well-established practice for growers to track their produce for internal records, without calling it traceability. Food retailers, especially larger ones, have robust systems as well. But the technology and practices have not been standardized across the industry.

This is where PTI comes in. **The initiative urges all companies involved in handling the 6 billion cases of annual U.S. produce to adopt one standardized system of labels, scanning and data collection.** Since its inception, PTI has made significant strides in this adoption.

“When it comes to fresh produce, (retailers are) seeing maybe 50 to 70 percent of fresh produce cases labeled with the PTI label,” said Jennifer McEntire, the vice president of food safety and technology at United Fresh Produce Association.



Jennifer McEntire, VP for food safety and technology at United Fresh Produce Association

She added that with leafy greens it's “even higher.” McEntire admits that extra effort is involved in scanning each label for each step in the chain. But when it comes to the exorbitant costs of an outbreak—well into billions of dollars for the romaine lettuce incident—companies will be eager to invest in collecting that valuable tracking information.

“PTI is a really easy way to capture it,” she said. **“But it comes down to making sure that all points in the supply chain are capturing it, or at least as close as you can get to where that consumer's going to eat that food.”**

Freshman Dems offer hurdles for USMCA

The House of Representatives is awash with new lawmakers. They've only been on the job for a few months but could present a formidable obstacle for the Trump administration as it pushes for approval of the U.S.-Mexico-Canada Agreement.

While both Democrats and Republicans have concerns with the massive trade pact that would replace the North American Free Trade Agreement, **the White House has much more sway**

over hesitant GOP members, and the Trump administration is expected to give Republicans enough cover to say “aye” despite any reservations.

That’s not the case with the Democrats, and the 2018 elections ushered in roughly twice as many new Democrats as Republicans into the House, which is where USMCA will have to pass first before moving to a likely more receptive Senate. That’s why a key block of voters the Trump administration will have to sell USMCA on is freshman Democrats, still overwhelmed by the enormity of new responsibilities that now include passage of a pact regulating virtually all trade in North America.



Rep. TJ Cox, D-Calif.

It’s not going to be an easy sell. Although many of the freshmen are from ag states that depend on a free-trade agreement (FTA) with Mexico and Canada to keep tariffs at zero for most farm commodities, they say they won’t be a rubber stamp and are demanding to have their concerns heard as they learn more about USMCA.

“First and foremost, it is critical that we have trade agreements that provide long-term stability to America’s farmers and ranchers and allow us to access new markets overseas,” freshman Rep. TJ Cox, D-Calif., told *Agri-Pulse* Monday. “It is important that we strive to address the legitimate concerns on labor and environmental protections abroad, and I urge the U.S. Trade Representative to hold discussions with the newly elected House freshmen so that we can raise these concerns directly with him.”

Cox, who represents one of the lushest agricultural districts in California, is getting his wish. U.S. Trade Representative Robert Lighthizer is addressing House Democrats Wednesday morning, and it’s expected to be a full room as the ambassador pitches the benefits of USMCA, House Ways and Means Chairman Richard Neal told *Agri-Pulse*.

“It should be pretty freewheeling,” Neal said about the meeting and stressed that he expects Lighthizer to both educate lawmakers and address their many concerns.

Rep. Rashida Tlaib, D-Mich., told *Agri-Pulse* she still has a lot to learn about the massive USMCA — and all of its chapters and side letters that set the guidelines for all of the trade in North America — but stressed she already has priorities.

“For myself, someone who’s been here for three months, the worker rights drew my attention,” she said. “We actually have a list going of things that we’re looking at in the new NAFTA.”

For Tlaib and other freshman Democrats, like Virginia’s Elaine Luria, the concern is that enforcement provisions are just not strong enough to make sure that USMCA’s promise to push up autoworkers’ wages in all three countries and give Mexican union members access to collective bargaining.



Rep. Rosa DeLauro, D-Conn.

“I’m learning and evaluating,” Luria said. “I honestly don’t know enough about all of the specifics of it yet. I’m definitely very concerned about the labor provisions and fair trade. ... I’ve been talking to other members to better understand the implications of all of it.”

One of the veteran lawmakers on Capitol Hill that freshmen and others have been turning to in recent months is longtime trade and labor maven Rosa DeLauro, who chairs the House Appropriations subcommittee on labor, health, human services and education.

