California Farm Equipment Magazine

APRIL 2024 Volume 43 • Number 4

www.californiafarmequipment.com

FOR MORE INFORMATION AND NEAREST DEALER
SEE PAGE 19

57th World Ag Expo® Came to a Close

Attendees and exhibitors from around the world returned to Tulare for the 57th Annual World Ag Expo®, the world's largest annual outdoor agricultural exposition. The three-day show boasted 1,258 exhibitors on 2.6 million square feet of exhibit space, and hosted over 100,000 attendees representing 49 states, the District of Columbia, and 81 countries.

Exhibitors reported quality traffic with plans to return. "The World Ag Expo® connected farm-ng with forward thinking farmers from around the world," stated Nathan Dorn, Business Development Manager with farm-ng. "Our team learned from a marketplace of engaged users. We will be back in 2025 with new tools and capabilities."

Farmers, students, and ag professionals returned in large numbers for the 2024 show. With many exhibitors offering test drives or demonstrations, World Ag Expo® provides attendees the opportunity to network and learn about the latest Ag equipment, services, and technology.

More than 100 educational seminars, demonstrations, and workshops were held over three days and covered a variety of topics ranging from irrigation to dairy, livestock to professional development, and more. The Fresno State WET Center Innovation Pitch Event and the Women in Ag Session featuring Senator Melissa Hurtado, and other influential women in agriculture, were notable sessions.

"2024 World Ag Expo® was once again a tremendous success," said Jerry Sinift, CEO of the International Agri-Center®. "Exhibitors and attendees alike have shared that World Ag Expo® continues to provide a great return on their investment of time and money. It is the place to be for anything agriculture."

Ag technology and innovation were yet again a highlight of the event. Autonomous solutions, electric vehicles, and drones continued to showcase the technological advancements featured in agriculture. The 2024 Top-10 New Products contest winners provided a look into the latest innovation and technology ranging from simple solutions to tech-forward items.

Other popular attractions at the 2024 World Ag Expo® included various drone displays, WW Livestock Demonstration Pavilion, and Food Booths.

The 2025 World Ag Expo® will be held February 11-13. Space renewals are now being accepted from 2024 exhibitors. Potential exhibitors can begin requesting space on March 1, 2024 at www.worldagexpo.org.

Water risks to agriculture: Too little and too much

Policies and funding are needed to support farmers' efforts to adapt to drought and flood risks, write the report authors.

By Patty Guerra, UC Merced

Water is among the most precious resources on the planet. Some areas don't get enough; some get too much. And climate change is driving both of those circumstances to ever-growing extremes.

Two UC Merced experts in civil and environmental engineering took part in a recent report by the Environmental Defense Fund examining the issue and potential solutions. Associate Professor of Extension Tapan Pathak and Professor Josué Medellín-Azuara co-authored the report, "Scarcity and Excess: Tackling Water-Related Risks to Agriculture in the United States," and wrote the section pertaining to California.

In addition to climate change, disruptive human interventions such as groundwater over-extraction, sprawling drainage networks and misaligned governance are driving up water-related agricultural costs, particularly in midwestern and western states, the researchers found.

The problem is magnified in California, which hosts the largest and the most diverse agricultural landscape in the U.S., Pathak and Medellín-Azuara wrote, with gross revenues from farms and ranches exceeding $50 billion.

"Due to the favorable Mediterranean climate, unique regional microclimate zones, a highly engineered and developed water supply system, and a close connection between producers and research and cooperative extension institutions, California's agricultural abundance includes more than 400 commodities, some of which are produced nowhere else in the nation," the UC Merced researchers wrote.

Almond orchard is used to recharge groundwater in a 2016 experiment.

But the state's varying climate and water needs pose a challenge. Though most of the precipitation falls in the northern part of California, the southern two-thirds of the state account for 85% of its water demand. And all of those crops must be watered in the summer, when there is little, if any, rainfall.

Some of the water comes from snowpack developed through winter storms and stored in reservoirs as it melts. Much of it comes from the Colorado River.

"Substantially less water is captured and stored during periods of drought, imperiling California's water supply and putting agricultural water needs at risk," Pathak and Medellín-Azuara wrote.

Climate change, with increasing periods of drought between excessively wet winters, magnifies that risk.

"Further, the rate of increases in the minimum temperatures in the Sierra Nevada is almost three-fold faster than maximum temperatures, resulting in potential decrease in the snowpack, earlier snowmelt, and more water in liquid form as opposed to snow," the researchers wrote. "According to the California Department of Water Resources, by 2100, the Sierra Nevada snowpack is projected to experience a 48% to 65% decline from the historical average."

Climate change is also expected to affect the availability of water from the Colorado River.

Climate extremes such as heat waves, drought and flooding - giving rises to increased weeds, pests and disease - are already significantly impacting agriculture and the broader economy, Pathak and Medellín-Azuara wrote.

The state's drought from 2012 to 2016 led to about 540,000 acres of fallow farmland in 2015, costing the state's economy $2.7 billion in gross revenue and 21,000 jobs. With the lack of precipitation, farmers increasingly pumped groundwater to irrigate crops, depleting those resources.

The report goes on to recommend policies, programs and tools be developed for agricultural resilience, including:

- Changing land use and crop management practices to support a transition to an agriculture footprint that can be sustained by the available water supplies.
- Increasing farmer and water manager access to important data and innovative technological tools to support their efforts.
- Reimagining built infrastructure and better using natural infrastructure so regions are better equipped to handle weather extremes.
- Developing policy and funding mechanisms to support mitigation and adaptation to water-related risks, avoid maladaptation and ensure food and water security.

"California's innovative agriculture needs to rapidly adapt to more volatile water availability, climate-driven higher water demands, and regulation protecting groundwater reserves, communities and ecosystems," Medellín-Azuara said. "The early adoption of more sustainable practices in agriculture will likely pay off dividends both in the short and long terms."

Added Pathak, "California faces significant challenges related to climate change, but it also presents opportunities for innovations, collaborations and sustained growth. To make agriculture resilient to climate risks, we need to engage in holistic solutions that integrates environmental, social, economic and policy considerations."

GOULD AUCTION & Appraisal Co. LLC

INTEGRITY
EXPERIENCE
RESULTS

UPCOMING AUCTION

Saturday, April 27, 9:00 AM

Inspection: Thursday, April 25 & Friday, April 26, 9:00 AM to 4:00 PM

Location: 6200 Price Way, Bakersfield, California, 93308

BIG AUCTION, DO NOT MISS IT!

No Junk, 100's of New Items, 15 Containers - 4 & 2 Door, 40 Mini Excavators, Mini Crawler Loaders, Etc. SEE OUR WEBSITE FOR MORE INFORMATION!

50+ Vehicles, Bankruptcy Cars, Pickups, Solar Co. Bankruptcy & More - This is a must see.

1997 Freightliner 3 Axle Water Truck 4000 Gal. Tank, Cat Engine, Low Miles, Nice, 2008 3 Axle Freightliner Columbia Cab, Cab & Chassis, 2005 GM Isuzu Cab Over W/Utility Bed, 75,000 Miles

FORD (2) 21 F-350XL w/37,800 Miles, 4,000 M, Gas, Utility Bed, Rack, 4 Door, 18 GMC 2500, 135,000 M. Utility Bed, Rack, FORD 18 Ford F-150, Ext. Cab, 172,000 M. Bad Engine, 2017 Explorer, 210,000M, 16 Ford Escape, 147,700M, Nice, 15 GMC 2500, 4 Door, Short Pickup Bed, FORD 12 F-150, Stnd. Cab, 2011 F-150, Ext. Cab, 105,000 M, 11 Ford 4 x 4 Ranger, Ext, Cab, 112,000M, 10 Ford F-150 4 x 4, 09 Ford F-150, Std. Cab, 08 F-450, Std. Cab, Cab & Chassis Must go Out of State. (5) Ford Rangers, some 4x4, 120,000 + M, Some Bad Motors, 2006 Diesel F350, Singles, 2000 F350, Flat Bed, 1998/1999 F-150's 4 x 4, 19 Indian Motorcycle, Nice,

Cars Bankruptcy) 15 Chevy Cruze, 14 Audi, 12 Kia, 11 Mercedes E350, 11 Maxima, 10 Mercedes C300, 09 Nissan Maxima, 09 Mini Cooper, 07 Chrysler 300, 06 Range Rover, 04 Mercedes S430,

Trailers: (2) 2019 Great Dane 53' Enclosed Dry Vans, Bankruptcy, Nice, 2018 2 Axle Enclosed 21' Trailer, Ball Hitch, 25' Enclosed Truck Bed, W/5' Overhang, 23' Enclosed Truck Bed W/Electric Lift.
Capri 22' Sailboat W/Sleeping Quarters

Equipment: Cat D6 W/Dozer Blade, S/N 9U2775, Cat D2 W/Holt Dozer Blade, S/N 5U167 Kobelco Excavator, Works, Broke Glass, 5000# Yale Forklift, S/N 520134, Toyota Model 02-5FGU55, 8000# Forklift, S/N 70129, David Brown 885 Diesel, S/N 8851, Nice, 8' Hydraulic Drag Scraper

New Equipment, 14 40' New Containers, 2 & 4 Door, 8', 9', (3) 12' Containers, Some W/Windows, Toilets, 6 & 7', 19' x 20' Portable Warehouse, New Living Quarters, New Solar Pannels, Parts & Installation Pcs for Solar, Bleachers, Rotary Shredders, Cutters, Augers, Drop Hammers, Rotavators, Leveling Blades, Equipment Attachments for Skid Steer Loaders, Vibratory Hammers, Barbed Wire, 20 x 30' Garage Car Ports, 20,000# Electric Winches, (10) Diesel Fuel Transfer Pumps, (10) Trash Dumpsters, (10) 4000# PSI Hot Water Pressure Washers, MUCH MORE, Not Room to List

Bankruptcy Case Being Sold ON LINE ONLY. Equipment Located in Kerman, Calif. Includes, 2001 Peterbilt Model 379, 1985 Peterbilt Model 379, 1979 Mack Rolloff Tractor, 1992 Diamond Z Tub Grinder, 1999 Kobelco Excavator, 2000 & 1995 Western Highside Dump Trailer, 1984 Ranco Belly Dump, Carson Dump Trailer, 07 Suzuki 450

LIVE AUCTION & ONLINE BIDDING • Proxibid handling all online bids • www.Proxibid.com

6200 Price Way, Bakersfield, CA 93308

Office (661) 587-3123 • Jerry (661) 333-3040

Bond # Ca MS150-49-03 USA MS2892233

www.gouldauction.com • E Mail @ Gouldhitch@aol.com

Case IH Showcases Magnum Upgrades and New Track Technology at Commodity Classic

New Magnum offers more horsepower, simplified precision technology and greater efficiency for premium operator experience

Case IH is entering the next era of power and efficiency with the MY25 Magnum™ flagship models. Launching at Commodity Classic, the latest upgrades build upon Magnum's legacy as the tractor of choice for more than 37 years. Case IH is also displaying next-level track technology for Steiger® Quadtrac® and technology solutions that meet the needs of any grower.

