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Solutions for a changing world!

Veterans Continue to Keep Country Safe through USDA Apprenticeship

To ensure that veterans have opportunities to enter high-demand career fields, the U.S. Department of Agriculture (USDA) leverages apprenticeship programs. USDA recently strengthened its Commodity Food Grader's Apprenticeship Program by expanding its scope from regional to national. As a result, transitioning service members, veterans and military spouses from across the country can now participate.

In the USDA Agricultural Marketing Service Specialty Crops Program (AMS-SCP), apprentices are hired and trained to inspect fresh and processed products for quality and condition in various settings. This one-year program currently has two veterans undergoing Agricultural Commodity Grader (ACG) apprenticeships.

Former Army aviation operations specialist and current apprentice Salvador Cruz inspects the powdered orange juice the U.S. military consumes in deployed locations. In fact, USDA agricultural commodity graders are responsible for inspecting all operational rations produced in facilities around the country prior to shipment to ensure they meet the Department of Defense specifications.

Ben Swanson is another apprentice who previously served in the Air Force in Qatar. At that time, he checked items of another kind. "I was an ammunition specialist that inspected bullets, bombs and missiles," he said. "The technical orders we had then are similar in concept to the technical grading specifications we use now for food."

Although veterans are encouraged by a variety of post-service federal benefits like the AMS-SCP, sometimes the process is not seamless in using them. Current AMS Outreach Coordinator Peter Scarabelli served in Bosnia and the Gulf War in the Navy prior to joining USDA. He was having a difficult time getting the Veterans Affairs (VA) housing stipend activated right away for his two apprentices until he turned to USDA Military Veterans Agricultural



Former Army aviation operations specialist and current apprentice Salvador Cruz inspecting the powdered orange juice

Liaison Monshi "Ram" Ramdass, who leveraged his existing partnerships with the VA to expedite the approval process. A housing stipend delay can mean the difference of up to \$8,000, depending on locality. "Without this apprenticeship program and housing stipend, I don't know if I would have been able to take that leap," said Swanson.

After Swanson and Cruz finish their apprenticeships, they will have opportunities for upward mobility with USDA. "Even though we are out of the military, we are still keeping our country safe, and that's important to me," said Cruz.

For more information about USDA opportunities available to veterans, their spouses, and transitioning service members, visit www.usda.gov/veterans.

By MD Sharman, Public Affairs Specialist, USDA Office of Partnerships and Public Engagement in Equity Initiatives.

The Shafter Cotton Research Station: 102 Years of Innovation



The Shafter Cotton Research Station in the 1920's.

By Mike McCoy, Kern County Museum

The general public is blissfully unaware of how much science is involved in agriculture and how science defines the industry. With the essential importance of agriculture in almost every economic system in the world, science began to drive the industry using genetics and chemistry to increase productivity. With the Hatch Act of 1887, U.S. government investment in agricultural science soon was greater than privately funded research.

One of the most important agricultural science initiatives in the United States was the development of the Shafter Cotton Research Station founded in 1922 by the U.S. Department of Agriculture. The station was originally created to establish California's cotton industry by creating specialized high-quality cotton varieties and then developing new markets. Nearly 100 years later the station is still in operation and providing important data and information to farmers in our region and all over the world.

The most important part of thecotton story in Kern County though, was the arrival of W. B. Camp to California. Originally from South Carolina, Camp attended Clemson University where he studied agronomy and worked in the USDA Cotton Breeding Office. As luck would have it, Camp transferred to California in 1917 with the USDA to develop a long-staple cotton supply for the wing coverings of airplanes for the war effort. Soon Camp developed a reputation for hard work, determination and innovation.

Camp's initial work at the Shafter Cotton Research Station started with nearly 100 different varieties of cotton from around the world. Camp initially settled on the long-staple Egyptian Pima Cotton and went into production actually creating successful crops during World War I. With the end of the war, Camp advocated for expanding the cotton industry in California with his leadership role within the USDA.

Camp's research in Shafter soon created a switch from Pima cotton to the Acala #8 variety. Camp also pushed for

mechanized ginning and brought in specialists from around the country to adapt ginning to the new cotton strain. Camp also advocated for "one variety" legislation that made Acala cotton the only cotton grown in California. He was fearful of cross contamination and felt that the single strain would boost the new industry. Under Camp's leadership, the Shafter Station would dominant cotton research for years to come and created a successful cotton industry in the Western United States.

In June of 2012, the USDA withdrew their support for the Shafter Cotton Research Station. Knowing the value of the ongoing research to the industry, the San Joaquin Valley Quality Cotton Growers Association took over the operation of the facility. This change helped move the station from single focused research to diversified research in several different areas, including orchard crops.

If you visit the Shafter Research Station today, you will find a 20 acre highly organized campus

with more than 20 buildings and 60 acres of experimental plot land. The land is equipped with permanent underground irrigation with a dedicated well and surface water from the Shafter-Wasco Irrigation District. The station is offering short term licenses and multi-year subleases including green house space and laboratory space to universities and private ag corporations.

One other big plus that W. B. Camp would have appreciated are the college interns from C.S.U. Bakersfield and the Kern Community College District. These interns receive hands on field training and conduct important research that directly benefits international agriculture. The California FARMS Foundation is based at the Shafter Station and helps to connect the dots with major universities and major agricultural firms. The foundation does accept members who support the goals of the Shafter Station and the foundation's mission. Visit www.calfarms.org/how-to-help for more information. If you would like to visit the Shafter Station, call 661-237-0900 in advance...it is a secure facility. And thank you to Station staff for all of the information on this critically important institution in our very own county!

Source: Valley Ag Voice - September 26, 2019 https://www.valleyagvoice.com



GOULD AUCTION INTEGRITY EXPERIENCE & Appraisal Co. LLC





UPCOMING AUCTIONS

Saturday, December 7th @ 10:00 AM

Inspection Friday, December 6th - 9:00 AM to 4:00 PM

Historical Landmark "Shafter Cotton Research Station" EQ Liquidation

17053 Shafter Avenue, Shafter, California

(Directions: From 99 @ Kimberlina Go West to Shafter Ave. South to Location. Watch For Signs)

John Deere D130 Riding Lawn Mower, Hesston 780DT 4x4 w/Cab, John Deere 4020 S/N 237398, John Deere 9910 2 Row Picker, John Deere 699 Picker, 1990 Ford 800 Diesel Truck w/Ranger Crane 44,000 Miles, 93 Chevy ½ Ton Pickup, EZ-GO **Electric Utility Vehicle**

Equipment: Marvin Laser Scraper, (3) Trailer Mount Water Pumps, 2 Axle Tandem Axle Dual Trailer for Special EQ. Caldwell Bowl Buggy 14' & 20' Schmeiser Til-N-Pak's, Strathmore 12'6" Wheel Offset Disc, JD 225 Wheel Offset Disc, Agri Tri Plane, Big Ox 9'3pt Hyd Blade, 4 Row Injection Rig, Mitchell 3pt Sprayer, Grizzly 3pt Backhoe, Brillion 5 Shank Chisel, Transplanter 6' & 8' 3pt Tandem Disc's, Howard 120" Rotovator, Clampco 3pt Fertilizer, (2) B&W Row Mulchers, Dandl RC19 PTO Stalk Shredder, Lilliston Cult. & Much More.