DeLauro said she’s happy to be educating her colleagues and stressed that she’s been conveying her concerns about USMCA problems with Lighthizer for months. **Of particular concern to her and a growing number of House Democrats is a provision under which Mexico and Canada agree to extend their patents for biologic pharmaceutical drugs to 10 years.** That’s a five-year increase for Mexico and a two-year increase for Canada.

The cumulative effect, according to Association for Accessible Medicines and DeLauro, will be more expensive prescription drugs for all Americans.

“Expanding the definition of biologics to get more exclusivity on patents will drive drug costs up,” she said. “And our laws can’t change any of this if USMCA is implemented.”

It’s also an issue for Rep. Jesús García, D-Ill., who says he’s concerned Lighthizer will say significant changes can’t be made to USMCA without changes to the core text of the agreement and forcing new negotiations between all three countries.

Rep. Neal declined to weigh in on that, saying, **“That’s what the meeting (with Lighthizer) will be for Wednesday morning.”**

But Lighthizer won’t have the final say, and the ambassador will be forced to take Democrats’ concerns seriously, DeLauro said. When asked if there were enough Democrats to force the White House to make changes, she answered: **“Yes! Of course. Members get this. They understand. And the public gets this and they’re going to be asking what (Democrats) are doing about this.”**

Carbon market for ag set to debut in 2022

A new market is on the way for farmers and companies that want to meet climate change goals, led by a think tank and a coalition of companies and nongovernmental organizations.

The idea is to create opportunities for growers to participate in a voluntary carbon market where they would be rewarded for adopting conservation practices such as no-till farming and planting cover crops

The Noble Research Institute (NRI) project has been in the works for about two years, when NRI began speaking with agricultural stakeholders about the potential for a voluntary market. In February 2018, the institute convened a steering committee, and last month the Ecosystem Services Market Consortium was announced.

Companies involved in the ESMC include ADM, Bunge, Cargill, General Mills, Indigo Agriculture, Mars and McDonald's USA. Noble, the Soil Health Institute and The Nature Conservancy also are part of the effort.

Noble says ecosystem services markets can help mitigate up to 89 percent of agricultural emissions its emissions by incentivizing farmers and ranchers to sequester carbon in the soil.

“We’re getting great interest not just from the companies but also from agricultural interests,” says Debbie Reed, executive director of the consortium, who has been working on the project since 2017.

“The phone’s been ringing off the hook,” says Bruce Knight of Strategic Conservation Solutions. Knight, the former chief of the Natural Resources Conservation Service, is a consultant to the project.

A big impetus for companies to get involved, Reed said, is in order to meet emissions goals laid out in the Science Based Targets Initiative, a voluntary effort now including 534 companies that have committed to achieving greenhouse gas reductions.

Those “Scope 3” emissions “are all indirect upstream and downstream emissions that occur in the value chain of the reporting company, excluding indirect emissions associated with power generation,” according to Gold Standard, a nonprofit foundation in Geneva, Switzerland, that certifies carbon offset projects.

Companies that are part of the ESMC say there are clear benefits for producers who adopt practices aimed at conserving soil, which is the primary focus of the effort.



Bruce Knight, Strategic Conservation Solutions

“There are opportunities to save money while doing this work and having the same or better yields,” says Jerry Lynch, chief sustainability officer at General Mills. The company recently [announced](#) a goal “to advance regenerative agriculture practices on 1 million acres of farmland by 2030.

“These practices focus on pulling carbon from the air and storing it in the soil in addition to helping the land be more resilient to extreme weather events,” General Mills said.

Lynch says interest in soil health has picked up in recent years. Last week, General Mills-led soil health academies in Canada — which also drew some U.S. participants — attracted 150 people representing about 100 farms, or twice as many as General Mills expected.

“For producers, it provides greater resilience on land and financial resilience,” Lynch says, noting that higher organic carbon content in soil can reduce the amount of water and nutrients a grower needs to apply.

This year, the project is running pilots on ranches in Oklahoma and Texas covering about 70,000 acres and anticipates rolling out nationwide in 2022. Reed says the goal is to have 60 million acres enrolled.



Jerry Lynch, General Mills

ESMC is currently testing its protocol “to quantify GHG, water quality and water conservation impacts of healthy soils practices” on those lands and will add more pilots in other areas of the country in the next couple of years.