The premium upgrades on MY25 Magnum tractors are designed with productivity in mind. The higher horsepower in MY25 Magnums — ranging from 265 to 405 models — helps operators efficiently complete tasks by handling larger implements, while also improving pass to pass accuracy through automated speed and steering control.

"We continue to build upon Magnum's strong roots as the most trusted tractor on the operation," says Morgen Dietrich, tractor segment lead at Case IH. "Power, technology and quality define the next generation of Magnums and we purposefully bundled integrated technology within the tractors to eliminate the hassle of purchasing individual tech components."

Dietrich explains the new Magnum 355 model will come standard with the 21-speed PowerDrive transmission, which builds toward future autonomy capabilities with brake to clutch functionality.

Case IH tractor solutions don't stop with new MY25 Magnums. Case IH continues to set the bar in track technology with the recent launch of the Quadtrac Heavy-Duty Suspension (HDS) for Steigers. Built with a new suspended track design, HDS elevates operator comfort and machine durability by significantly reducing shocks and jolts, while increasing productivity with faster transport speeds.

"From Farmalls to Magnums and Steigers, we continue to build upon our tractor portfolio legacy by unleashing new options and purposeful solutions for our wide range of customers," says Dietrich. "Our tractor portfolio, which ranges from 25 hp to 715 hp, demonstrates Case IH's commitment to bringing solutions to operations of all sizes. It spans across tractors and harvesting to planters, tillage and technology."

For producers looking to add technology to their existing fleet, Case IH is also talking about its aftermarket solutions at Commodity Classic.

Entry level telematics from Case IH deliver benefits to an operation through tracking and remotely monitoring machines without technology built in and other vehicles within a fleet. Available as an aftermarket kit, growers will receive a five-year subscription to AFS Connect. Additionally, growers can add the Pro 1200 Guidance kit to enable guidance, agronomic and telematics data transfers from older tractors through AFS Connect. This allows operators to have the same display user experience as other machines in their fleet, simplifying the training and management of operators.

California Farm Equipment

California Farm Equipment is Published Monthly. The Publisher does not assume responsibility for statements by Advertisers, Editorial or for Products advertised in California Farm Equipment Magazine. The Publisher and Advertisers are not responsible for erroneous statements, ad misrespresentation or typographical errors.

Publisher Joe L. Neyer III
Associate Publisher Mona L. Neyer

Subscription Rate: Anywhere in the U.S. is $18 for one year and $36 for three years, payable in advance.

Website: californiafarmequipment.com
Email: info@cfemag.com

Postmaster: Please send "Address Service Requested" corrections to California Farm Equipment, Post Office Box 1128, Visalia, CA 93279

Telephone: 559-627-2182

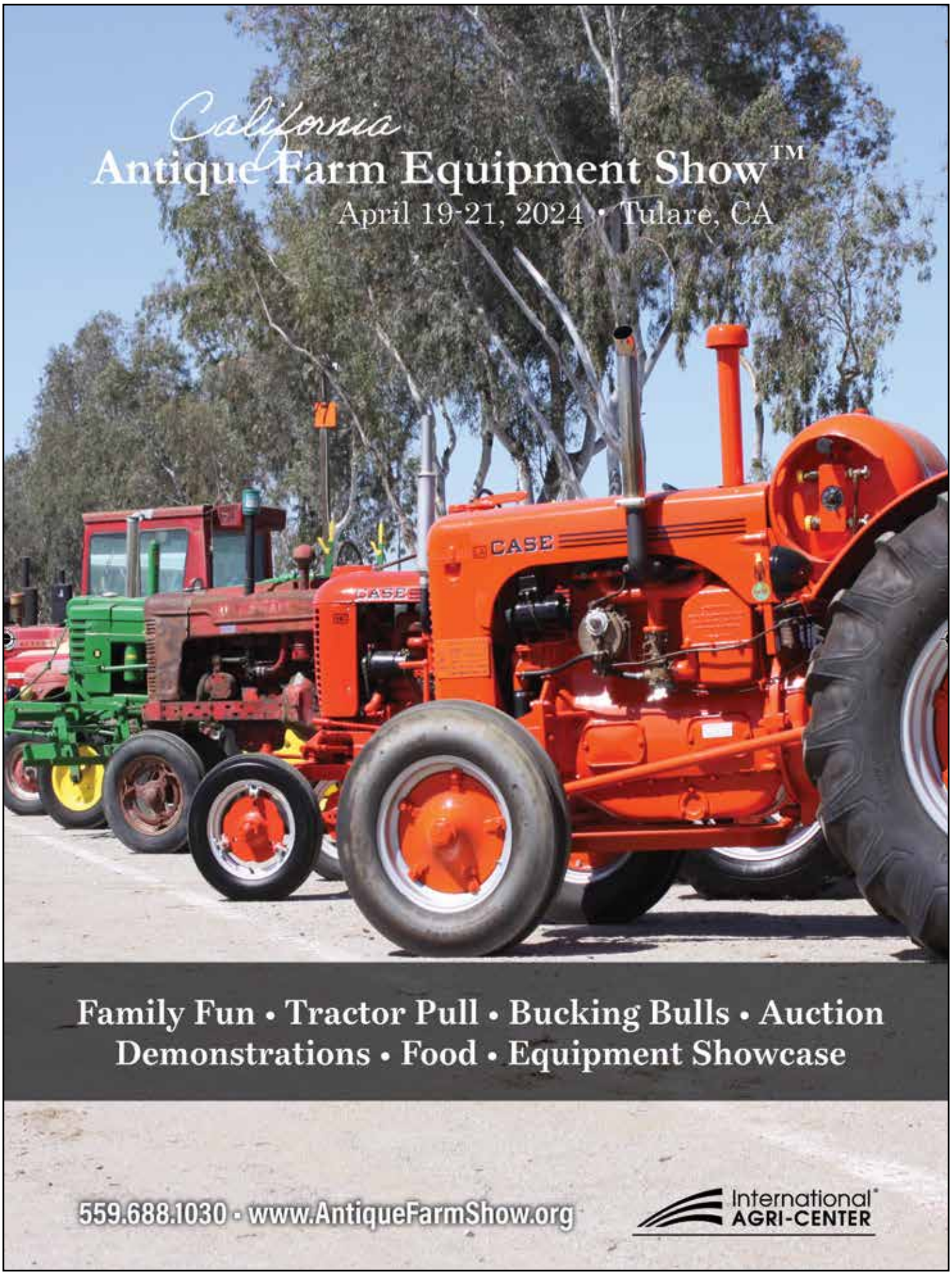
CONTACTS

Editorial Office
California Farm Equipment
P.O. Box 1128, Visalia, CA 93279
Telephone (559) 627-2182. Website at: www.californiafarmequipment.com

Advertising
Contact the Advertising Department at 559-627-2182 or email: info@cfemag.com

Subscriptions
For a one year subscription $18.00 and for a three year subscription $36.00. Out of the country one year $75.00 except for Canada and Mexico $50.00.

For all inquiries, send to California Farm Equipment, P.O. Box 1128, Visalia, CA 93279, call 559-627-2182 or email us at info@cfemag.com


California
Antique Farm Equipment Show™
April 19-21, 2024 • Tulare, CA
CASE
CASE
Family Fun • Tractor Pull • Bucking Bulls • Auction
Demonstrations • Food • Equipment Showcase
559.688.1030 - www.AntiqueFarmShow.org
International AGRI-CENTER

North San Joaquin Valley Earns High AA Rating to Create Tree Nut Biomass Industries

AA rating means the region is filled with biomanufacturing opportunities because of available woody and nut tree biomass.

The almond industry and the innovative bioeconomy in the North San Joaquin Valley got a boost to develop businesses that would create new products made from almond wood, hulls and shells with a AA rating for a Bioeconomy Development Opportunity Zone.

The area, called a BDO Zone for short, is centered in Modesto and is a partnership among the Almond Board of California (ABC), BEAM Circular, which is a Modesto area non-profit that partners with private business and public entities to develop a bioeconomy, Stanislaus County, and Ecostrat. ABC and Beam funded the application for the BDO assessment.

The BDO Zone Initiative, a program to certify and rate regions for the prospects and risks for biomanufacturing opportunities, issued the high AA rating because of the availability of orchard biomass, nut tree shells and almond hulls as well as the large number of almond processors in the region. In addition, the BDO Zone has easy access to create partnerships in Silicon Valley and other tech and innovation driven areas. The BDO Zone Initiative is part of Ecostrat, a non-profit with a goal of boosting bioenergy, biochemical and biofuel development in North America.

The AA rating, "is a testament to our region's unique positioning for global leadership in the bioeconomy," said Karen Warner, BEAM Circular's CEO. "Local communities here are proactively investing in the infrastructure, partnerships and innovation that will allow us to grow world-class bioindustrial manufacturing facilities in the heart of the most productive agricultural state in America. This region is ready to support and scale the future of sustainable bioproduction."

New businesses using biomass could add new markets for the almond industry as well as further the industry's continuing efforts on environmental stewardship.

"With this rating and the research investments made by the almond industry, we stand ready to partner with companies in bio-based industries," said Josette Lewis, ABC's vice president and chief scientific officer. "Almond biomass is uniquely concentrated with well established transport systems."

Jordan Solomon, chair of the BDO Zone Initiative, said the region has more than a million tons of underutilized biomass available for projects.

"This first AA BDO Zone rating for tree nut biomass underscores the high level of readiness for biomanufacturing in the North San Joaquin Valley," Solomon said. "The zone offers very low-risk supply chains and is positioned as a prime target for top-tier and innovative bio-based projects. The collaborative efforts of organizations dedicated to realizing this BDO Zone highlight the region's visionary approach and the bold stance it takes in the global bioeconomy."

"Stanislaus County is proud to be investing in the growth of our region's bioproduction leadership," said Mani Grewal, chair of the Stanislaus County Board of Supervisors. "We are building upon our historic strengths in agriculture and manufacturing to grow the bio-based industries of the future. We welcome collaboration with new projects that create quality jobs and advance the economic vitality of our community."

The full BDO Zone rating for North San Joaquin Valley is here or visit www.bdozone.org.

2024 American Agri-Women Fly-In: Uniting Women Across the Ag & Natural Resource Inds.

American Agri-Women (AAW) is excited to announce the expansion of its annual Washington DC Fly-In event, opening it up for the first time to all women involved in the agricultural and natural resource industries. The 2024 American Agri-Women Fly-In promises to be a historic gathering, uniting women from across the country to make their voices heard on behalf of the agricultural industry in the nation's capital.