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Saturday, December 14th @ 9 AM (Rain or Shine)

Inspection Friday, December 13th - 9:00AM to 4:00PM 6200 Price Way, Bakersfield, California

Expecting 40+ Vehicles Including 350's, 450's & 550's w/Utility Beds, Vans, 10 Quads, IHC I-656, 843 Bobcat Skid Steer Loader S/N 504028094, Golf Carts, Zieman 2 Axle 30' Ramp Trailer, 5 Water Dogs w/ 500 Gal Tanks, (3) Miller Wire Feed Delta Fab Welders, Shop Tables, Shop Tools of All Kinds

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Partners unveil first on-farm robotics incubators

Opening in Salinas and Merced in 2025, Reservoir Farms will drive ag innovations in automation robotics

Jennifer Goldston - AgTech PR for the Reservoir

The Reservoir, a nonprofit building tech incubators across California, and partners Western Growers Association, University of California Agriculture and Natural Resources, Merced College, Hartnell College and venture capital firm HawkTower have announced the creation of the first-ever on-farm robotics incubators, Reservoir Farms.

Unveiled during a press conference at the FIRA USA 2024 robotics conference in Woodland, Reservoir Farms are set to open in the Central and Salinas Valleys in early 2025. This pioneering initiative significantly shifts how agricultural technology innovates through real-world testing environments, world-class resources and critical industry partnerships.

California agriculture faces critical challenges, including labor availability and cost, import competition, increased regulation, water scarcity, and climate-related challenges, including extreme weather. These challenges have spurred significant advancements in agricultural precision, automation, mechanization, and robotics in recent years.

Despite advancements, early-stage agtech projects lack critical ecosystem support, like connecting directly with growers, testing and validating their solutions, and accessing dedicated shop space and farmland. These gaps hinder capital efficiency and the development of critical solutions that meet the agricultural sector's needs.

Initial projects at the incubators will focus on early-stage agricultural innovations in automation and robotics, including rovers and drones, that accelerate the development of breakthrough solutions to the opportunities and imperatives faced by California farms producing high-value specialty crops, such as labor shortages, profitability, and adopting climate-smart technologies.

Western Growers Association, a key advocate for advancing agricultural innovation, will provide financial and operational support as an anchor partner.

Anchor educational partners like UC ANR, Hartnell College, and Merced College will play a crucial role in innovation and workforce development, preparing the next generation of agricultural researchers, professionals, and innovators to drive the future of farming in California.

HawkTower, a venture capital firm investing in early-stage startups developing breakthrough innovations for California's environmental and industrial imperatives, is also an anchor

"The launch of Reservoir Farms is a critical step forward in ensuring the future resilience of California's agriculture and across the Central Coast and Central Valley," said Danny Bernstein, CEO of the Reservoir and managing partner of Hawk-Tower. "By placing incubators directly on the farm, we enable innovators to test, iterate, and scale solutions in real-world conditions as a more immediate path to advance farming communities."

A new model to incubate agtech innovation The idea for Reservoir Farms emerged from extensive industry research and consultations with over 50 organizations in

the specialty crop sector. Key insights uncovered critical gaps in startups' access to real-world testing environments, shop space, and direct relationships with growers – factors severely hindered capital efficiency and posed a formidable barrier to innovation.

"Our goal is to eliminate the friction points that have historically slowed down the development of new agtech solutions," said Walt Duflock, senior vice president of innovation at Western Growers Association. "Reservoir Farms offers a new model." where startups can work side-by-side with growers to test their technologies, iterate in a low-stakes environment, and build scalable solutions to improve agriculture's operations."

Initiative to support thriving agtech ecosystem and job creation

The Reservoir Farms initiative also reflects a broad-based collaboration between key educational institutions, industry players, and local communities to ensure the next generation of agricultural professionals is equipped with the skills needed to support the region's growing agtech sector.

Supporting partners include Central Coast Small Business Development Center (SBDC), Communities Organized for Relational Power in Action (COPA), Digital NEST, Farmhand Ventures, Merced County Farm Bureau, Milano Technical Group, Monterey Bay DART (Drone Automation & Robotics Technology), Monterey Bay Economic Partnership, Monterey County Farm Bureau, Tesserakt Ventures, and The VINE.

"As robotics and automation become more integral to California agriculture, it's essential to have facilities like Reservoir Farms embedded within the farming community," said Gabriel Youtsey, chief innovation officer at UC ANR. "By bridging the gap between lab-based research and real-world application and accelerating tech transfer, Reservoir Farms can help build the workforce and technology needed to address the critical challenges on the farm, from labor shortages to climate change."

Focus on specialized services and real-world testing in California's agricultural heartland

Reservoir Farms will open its first two locations in Salinas Valley and Merced in the first quarter of 2025. Participants can lease testing fields and shop space without the burden of multi-year leases, giving them the flexibility needed to scale. The incubators will offer fully equipped R&D workshops, secure storage for expensive equipment, and customized, pre-planted specialty crop fields for testing.

These facilities will be complemented by Reservoir Farms' co-working spaces, meeting rooms, and a robust demo day schedule designed to connect startups with growers, investors, and other key stakeholders.

In addition, the Western Growers Association's validation process will provide startups with a quantitative "scorecard" that offers crucial metrics on scalability, efficacy, and financial viability. This validation, combined with UC ANR's field testing, will help startups refine their products and receive a critical stamp of approval that builds trust with growers and ensures a smoother path to commercialization.

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South Coast REC program educates, trains future ag workforce

GROW program also builds skills of students with learning differences



Students tour South Coast REC during a GROW field day. Photo by Saoimanu Sope

Renowned for pioneering research that leads to exciting new crop varieties like the Luna avocado, the University of California South Coast Research and Extension Center (REC) in Irvine is also an important hub for agricultural education. Through programs like the GROW program, South Coast REC – administered by UC Agriculture and Natural Resources – is a dynamic resource for workforce development in the community.

Originally created by the Orange County Farm Bureau, GROW provides out-of-the-classroom experiences in agri-business, career exploration and other educational opportunities for local high students in school districts with agriculture programs. Participants engage in field days at South Coast REC to learn about the research component of agriculture, and the research center quickly became a popular aspect of the program.

In 2016, South Coast REC stepped in to oversee GROW. Tammy Majcherek, UC Cooperative Extension community education specialist for Orange County, has been at the forefront of the program's successful partnership between the Orange County Farm Bureau and the REC.

"Each field day we host is different, and that's intentional," said Majcherek. "The students aren't just learning about agriculture – they're experiencing it. During their visit, they see where their food comes from and realize that agriculture isn't just planting seeds or hopping on a tractor."

In 2023, GROW reached more than 600 high school students and continues to nourish the minds and lives of Orange

County community members. Students interact with UCCE advisors, industry partners and other experts to learn about a wide variety of topics related to agriculture including hydroponics and emerging ag technologies, pest management, food safety and preservation, plant breeding and more.

Andres Martinez, a junior at Fullerton Joint Union High School in Orange County, recently visited South Coast REC for a GROW field day and said it surpassed his expectations. "Everything was cool. I thought we were just going to be sitting in a classroom but my expectations definitely got blown out the water," he said, adding that he loves to eat and his favorite part of the visit was trying new food.

Martinez admitted that the visit deepened his interest in

agriculture and he would like to return to South Coast REC to learn more about where his food comes from.

Chocolate avocado pudding, anyone?

"We provide an opportunity for the students to see how growers, nutritionists and chefs intersect," Majcherek said, noting that participants not only get to taste the crops harvested at South Coast REC, but they get to use it in creative dishes like chocolate avocado pudding.