Those areas include the Northern Plains, which has an abundance of rangeland and cropland; California, the most agriculturally diverse state in the country; the Great Lakes region, where communities have struggled with water quality issues; and the Delta, with its rice farms.

The potential is there for a voluntary carbon market, Knight says. An analysis by Informa Economics estimates the carbon/water quality market in the U.S. at about \$14 billion.

“It’s real, it’s big, it’s significant and we’re going after it,” Knight says.

A problem that has plagued markets involving agriculture is simply the cost. Amy Hughes, a senior manager at the Environmental Defense Fund who focuses on agricultural sustainability within ecosystems, says farmers who have tried to participate in carbon markets have not been able to make any money off deals because of the expense of data-gathering and recordkeeping — what Knight calls measurement, reporting and verification.

“So far, the protocols that include soil practices have struggled to get that balance between transaction costs and the money paid,” Hughes said.

“We’re exploring automation and blockchain to cut down on costs,” Knight says. He and Reed also say that ESMC is looking at using [Quick Carbon](#) methodology developed at the Yale School of Forestry to provide inexpensive carbon measurements across a large landscape.

One benefit of being involved with ESMC is that companies will have someone else doing the “heavy lifting” of data management, Lynch says.

Another issue of concern to farmers is whether they can be paid for conservation practices they have already been implementing for some time.

“We absolutely do not want to penalize anyone who has been an innovator or an early adopter,” Reed says. In an email, she explained that when farmers enroll in the program, they will have to produce soil organic carbon samples, but the program will allow for a lookback period to Jan. 1, 2015, to reward SOC increases from that baseline period.

“We are modeling that lookback based on soil carbon sampling and historical information and data,” she said. “That can create credits immediately; additional credits will accrue annually, going forward.”

Another issue involves the rate of adoption. **Current carbon markets, Reed says, “state that if a practice has been adopted at a rate of 5 percent or more in a given geography,” then the landowner cannot participate in the market at all. “That is because current markets use a reductionist ‘one-practice, one-gas approach,’” she said.**

Calling that a “failed marketplace rule,” Reed says, “We are redefining that and saying that if a practice has been adopted at a rate of 49 percent or less in a given geography, we will view adoption of that practice as additional — it can count toward measuring your improved outcomes in existing carbon offset markets.”

Ryan Sirolli, sustainability coordinator for row crops at Cargill, says even growers who have been working to improve their soil health for 10 years can continue to see improvement in their soil organic matter. He also says there are many opportunities to participate given the wide range of conservation practices available to improve soil health.

Farm bill's urban farming programs recognize new technologies

The 2018 farm bill officially recognizes urban farmers — from those with community gardens to those operating multimillion-dollar vertical farms — with the creation of both a new office and a research, education, and extension initiative.

The [Agriculture Improvement Act of 2018](#) is not the first time a farm bill has recognized the importance of urban farming; the urban garden program during the Carter Administration allocated funding to the nation’s largest cities in an effort to empower local communities to grow their own food.

The 2018 farm bill, however, is unprecedented in that it calls on the ag secretary to establish a USDA Office of Urban Agriculture and Innovative Production and appoint a senior official to serve as its director. The mission of the new office will be to “encourage and promote urban, indoor, and other emerging agricultural practices,” focusing on things like community gardens and farms located in urban areas, on rooftops, and using technologies like vertical or hydroponic farming.

[Nevin Cohen](#), associate professor at City University of New York’s graduate school of Public Health and research director at the [Urban Food Policy Institute](#), says while some USDA funding has been available for urban farms over the years, “it is important that urban agriculture is recognized as important enough within the agricultural production sector to warrant an office. It recognizes that new technologies are emerging — aeroponics, hydroponics, aquaponics.”

Urban agriculture is a rapidly growing, yet still very small, sector of the U.S. ag economy. According to [Henry Gordon-Smith](#), founder and managing director of [Agritecture Consulting](#), less than 1 percent of U.S. vegetables are currently grown by urban farms, but 20 percent of U.S. vegetables could eventually be grown in U.S. cities in community gardens, greenhouses, warehouses, shipping containers, on the rooftops of city buildings, and elsewhere.



Nevin Cohen, CUNY

Vertical farming alone, defined as the practice of growing food in vertically stacked layers, is growing at a rate of 24 percent a year, Gordon-Smith said. “The idea of policy leadership around this topic is spreading. Ten years ago, it didn’t even exist,” he said.