Taking place from June 2nd to June 4th, 2024, in our nation's capital, this groundbreaking event offers a unique opportunity for women across the agricultural and natural resource sectors to come together, share insights, and advocate for critical issues affecting their industries.

Key Highlights of the Event Include:

• Presentations: Engaging sessions on how to make an impact at the local, state, and federal levels of government, as well as discussions on the topic of climate change regulation and its financial impact to producers.

• USDA Agency Roundtable: Interactive discussions with representatives from various USDA agencies, including FSA, Trade, NASS, APHIS, and Forestry.

• Meeting with the EPA: Limited space available for a meeting with the Environmental Protection Agency. Early registration is encouraged to secure a seat at the table.

• Cultural Experience: A visit to the Embassy of Spain, offering attendees a glimpse into the cultural and agricultural connections between Spain and the United States.

• Congressional Reception: An opportunity to network and engage with congressional representatives, fostering dialogue on important agricultural issues.

• Senate & Congressional Visits: Participants have the chance to schedule visits with their preferred members of Congress to discuss priority AAW issues.

Join Us in Washington, DC: The 2024 American Agri-Women Fly-In offers a unique opportunity for women across the agricultural and natural resource industries to come together, advocate for important issues, and make a lasting impact. Don't miss this chance to unite as one voice in the nation's capital!

For more information and to register, visit https://americanagriwomen.org/flyin

New Discovery Speeds Scientists' Push for HLB-Tolerant Citrus

It's one thing for a hybrid citrus tree to tolerate citrus greening disease (a.k.a. Huanglongbing) and quite another if it also produces orange-like fruit—especially if the juice makes for a delicious breakfast beverage! Now, that holy grail of traits could be closer at hand, thanks to the chemical and genetic sleuthing of a team of Agricultural Research Service (ARS) and University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) scientists.

Huanglongbing (HLB) was first detected in Florida's Miami-Dade County in 2005. The disease has since spread throughout Florida, threatening a citrus industry there that contributes nearly $7 billion to the state's economy and employs more than 32,000 individuals. The disease also poses a threat to other U.S. citrus-growing areas, including California, Louisiana and Texas.

In Florida, sweet oranges like Valencia, Hamlin and Midsweet are the main varieties used to make orange juice. However, sweet orange (Citrus sinensis) is highly susceptible to HLB, which is caused by the bacterium Candidatus Liberibacter asiaticus and transmitted by insects called Asian citrus psyllids. The disease causes citrus trees to become unproductive and fruit quality to decline. In sweet oranges, for example, the fruit of diseased trees tend to stay green and produce bitter-tasting juice, which diminishes their marketability but poses no consumer danger. Infected trees cannot currently be cured.

Scientists are investigating countermeasures on multiple fronts in hopes of providing the Sunshine State—which went from producing nearly 80 percent of U.S. non-tangerine citrus fruit to less than 42 percent—with a ray of hope. ARS efforts indirectly took root in the 1960s, when agency scientists created citrus hybrids using a relative named Poncirus trifoliata (the cold-hardy trifoliate orange) to shore up the trees' cold tolerance. The start of the HLB epidemic more than four decades later revealed something else: the hybrids also appeared to tolerate the new disease, prompting intensive research by ARS and the UF/IFAS to understand why and how this related to fruit quality.

Initial field tests and flavor evaluations showed that some of the Poncirus-derived hybrids—with the notable exception of US Sundragon—tended to produce juice with an undesirable off-flavor but aroma profiles similar to sweet orange. So, the scientists re-assessed their approach. They decided that, in addition to using data from analyses of juice-aroma compounds, they needed to get a better handle on the individual chemicals that give orange juice its characteristic flavor. And they did just that, identifying 26 total flavor compounds and seven chemicals called esters deemed essential to the desired flavor profile of orange juice.

That advance, in turn, enabled the team to pinpoint the esters' master gene, CsAAT1, and make what's known as a DNA marker for it—a tool that can be used to quickly check for the genetic presence of a desirable trait in germinated seeds versus observing its physical expression in 10- or 15-year-old mature plants.

"Breeders can use this DNA marker to screen seedlings for desired flavor profiles at an early stage," explain Anne Plotto and Jinhe Bai, plant physiologists with the ARS Citrus and Other Subtropical Products Research Unit in Fort Pierce, Florida. "By incorporating this gene into the genetic makeup of HLB-tolerant hybrids derived from Poncirus trifoliata and mandarin, or from many other possible crosses with the same objective, breeders can ensure that these new hybrids not only possess HLB tolerance but also maintain the characteristic sweet orange flavor."

A full description of the team's approach was published February 28, 2024 in the journal Science Advances.

Plotto and Bai, the principal investigators, co-authored the paper together with 11 other collaborators from ARS' U.S. Horticultural Research Laboratory in Fort Pierce, Florida, and Daniel K. Inouye U.S. Pacific Basin Agricultural Research Center in Hilo, Hawaii, and UF/IFAS' Citrus Research and Education Center in Lake Alfred, Florida, and Gulf Coast Research and Education Center in Balm, Florida.

The researchers caution that even with the use of high-tech tools like machine-learning, the first commercial releases of orange-like hybrids with HLB tolerance will be contingent on several more years of testing and refinement.

Nonetheless, "this research represents a significant step in citrus breeding, combining traditional techniques with modern genetic tools," said Plotto and Bai. "The approach could also serve as a model for other crop improvement programs," they added.

Scientists Collaborate to Study the Cause and Development of Liver Abscesses in Cattle

To effectively prevent liver abscesses in cattle, it is crucial to gain a complete understanding of the development of this condition and the bacteria responsible for causing the infection.

A collaborative effort between scientists from the USDA's Agricultural Research Service (ARS), Texas Tech University, Kansas State University, and West Texas A&M University work on reliable and repeatable liver abscess models to learn the triggers for this costly condition in cattle that not only negatively impacts animal well-being but also causes liver condemnations and may lead to increased carcass trimming and an overall decrease in profitability.

The first successful model study, recently published in the Journal of Animal Science, is part of a series of studies conducted at the USDA-ARS Livestock Issues Research Unit in Lubbock, Texas, that aim to find solutions to a problem of concern for animal well-being that is costing the industry millions of dollars.

Cattle with liver abscesses can experience health problems and reduced growth and feed efficiency. However, cattle with liver abscesses don't show clinical signs and are generally identified too late –at harvest. The economic losses associated with this condition in cattle can be as high as 400 million dollars annually. The knowledge gained from these models will help develop preventive interventions.

"After decades of studies, researchers haven't found an accurate way to predict nor diagnose liver abscesses, because of the complexity of the disease," said Rand Broadway, a research scientist with the Livestock Issues Research Unit. "Our study is a huge collaborative effort between USDA and academic partners to develop a liver abscess model in cattle that can help us better understand how liver abscess formation begins. We are constantly learning about the causes and development of these abscesses."

This model consistently showed a 50 percent prevalence, which is important for researchers to study liver abscess development and prevention strategies, particularly in calves entering the beef supply chain from dairy origin. In addition, the model continues to be improved in an effort to mimic "real-world" disease etiology while examining the physiological changes in the animal to better understand root causes of the disease.

Currently, the primary treatment to prevent liver abscesses in cattle has been in-feed antibiotics. However, antibiotics have come under more scrutiny by the general public, and alternatives to antibiotics are being sought.

"We are trying to ensure this model is effective and applicable to test non-antibiotic interventions in the future," added Broadway. "We seek to use the knowledge gained from these models to develop different alternative interventions, such as nutrition management strategies."

In the study, scientists work with dairy and 'beef-dairy' cross steers, the population of cattle that most commonly suffer from this infection. They tested two diets (a high grain-based and forage-based) and three bacteria commonly found in liver abscesses [Fusobacterium necrophorum subsp. necrophorum, Trueperella pyogenes, and Salmonella enterica serovar Lubbock]. The results from the high-grain diet model were found to be more reliable, leading scientists to focus more on this model.

Most people associate liver abscesses in cattle with a high-energy diet. The theory is that when cattle are fed elevated grain levels, highly fermentable starch in the rumen is rapidly fermented by bacteria, causing a drop in rumen pH. This acidity causes damage to the rumen lining, allowing bacteria to travel into the blood, reaching the liver and other organs where they can cause infection. However, it is still unknown with accuracy the exact route that these bacteria take to cause infection or injury to the liver.

Scientists discovered that the bacteria associated with liver abscesses in cattle may not always originate from the rumen. An alternative route may be bacterial travel from the lower gastrointestinal tract. The research showed that in some cases, when these bacteria were not detected in the acidic rumen environment caused by a high-grain diet, no liver abscesses were detected. However, when scientists introduced bacteria directly to the rumen, they observed the formation of liver abscesses and were able to isolate the bacteria from the infected sites.

The study confirms that an acidotic diet, combined with bacterial inoculation in the rumen, can be used as a model to induce liver abscesses. However, further research is being conducted at USDA to determine the consistency of the model before it can be used to evaluate new interventions to prevent this complex infection.

The Agricultural Research Service is the U.S. Department of Agriculture's chief scientific in-house research agency. Daily, ARS focuses on solutions to agricultural problems affecting America. Each dollar invested in U.S. agricultural research results in $20 of economic impact.

Come and see our huge inventory of Case IH and Kubota tractors

Low-rate financing available and or Lease options!

READY FOR RENT OR PURCHASE

from 25 hp to 620 hp

Also, for rent many implements to choose from!

Linder EQUIPMENT CO.

SERVING AGRICULTURE SINCE 1884

311 E. Kern Ave., Tulare, CA 93274

(559) 685-5000 **www.linderequipmentkubota.com**

CASE IH AGRICULTURE

Serving Agriculture Since 1884

Kubota

The John Deere Foundation Commits Nearly $4 Million in Grants to the National FFA Organization

The John Deere Foundation's unrestricted, multi-year giving supports the educational outreach and mission of FFA to lift up the next generation of leaders in agriculture.

John Deere Foundation announced a three-year grant totaling $3.9 million to the National FFA Organization (FFA), the premier organization preparing youth for leadership and careers in the science, business and technology of agriculture.

The investment builds on the Foundation's legacy of philanthropy since its founding in 1948, showcasing John Deere's continued commitment to serving those who live, work, and learn within the communities that John Deere serves. The grants will provide access to resources and educational programs to students interested in exploring a broad range of agricultural career pathways and leadership opportunities. Through this investment, Deere will continue its nearly 80 years of support for FFA.