Using cocoa powder, avocados, milk or milk alternatives and a sweetener, participants create a new and different snack. Thy Phan, a student at Westminster High School, recently visited South Coast REC for a GROW field day and said the pudding taste surprised her. "It didn't look that good when we were making it, but I actually like it," she said.

"Of course, not all the students are going to like it but many of them are, at least, willing to try something new because they're involved in the process of creating it," said Majcherek.

Jacob Ortigoza, another student from Westminster High School, confirmed that he was not a fan of the chocolate avocado pudding. "I didn't like the flavor, but making it was fun. I'd like to do more cooking," he said.

GROW continues to expand its programming to serve students in various Career Technical Education programs, including cuisine, biology and mechanical engineering, as well as young adults in Adult Transition Programs.

GROW participants enter the workforce at SCREC

See South Coast REC page 16



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Kubota Forms New Alliance with Boot Campaign to Raise Funds and Awareness for Life-Improving **Programs for Veterans and Military Families**

Kubota Grows its "Geared to Give" Program in Support of All Veterans, Beyond Those with Farming Roots



In honor of those who served, Kubota Tractor Corporation today announced a new partnership with Boot Campaign to support the organization's work to restore the lives of veterans and military families through individualized, life-improving care. The company kicks off its program with Boot Campaign on Veterans Day with a series of activities that run through Military Appreciation Month in May of 2025.

Kubota Forms New Alliance with Boot Campaign to Raise Funds and Awareness for Life-Improving Programs for Veterans and Military Families.

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Through a series of internal and customer facing efforts, Kubota aims to support Boot Campaign's mission to provide personalized care for veterans and their families to treat the root cause of hidden wounds of war, to ease stress and financial strain, and to produce quantifiable, long-lasting, and life-changing results year-round.

Kubota launched its "Geared to Give" program in 2015 in partnership with the Farmer Veteran Coalition (FVC) to provide donated Kubota equipment and financial support to help veterans pursue a future in farming. Now, as Kubota embarks on the program's 10th year, the company will continue to support FVC but also expand its efforts to help

more veterans with the Boot Campaign alliance.

"Over the past decade of the 'Geared to Give' program, our support of veterans has been incredibly well received by employees, dealers, and customers," said Alex Woods, **Kubota Senior Vice President** and a veteran of the Army National Guard. "One of the key learnings has been the collective passion for supporting all veterans and military families, whether it's for those returning to farming or construction or not. That's why we are expanding 'Geared to Give' and our support for veterans and active military through Boot Campaign. Together, we recognize that our work would not be possible without their work to defend our freedom."

Kubota's support for Boot Campaign's programs kicked off in honor of Veterans Day and runs through May 2025 for Military Appreciation Month when the company will raise funds with in-store, dealer fundraising efforts and online boot sales as a part of Boot Campaign's "Lace Up, America" movement, and T-shirt sales in support of their "You Matter" program, to remind us all of the service and sacrifice of our nation's veterans and military families, and to give back to Boot Campaign's mission-driven programs.

"At Boot Campaign, we want every man or woman who has laced up their boots in service to our country to know that their life, their service, and their sacrifices matter," said Shelly Kirkland, CEO of Boot Campaign. "Partnering with Kubota gives Americans another way to outwardly honor the stories of those who served, while also supporting veterans seeking care and treatment through our individualized programs."

Last month, Boot Campaign representatives and Board Member Johnny Joey Jones joined Kubota at its annual dealers' conference, Kubota Connect 2024, to announce the partnership internally to Kubota's 1,100 dealers nationwide and to share more about the organization's mission and why giving back is so important.

To learn more about the Kubota's efforts with Boot Campaign, visit: bootcampaign.org/kubota



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Students design high-tech solutions through Farm **Robotics Challenge**

By Michael Hsu

Senior Public Information Representative

A robot that navigates and weeds row-crop fields – and its design team from Olin College of Engineering in Massachusetts - have garnered the grand prize in the second annual Farm Robotics Challenge. Five winning teams, representing various universities and colleges across the U.S., were announced during a ceremony at the FIRA USA robotics conference in Woodland (watch recording).

A total of nine teams competed in the Farm Robotics Challenge, organized by University of California Agriculture and Natural Resources and the Al Institute for Next Generation Food Systems (AIFS), with support from technology partner farm-ng.

During the yearlong contest, the students engaged with growers about their pain points and challenges and then developed creative solutions using the farm-ng Amiga robot platform.

"It's inspiring to see the creativity and dedication of these students, who put in a lot of hard work and long hours to pull together some truly remarkable projects for this competition," said Gabriel Youtsey, chief innovation officer at UC ANR. "We hope the challenge attracts more students to consider careers in agriculture; we're here to help build a supportive community to grow that pipeline to the workforce."



The PhoenixBot team from Olin College of Engineering won the Farm Robotics Challenge Grand Prize.

Providing a platform for students to demonstrate innovative design, field testing and evaluation, and real-world problem solving, the Farm Robotics Challenge is sponsored by F3 Innovate, Beck's Hybrids, California Tomato Research Institute and the United Soybean Board.

"It's a great day when engineers, marketing and technology folks understand there are great opportunities to create products for American farmers," said Brad Fruth, director of innovation at Beck's Hybrids. "It has been exciting for Beck's Hybrids to participate in this challenge and see the bleeding edge of where technology and agriculture converge."

The student teams leveraged AI, machine learning, automation, coding and fabrication to advance innovation in agriculture.

"Not only does the challenge demonstrate the future of

farming with robotics, but it's also encouraging the next generation of engineers to focus their talents on the challenges that exist in growing our food," said Brendan Dowdle, CEO of farm-ng. "The students who participate have a unique mix of skills in robotics, software and a passion for the future of agriculture."



Kenechukwu "Kene" Mbanisi, assistant professor of robotics at Olin College of Engineering, accepts the grand prize on behalf of the student team at the FIRA USA Conference in Woodland. Photo by Evett Kilmartin

Grand Prize Winner: PhoenixBot, Olin College of Engineering, an autonomous mechanical weeding systembuilt to navigate through row-based crop fields of seedling to early-stage crops to effectively remove weeds from the beds

Team Advisor: Kenechukwu Mbanisi

Students: Summer Crew/Leads: Jeffrey Woodyard, Dokyun Kim, AJ Evans, Toby Mallon, Brooke Moss

Subteam Leads: Dexter Friis-Hecht, Joe Leedy, Maya Adelman, Dominic Salmieri, Chang Jun Park, Akshat Jain

Team Members: Bill Le, Dongim Lee, Felix Halaska, Bhargavi Deshpande, Elisa Camacho, Cooper Penkava, Marcellus Smith, Rohan Bendapudi, Darian Jiminez, Ivy Mahncke, Quinn Verrill, Sam Wisnoski, Oscar Bao, Mia Chevere, Shauna Sperou



Members of the Auburn University Florabot team pose on the main stage of FIRA USA, flanked by Kelly Scott of UC ANR (left) and Priscilla Koepke of F3 Innovate. Photo by Mike Hsu

Excellence in Productivity: Florabot, Auburn University, a robot designed to autonomously navigate through nursery See Farm Robotics next page

Farm Robotics

continued from previous page

plant beds collecting imagery data for plant counting and quality assessment

Team Advisor: Tanzeel Rehman

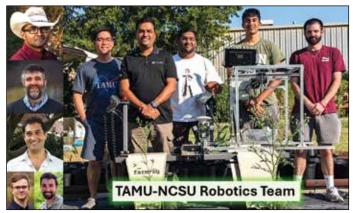
Students: Hamid Syed, Faraz Ahmad, Mesbahul Maruf, Mohtasim Hadi, Carter Freeman



The team from Washington State University and Heritage University won the Excellence in Small Farms Technology Award.