Gordon-Smith and others said that both policy and research around urban agriculture — whether at the federal, state, or local level — must respond to the rapidly developing, innovative entrepreneurial activity. Examples of these types of innovative urban farms include California-based [Local Roots](#) and New York-based [Brooklyn Grange](#) and [Bowery Farming](#).

Sen. Debbie Stabenow, D-Mich., ranking member of the Senate Agriculture Committee, was a major force behind the urban agriculture provisions. Urban agriculture is growing rapidly in Detroit, as well as other cities, and sources noted that getting farm bill support from legislators in predominantly urban districts and states is easier if their constituents also benefit from the bill.

The farm bill also directs the secretary to assign a farm number to urban farms, gives authority to award competitive grants, and establishes an Urban Agriculture and Innovative Production Advisory Committee.

The committee is expected to help set up the competitive grants pilot project program, which is to increase compost and reduce food waste as directed by the farm bill. The grants can be awarded to urban farmers who operate a community garden or nonprofit farm, or educate a community on food systems, nutrition, environmental impacts, and agricultural production. Grants can also be made to help beginning farmers offset start-up costs.

Finally, the farm bill establishes the Urban, Indoor, and Other Emerging Agriculture Production Research, Education, and Extension Initiative. authorizing competitive research and extension grants to support research, education, and extension activities for the purposes of enhancing urban, indoor, and other emerging agricultural production. This section also provides \$4 million in mandatory spending through 2023 and requires the secretary to conduct a census of urban, indoor, and other emerging agricultural production.

One urban operation, the [Huerta del Valle](#) farm in Ontario, Calif, east of Los Angeles, already has benefited from both public and private grants, including a four-year, \$400,000 USDA National Institute of Food and Agriculture [Community Food Projects](#) grant, which allowed the four-acre nonprofit farm, which is now in the process of expanding, to begin paying its volunteer staff.



Arthur Levine, Huerta del Valle

“We need additional support going forward,” Arthur Levine, project manager at Huerta Del Valle, said. “We are going from four acres to 30 acres (at several sites). We are looking to get more USDA support so we can scale up. The infusion of grant or foundation funding is critical to projects like ours,” says [Arthur Levine](#), project manager at Huerta del Valle.

Huerta del Valle and other urban farms in California also benefit from state legislation, including the 2013 [Urban Agriculture Incentive Zones Act](#), which allows cities and counties to provide landowners a tax incentive if they let their land be used for urban agriculture for a period of at least five years.

Other grants that benefit urban farmers are also available through the state. For instance, Huerta del Valle will receive \$1 million in reimbursement funding over five years to compost waste under a multimillion cap-and-trade grant awarded to the city of Ontario. Levine plans to apply for a USDA loan so the farm can buy the \$350,000 in equipment it needs to undertake the project and then repay the loan once the farm receives the grant money.

“The farm bill provisions create an opportunity for urban farms to tap into new sources of funding,” said Cohen. “Urban farms will be counted for the first time and having a designation as a farm makes it clear what parcels qualify for lower taxes” in California as well as incentives provided by other states, counties, or municipalities, says Cohen.

[Rachel Surls](#), Los Angeles County’s sustainable food systems adviser at the University of California, agrees that including urban farms in the U.S. Census of Agriculture and giving each farm a number is a good first step for USDA. **“We don’t know what urban farmers’ needs are, how many there are, or what their farms look like,” Surls says.**

[A recent study](#) by graduate students at the University of California, Los Angeles that looked at urban farms in the county found that of the 1,261 verified urban agriculture sites, 761 were school gardens, 382 were commercial operations, and 118 were community gardens. The study also showed that the county’s urban farmers traveled 13.9 miles to distribute their goods, compared to 46.8 miles traveled by vendors of the Los Angeles County farmers market.

“Most of the products (sold by urban farms) are marketed as local and pesticide free,” Gordon-Smith said. “Local is becoming very popular with millennials; they want to buy products that

contribute to the local economy.” Products are also marketed as sustainably grown or grown by family owned farms, he adds.

Urban agriculture also focuses on food equity and social justice, Surls says, but many of the newer high-tech startups that are interested in vertical farming are also interested in making a profit. Many urban farms are multidimensional in that they sell a portion of their goods at a low price in the neighborhood in which they farm and the rest at a higher cost to commercial ventures such as restaurants or grocery stores.