FFA plays a critical role in the personal and professional development of future leaders through agricultural education. The John Deere Foundation's multi-year, unrestricted giving will support the National FFA Organization's vision of growing the next generation of leaders who will change the world.

"With shared values to prepare future generations for the challenges of feeding, clothing, and fueling a growing global population, the John Deere Foundation supports the FFA mission to help the next generation rise up to tackle global challenges," said Mara Downing, President, John Deere Foundation and Vice President, Global Brand and Communications at John Deere. "The John Deere Foundation will continue to invest in organizations like FFA that create meaningful, measurable, and long-lasting impact on the lives of others and provide them with the resources to help them get there."

"We are incredibly grateful for John Deere's continued support and longstanding partnership," said Molly Ball, president of the National FFA Foundation and chief marketing officer of the National FFA Organization. "By making an unrestricted, multi-year gift, John Deere is able to have the greatest impact on FFA members. This support truly helps us work toward our mission of preparing members for premier leadership, personal growth and career success."

About Deere & Company

Deere & Company (www.JohnDeere.com) is a global leader in the delivery of agricultural, turf, construction, and forestry equipment. We help our customers push the boundaries of what's possible in ways that are more productive and sustainable to help life leap forward. Our technology-enabled products including the John Deere Autonomous 8R Tractor, See & Spray™, and E-Power Backhoe are just some of the ways we help meet the world's increasing need for food, shelter, and infrastructure. Deere & Company also provides financial services through John Deere Financial.

For more information on Deere & Company, visit us at www.deere.com/en/news/.

About National FFA Organization

The National FFA Organization is a school-based national youth leadership development organization of more than 945,000 student members as part of 9,163 local FFA chapters in all 50 states, Puerto Rico and the U.S. Virgin Islands. The FFA mission is to make a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education. For more, visit the National FFA Organization online at FFA.org and on Facebook and Twitter.

About National FFA Foundation

The National FFA Foundation builds partnerships with industry, education, government, other foundations, and individuals to secure financial resources that recognize FFA member achievements, develop student leaders, and support the future of agricultural education. Governed by a 19-member board of trustees composed of educators, business leaders, individual donors and FFA Alumni, the foundation is a separately registered nonprofit organization. About 82 percent of every dollar received by the foundation supports FFA members and agricultural education opportunities. For more, visit FFA.org/Give.

Organic strawberry yields boosted by technique refined through UCCE research

There is a stark difference in plant vigor between an ASD-treated plot (left) and a standard untreated plot in an organic field infected with charcoal rot. Photo by Joji Muramoto

By Michael Hsu - Senior Public Information Representative

Troubled by puny plants, low yields and persistent mite problems, third-generation Southern California strawberry grower Glen Hasegawa was ready to give up on his transition from conventional to organic 12 years ago.

"I've always liked a challenge – but it turned out to be more of a challenge than I thought it would be!" he said.

But then, with the help of scientists including Oleg Daugovish, UC Cooperative Extension strawberry and vegetable crop advisor in Ventura County, Hasegawa tried a technique called anaerobic soil disinfestation (ASD). When applied correctly, the multi-step ASD process creates a soil environment that suppresses pathogens and weeds and makes for healthier, more robust crop growth.

"Back in the day, it was really hard to get the plant growing vigorously in organic," said Hasegawa, owner of Faria Farms in Oxnard. "So we started using the ASD and then you could definitely see that the plant had more vigor and you could grow a bigger, better plant using it."

Seeing that he could produce yields "in the neighborhood" of those grown in conventional strawberry fields fumigated with synthetic fumigants, Hasegawa was able to expand his original 10 acres of organic strawberries to 50 acres.

"I guess you could say I'm kind of a convert," he said, noting that he now applies ASD to all his acreage each year in late spring.

Joji Muramoto, UC Cooperative Extension specialist in organic production based at UC Santa Cruz, has been experimenting with ASD since it was first brought to the U.S. from the Netherlands and Japan in the early 2000s. Carol Shennan, a professor in the Department of Environmental Studies at UCSC, and Muramoto were among the first to try the technique in California. They found that ASD successfully controlled an outbreak of Verticillium wilt – caused by the pathogen Verticillium dahliae – at UCSC's small organic farm in 2002.

Since then, Shennan, Muramoto, Daugovish and their colleagues have seen encouraging results at 10 trial sites across the state.

"We demonstrated that ASD can provide comparable yields with fumigants, in side-by-side replicated trials," Muramoto said.

ASD promotes host of beneficial changes to soil ecosystem

ASD comprises three basic steps: incorporating a carbon source that is easily digestible by microbes in the soil (traditionally, rice bran has been used), further encouraging fermentation by covering the soil with plastic to limit oxygen supply, and finally adding water through drip irrigation to initiate the "anaerobic" decomposition of the carbon source and maintain the three-week "cooking" process.

The resulting cascade of chemical, microbiological and physical changes to the soil creates an ecosystem that is both conducive to strawberry growth – and inhospitable to pathogens and weeds.

See Organic Strawberry next page

Organic Strawberry

continued from previous page

"It's not like a pesticide where you have a mode of action, and thus resulting in 'A' and 'B' for you," Daugovish explained. "There's a sort of cocktail of events that happens in the soil; they all happen interconnectedly."

Compared to similar fields that did not undergo the process, ASD-applied organic strawberry fields across California have seen yields increase by 60% to 70% – and even doubling in some cases, according to Daugovish.

The UCCE advisor also shared the story of a longtime grower in Ventura County, who came to him with fields in "miserable" condition; they were plagued by one of the world's worst weeds, yellow nutsedge, and infected with charcoal rot, a disease caused by the fungus Macrophomina phaseolina. But after applying rice bran and following the ASD recipe, the grower saw phenomenal results.

"The only complaint he said to me was, 'Now I have too many berries – we have to have more pickers to pick the berries!'" Daugovish recalled.

Via researchers' meetings, online resources, on-farm demonstration trials and word of mouth from peers, use of ASD by California strawberry growers has grown significantly during the past two decades. Tracking the purchase of rice bran, Muramoto estimated that about 2,500 acres were treated by the ASD-related practices in 2023 – covering roughly half of the 5,200 total acres of organic strawberries in California.

Muramoto directly links the growth of California organic strawberry production – which now comprises about 13% of total strawberry acreage in the state – with the increasing adoption of ASD.

"If you remove the acreage with the applied rice bran over the last 10 years or so, organic strawberry acreage is just flat," he said.

Within the last decade, acreage of organic strawberries with ASD-related practices increased by 1,640 acres, which is a boon for air quality, human health and long-term soil vitality. According to Muramoto's calculations, that increase in organic acreage translates to a reduction of about 465,000 pounds of fumigant active ingredients that would have been used in growing conventional strawberries.

"There are hundreds of reports of acute illnesses related to fumigation in the record, so it's very important to find alternatives to fumigants," said Muramoto, citing California Department of Pesticide Regulation documents.

Research continues to make ASD more economical, effective

The popularity of ASD has come at a price, however, for organic strawberry growers.

"There's more organic out there, and I think most of the organic guys are using it, so there's more demand on the rice bran; the price has been steadily going up every year, like everything else," said Hasegawa, adding that he has been trying to decrease the amount of carbon while maintaining ASD's efficacy.

On top of greater demand from other growers and from beef cattle and dairy producers (who use rice bran as feed), the price also has increased due to higher costs in transporting the material across the state from the Sacramento Valley. So Daugovish and his colleagues – including Peter Henry, a U.S. Department of Agriculture plant pathologist – have been searching for a cheaper alternative.

"We all want an inexpensive, locally available, reliable, easy to use and functional carbon source, which sounds like a big wish list," Daugovish said.

Carbon sources such as bark, wood chips, or compost are ineffective, as the crucial ASD microorganisms are choosy about their food.

"Microbes are just like cows; you can't feed them straight wood; they get pretty angry," Daugovish explained. "And if you feed them something with too much nitrogen, they can't digest it – they get the runs. Microbes are the same way – you have to have the right proportion of stuff so they feel comfortable doing what they're doing."

In search of an ideal replacement, researchers tried and ruled out grass clippings, onion waste, glycerin and coffee grounds. Finally, they pivoted to a material with properties very similar to rice bran: wheat bran, in the form of wheat middlings (also called midds, a byproduct of flour milling) and dried distillers' grain (DDG, a byproduct of ethanol extraction).

After field experiments in Santa Paula, the UC and USDA researchers found that midds and DDG were just as effective at controlling soilborne pathogens and weeds as rice brain – but at 25% to 30% less cost. Their results were published last year in the journal Agronomy.

"Not surprisingly, the wheat bran has worked almost exactly the same as rice bran," Daugovish said.

He and Muramoto are now conducting trials with wheat bran at commercial fields, and the initial results are promising. Daugovish said the grower at one site in Ventura County has seen a 90% reduction in Macrophomina phaseolina, the causal pathogen of charcoal rot, in the soil – and an 80% to 90% drop in yellow nutsedge germination. They are waiting for final yield numbers after the coming summer.

While ASD has been beneficial to organic productivity and soil health, both Daugovish and Muramoto acknowledged specific limitations in suppressing the "big three" strawberry diseases: Verticillium wilt, Fusarium wilt and charcoal rot. In coastal areas with cooler soil temperatures, for example, ASD can actually exacerbate the latter two diseases, as the fungal pathogens feed on the rice bran.

"We know it works at warmer temperatures, but, practically, it's hard to do in coastal California," Muramoto said. "It would be nice if we can find a way to suppress Fusarium wilt at a lower temperature, but we don't have it right now."

That's why researchers emphasize that ASD is not a "silver bullet." It's just one tool in the organic toolbox, which includes careful crop rotation, disease-resistant strawberry varieties and better diagnostic tests that help growers pinpoint outbreaks and make the application of various methods more targeted and more efficient.

And scientists will continue to optimize ASD to make it more effective and economical for growers in the different strawberry regions of California – from the Central Coast to the Oxnard Plain.

"We know it can work really well; it's just finding the most sustainable way to do this in our region," Daugovish said. "We've got to just have an open mind and keep trying."

Tips on care of backyard chickens, sheep, goats compiled on new website

The Small Acreage Landowners website contains tips for caring for goats, cows, pigs, poultry, horses, sheep, rabbits, llamas and alpacas. Photos by Theresa Becchetti

By Pamela S Kan-Rice
Assistant Director, News and Information Outreach

UC Cooperative Extension expertise available in English and Spanish on small-scale livestock production, pasture management, pests and predators, weed management and emergency preparedness

A team of University of California Agriculture and Natural Resources advisors has created a new comprehensive website for small acreage landowners in California and beyond. The Small Acreage Landowners website, at https://ucanr.edu/sites/smacreage, is designed to be a one-stop shop for backyard livestock producers, youth raising livestock, and other small acreage landowners. Information on livestock husbandry, pasture management, pests and predators, weed management and emergency preparedness is in English and Spanish on the website.