Excellence in Small Farms Technology: Bin Haulers, Washington State University & Heritage University, a precision agricultural robotic system designed for efficient bin-picking and placement in apple orchards

Team Advisors: Manoj Karkee, Safal Kshetri Students: Dawood Ahmed, Syed Usama Bin Sabir, Divyanth L.G., Priyanka Upadhyaya, Achyut Paudel, Robert Barragan, Apol Medrano, Osmar Alvarez, Bethany Navaroo, Salvador Ayala



The Texas A&M University and North Carolina State University Robotics Team won the Excellence in Sustainability Award.

Excellence in Sustainability: TAMU-NCSU Robotics Team, Texas A&M University & North Carolina State University, a multi-modal proximal data collection system utilizing artificial intelligence to generate height maps for semi-structured row crop fields to aid in effective application of post-emergence herbicide

Team Advisors: Steven Brian Mirsky, Chris Reberg-Horton, Muthu Bagavathiannan

Students: Joe Johnson, Matthew Kutugata, Ruthvik

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Kanumuri, Wesley Hawkes, Jonathan Herrera, Luke Conran,



The UC Santa Cruz team won the Excellence in Safety Award.

Excellence in Safety: University of California Santa Cruz, an application that allows a user to view the camera, as well as operate the Amiga robot, without a physical connection

Team Advisors: Dejan Milutinovic, Darryl Wong Students: Katherine Rogacheva, Milos Suvakovic, Oliver Fuchs, Sam Leveau, Mauricio Chavez

In addition to recognition for their efforts, the Grand Prize Winner was awarded \$10,000, and the Excellence in Productivity and Small Farms Technology winners won \$5,000 each, while the Excellence in Sustainability and Safety winners won \$2,500 each.

Other competitors in the challenge included teams from Cal Poly San Luis Obispo, California State University Fresno, Hartnell College and The Pennsylvania State University.

For more information about the Farm Robotics Challenge, including details on how to participate, visit https://farmroboticschallenge.ai.

Virtual fencing 'game-changer' for ranchers grazing cattle



Cattle wearing solar powered virtual fencing collars. All Photos courtesy of Brian Allen

Tech can save ranchers time and benefit animals and land, becoming more viable

By Saoimanu Sope **Digital Communications Specialist**

After the Caldor Fire destroyed seven miles of fencing on their cattle ranch in 2021, Leisel Finley and her family needed to replace the fence.

Finley, a sixth-generation rancher at Mount Echo Ranch in Amador County. said reconstruction costs were bid at \$300,000 and would take at least a year to build, leaving the family without summer pasture and a herd of hungry cows to feed. Additionally, the U.S. Forest Service mandates that grazing be withheld for two years in postfire landscapes. This put the family in a difficult position.

While watching a recording of a California Cattlemen's Association meeting, Finley learned about a pilot program for virtual fencing. Desperate to find an alternative solution, she registered to try the livestock containment technology, which uses GPS enabled collars to monitor each animal's location in near real time.

Livestock producers can draw a perimeter on a map of their pasture using a laptop or smartphone application and send those instructions to the collar. The collar then uses audio and tactile cues to contain the animal in the area.

Eager to discover the short- and long-term benefits of virtual fencing, Finley turned to Scott Oneto, farm advisor, and Brian Allen, assistant specialist, from the University of California Cooperative Extension office in the Central Sierra. Since partnering with Oneto and Allen, Finley said she has come to understand and uncover more of the technology's potential.

The team has consistently observed the technology's value in integrating with and enhancing traditional livestock production systems across California. Though still in its early stages of development, the location tracking and containment system appears to provide time- and cost-savings that make it a game-changer for ranchers.

Ability to monitor location of animals in real time

Virtual fencing really stands out in its ability to monitor each animal's location in real time. During roundups, ranchers can use their smartphones to see their own location relative to their herd. The system can also send alerts if an animal crosses the virtual boundary or if a collar remains stationary for an extended period, potentially indicating that the animal is sick or that the collar has fallen off.

Rounding up cattle on large, forested grazing allotments can be challenging, as the process generally requires a group of people and many return trips to find every animal. Prior to virtual fencing, Finley and her father could gather about 85% to 90% of the herd in a week. Since using virtual fencing, Finley said one of their most recent roundups lasted three days, and they located every single cow.

Something that every livestock producer dreads is the notorious call from a neighbor or California Highway Patrol alerting them that one of their cows is

See Virtual fencing next page

Virtual fencing

continued from previous page out in the middle of the road. It always seems to happen at midnight or while they are out with friends or family. This scenario changes with virtual fencing. Containment based on animal behavior

The containment system that virtual fencing is built on is based on animal behavior. When the animal crosses an invisible boundary, the collar emits an audio warning, prompting most animals to instinctively turn back into the desired area. If the animal doesn't respond, the collar delivers a mild electric pulse as a secondary deterrent.

Field trials by Oneto and Allen demonstrated the system's success. Recently, the team trained a herd of 37 cattle of mixed ages that had no previous exposure to virtual fencing. During the initial six-day training period, the cattle responded to the audio warning alone about 75% of the time when they approached a virtual fence boundary, with the remaining 25% of cases requiring an electric pulse.

After about three weeks, the herd was responding to audio cues alone about 95% of the time. The field trials also showed that the collars contain the livestock within the desired areas 90% to 99% of the time when the entire herd wears virtual fence collars and their basic needs for safety, connection to the rest of the herd, water, forage, shade, etc. are met.

Opportunities for improvement

While the technology is effective in its current capacity, there are notable areas where it can improve. One limitation to the system is the current reliance on cellular networks to operate. If an animal wanders into an area outside of coverage, the collar will continue to operate based on the last instructions but won't receive updates or report locations. This is especially a concern in many areas of California with poor cell reception, including the steep forested rangelands where many livestock producers have summer grazing allotments.

Another limitation is that some companies require a solar-powered base station with radio and cellular antennas to be placed on the pasture. These facilitate the transfer of animal locations and updates to the virtual

fences. A base station going offline would create the same conditions as a drop in cell signal until the base station is repaired. Some companies are currently developing collars that bypass the need for these base stations.

The other major concern for ranchers is the cost for a virtual fencing system. The average rancher can expect to pay an estimated \$20,000 to \$30,000 in upfront costs. The cost to set up a base station alone is \$5,000 to \$10,000. However, this cost is highly dependent on several factors, including the manufacturer, the number of livestock to be collared, if the livestock are large or small ruminants, and the number of GPS base stations to cover the range.

According to Allen and Finley, the high cost of virtual fencing can be offset by the unique animal and land management benefits it can provide. "While physical perimeter fencing remains essential, VF is rapidly emerging as an innovative tool to control livestock with ease, precision, and flexibility in ways that were not previously feasible with traditional fencing," Allen said.

Finley described the technology as a "game-changer" for her family. Virtual fencing helps control invasive grasses, installing fuel breaks

While virtual fencing is designed to contain livestock without physical fencing, it is not intended to outright replace secure perimeter fencing. Instead, it operates best as a highly dynamic and adaptable cross-fence, allowing for more intentional grazing on the landscape to meet livestock production and natural resource conservation objectives within a secure physical perimeter.

