



# California Farm Equipment Magazine

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## Unveiling California's Hidden Gem: The City of Tulare on Viewpoint with Dennis Quaid

California is brimming with hidden gems, and the City of Tulare is ready to unveil its charm on an upcoming segment of Viewpoint with Dennis Quaid. This captivating Public Television program dives into destinations that offer a unique blend of livability, adventure, and opportunity – and Tulare checks all the boxes!

Nestled in California's Central Valley, Tulare boasts a rich agricultural heritage, with a vibrant community known for its entrepreneurial spirit. But Tulare is more than just farms. The city offers a surprisingly diverse array of cultural experiences, outdoor adventures, and a friendly atmosphere that makes you feel right at home. Viewers who watch will discover:

**The essence of California agriculture:** Tulare is a cornerstone of California's agricultural industry. The segment will explore the fascinating world of farming, showcasing the dedication of local farmers and the innovative techniques that produce the bounty we enjoy.

**A vibrant arts and culture scene:** Tulare is a surprising hub for art and culture, with a thriving downtown district, museums, and galleries showcasing local talent. Viewpoint will delve into the city's creative energy and its commitment to preserving its rich history.

**Outdoor adventures for every taste:** From scenic hikes and bike rides to exploring the beauty of the surrounding countryside, Tulare offers a wealth of outdoor recreational opportunities. Viewpoint will showcase the city's natural beauty and encourage viewers to get outside and explore.

**A warm welcome awaits:** Tulare is a community that values its residents and visitors. The segment will highlight the friendly atmosphere and the welcoming spirit that makes Tulare a truly special place to live, work, and play.

As Tulare Mayor Patrick Isherwood states, "Tulare possesses a vibrant blend of agricultural heritage, fascinating cultural roots, and welcoming community spirit, and we look forward to sharing the many reasons why Tulare is such a special place to live, work, and visit."

## KIOTI Launches Smart Connected Service Solution with New KIOTI Connect App

### Stay Informed and Take Control of Your KIOTI Machinery with New Remote Monitoring Technology

KIOTI Tractor, a division of Daedong-USA Inc., announces the launch of KIOTI Connect, a connected vehicle technology app designed to enhance connectivity, efficiency, and peace of mind for KIOTI equipment owners.

KIOTI Connect provides users with real-time insights into equipment performance and location, enabling data-driven decisions that optimize operations. With advanced AI-powered predictive analytics, the system anticipates and prevents potential maintenance issues, reducing downtime and boosting overall productivity. Easy to use, the app provides seamless access to essential data and support, ensuring machine owners are connected and informed as they work.

"We're excited to introduce this AI-powered predictive analytics tool to help machine owners anticipate and prevent maintenance issues before they occur, increasing uptime and overall efficiency," said Youngjin Son, senior vice president and chief product technology officer of Daedong-USA, Inc., KIOTI Tractor Division. "Designed with customer needs in mind, KIOTI Connect takes control of managing equipment location and operational status, simplifying machine ownership, so operators can focus on the job at hand."

The KIOTI Connect app transforms the way operators work by keeping them better connected to machine status in real time. A key feature of KIOTI Connect is real-time monitoring, providing immediate visibility to machine health, which in turn optimizes machine usage. Proactive alerts remind operators about scheduled maintenance tasks, like oil changes or air filter replacements, enhancing the health and lifespan of the machine. Soon, smart remote diagnostics will enable users to troubleshoot and identify issues remotely, reducing downtime by resolving issues quickly.

Additional services provided in the first phase of the app include the OpenAI AI language model. The GPT-based solution is tailored for the agricultural



sector, providing customers with an efficient way to access a wide range of information related to agriculture practices and tractors.

Operators can track the machine location through their device, set up custom geofences, and remotely enable restart inhibitors. Through these features, customers will gain peace of mind and stay informed with alerts on movement and more.

To further unlock the potential of their machines, owners will soon be able to utilize KIOTI Connect to discover compatible attachments or access essential resources, like maintenance schedules, manuals, and troubleshooting guides. KIOTI Connect gives operators everything they need to maximize performance and get the job done right.

Currently, KIOTI Connect is compatible with RX Series, HX Series, and compact construction models free of charge for the first three years, giving users the opportunity to experience its full range of features. After the initial period, customers will have the option to continue with a subscription or discontinue the service.

KIOTI plans to expand the service to additional equipment lines in 2025, further enhancing accessibility and operational efficiency across a broader range of machines. To learn more, visit [KIOTI.com](http://KIOTI.com) or download KIOTI Connect from the App Store or Google Play.



# Sweet molasses feed key to understanding grazing behavior in cattle

## Recognizing behavior could optimize herd distribution, enhance nutrition

Photo by Kristina Horback, UC Davis

By Emily C. Dooley, UC Davis

Researchers tempted grazing cattle with sweet molasses feed to discover whether cows would roam far and wide to graze or stick close to the herd, water supplies and feed stations.