“The central issue in this space is education and training. New people are entering the space with no experience or knowledge of farming,” Gordon-Smith said. “This industry is moving so fast; it’s sort of like a Silicon Valley.”

The focus of USDA funding needs to be on helping existing urban farmers and new entrants gain the farming skills they need and as well as the marketing expertise needed to commercialize their products, sources said.

News Briefs

Water district advances DCP. The board of directors of the Metropolitan Water District of Southern California voted unanimously Tuesday to contribute additional water to Lake Mead. The decision advances the Drought Contingency Plan (DCP) – an agreement negotiated among the states that rely on the Colorado River to prevent the river’s two largest reservoirs, Lake Mead and Lake Powell, from reaching critically low levels. Metropolitan’s board approved the DCP in December and the plan has broad support from the federal government, other Colorado River Basin states, water agencies and the environmental community. However, the decision was made over objections from the Imperial Irrigation District, which holds rights to the biggest allocation of Colorado river water. The Imperial Irrigation District has refused to sign – insisting that the federal government provides \$200 million for restoration of the Salton Sea. “This agreement is far too important to give up now. Seven states have worked together for years to reach this compromise and ensure a reliable water supply for the 40 million people and 5 million acres of farmland that rely on the Colorado River,” Metropolitan General Manager Jeffrey Kightlinger said. “There is a lot of work yet to be done to negotiate long-term solutions for the river’s sustainability, but this agreement provides a bridge of stability for the next eight years.” The plan can now move to Congress, which must approve the multi-state agreement before it takes effect.

NRCS seeks farm bill input: The Natural Resources Conservation Service in California will hold a State Technical Advisory Committee (STAC) meeting on March 28, 2019. The STAC is invited to recommend natural resource priorities for the Agency to consider as it implements the new 2018 Farm Bill conservation programs. The meeting will be held at the USDA Davis State Office, located at 430 G. Street, 1st Floor Conference Room, from 9 a.m. to 2:30 p.m. Attendees are asked to RSVP to Rachel.lopez@ca.usda.gov by close of business March 22. In addition to recommending state resource priorities, the meeting will include presentations from NRCS program leads, timelines for conservation program signups, a status update on 2018 Farm Bill implementation and general discussion on conservation topics. The STAC consists of farm and conservation organizations, commodity groups, universities, state and federal resource agencies,

Resource Conservation Districts and non-profit organizations. The STAC provides recommendations to State Conservationist Carlos Suarez, on conservation priorities to undertake with Farm Bill funding and NRCS technical assistance. “California has a wide range of natural resource priorities in need of conservation planning, technical support and Farm Bill funding assistance,” said State Conservationist Carlos Suarez. “We rely on input from the STAC to help prioritize customers’ many diverse needs.”

Beetle research helps understand potential bioproducts. The guts of this forest-dwelling insect are adapted to take tough plant materials, like lignin and cellulose, and transform them into hydrogen, ethanol, methane and other energy-rich biofuels. In a new study, researchers at UC Berkeley and Berkeley Lab describe how the architecture of the long-horned passalid beetle’s gut — and the beneficial microbes that inhabit it — help this forest-dwelling insect take tough plant materials, like lignin and cellulose, and transform them into hydrogen, ethanol, methane and other energy-rich biofuels. “We brought together a team of experts and used advanced molecular biology tools, together with spectrometry and tiny sensors, to discover that the beetle’s gut is made of up specialized compartments — each with a distinct microbiome — that work together almost like a factory production line, using unique biochemistry to turn the wood into food and fuel,” said Eoin Brodie, assistant adjunct professor of environmental science, policy and management at UC Berkeley and senior author of the paper, which appeared Monday, March 11, in the journal [Nature Microbiology](#). “The key innovation that nature has provided here is a way to combine biochemical processes that are otherwise incompatible,” Brodie said. For example, some of the compartments are optimized to carry out reactions that require lots of oxygen, while others carry out reactions inhibited by oxygen. “It turns out that the beetle’s gut architecture, such as the length and thickness of its gut walls, has evolved to suit its microbiome so that specific metabolic processes are favored in different gut regions,” said Javier Ceja-Navarro, a Berkeley Lab research scientist and lead author of the paper. “This beetle and its microbes have worked out what scientists around the world are hurrying to optimize – how to efficiently turn woody plant biomass into biofuels and bioproducts,” Ceja-Navarro said.