With grant funding from the USDA **Natural Resources Conservation** Service, the UCCE team continues to work with Finley and other livestock producers to test these applications on California's diverse rangelands.

Within the Sierra Nevada and Coast Ranges foothills, these trials include using virtual fencing on cattle for targeted grazing of invasive grasses to support the recovery of native forage and installing fuel breaks within the wildland-urban interface to remove vegetation where the edge of a pasture meets urban housing.

Using virtual fencing, 25 cattle were

successfully concentrated on a field of Medusahead (Elymus caput-medusae), an invasive annual grass. The herd respected the virtual fencing boundary 99% of the time despite nearby preferable forage. Grazing reduced medusahead seed heads from 2,072 per square meter in the ungrazed control area to just 68 per square meter in the grazed section.

In a different trial, 37 cattle with virtual fencing collars were contained within 120-feet-wide fuel breaks along the boundary of an annual rangeland and residential area. Cattle stayed within the boundaries 99% of the time, leading to an 81% reduction in fine fuel biomass and lowering wildfire risk in the wildland-urban interface.

Within rangelands on conifer forests, these UCCE trials concentrate cattle on brush to reduce the flammable plants and vegetation that competes with desirable timber species. It also can prevent livestock from entering sites that are sensitive to livestock presence.

Upcoming grazing trials will focus on how virtual fencing works with goats and sheep. In addition to Oneto and Allen, UCCE's contribution to virtual fencing research is in large part due to Leslie Roche, UCCE specialist and associate professor at UC Davis, Dan Macon and Jeff Stackhouse, UCCE livestock and natural resources advisors, Kristina Horback, associate professor at UC Davis and Lone Star Ranch in Humboldt County.

To learn more about the trials led by the UCCE team, visit https://cecentralsierra.ucanr.edu/Virtual_Fencing/



Virtual fence successfully contained cattle within a three acre area to graze Medusahead, despite the presence of more desirable forage nearby, as indicated by the line grazed into the pasture.





South coast REC

continued from page 8

Adult Transition Programs (ATP) cater to 18- to 26-year-olds who have learning differences and are shifting from the student life to that of a young professional. Skill-building, for personal or professional use, is the primary focus of ATP and Majcherek was adamant about providing a space for ATP members to learn and explore at South Coast REC.

Gavin Olsen, who was a member of ATP at Esperanza Education Center in Mission Viejo, also learned of South Coast REC during a GROW field day. Despite growing up in Orange County, Olsen admitted that he had no idea the REC existed, but is glad he finally does.

"I grew up knowing about agriculture and come from a family of farmers," said Olsen, who dreams of owning land one day. "At South Coast, I'm learning what it takes to manage land and I'm understanding plants better," he added.

Lindsey Pedroncelli, interim director of South Coast REC, envisions the center as a launch pad for success. "We not only want to highlight novel career paths to students, but we want to train and empower them to work in these spaces," she said.

Earlier this year, Olsen was hired as a field technician, supporting matters like plowing weeds, setting up irrigation lines and preparing field plots. Olsen has dyslexia and said the nature of his work at South Coast REC requires him to be hands-on, which he loves and prefers over desk work.

"I love getting my hands dirty and I feel like the hands-on aspect of the job is the best part," Olsen said.

Pedroncelli wants South Coast REC to continue serving students by providing a base of knowledge that will help them succeed in the various agricultural industries.

"Beyond teaching the basics, we aim to assist students in taking the next step - whether that be pursuing a certification or degree at a college or university, taking part in an internship, or getting their first industry job," Pedroncelli added.

To donate and support the GROW program, visit https://give.ucanr.edu/



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AG PRODUCTS DEBUT IN 2024



The SiftAI technology triggers robotic sorting arms to remove unacceptable products at rates up to 80-100 picks per minute with two-robot systems, as shown here.

Al-Based Robotic Potato Sorter Improves Product Grading and Slashes Costs

The SiftAI® Robotic Sorter from Smart Vision Works, a KPM Analytics brand, is the industry's first automated system for final potato inspection and sorting.

Fresh-pack potato processors struggle to find workers for the final inspection of potato sorting and grading. Even when sheds can adequately staff, defects still reach customers, and acceptable potatoes are wasted. Now, for the first time, a robotic sorter is available to automate final inspection, ensuring accurate grading, increasing profits, and allowing managers to redeploy scarce workers to other tasks.

The SiftAI Robotic Sorter combines a delta robot with an AIbased vision inspection system. Each system is programmed with Al models for overall potato size and shape or presence of defects like bruises, cracks, percent green, and other cosmetic features. Installed over a roller table, the SiftAI cameras collect images of all sides of the potato. For any potatoes that grade outside the AI model's acceptance criteria, the system triggers the robotic arm to pick up and remove the potato from the product stream at rates between 80-100 picks per minute with two-robot system configurations. The SiftAI Robotic Sorter inspects potatoes with the same dexterity and speed as a human inspector but with much higher accuracy that increases profitability and reduces customer chargebacks.

Currently, the industry goal is to have no more than 5% of defective potatoes reaching customers, which is the limit set by the US Department of Agriculture. What's more, human inspectors typically discard 10 to 20% of acceptable potatoes, reducing profits. In beta testing, the new Al-enabled robotic sorter dramatically reduced the percentage of missed defects and misgraded potatoes.

Adding increased profitability to the labor savings, the financial impact of automation is significant. The investment pays for itself in fewer than two years.

"Because of potato oversupply and rising wages in North America, many potato processors are losing money on every box shipped," said Curtis Koelling, vice president of product development and innovation for Smart Vision Works, a KPM Analytics brand. "Managers are eager to identify technology that can lower their production costs," he said. "When they see a competitor managing final inspection without labor costs, they become very interested in the technology."

Advanced Al Technology

The system's high accuracy is possible because its technology is not like the basic AI commonly used by other vision inspection systems. Instead, the system uses AI built on 12 years of development by AI scientists and years of experience in the potato industry. Unlike systems that use optical scanners, the SiftAI system takes a full digital image and runs it through a neural network.

Availability

The SIftAI Robotic Sorter is available for order now. The product includes a vision-based inspection system, sophisticated AI software, and a proven potato-inspection model comprised of 19 different defects. For an on-site evaluation of how the robotic sorter will perform in a specific application, contact KPM Analytics at sales@ kpmanalytics.com.



New Holland Agriculture debuts the new CR10 combine, the next step in harvest excellence

Heading into the 2025 season, New Holland Agriculture is launching the new CR10 combine, a combine that continues to redefine how farmers lower their total cost of harvesting. The new CR10 joins the previously launched CR11 and is set to maximize output, minimize grain loss and address operational economics in a platform that features the next generation of harvesting technology.

"This combine shares the same new and innovative architecture and industry-leading features as the recently launched CR11. The CR10 raises the bar for productivity and efficiency to lead the pack in the fastest growing combine class segment in North America," states Curtis Hillen, cash crop segment lead for New Holland Agriculture North America. "It brings together power with groundbreaking technology to empower farmers with unprecedented capabilities to help reduce their total cost of harvest. All in a combine size that's built to meet the capacity needs of many North American farmers."

- · Built to tackle demanding harvesting conditions
- New cab elevates comfort, convenience and functionality
- Technology packages stacked and tailored for farmer's needs

The new CR10 will be commercially available for the 2025 harvest season in North America. For more information, visit agriculture. newholland.com or contact your local New Holland dealer.