"We've seen an amazing growth in interest in small-scale livestock production throughout California in the last four years," said project leader Julie Finzel, UC Cooperative Extension livestock and natural resources advisor for Kern, Tulare and Kings Counties. "Folks in our communities are hungry for knowledge about how to care for their land and their animals – from urban chickens to backyard goats and sheep."

The website includes specific information for most common livestock species, as well as links to sites with more in-depth information about specific topics. Other pages include information on protecting livestock and property from pests and predators, controlling common weeds and protecting water quality.

The site also provides links to a variety of other UC ANR resources, including wildfire information from the Fire Network, and videos and webinars from the UC ANR Managing Land & Livestock on Small Acreage Webinar Series.

Two horses graze in a fenced, grassy pasture.

Wildfires, floods, high winds, drought, earthquakes and snow all pose threats for small acreage landowners who may need to evacuate themselves and their livestock. The website provides disaster preparedness guides.

"We're excited this new website will make science-based information available to a wider audience," said Finzel. "Most of our educational programming has focused on commercial livestock production."

In addition to Finzel, a team of UC Cooperative Extension livestock advisors contributed to the project, including Theresa Becchetti (Stanislaus and San Joaquin counties), Brooke Latack (Imperial, Riverside and San Bernadino counties) Dan Macon (Placer, Nevada, Sutter and Yuba counties), Devii Rao (San Benito, Santa Cruz and Monterey counties), Rebecca Ozeran, former UC Cooperative Extension livestock advisor for Fresno and Madera counties and Flavie Audoin, former UCCE advisor for the Central Sierra now rangeland management extension specialist at University of Arizona. UC ANR technician Sequoia Williams in Placer County compiled information and designed the webpages.

Brown, beige and caramel-colored pigs root around in a grassy pasture.

The website gives advice for managing pasture to propagate desirable plant species and discourage weeds.

The Small Acreage Landowners website was created in part with funds from a USDA-NIFA Renewable Resources Extension Act grant.

0% APR | UP TO 48 MOS

— PLUS —

SAVE UP TO **$300*** ON SELECT KUBOTA EQUIPMENT

FRESNO
Pioneer Equipment Co.
559-486-7580

MERCED
Garton Tractor, Inc.
209-726-4600

MODESTO
Garton Tractor, Inc.
209-538-0911

NEWMAN
Garton Tractor, Inc.
209-862-3760

PORTERVILLE
Farmers Tractor
559-784-4967 • 800-533-4967

REEDLEY
Pioneer Equipment Co.
559-638-9201

RIO VISTA
Dolk Tractor Company
707-374-6438

SANTA ROSA
Garton Tractor, Inc.
707-586-1790

STOCKTON
Big Valley Tractor
800-266-9631
209-466-9631

TULARE
Linder Equipment Company
559-685-5000

TURLOCK
Garton Tractor, Inc.
209-632-3931 • 877-872-2867

UKIAH
Garton Tractor, Inc.
707-468-5880

Kubota

KubotaUSA.com

#1 SELLING TRACTOR UNDER 200 HP

6 YEARS POWERTRAIN LIMITED WARRANTY

**Based on EDA/UCC Data from 01/01/2018 - 12/31/2022 for sales of new tractors 0-200 Hp in the USA.© Kubota Tractor Corporation, 2024. 0% A.P.R. financing for up to 48 months on purchases of new Kubota LX SERIES equipment from participating dealers' in-stock inventory is available to qualified purchasers through Kubota Credit Corporation, U.S.A.; subject to credit approval. Example: 48 monthly payments of $20.83 per $1,000 financed. Each dealer sets their own price. Customer instant rebates up to $300 are available with promotional rate financing. Customer instant rebates include Orange Plus Attachment Instant Rebate of $100 with purchase of the second qualifying new implement and $200 for the third new qualifying implement. Some exceptions apply. There is no rebate on the first implement purchased. Offers expire 06/30/24. Terms subject to change. Your Kubota Limited warranty gives you specific legal rights. You may have other rights which vary from state to state. 6 years limited powertrain warranty, Kubota Tractor Corporation does not authorize any person to create for KTC any obligation or liability other than that stated in the limited warranty. This material is for descriptive purposes only. Kubota disclaims all representations and warranties, express or implied, or any liability from the use of this material. For complete warranty, disclaimer, safety and product and incentive offer information, consult your local Kubota dealer and the Owner's Warranty Information Guide for the Kubota limited warranty on all products. Visit KubotaUSA.com/disclaimers for more information.

~ 2024 ~
REAL CALIFORNIA PIZZA CONTEST

BECOME A 2024 REAL CALIFORNIA PIZZA CHAMPION

Real California Milk Kicks Off 6th Annual Search For Pizza Innovation Using California Cheese & Dairy

2024 contest includes new format, new categories, and over $28k in cash prizes

The California Milk Advisory Board (CMAB) today announced the launch of the 2024 Real California Pizza Contest, the sixth annual search for the best pizza recipes using Real California cheese and dairy. The contest, which is open to professional chefs and culinary students throughout the U.S., will award prize money totaling $28,500 for the most innovative uses of cow's milk cheeses from California. The entry submission period runs from March 18, 2024, through May 17, 2024.

This year's contest simplifies submissions into two new categories: Protein and Produce. Protein pizza recipes will highlight meat toppings in combination with Real California Mozzarella and other Real California cheeses. Produce pizza recipes will emphasize the delicious flavors of vegetables and fruits paired with Real California Mozzarella and other Real California cheeses.

"Each year we bring the best of the best in pizza together to showcase how California cheeses and dairy ingredients – paired with protein, produce or both – are essential tools for pizza flavor and innovation," said Mike Gallagher, Business and Market Development Consultant for the CMAB.

"We look forward to reviewing the submissions that celebrate California's leading foodservice cheese, Mozzarella, and our many cheese varieties."

All entries will be evaluated with the top four recipes in each category selected as finalists. The eight finalists will receive an all-expense paid trip to compete head-to-head at a bake-off event on August 7, 2024, at the Culinary Institute of America at Copia in Napa, Calif.

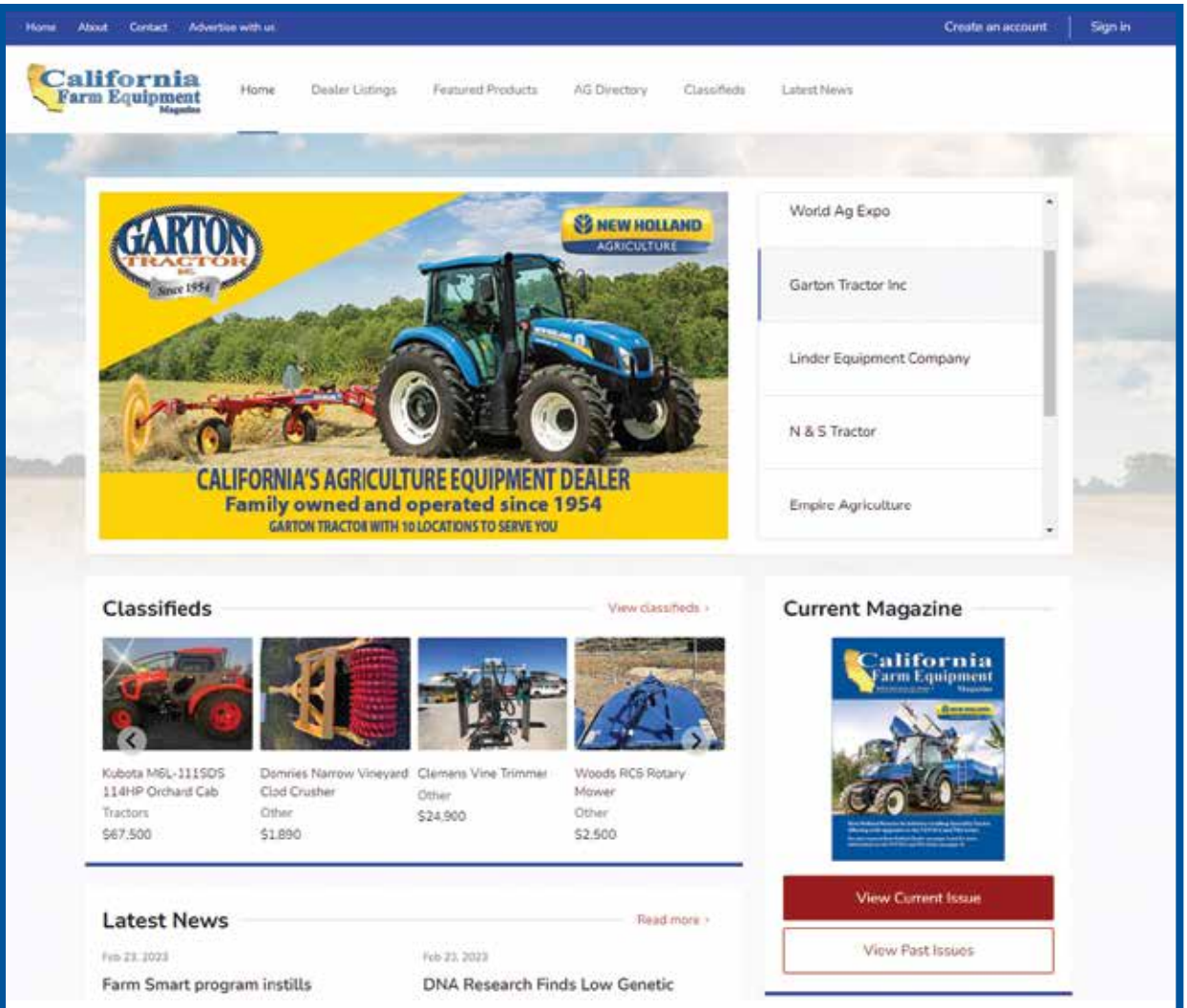
During the bake-off event, following the main competition, the eight chefs will compete in a separate Three-Cheese pizza bake-off, where they will be randomly paired and charged with crafting a signature three-cheese pizza selected from the wide array of cheeses made with Real California Milk.

The winners of the Protein and Produce categories will each receive $7,500, and the pair of winning chefs in the Three-Cheese pizza bake-off will split $7,500. All other finalists will receive $750 each.

Both competitions will be judged by an esteemed panel of award-winning pizza chefs, including 13-time world pizza champion Tony Gemignani, renowned Italian and pizza chef Glen Cybulski, and 2023 Real California Pizza Contest grand prize winner Bill Crawford of Righteous Slice in Idaho.