The findings by animal scientists at the University of California, Davis and published in the journal *Scientific Reports*, offer a low-cost way for ranchers and others to identify the best cows for their landscapes to optimize grazing while meeting the nutritional needs of cattle.

This is the third in a series of papers about research seeking to better understand the grazing personalities of cattle. The first studies established that the cows weren't mindless wanderers or followers but had personalities that differentiated how far and wide they would graze, said Kristina Horback, the senior author on the paper and an associate professor in the Department of Animal Science.

"This final study is trying to figure out, 'Can we have any early indicators so that we don't have to put GPS collars on all cows, but just do a quick practical test?'" Horback said.

Water quality, soil health and habitats can be degraded by cattle grazing unevenly or concentrated in specific areas. A herd with animals that wander around a landscape to graze can benefit the landscape by distributing grazing areas and defecation sites while also reducing fuel loads for wildfires.

### Routine checks yield grazing personality

The research took place from June to August over two years at the UC Sierra Foothill Research and Extension Center in Browns Valley. Horback and others tracked 50 pregnant Angus and Hereford beef cows wearing GPS collars across the 625-acre site, which is a mix of grassland and treed areas. The elevation ranged from 600 to 2,028 feet.

Researchers were able to predict cows' likely grazing personalities by analyzing behavior in situations such as pregnancy checks or vaccinations, which require the cows to walk through chutes or narrow passageways.

At the end of the chutes, the cows had two choices: go one direction to join the herd or another direction to pur-

sue sweet molasses feed placed at different distances. The animals that moved slowly through the chutes and would go out of the way for the feed were consistently the grazing wanderers.

"They were the ones on range that would go far and wide, that would also not really be that motivated to be closely, tightly packed with the rest of the herd," Horback said.

The homebodies consistently sought out the herd.

"They would not choose that sweet molasses," Horback said. "They would go right back to the herd as quickly as they could, and then on range, they would just stay together. They have their social group there."

### Future generations

Next up in the research is to see if grazing personalities pass down to later generations. Horback is looking at the female calves of the studied cows to see if they pick up on the same patterns as their moms.

"If there are any calves who are fostered off to another cow, do they pick up the grazing patterns of their birth mom or their adopted mom?" Horback said. "There's no guarantee that genetics alone will determine the grazing behavior of a cow, but it could increase the likelihood that a cow is a hill-climber or a bottom-dweller."

She is also working with colleagues in New Zealand and New Mexico to analyze blood samples from the cows that were tracked as part of related studies to see if genetic testing can provide some insight into behavior.

UC Davis emeritus professor Juan Medrano published research a decade ago about genetic markers in cows that could indicate either hill-climbers or bottom-dwellers.

"I hope to build on that knowledge with a larger, international dataset to understand whether grazing personalities are heritable," Horback said.

Maggie Creamer, who earned her Ph.D. in animal behavior at UC Davis, contributed to the research, which was supported by the Russell L. Rustici Rangeland and Cattle Research Endowment.

This story was first published on the UC Davis News site.



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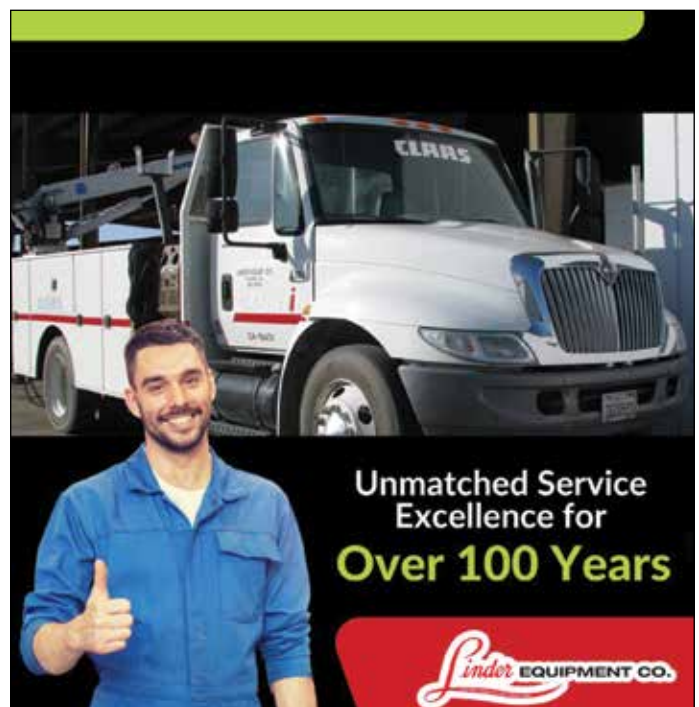