Case IH Introduces Largest Combine Lineup in the Industry with Addition of Single-Rotor AF9 and AF10 - Completing the AF Series

To help farmers harvest more acres with every engine hour, Case IH is launched the new AF9 and AF10 combines, redesigned from the ground up, to maximize capacity and crop flow with efficient horsepower, simplified maintenance and connectivity built-in at

The single-rotor AF9 and AF10 combines complete the new AF series, which launched earlier in 2024 with the AF11 - a Class 10+, high-capacity powerhouse. The revolutionary combine series features three models across Class 9 and 10+ to help farmers cover more acres in less time with power, efficiency and throughput.

"We know the harvesting challenges farmers face each year and know how critical it is to make each day as productive as the next," said Leo Bose, harvesting segment lead at Case IH. "The AF9 and AF10 live up to the challenge."

"We are hyper-focused on delivering solutions that make our customers' lives easier and their operations more productive," said Bose. "That's why we built the AF series combines with industry-leading matched capacity and why we are delivering more precision technology at base than ever before."

For the Case IH harvesting lineup talk with your local Case IH dealer or visit caseih.com.



LS Tractor USA proudly launched its latest new tractor models – the MT2 and MT2E, available in Cab and ROPS. This cutting-edge tractor is set to redefine homesteading experiences with its combination of reliability, performance, and a sleek new design.

Reliability Unmatched

Building on our legacy of providing reliable tractor solutions, the new MT2 and MT2E series is engineered to deliver unmatched performance in the field. Customers can expect the introduction of new valuable tools designed to enhance both reliability and efficiency.

The latest enhancements include a new instrument panel, delivering insights into the tractor's performance and indicating the need for maintenance. Additionally, another feature is designed to optimize fuel efficiency, resulting in reduced operating costs.

Tested and Proven

Prior to release, the New MT2 and MT2E models undertook more than 1,000 hours of testing in various environmental conditions all over the United States. From clearing bush in Ohio, to testing the increased digging depth in Michigan, and assessing the new loader lift capacity in North Carolina, making these models a reliable choice for a wide range of tasks in every corner of the country.

Powerful Performance

The heart of the new MT2 and MT2E series lies in its powerful engine, designed to tackle the toughest challenges. Introducing an increase in loader lift capacity by 16-22% and a 30% boost in backhoe digging force. This new machine empowers users to achieve more in less time, optimizing their productivity.



KIOTI Expands Tractor Line with New RX40 Utility Tractor The RX40 Series delivers the ultimate blend of power, comfort, and value to easily tackle demanding work.

Building upon the trusted legacy of the RX20 line, this new addition offers a superior blend of power, comfort, value, and performance all in one versatile package. The RX40 Series boasts significant upgrades from its predecessor, providing operators an enhanced experience both in the field and during long work hours.

"With the RX Series, we've reimagined what a utility tractor can offer by combining advanced features with the rugged reliability KIOTI is known for. These mighty machines are built with operator needs top of mind," said Joel Hicks, KIOTI associate product line manager for tractors. "The RX40 is more than an upgrade; it's an investment in not only your productivity and comfort, but also contributes to the success and sustainability of your farm."

Comfort and Convenience

A standout feature of the RX40 Series is its spacious five-pillar cab, designed to prioritize operator comfort and convenience. Inside the cab, operators will enjoy incredible visibility, ample head- and legroom, and a deluxe air-ride suspension seat to minimize fatigue during extended use. The cab is also outfitted with climate control for year-round comfort and productivity, and an optional instructor seat making training a breeze.

Comfort and Convenience **Peak Power and Performance**

Value and Versatility

The RX40 models are available now at KIOTI dealerships across the United States and Canada. To learn more about the new RX40 Series, contact an authorized KIOTI Tractor dealer or visit KIOTI.com.

New Research Suggests Eating Almonds Regularly May Improve Recovery After Exercise

A new study found regularly eating almonds may aid recovery after exercise by reducing pain and muscle damage, while improving muscle performance. Eating foods that help people recover from exercise by reducing muscle fatigue and soreness may help them better stick to their exercise routines.

These new findings add to the growing body of scientific evidence exploring how almonds affect recovery after exercise. Prior studies investigated almonds' effect on feelings of fatigue and exercise metabolism and explored the impact of eating almonds on feelings of soreness and muscle performance.

In this new randomized, crossover study, published in Current Developments in Nutrition and funded by the Almond Board of California, 26 middle-aged adults who exercised one to four hours per week and were at a healthy weight or mildly overweight (body mass index (BMI) of 23-30) ate either two ounces (57g) of whole raw almonds or a calorie-matched (three ounces / 86g) of unsalted pretzels daily for eight weeks. After eight weeks of eating almonds or the control food with a four-week washout period between the two interventions, participants performed a 30-minute downhill treadmill run to induce muscle damage, then were immediately given their daily two-ounce (57g) serving of almonds or calorie-matched pretzels. Participants continued to eat daily servings of almonds or pretzels for three days after the treadmill run.

Researchers measured participants' perceived muscle soreness, muscle performance (assessed via a muscle contraction test and a vertical jump) and blood markers of muscle damage/ inflammation (creatine kinase, C-reactive protein, myoglobin and antioxidant capacity) before the treadmill run and at 24, 48 and 72 hours after the run.

The Results: During exercise recovery (up to 72 hours after the treadmill run), the almond group compared to control had:

- Lower creatine kinase (CK) levels a marker of muscle damage.
 - · A quicker decline in CK levels after 72 hours, which may

indicate a faster recovery rate.

- Better muscle performance at 24 and 72 hours.
- · Modestly reduced pain ratings following maximal contraction at 24 (37% lower) and 48 hours (33% lower)

There were no differences in other biochemical markers of muscle damage and inflammation (like C-reactive protein, myoglobin concentrations and total antioxidant capacity). This study tested non-smoking adults who exercised one to four hours per week and were at a healthy weight or were mildly overweight, so the results may not apply to people with other demographic and health characteristics. Future studies should also consider taking measurements over a longer recovery period.

"Our study provides more insight into the role almonds may play in supporting fitness recovery," said Dr. Mark Kern, PhD, RD, CSSD, professor of exercise and nutritional sciences at San Diego State University. "Almonds contain a wide range of nutrients that we know support exercise recovery including protein, antioxidants and phytonutrients. These nutrients are supplied in a whole food package versus isolated vitamin supplements which may contribute to the almond benefits observed in this study."

One ounce (28 g) of almonds provides 6g of protein, 4g of fiber, 13g of unsaturated fat, only 1g of saturated fat, and 15 essential nutrients, including 77mg magnesium (18.3% DV), 210mg potassium (4% DV), and 7.27mg vitamin E (50% DV), making them a great snack for healthy active lifestyles.

"More research is needed to understand the mechanisms behind how almonds improve exercise recovery. Strategies to improve exercise recovery are important because if you are recovering better, you are likely to be able to train sooner—or harder—for subsequent workouts," Dr. Kern said.

Study Conclusion: Snacking on two ounces (57g) of almonds for eight weeks modestly reduced pain ratings, helped maintain muscle strength, and reduced muscle damage after exercise.



National Anthem Contest Returns to World Ag Expo[®] for 2025

World Ag Expo[®] is excited to announce the return of the National Anthem Competition for 2025. Local singers and vocalists are once again invited to compete for the opportunity to perform live at the show. The 58th edition of World Ag Expo is scheduled for February 11-13, 2025.