Professional chefs and culinary students can review the contest details, official rules, and submit entries at pizzacontest.realcaliforniamilk.com. This year's entry form includes pizza name, photograph, and a brief description detailing the recipe concept and use of Real California dairy. Chefs can choose from more than 250 varieties and styles of cheeses that feature the Real California Milk seal, which means they are made with sustainably sourced milk from California's more than 1,100 family dairy farms.

CFEM WEBSITE: CFEMAG.COM



VISIT OUR WEBSITE

CFEMAG.COM

- **FREE CLASSIFIED ADS**
  (Create Account and Place Your FREE AD or Upgrade to a Photo Ad)
- CLASSIFIEDS
- VIEW CURRENT/PAST CFEM ISSUES
- DEALER LISTINGS
- FEATURED PRODUCTS
- AG DIRECTORY
- LATEST NEWS
- FEATURED COMPANIES
- UPCOMING EVENTS
- BANNER ADS
- HYPERLINK TO COMPANY WEBSITES
- DIGITAL SUBSCRIPTION FREE
- PRINT MAGAZINE SUBSCRIPTION (MAIL)

Visit our New Website. We are a work in progress. Adding new information daily. If you encounter any problems please let us know. You can contact us at: 559-627-2182 or email: info@cfemag.com

Dairy Producers Can Enroll for 2024 Dairy Margin Coverage

Dairy producers are able to enroll for 2024 Dairy Margin Coverage (DMC), an important safety net program offered through the U.S. Department of Agriculture (USDA) that provides producers with price support to help offset milk and feed price differences. This year's DMC signup began Feb. 28, 2024, and ends April 29, 2024. For those who sign up for 2024 DMC coverage, payments may begin soon, for any payments that triggered in January 2024.

USDA's Farm Service Agency (FSA) has revised the regulations for DMC to allow eligible dairy operations to make a one-time adjustment to established production history. This adjustment will be accomplished by combining previously established supplemental production history with DMC production history for those dairy operations that participated in Supplemental Dairy Margin Coverage during a prior coverage year. DMC has also been authorized through calendar year 2024. Congress passed a 2018 Farm Bill extension requiring these regulatory changes to the program.

"FSA is announcing the sign up for 2024 Dairy Margin Coverage. We encourage producers to enroll in this important safety net program. In reviewing 2023 margins and the more than $1.2 billion in Dairy Margin Coverage payments issued to producers, Dairy Margin Coverage is proven to be a program to reduce risk for our dairy producers," said FSA Administrator Zach Ducheneaux. "If 2023 taught us anything, it's that we honestly have no idea what will happen in the market in any given year. Producers who took advantage of this affordable risk management tool for the 2023 program year, were able to mitigate some financial impacts on their operations. At $0.15 per hundredweight for $9.50 coverage, risk protection through Dairy Margin Coverage is a relatively inexpensive investment in a true sense of security and peace of mind."

DMC is a voluntary risk management program that offers protection to dairy producers when the difference between the all-milk price and the average feed price (the margin) falls below a certain dollar amount selected by the producer. In 2023, Dairy Margin Coverage payments triggered in 11 months including two months, June and July, where the margin fell below the catastrophic level of $4.00 per hundredweight, a first for Dairy Margin Coverage or its predecessor Margin Protection Program.

2024 DMC Coverage and Premium Fees

FSA has revised DMC regulations to extend coverage for calendar year 2024, which is retroactive to Jan. 1, 2024, and to provide an adjustment to the production history for dairy operations with less than 5 million pounds of production. In previous years, smaller dairy operations could establish a supplemental production history and receive Supplemental Dairy Margin Coverage. For 2024, dairy producers can establish one adjusted base production history through DMC for each participating dairy operation to better reflect the operation's current production.

For 2024 DMC enrollment, dairy operations that established supplemental production history through Supplemental Dairy Margin Coverage for coverage years 2021 through 2023, will combine the supplemental production history with established production history for one adjusted base production history.

For dairy operations enrolled in 2023 DMC under a multi-year lock-in contract, lock-in eligibility will be extended until Dec. 31, 2024. In addition, dairy operations enrolled in multi-year lock-in contracts are eligible for the discounted DMC premium rate during the 2024 coverage year. To confirm 2024 DMC lock-in coverage or opt out in favor of an annual contract for 2024, dairy operations having lock-in contracts must enroll during the 2024 DMC enrollment period.

DMC offers different levels of coverage, even an option that is free to producers, minus a $100 administrative fee. The administrative fee is waived for dairy producers who are considered limited resource, beginning, socially disadvantaged or a military veteran. To determine the appropriate level of DMC coverage for a specific dairy operation, producers can use the online dairy decision tool.

DMC Payments

DMC payments are calculated using updated feed and premium hay costs, making the program more reflective of actual dairy producer expenses. These updated feed calculations use 100% premium alfalfa hay.

More Information

USDA also offers other risk management tools for dairy producers, including the Dairy Revenue Protection (DRP) plan that protects against a decline in milk revenue (yield and price) and the Livestock Gross Margin (LGM) plan, which provides protection against the loss of the market value of milk minus the feed costs. Both DRP and LGM livestock insurance policies are offered through the Risk Management Agency. Producers should contact their local crop insurance agent for more information.

For more information on DMC, visit the DMC webpage or contact your local USDA Service Center.

APPRAISALS

Taylor AG Equip. Appraisals
ASAA Certified 34 Years
ASFMRA 2014
USPAP & Valuation
Retail AG Sales 40 + Years
916-806-7431 David

FARM EQUIPMENT

1500 Gallon Water Tank Trailer. Has good running Honda pump. Good condition. $2500 cash. Call 559-284-5940

Automatic Solar Water Pump System. Lower utility bills, no utility connect needed. Pushes up to 600 feet 30,000 gallons per day. Huge tax credits available. Call 530-273-4895

Harlo 6500 4WD, 4,646 Hours $34,500 Call 559-651-0330

John Deere 5083EN 2011, 83HP, 1700 hours, very nice condition. $19,995 or Best offer takes it. Call 559-905-3130.

Steiger PTA310 1982, 3,453 hours, SN:152-01509, 310 HP, 6-cyl Cummins Diesel $26,500. Call Richard 800-653-6279.

WATER PUMPING WINDMILLS with metal towers - New or Used windmills. prices start at $2,500.00. Call Us at 559-779-8354

GENERATOR 65KW, 300 hours, almost new. $10,000.00 Call Jim 559-261-5469.

Ford Tractor 4630 Diesel, good condition $10,000.00
Indesco Disc 6'9" $11,000.00
Call 209-632-0179

PUMA 200 RENTAL #4137, SN: ZGES02726

200 PTO HP, FT: 380/85R30 RT: 380/90R46 w/duals, RW: 1,100 LBS, GPS ready, 4 electronic remotes, warranty 6/21/21 end date or 5000 hrs. whichever comes first, now 2463 hrs.
.....Call For Price

PUMA 185 RENTAL #4131, SN: ZGES02638 185 PTO HP, FT: 380/85R30 RT: 380/90R46, RW: 1,100 LBS, GPS ready, 4 mech. remotes, warranty 5/27/21 end date or 5000 hrs. whichever comes first, now 2362 hrs.
.....Call For Price

PLUS More Rentals to Choose From
LINDER EQUIPMENT CO.
559-685-5000
*Plus Taxes, Etc. on above equipment

WANTED

British White Hefers
Extra Long Horns
Watusi Cows
Call 805-610-5855

2016 New Holland 110TL

FOR WORKMASTER Fits 35/40 TIER 3 Tractor - Compact Utility
.....$5,600.00
LOCATION: Salinas, CA

2015 New Holland TS6.140 Tractor

New, 3 Hrs., 2WD, 139 HP, Stock #FTT262
.....$45,000.00
LOCATION: Salinas, CA

Coastal Tractor
831-757-4101
*Plus Taxes, Etc. on above equipment

RENTALS

RENTALS: We Rent Farm Equipment. Linder Equipment Co., Tulare, CA. 559-685-5000.

2010 THOMAS WR944
Used $6,000.00

Location: Bakersfield CA

2023 JOHN DEERE 3032E
Used 5 hrs., Loader, Powertrain, 28 HP, 4WD, Hydro

Location: Bakersfield CA

San Joaquin Tractor Co.
Bakersfield, California 93305
Phone:(661) 705-6133

Mulrooney AUCTION COMPANY
AUCTIONEERS & APPRAISERS
Office 209-366-0600 Fax 209-366-1113
Post Office Box 748 / Galt, California 95632
info@mulrooneyauction.com • www.mulrooneyauction.com

Don't Forget to Pray!
- Pray for your people and your products.
- Pray for your grounds and your gear.

If you would like prayer support please call
Kevin at 925-765-4849

FARMALL F12 Tractor $1,600
JD (Old) Corn Planter..... $500
ROOTS Duster $300
500 Gallon water tank on trailer with pump $800
FORKLIFT (Homemade)..... $400
1955 CHEVY C30 flatbed dump $3,500
1941 FORD 1½ ton truck..... $3,500
Ceres, CA **408-250-4725**

EDWARD J. CHADWICK
YAKIMA VALLEY LOGISTICS LLC

"For Your Next Shipment Call
YAKIMA VALLEY LOGISTICS LLC
for a quick response and competitive rate"

- FLATBED
- DRY VAN
- REFRIGERATED
- HOTSHOT CARRIERS AVAILABLE

509.833.7880
ed@yvlogistics.com

GOULD AUCTION & Appraisal Co. LLC
Integrity, Experience, Results
- CONSIGNMENTS WELCOMED -
- Free Estimate on site Appraisal's or Auction Proposal -
Office (661) 587-3123 • Jerry (661) 333-3040
6200 Price Way, Bakersfield, Ca. 93308
Bond # Ca MS150-49-03 USA MS2892233
Website: www.gouldauction.com E-Mail: Gouldhitch@aol.com

SPRING SALE!

Domries ET-3322F 5'3" 3 Point Tandem Disk, 22" blades SKU: AA8624....$7,199.00*

LANDPRIDE RCF2072 72" Medium Duty Rotary Cutter SKU: 005992.....$4,235.00*

Big Tex 30SV-8 5'x8' Single Axle Utility Trailer GVWR: 2,995 w/ Spare SKU:AA4834
.....$4,100.00*

New KUBOTA B2401DTN 4wd narrow ROPS tractor SKU: 002437.....$17,499.00 *

GARTON TRACTOR INC. 877-TRACTOR
1-877-872-2867
www.gartontractor.com
QUALITY PEOPLE QUALITY PRODUCTS
Turlock • Newman • Fairfield • Fresno
Madera • Merced • Modesto • Santa Rosa
Stockton • Tulare • Ukiah • Woodland
*Plus tax, shipping, etc.

Run It Til It SELLS!

"Let us help you sell your equipment-
with one low-cost classified ad!"
...and as an added bonus we'll list your
classified ad on the world wide web
for no additional charge!