# Linder Equipment Company - 141 years and still going strong serving California's Central Valley



The Linder family has served the ag industry in California's Central Valley since 1884. Reynold Linder, former CA Senator, opened Linder and Harlow, a farm implement business in July of 1884. Just to put that in perspective, the Linder family has been doing business in Tulare since the telegraph was first used and before the Statue of Liberty was first unveiled. Soon after it's beginning, Reynold Linder bought out Mr. Harlow and renamed the business, Linder Hardware Company. In those early years, Linder Hardware Company included a full-service grocery, along with a general stock of hardware necessities. Together, Reynold Linder and his son George established a reputation built on strong character and unmatched work ethics. For many years they kept farmers thriving and growing. In 1947 David Linder, Reynold's grandson, crossed the street and opened Linder Truck and Tractor Co. as an extension to the services Linder Hardware could offer the community of Tulare and the surrounding areas. Today, Linder Equipment Company sits on the corner of Kern and L Street in Tulare and is your one stop shop for all things agriculture. Whether you are looking for sales, rentals, parts, or service, Linder Equipment Company has it all. The store is an authorized dealer of Kubota, CLAAS, CASE IH, Jack Rabbit, and many other shortlines. Among other things, it boasts the largest parts stock in a single location this side of the Mississippi.

The family owned and operated business is currently led by the 5th generation. Their mission: to conduct business guided and governed by the highest of standards and business ethics. Like the family before them, they strive to make their reputation an invaluable and permanent asset to the community. In 1934 a publication prepared by the Tulare Times and Advanced Register, titled Life Stories of Tulare Citizens featured a piece on George Linder, Reynold's son, which they adhere to today. "To manage an institution possessing the magnitude and diversification of the Linder store requires executive ability of a high order, a keen sense of values and an appreciation of the importance of character and efficiency in the matter of building up an executive staff and store personnel." Consequently, the management team at Linder Equipment Company are a dedicated group of professionals who provide excellent leadership to staff and quality service to customers. It is because of their hard work that Linder Equipment Company thrives and continues to serve multi-generations of customers today. Accordingly, the family owned business, which spans 141 years of personalized quality service, will continue to serve California's Central Valley for many years to come.



# California Farm Equipment

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# Carbon Robotics Introduces Faster, Lighter and Modular LaserWeeder G2 Product Line

*Powered by Carbon AI, LaserWeeder G2 provides farmers with the world's most precise weed control in new sizes, configurations and prices*



The LaserWeeder G2 600 (20-feet) and G2 200 (6.6 feet) in the field. | Photo Credit: Carbon Robotics

Carbon Robotics, the leader in AI-powered farming, today debuted LaserWeeder G2, its new product line that combines the latest AI, computer vision, robotics and laser technology for precision weed control. LaserWeeder G2's faster, lighter and modular design makes precision weeding available to more farm sizes, field configurations, crop types and farm budgets around the world. By eliminating the need for hand labor, herbicides and mechanical weed control, the LaserWeeder G2 reduces farmers' weed control costs by up to 80%, increases crop yields and boosts farm profitability.

"At Tanimura & Antle, we have a long history of implementing cutting-edge innovations throughout our operations in order to drive efficiency, advance sustainability and produce the premium quality fresh produce our customers expect," said Scott Rossi, vice president of northern farming operations at Tanimura & Antle. "The LaserWeeder G2 is another game-changing technology that we have been implementing in our commitment to innovation. By integrating this precision technology into our operations, we are taking another step forward in reducing labor costs, optimizing resources and continuing our legacy of innovation in the industry."

The LaserWeeder G2 product line delivers significant efficiency improvements, operating up to twice as fast as its predecessor to maximize laser-weeded acres per hour. New models are lighter, starting at 4,250 pounds and the 20-foot model is 25% lighter than the original LaserWeeder. This enables LaserWeeder G2 models to be paired with lighter and less expensive tractors, reducing soil compaction and allowing for earlier field entry. Additionally, its modular design sup-

ports machine widths ranging from 6.6 to 60 feet, offering flexible configurations to fit diverse farm requirements and budgets.

The LaserWeeder G2 incorporates advanced technologies to maximize performance and reliability. Its powerful new 240-watt lasers reduce shoot times, enabling growers to cover more acres in less time. Upgraded NVIDIA graphic processing units (GPUs) accelerate image processing for precise and accurate weeding. High-resolution cameras with enhanced optics ensure clear and detailed visualization. The 100% liquid-cooled system maintains consistent and dependable operation in

all conditions, day or night. With Starlink high-speed internet, the LaserWeeder G2 product line supports fast model updates and seamless image uploads.