The entry period for the contest is now open and runs through January 6, 2025. The winner will be announced on January 15, 2025.

- To qualify for the World Ag Expo® National Anthem Contest, entrants must be a resident of Tulare County, CA and/or a 2025 World Ag Expo® exhibitor.
- Entrants must be 16 years or older at the time of performance and must be willing and able to perform publicly at

World Ag Expo® 2025 on

the International Agri-Center® grounds in Tulare, CA.

- · Applications must be submitted at bit.ly/WAE25NationalAnthemApp by Monday, January 6, 2025, at 11:59 p.m. PST.
- Video for application must be a cappella and may not exceed three minutes in length.

The winner will perform the Star-Spangled Banner live on either February 11, 12, or 13, 2025 at World Ag Expo[®] in Tulare, CA for more than 30,000 attendees, exhibitors, volunteers, and staff from all over the world.

Official rules can be found at https://www.worldagexpo. com/attendees/national-anthem/.

Questions can be directed to Juliana Ramirez at 559.688.1030 or info@farmshow.org.



Irrigation startups showcased as the IA announces 2024 Pitch Competition winners

The Irrigation Association announced the winners of the 2024 Pitch Competition, showcasing products by today's groundbreaking agriculture and landscape irrigation technology startup companies. These companies are developing innovative products and solutions that are set to revolutionize the irrigation industry and lead to wise water use and improved irrigation efficiency.

The 2024 Agriculture Irrigation Pitch Competition winner is Krah USA LLC. Krah USA manufactures large diameter HDPE pipe with profile wall and solid wall options for pressure and gravity flow applications with up to a 196-inch inside diameter.

The 2024 Landscape Irrigation Pitch Competition winner is Wirevirus. Wirevirus is an innovative device that allows two valves to operate individually with just one good field wire, offering a cost-effective solution that reduces material waste, labor and installation time, while eliminating the need for additional wiring.

These winning startups represent what's best about the future of irrigation and water management. Their visionary concepts are at the forefront of revolutionizing the integration of smart technology and the wise use of water.

"The exceptional innovation and forward-thinking solu-

tions showcased in this year's Pitch Competition are truly inspiring," said IA CEO Natasha Rankin. "These entrepreneurs are not only advancing their own businesses, but also driving creativity and transformative ideas that help propel the entire irrigation industry toward greater sustainability, growth and long-term success."

The Pitch Competition is a testament to the Irrigation Association's commitment to promoting innovation. By providing a platform for these promising startups to showcase their ideas, the IA is working to foster a thriving, growing irrigation industry.

This year's competition featured eight irrigation startup companies that gave presentations and were judged by a panel of experts evaluating the quality of their presentation, the product, market need and economic feasibility. Official judging was conducted live on the exhibit floor on Nov. 6 during the 2024 Irrigation Show and Education Week. The winners were announced Nov. 7 during the IA General Session

Visit irrigationshow.org for more details about the contest and to see a list of the startup companies that exhibited at the show and participated in the Pitch Competition

Classic Desserts That Combine Christmases

Past and Present





Coconut Cake

Recipe courtesy of "Cookin' Savvy"

- 1 vanilla or white cake mix
- 1 cup all-purpose flour
- 1 cup sugar
- 1 cup coconut Greek yogurt
- 1 cup milk
- 2 tablespoons melted butter
- 3 eggs

Frosting:

- 1 stick butter, softened
- 1 package (8 ounces) cream cheese, softened
- 1/4 cup heavy whipping cream
- 5 cups powered sugar
- 2-4 cups shredded coconut

Heat oven to 350 F.

In mixing bowl, mix cake mix, flour and sugar. Blend in yogurt, milk, butter and eggs.

Christmas Cinnamon Cookies

Recipe courtesy of "Cookin' Savvy"

- 1 2/3 cups self-rising flour
- 2 1/2 teaspoons cinnamon
 - 1/4 teaspoon ginger
 - 1/8 teaspoon cloves
 - 1/2 cup sugar
 - 1/2 cup brown sugar
 - 1 egg
 - 2 tablespoons water (optional)
 - 1 cup powered sugar (optional)

FAMILY FEATURES

If holiday gatherings have started to feel more overwhelming than celebratory, it's time to go back to the basics with seasonal desserts that are easy yet elegant.

Wow your crowd this year with a mouthwatering Hummingbird Cake or Coconut Cake that call to mind holidays past without requiring hours spent in the kitchen (like grandma used to do). Or for a classic take on an old favorite, these Christmas Cinnamon Cookies can even let the kiddos get involved – just make the dough then have your little helpers use their favorite cookie cutters to make festive shapes before the oven does the rest of the work.

Find these recipes and more from "Cookin' Savvy" at Culinary.net.

Hummingbird Cake

Recipe courtesy of "Cookin' Savvy"

- 1 spice cake mix
- 1 cup sugar
- 1 cup banana cream Greek yogurt
- 3 eggs
- 1 cup crushed pineapple
- 1 cup crushed pecans
- 1 cup all-purpose flour
- 2 tablespoons melted butter

Frosting:

- 1 stick butter, softened
- 1 package (8 ounces) cream cheese, softened
- 1/4 cup heavy whipping cream
 - 5 cups powdered sugar
 - 1 package pecans (optional)

Heat oven to 350 F.

In mixing bowl, mix spice mix and sugar. Blend in yogurt, eggs and pineapple. In separate bowl, mix pecans, flour and butter then add to cake mixture.

Grease two 8-inch cake pans with butter. Pour half the mixture into each pan then bake 45 minutes. Cool on rack before icing.

To make frosting: In mixing bowl, mix butter, cream cheese and heavy whipping cream. Slowly blend in powdered sugar.

Ice cake then decorate with pecans, if desired.

Grease two 8-inch cake pans with butter. Pour half the mixture into each pan and bake 45 minutes. Cool on rack before icing.

To make frosting: In mixing bowl, mix butter, cream cheese and heavy whipping cream. Slowly blend in powdered sugar.

Ice cake then pat shredded coconut gently into icing.

In mixing bowl, combine flour, cinnamon, ginger, cloves, sugar, brown sugar and egg to make dough. If dough is too dry to form into ball, add water. Form into log and wrap in parchment paper. Refrigerate 1 hour.

Heat oven to 350 F.

Roll dough out and cut into shapes with cookie cutters. Place on cookie sheet covered in parchment paper and bake 8-10 minutes. Let cool on rack then dust with powdered sugar, if desired.



22 CALIFORNIA FARM EQUIPMENT MAGAZINE | DECEMBER 2024

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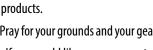
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UPCOMING EVENTS

DECEMBER 2024

4-6: 108th Annual CCA/CCW Convention. Grand Sierra Resort and Casino 2500 E 2nd St, Reno, NV, United States More details to be updated in the coming months.

12: Virtual Community Meeting on 2023 AMN Report: DPR is hosting a virtual meeting to provide information on the 2023 air monitoring results for communities where monitors are located (Oxnard, Santa Maria, Shafter and Watsonville). The meeting will be available in Spanish and English. Visit DPR's website to view the full 2023 Air Monitoring Report.

13: Citrus Fruit Display & Tasting - Citrus Industry 9:00 AM to 12:00 PM. Sponsor: Lindcove Research and Extension Center • 22963 Carson Ave, Exeter, CA. Contact: Donald Cleek 559-592-2408 Ext 1767.