Use this order form to place your ad or give us a call today!

- Minimum ad size is 15 words.
- Mail order form and payment to:

California Farm Equipment Classifieds
P.O. Box 1128
Visalia, CA 93279-1128

- Or call in your ad Today!

559-627-2182

A friendly classified representative will help you with your ad. Please have your credit card ready when you call.

Name_____

Street_____

City _____State ___Zip_____

Phone _____ E-mail _____

Method of payment enclosed:: ☐Check ☐Money Order

Credit Card: ☐Visa ☐MasterCard ☐American Express

Account Number_____CID#_____

Exp. Date_____

Signature _____

# of Words in Ad?_____ Month ad should appear in:_____

What Category to run ad under: _____

Fill out below exactly how your ad should appear. Please print clearly- One word per line. Phone number is one word.

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
				15-$19.00
_____	_____	_____	_____	_____
16-$19.90	17-$20.80	18-$21.70	19-$22.60	20-$23.50
_____	_____	_____	_____	_____
21-$24.40	22-$25.30	23-$26.20	24-$27.10	25-$28.00

UPCOMING EVENTS

APRIL 2024

4-6: American Agri-Women Mid-Year Meeting. Each year in April, American Agri-Women hosts a Mid-Year Meeting for those interested in discussing current agricultural issues and policies. Hilton Garden Inn Manhattan, Kansas. For more information visit: www.americanagriwomen.org/events

19-21: California Antique Equipment Show. Welcome to the best show in the West for old iron! FAMILY FUN AROUND EVERY CORNER. Visit agriculture's past by learning about tractors, engines, equipment, and more. Located right off Highway 99, the International Agri-Center® is easy to get to. For more information call 559.688.1030 or 800.999.9186 or Email; antique@farmshow.org

JUNE 2024

2-6: American Agri-Women Legislative Fly-In. Join us in D.C. and have our voices heard! We develop our policy positions each year at our Mid-Year Meeting to present at our annual Legislative Fly-In to Washington, D.C. each June. Embassy Suites by Hilton Crystal City, Arlington, VA. For more information visit: www.americanagriwomen.org/events

26-27: California Cattlemen's Association Mid-Year Meeting. Attend and be active in setting CCA policy. Come discuss issues with fellow producers and hear updates. Your voice helps develop policy that provides direction for your organization. Nugget Casino Resort, Sparks, NV. For more information Visit: https://calcattlemen.org/events/

NOVEMBER 2024

14-17: American Agri-Women 2024 50th National Convention. Come celebrate our 50th anniversary in Fond du Lac, Wisconsin! Details coming soon, stay tuned! For information visit: www.americanagriwomen.org/events

DECEMBER 2023

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.

To list your special event in California Farm Equipment send details to CFEM, PO Box 1128, Visalia, CA. 93279. or email to: info@cfemag.com.

Applications for USDA Urban Agriculture and Innovative Production Grants Due April 9

The U.S. Department of Agriculture (USDA) is accepting applications for grants to support urban agriculture and innovative production. Applications for USDA's Urban Agriculture and Innovative Production grants are due April 9, 2024, via grants.gov.

"This grant program has proven very popular and impactful in recent years, and we look forward to partnering with more communities nationwide to strengthen local food systems and increase access to healthy foods," said Terry Cosby, Chief of USDA's Natural Resources Conservation Service (NRCS), which leads USDA's Office of Urban Agriculture and Innovative Production (OUAIP). "These projects will add to the important work communities are doing to build food security in underserved areas."

Since 2020, UAIP grants have invested more than $46.8 million in 186 projects across the country, and they're part of USDA's broad support for urban and innovative producers. UAIP grants are available to a wide range of individuals and entities, including local and Tribal governments, nonprofits, and schools. OUAIP provides grants for two types of projects, Planning Projects and Implementation Projects.

Planning Projects

Planning Projects initiate or expand efforts of farmers, gardeners, citizens, government officials, schools and other stakeholders in urban areas and suburbs. Projects may target areas of food access, education, business and start-up costs for new farmers and the development of plans related to zoning and other needs of urban production. For example, the May James Urban Agriculture Park Planning project in Charlotte, N.C. will address significant issues including food deserts, socio-economic disparities, physical inactivity and nutrition-related health problems by planning an urban agriculture park in an underserved area. In Flagstaff, Ariz. the County of Coconino and partners will develop, implement, and refine a model for community and culturally connected agriculture education to increase engagement in the local food system and increase food security for resident populations in need.

Implementation Projects

Implementation Projects accelerate existing and emerging models of urban, indoor and other agricultural practices that serve farmers and communities. Projects may improve local food access, include collaboration with partner organizations, and support infrastructure needs, emerging technologies, and educational endeavors. For example, Flint River Fresh in Albany, Ga. will bring fresh, healthy food directly to the community and guide residents to self-sufficiency and entrepreneurship through urban agriculture including a new hydroponic greenhouse, a grocery space in a low food-access location and expanded outreach and educational opportunities. Grow It Forward in Manitowoc, Wis. will increase food production and improve access to local healthy food, establish an urban agriculture training program, and expand the capacity of the existing hydroponic farm, community garden, and greenhouse.

More Information

OUAIP was established through the 2018 Farm Bill. It is led by NRCS and works in partnership with numerous USDA agencies that support urban agriculture and innovative production. Other efforts include:

Administering the People's Garden Initiative, which celebrates collaborative gardens across the country and worldwide that benefit their communities by growing fresh, healthy food and supporting resilient, local food systems using sustainable practices and providing greenspace.

Creating and managing a Federal Advisory Committee for Urban Agriculture and Innovative Production to advise the Secretary on the development of policies and outreach relating to urban agriculture.

Providing cooperative agreements that develop and test strategies for planning and implementing municipal compost plans and food waste reduction plans.

Investing in risk management education to broaden reach of crop insurance among urban and innovative producers.

Organizing 27 FSA urban county committees to make important decisions about how FSA farm programs are administered locally. Urban farmers who participate in USDA programs in the areas selected are encouraged to participate by nominating and voting for county committee members.

Establishing 17 new Urban Service Centers staffed by FSA and NRCS employees where urban producers can access farm loan, conservation, disaster assistance and risk management programs.

Partnering with the Vermont Law and Graduate School Center for Agriculture and Food Systems to develop resources that help growers understand and work through local policies.

Learn more at usda.gov/urban. For additional resources available to producers, download the Urban Agriculture at a Glance brochure or visit farmers.gov/urban.

Scientists Develop Technology to Reduce Pathogens in Intact Eggs

CDC estimates Salmonella bacteria causes about 1.35 million infections, 26,500 hospitalizations, and 420 deaths in the United States every year. Despite their appearance in everyday meals and snacks, the truth is that raw eggs and egg products can carry Salmonella and cause foodborne illness and outbreaks, and even death, in some circumstances. But researchers at the U.S. Department of Agriculture (USDA) recently found a way to combat this through Radio Frequency (R.F.) technology.

A simple solution to foodborne pathogens in eggs would be to pasteurize all raw eggs before they are consumed; however, less than 3 percent of commercial eggs are pasteurized in the United States. Conventional thermal pasteurization of intact eggs is usually a long process that involves submerging eggs in hot water for more than 57 minutes to inactivate Salmonella cells. Researchers at the Agricultural Research Service's (USDA-ARS) Eastern Regional Research Center in Wyndmoor, Pa., used a novel thermal technology that pasteurizes eggs and inactivates Salmonella cells with a short processing time.

During the study, the water molecules inside the egg rotate and align with the RF instrument's electric field. This molecular friction causes the liquid inside the egg to heat up quickly and subsequently reduce Salmonella by 99.999 percent within 24 minutes. The R.F.-processed eggs were transferred to the refrigerator and kept at 7°C for seven days to simulate the commercial cold chain temperature.

Eggs in a R.F. unitRadio frequency unit. (Photo by Joseph Sites, ARS)

"After treatment with the system, no intact Salmonella or sub-lethal Salmonella cell remnants were recovered, and no cell recovery was found in the R.F. - treated eggs when stored at retail refrigerated temperature," said USDA-ARS Research Food Technologist Daniela Bermudez-Aguirre. "The egg quality, such as the color and other parameters, were also preserved through the processing."

This technology has shown several advantages when used in food, all without a negative effect on food quality. Statistics also show that Americans consumed a total amount of 93.1 billion eggs in 2023. So, this is a promising advancement for small farmers or egg processors and can ensure food-safe eggs while minimizing Salmonella. Consumers will also benefit from this technology since it preserves the quality of the eggs that can be used for special markets such as nursing homes, hospitals, or schools.

ARS researchers will continue to develop this technology's capabilities and expect it to be commercially available in the near future.

Ag Directory

Ag Internet Directory

Auctions

Gould Auction
.....www.gouldauction.com

Mulrooney Auction
.....www.mulrooneyauction.com

Equipment

Agco Corporation
..... www.agcocorp.com

Big Valley Tractor
..... www.bigvalleytractor.com

Bobcat Central
.....www.bobcatcentral.com

Case Corporation
..... www.casecorp.com

Coastal Tractor Company
.....www.coastaltractor.com

Diamond A Equipment
.....www.diamondaequipment.com

Dolk Tractor Company
..... www.dolktractorcompany.com

Donahue Corporation
.....www.donahue-trailers.com

Farmers Tractor
..... www.farmerstractor.net

Garton Tractor Inc
..... www.gartontractor.com

Grasshopper
.....www.grasshoppermower.com

Hanford Equipment Company
..... www.kubota.com/DealerWeb/kubota/HanfordEquip_Hanford