Farm Hands on the Potomac...

Health and Human Services Secretary **Alex Azar** announced that National Cancer Institute Director **Ned Sharpless** will serve as acting Food and Drug Administration Commissioner after Commissioner **Scott Gottlieb** leaves the agency next month. The administration is currently searching for a permanent replacement, after [Gottlieb recently announced his retirement](#).

Land O’Lakes named **Pete Kappelman** as senior vice president of member and government relations on March 11. Kappelman is a fourth-generation crop and dairy farmer and has worked with legislators on important ag policy issues including the farm bill, trade and immigration. He was named Director of the Year in 2018 by the National Council of Farmer Cooperatives and also served on the board of directors for the National Milk Producers Federation, the National Dairy Promotion and Research Board, the U.S. Dairy Export Council, the Professional Dairy Producers of Wisconsin, and the UW Center for Dairy Profitability.

President Donald Trump announced his intent to once again nominate former Secretary of Agriculture **Michael Johanns** of Nebraska, to be a Member of the Board of Directors of the Millennium Challenge Corporation. He was first appointed to the position in 2016.

Senate Majority Leader **Mitch McConnell**'s deputy chief of staff, **Don Stewart**, left the Hill to join Global Automakers in a newly created position of executive vice president of public affairs effective March 25. Stewart was the deputy chief staff for McConnell for four years. Before that, he held positions as chief of staff and communications director to McConnell when he was Senate Minority Leader. Stewart kicked off his career on the Hill as a staffer for senators **Paul Coverdell**, R-Ga., **Phil Gramm**, R-Texas, and **John Cornyn**, R-Texas, and holds the distinction of being the longest-serving chief spokesman for a Republican Senate leader.

Brent Blevins started a new position as senior policy adviser for the House Science, Space and Technology Committee on the staff of **Rep. Frank Lucas**, R-Okla. Blevins most recently worked as a legislative assistant for **Sen. John Cornyn**, R-Texas. He previously worked for **Sen. Luther Strange**, R-Ala., and on the House Natural Resources Committee's Federal Lands Subcommittee under **Rep. Tom McClintock**, R-Calif., as a senior professional staff member.

Aaron Allen joined the House Administration Committee working for the Franking Commission. Allen previously worked in the office of **Rep. Juan Vargas**, D-Calif., from 2013-2019, most recently as a senior legislative assistant.

Lundberg Family Farms hired **George Orosz** to the newly created position of vice president of sales. Lundberg Family Farms is a provider of organic rice, rice products and U.S.-grown quinoa. Before joining Lundberg, Orosz had been with Schwan's Co. for six years, most recently as senior director of sales for the club channel. He also has worked for Hostess Brands, ZoomSystems, Archway & Mothers Cookie Company, and Gillette. **Todd Kluger**, who had been vice president of sales and marketing, now will become vice president of marketing.

After more than 15 years with Del Monte Fresh Produce North America (N.A.) Inc., **Emanuel Lazopoulos**, senior vice president, sales, marketing and product management N.A., will retire from the company April 19. He started his career in 2003 with Del Monte and was promoted to his current position in 2005. Taking over his responsibilities and bringing more than 20 years of experience in the sales and marketing area is **Danny Dumas**. He was previously vice president N.A. sales and product management (banana and pineapple programs) since 2014, vice president of Europe and Africa from 2010 to 2013, and district sales manager of Canada.

During its 83rd annual meeting, the California Fresh Fruit Association elected new officers to serve on its board. Elected as chairman is **Randy Giumarra** of Giumarra Vineyards, vice chairman is **Kevin Herman** with The Specialty Crop Co., second vice chairman is **Wayde Kirschenman** with Kirschenman Enterprises, and the secretary/treasurer is **Louis Pandol** with Pandol Bros. Inc. **Kent Stephens**, chief financial officer of Marko Zaninovich Inc., also received the Mentor's Award, which goes to individuals who demonstrate dedication to the industry through leadership.

The California State Fair board of directors selected **Karen Ross**, secretary of the California Department of Food and Agriculture, as the Agriculturalist of the Year. This award is presented to individuals who contribute extensively and in a professional capacity to California's agricultural industry.



Karen Ross, Secretary of the California Department of Food and Agriculture

Best Regards,

Sara Wyant

Editor

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