14: Citrus Fruit Display & Tasting - Public 9:00 AM to 12:00 PM. Lindcove Research and Extension Center • 22963 Carson Ave. • Exeter, CA. Contact: Jasmin Del Toro: 559-592-2408 ext 1764. Details: The general public is invited to join us for a family-friendly Citrus Tasting Event. You can see and taste more than 100 citrus varieties that are grown at Lindcove Research and Extension Center.

We will have \$5 bags of freshly picked citrus for sale. Take a bag of fruit home choose from Cara Caras, Navels, Mandarins, or assorted citrus from 4 bins.

JANUARY 2025

28-30: Unified Wine & Grape Symposium. For further details please visit the website: www.unifiedsymposium.org

FEBRUARY 2025

25-\$28.00

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11-13: World Ag Expo 2025, the largest annual agricultural show of its kind. The International Agri-Center® Tulare, CA. World Ag Expo® provides a platform of networking, education, and business in one of the most productive ag counties in the United States. For information email: info@ farmshow.org, or call 559.688.1030, 1.800.999.9186

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Domino's FFA Commitment with \$100,000 in Scholarships for College Students Studying Agriculture Education



Domino's is funding 10 scholarships worth \$10,000 each for FFA members working toward a college degree in agricultural education, with the intent to pursue a career as an agriculture science teacher.

Domino's Pizza Inc. (NYSE: DPZ) has funded scholarships for Future Farmers of America (FFA) students for seven years, and is excited to announce the strategic expansion of its scholarship program for the 2024-25 cycle. Domino's is funding 10 scholarships worth \$10,000 each for FFA members working toward a college degree in agricultural education, with the intent to pursue a career as an agriculture science teacher.

The new scholarship program was created in response to a need identified by FFA leaders and professionals in the industry – the need for more ag teachers to support FFA students and ultimately, future leaders in agriculture.

"National FFA values Domino's support through their sponsorship and partnership," said Molly Ball, president of the National FFA Foundation. "These scholarships help cultivate the talent pipeline for agricultural education and continue to develop future teachers and advisors that positively impact the industry and the world."

FFA high school seniors or FFA alumni in college can apply for the Domino's-sponsored scholarship by completing the application through FFA's website by midnight on Jan. 9, 2025. Only one application is required to access multiple scholarship opportunities totaling nearly \$2.5 million. Winners will be notified in late April and funds will be distributed in July for the fall 2025 semester.

Domino's has donated \$2 million to FFA since joining as a national sponsor in 2017. In 2025, Domino's will donate \$500,000 to fund the new scholarship program, work-based learning grants, sustainability curriculum, and workforce development programs aligned with FFA's Food Processing and Products career pathway.

"When Domino's first committed to support FFA, we acknowledged that without farmers, there would be no pizza," said Carrie Ballew, Domino's vice president – chief procurement officer and FFA sponsors' board member. "To adequately support future farmers, we need to empower future and current agriculture science teachers. They're critical to FFA, and the ag industry. We are grateful for the opportunity to do our part by offering this scholarship to those aspiring toward a future in the agriculture education field."

Learn more about Domino's partnership with FFA, and other community outreach efforts, at stewardship.dominos.

USDA Invests in California Compost Facility, Part of Plan to Strengthen American Farms & Businesses, Increase **Competition and Lower Costs**

U.S. Department of Agriculture (USDA) Rural Development California State Director Maria Gallegos Herrera announced a \$4.2 million investment to expand a vermicomposting facility in Hollister, California.

"Locally produced organic fertilizer is an important part of California's agricultural supply chain and with this investment, I'm confident everyone will benefit, from our producers to consumers," said Gallegos Herrera. "Under the Biden-Harris Administration, USDA is creating a competitive, resilient, and sustainable economy so our rural businesses and individuals prosper."

Central Coast Worm Farm LLC will use the \$4.2 million Fertilizer Production Expansion Program (FPEP) grant to help grow its vermicomposting facility located in Hollister, California. Central Coast Worm Farm, a sustainable composting and organic waste processor, will increase the capacity of

this operation by installing a static composting system and improving facility access. When operational, Central Coast anticipates fertilizer production will increase to 158,000 tons per year of organic composting. The project is expected to create 16 new positions and provide product to 28,000 acres of producer operated crops.

The Department is awarding over \$120 million today to fund six fertilizer production projects in Arkansas, California, Illinois, South Dakota, Washington and Wisconsin through FPEP, which is funded by the Commodity Credit Corporation and provides funding to independent business owners to help them modernize equipment, adopt new technologies, build production plants and more.

To date, USDA has invested over \$368 million in 67 projects through FPEP, creating new jobs and increasing domestic fertilizer production across the country.



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Agricultural Research Technology Center Breaks Ground in Davis, CA

Advances in crop production and preservation are poised for new digs as the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) broke ground today for a modernized facility to consolidate labs that are currently located at the University of California, Davis.

The Agricultural Research and Technology Center (ARTC) is a cutting-edge facility that will include customized laboratories, greenhouses and capacity for scientists as part of the ARS's ongoing efforts to mitigate and adapt to climate change, water scarcity, emerging pests, and increasing global need in support of a resilient agricultural production system.

The two-story 59,000 square foot building will house four ARS research units: Crops Pathology and Genetics, Invasive Species and Pollinator Health, National Clonal Germplasm Repository - Tree Fruit and Nut Crops and Grapes, and Sustainable Agricultural Water Systems.

Collectively, these units improve the health, sustainability, and profitability of agricultural production and natural resources in California and the Western United States.

"The building will be a nexus for scientists to investigate plant diseases, plant genetic resources, conventional and advanced plant breeding methods, soil health, invasive species management and myriad other areas driven by long-term agricultural research and climate-informed decision-making strategies," said Dr. Simon Liu, ARS Administrator.

A rendering of the new Agricultural Research and Technology CenterA rendering of the new Agricultural Research and Technology Center in Davis, California. (Image courtesy of Burns & McDonnell)

Collaborations between ARS, US-DA's chief in-house research agency, and UC Davis began in 1956 with the location of the Crops Pathology and Genetics Research Unit (CPGRU) led by ARS Plant Pathologist, Dr. Austin Goheen, on campus to research grape



A rendering of the new Agricultural Research and Technology Center in Davis, California. (Image courtesy of Burns & McDonnell)

ARS scientists have since fanned across several UC Davis departments, including Plant Pathology, Viticulture and Enology; Entomology and Nematology; Plant Sciences; and Land, Air and Water Resources, which has facilitated many collaborations that have benefited various stakeholders in industries that include almond, walnut, rice, and grapes.

ARS's presence on campus has since grown to over 30 scientists with supporting staff across the four research units and the Western Human Nutrition Research Center.

Strong collaborative research efforts between university extension specialists, farm advisors, and faculty will continue with the move to the

"This research will benefit growers, commodity groups, agricultural businesses, and U.S. consumers who rely on ARS to find solutions to agricultural and environmental problems," said Dr. Amisha Poret-Peterson, CPGRU Acting Research Leader. "It's incredible to celebrate current and future cooperative research among ARS, groundwater sustainability agencies, UC Davis researchers, and stakeholders in diverse specialty realms such as tree nut, rice, and beekeeping industries."

ARS remains committed to nationwide infrastructure modernization, empowering researchers to address agricultural challenges from animal science and crop production to climate change and sustainable farming practices

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