Hesston by Massey Ferguson
..... www.hesston.com

Klamath Basin Equipment
..... www.klamathbasinequipment.com

Kubota Corporation
.....www.kubota.com

LAFORGE Systems Inc
.....www.laforgegroup.com

Linder Equipment
..... www.lindereq.com

Madera Tractor
.....www.maderatractor@madnet.net

Massey Ferguson
..... www.masseyferguson.us

N & S Tractor
.....www.nstrac.com

New Holland
..... www.newholland.com

Peltzer Enterprises Inc
.....www.peltzerenterprises.com

Pioneer Equipment
..... www.pioneerequipment.com

Plantel Nurseries
.....www.plantelnurseries.com

Powerland Equipment
.....www.powerlandequipment.com

Presision Air Systems Inc
.....www.precisionairsystems.com

Quality Machinery
.....quality-mc.com

Quinn Company
..... www.quinncompany.com

Rubicon Equipment
.....www.rubiconequipment.com

San Joaquin Tractor
.....sanjoaquintractor.com

Sonsray Machinery
..... www.sonsraymachinery.com

South Kern Machinery
.....www.kernmachinery.com

Valley Tractor
.....www.valley-tractor.com

Woodland Tractor & Equipment
..... www.WoodlandTractor.com

Wilkinson International
.....www.wilkinsoninternational.com

Manufacturers

McIlroy Equipment
.....www.mcilroyequipment.com

Nikkel Iron Works
..... www.nikkelironworks.com

N&S Tractor
..... www.nstractor.com

Smith Welding & Machine Shop
..... www.smithweldingshop.com

Farm Shows

Antique Farm Show
..... www.antiquefarmshow.org

Colusa Farm Show
..... www.colusafarmshow.com

World Ag Expo
..... www.worldagexpo.org

Federal Government

Army Corps of Engineers
..... www.wetland.usace.mil/

Bureau of Land Management
..... www.blm.gov

Farm Service Agency
..... www.fsa.usda.gov

National Weather Service
..... www.nimbo.wrh.noaa.gov

Organizations

Almond Board of California
..... www.almonds.com

California Assn. of Winegrape Growers
..... www.cawg.org

California Cattlemen's Association
.....www.calcattlemen.org

California Dairy Research Foundation
..... www.cdrf.org

California Poulty Federation
.....www.cpif.org

California Raisins
.....www.calraisins.org

California Rangeland Trust
.....www.rangelandtrust.org

California Strawberries
.....www.californiastrawberries.com

Far West Equipment Dealers Association
..... www.fweda.com

Real Estate

Schuil & Associates
..... www.schuil.com

Valley Real Estate
..... www.valleyre.net

State Government

Department of Agriculture
..... www.usda.gov

Department of Conservation
..... www.consrv.ca.gov

Department of Food and Agriculture
.....www.cdfa.ca.gov

Department of Pesticide Regulation
.....www.cdpr.ca.gov

Department of Water Resources
.....www.dwr.water.ca.gov

Universities

Berkeley Agriculture and Resource Dept..... are.berkeley.edu

Davis Agriculture Department
.....www.agecon.ucdavis.edu

Weather

The Weather Channel
..... https://weather.com

If you would like to have your website listed here contact us at:

Website: californiafarmequipment.com Telephone: (559) 627-2182 E-mail: info@cfemag.com

$1.7M granted for climate-smart planning led by UC ANR scientists

By Saoimanu Sope - Digital Communications Specialist

Cover crop from a UCCE led research project focused on adapting to climate change using smart land management practices. Photo courtesy of Cristina Murillo-Barrick.

In California, natural and working lands make up 95 million acres of the state and play a vital role in building resilience to the impacts of climate change. University of California Agriculture and Natural Resources was awarded $1.7 million for the California Next Generation and Equitable Climate Action Plan, as part of the state's Natural and Working Lands Climate Smart Strategy and California's 30x30 Initiative, an effort to conserve 30% of the state's lands and coastal waters by 2030.

Natural and working lands include both unmanaged and managed areas actively used for agriculture, forestry or production purposes.

Chandra Richards, UC Cooperative Extension agricultural land acquisitions academic coordinator for Southern California, and Cristina Murillo-Barrick, UCCE's Black, Indigenous and People of Color community development advisor for the Bay Area, are leading the California Next Generation and Equitable Climate Action Plan project.

To build capacity and technical assistance for climate- smart action planning, Richards and Murillo-Barrick will use the Climate Smart Land Management Program funding, awarded through the California Department of Conservation, to focus on two of the most pressing climate action issues: equitable land access and land management diversification.

According to the 2022 U.S. Department of Agriculture census, demographic data indicates that California agricultural land ownership and production is concentrated within an aging and mostly White demographic. However, research suggests diverse management practices promote healthy landscapes. This has been shown to benefit the environment, human health and climate resilience in multiple ways.

For this reason, this project centers on "historically underrepresented communities," a term that includes California Native American Tribes, communities of color, landless farmers, immigrant and non-English speaking communities and other agency-designated minority groups (racial, ethnic and non-male groups, socially disadvantaged farmers and ranchers, and California designated severely disadvantaged communities).

Focusing on Southern California, UC Cooperative Extension scientists will identify barriers to land access, management and opportunities to increase land manager diversity. They also will engage historically underrepresented communities in coalition building, capacity assessment and climate action planning.

Within the last few decades, Californians have faced increased ecosystem stressors and decreasing diversity of natural systems. This pattern continues to damage already-vulnerable communities (disproportionately historically underrepresented communities), while also worsening and intensifying climate impacts, including drought, wildfire, flooding and disease. Overcoming these kinds of systemic and structural challenges will require the next generation of land managers to reflect California equitably, while preparing them to take on climate resilience. The project will determine clear solutions and plans that enable long-term, strategic land use and protection.

To do this work, UCCE is collaborating with the Community Alliance with Family Farms (CAFF), California Association of Resource Conservation Districts (CARCD) and the California Bountiful Foundation, all of whom serve as subgrantees and will deepen connections with communities.

Organizations like CARCD have long served as "boots on the ground" personnel and have close relationships with landowners and land managers. "RCDs have been hearing the land equity need for a long time and are actively collaborating with different partners to tackle this pressing issue," said Qi Zhou, program manager of Justice, Equity, Diversity and Inclusion at CARCD and member of the Strategic Growth Council Land Equity Task Force.

"California RCDs are excited about this project because it will allow major California agriculture and conservation partners to collaboratively develop plans and implement projects centering on equity land access and land management diversification," Zhou added.

Project lead Richards said $270,000 of the grant will be reserved for new partnerships with organizations in Southern California that have experience with, and strong ties to, historically underserved communities.

UC ANR is collaborating with the California Department of Food and Agriculture as well as California Climate and Agriculture Network (CalCAN), and World Be Well, a Southern California nonprofit.

Tawny Mata, CDFA's director of the Office of Environmental Farming and Innovation, described technical assistance providers as being grounded in their local agricultural communities and recognized their importance to partners in the success of CDFA's incentive programs.

"When we do succeed in reaching historically underserved farmers and ranchers with our grant programs, it is often with the thoughtful support and planning of a technical assistance provider," Mata said. "I look forward to this project helping us refine our own technical assistance funding programs and bringing technical assistance providers together to network and share best practices for improving land access and promoting climate-smart agriculture."

"The successes of this project will elevate the voices of historically underrepresented communities, strengthening efforts in these communities to support climate action," said Richards. Additionally, the project will increase sharing of regional reports, needs assessments and community plans surrounding climate-smart management practices. Finally, it will boost technical assistance for these groups specifically.

To learn more about the Climate Smart Land Management Program and this year's awardees, visit: https://www.conservation.ca.gov/index/Pages/News/California-award-8-5-million-climate-action-natural-working-lands.aspx.

USDA Researchers Use an Edible Blue-Green Algae to Protect Honey Bees Against Viruses

Scientists at the United States Department of Agriculture (USDA)'s Agricultural Research Service (ARS) developed an edible antiviral treatment that can be used to protect honey bees against Deformed Wing Virus (DWV) and other viruses, according to a recent study published in Sustainable Agriculture.

Honey bees are important agricultural pollinators. However, viruses, including DWV, are linked to the deaths of millions of colonies worldwide. DWV, like other viruses, is most often spread by Varroa mites who carry the disease inside them and infect bee colonies. Infection typically causes deformity and death in bees, especially in the pupae and brood. These colony losses devastate beekeeping industries and pose a major risk to agriculture and the global food supply.

While there are medicines for other bee diseases and parasites, there is currently no treatment available to help beekeepers reduce viruses in their colonies. Nearly all colonies have DWV and can often be infected with multiple viruses at any given time. Effective antiviral treatments could help to improve colony health and survival as well as crop pollination efficiency.

"We found that engineered algae diets suppressed DWV infection and improved survival in honey bees," said Vincent Ricigliano, research scientist at the ARS Honey Bee Laboratory in Baton Rouge, Louisiana. "When mixed into bee food, the engineered algae boost the bee's immune system to fight off the targeted virus."

Bees feeding on a microalgae pattyHoney bees feed on a pollen patty containing microalgae. (Photo by Vincent Ricigliano, ARS)

According to Ricigliano, blue-green algae is the "bee's knees" of bee food additives. Ricigliano and other ARS researchers previously studied blue-green microscopic algae, also known as microalgae, as a potential food source for honey bees. The algae showed promise since it has a nutritional profile that resembles pollen and is scalable to the level of commercial beekeeping.

"In addition to the nutritional benefits and immune-boosting effects, engineered algae strains have the potential to protect bees against a wide variety of pathogens," said Ricigliano.

Blue-green algae grow via photosynthesis and can remove carbon dioxide from the atmosphere, making it an ecologically friendly approach to improve the health of honey bees.

"This technology represents a potential new class of treatments for honey bees that is highly sustainable and scalable," said Ricigliano.

"It can be added directly to supplemental feed without additional processing and easily integrated into beekeepers' existing management practices. However, there are regulatory considerations that must be addressed before these applications can be fully realized."

The researchers filed a patent application for the technology and plan to use variations of it to target additional bee viruses and other pathogens in future studies.

EXCLUSIVE DISCOUNTS FOR FARM BUREAU MEMBERS

LOW RATE FINANCING AVAILABLE*

on all new Farmall® series tractors

PLUS

$200 FARM BUREAU DISCOUNT**

- Farmall compact A series **($100 per unit for Farmall compact 25A)**
- Farmall compact C series
- Farmall utility A series
- Farmall utility C series
- Farmall utility U series
- Farmall 100A series
- Farmall N series
- Farmall V series

For more information visit caseih.com or contact your local Case IH dealer.

* For commercial use only. Customer participation subject to credit qualification and approval by CNH Industrial Capital America LLC. Offer valid only on new Case IH Farmall® Series tractors. See your participating Case IH dealer for details and eligibility requirements. Down payment may be required. Offer good through December 31, 2024. Not all customers or applicants may qualify for low-rate financing. Offer subject to change or cancellation without notice. CNH Industrial Capital America LLC standard terms and conditions apply.

** Offer available through December 31, 2024. Available on new Case IH Farmall tractors. This offer may be combined with other offers, but is not valid on prior purchases. A valid Farm Bureau® Membership Certificate is required, which may be obtained at fbverify.com/case. See your participating Case IH dealer for details and eligibility requirements. Not available in all states. Offer subject to change or cancellation without notice. FARM BUREAU, the letters FB, the FB National Logo, and the State Farm Bureau Logo are service marks of the American Farm Bureau Federation used under license by Case IH.

CNH INDUSTRIAL | CAPITAL

CASE IH

CALIFORNIA FARM EQUIPMENT
MAGAZINE
PO BOX 1128
VISALIA, CA 93279-1128

PRSRT STD
US POSTAGE PAID
GARDENA, CA
PERMIT NO. 40