With new size options and a range of price points, the LaserWeeder G2 brings laser weeding within reach for more farmers around the globe. Available configurations include:

Specialty Vegetable Crops and Herb Models

#### **LaserWeeder G2 200**

Width: 6.6 feet (2.0 meters)

Weight: 4,250 pounds (1,928 kilograms)

Description: Ideal for smaller farms, its compact size makes it easier to transport.

#### **LaserWeeder G2 400**

Width: 13.3 feet (4.0 meters)

Weight: 6,000 pounds (2,722 kilograms)

Description: A versatile mid-size model capable of handling diverse crop types and field layouts.

#### **LaserWeeder G2 600**

Width: 20 feet (6.1 meters)

Weight: 7,200 pounds (3,266 kilograms)

Description: The next generation of Carbon Robotics' industry-leading LaserWeeder, designed for a wide range of specialty vegetable and herb crops.

Broadacre Organic Corn and Soybean Models

#### **LaserWeeder G2 1200**

Width: 40 feet (12.2 meters)

Weight: 12,000 pounds (5,443 kilograms)

Description: Specifically designed for organic corn and soybean operations, this model introduces the first broadacre

*See LaserWeeder next page*



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## LaserWeeder

*continued from previous page*

weeding solution that does not disturb crops or soil, significantly increasing yields.

### LaserWeeder G2 1800

Width: 60 feet (18.3 meters)

Weight: 14,000 pounds (6,350 kilograms)

Description: Built for large-scale organic corn and soybean operations, it integrates seamlessly with farming operations standardized on 60-foot-wide farming equipment.

"LaserWeeder G2 is a huge leap forward. Designed with Carbon AI, the new product line benefits from years of learning in real-world farm fields and conditions," said Paul Mikesell, CEO and founder of Carbon Robotics. "All of the hardware components are upgraded. This was an incredible feat by our world-class engineering, product and field teams. I'm extremely proud of this new technology and how it will help farmers set a new standard in farm profitability and sustainability."

Powered by Carbon AI, the most advanced deep learning system for plant detection and identification, the LaserWeeder G2 utilizes a growing dataset of over 40 million plants labeled from three continents. To date, it has helped growers laser weed over 250,000 acres, eliminating over 15 billion weeds across 100+ different crops.

The LaserWeeder fleet operates with unified software and is controlled by an intuitive iPad operator app. Farmers can access detailed performance metrics, including crop data and intelligence on weeds, through the Carbon Ops Center and the mobile Carbon Companion App, ensuring streamlined operations and actionable insights.

All LaserWeeder G2 units are designed and manufactured at Carbon Robotics' newly opened, state-of-the-art manufacturing facility, located in eastern Washington State, USA.

To learn more about Carbon Robotics and how it's driving the future of farming, visit <https://carbonrobotics.com/>.

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# California DPR Launches New SprayDays Online System



This month, the California Department of Pesticide Regulation (DPR) is introducing a new online system, SprayDays, sharing Notices of Intent (NOI) to use a restricted use pesticide with the public. While the system will not be available to the public until March, growers and pest control advisors (PCAs) are encouraged to prepare for this change now.

SprayDays – built to meet DPR’s promise to allow a prior notification to the public of some pesticide applications – is built onto the existing CalAgPermits online system. Growers and PCAs will be required to use electronic filing unless an exemption is granted by the county agricultural commissioner. “Growers and applicators must use the CalAgPermits system for NOI submissions starting February 24, 2025. If electronic filing is not possible, they will need to obtain approval to submit a paper NOI from the County Ag Commissioner office,” explained Gabriele Ludwig, director of environmental policy at the Almond Board of California.

## Almonds

### Transitioning to an Online System

As Ludwig explained, the new system builds on existing NOI processes, which already requires pesticide applicators to provide advance notice of restricted-use pesticide applications. SprayDays leverages the CalAgPermits program which is aimed at streamlining submissions and increasing public access to information, according to DPR.

NOIs must still be submitted at least 24 hours before a planned application of a restricted-use material. For fumigants, the advance notice deadline extends to 48 hours (Note: County Ag Commissioner offices may have their own, longer deadlines). In both cases, the process remains consistent with current requirements, though the submission

method now shifts to a digital platform.

According to Ludwig, “The practical process of filing an NOI hasn’t changed significantly, but growers need to familiarize themselves with the electronic system to ensure compliance.”

### Features of SprayDays

Once the information is live to the public in late March of this year, the system offers two main tools for the public to obtain information about NOIs.

**Notifications:** Users can sign up to receive email or text alerts for planned pesticide applications near up to 10 addresses. Notifications will include the type of pesticide and the application window – which NOI windows

are good for up to four days after the application – but will not provide a specific location, just that it’s within a mile of the address the user uses.

**Searchable Map:** The system features an online map that allows users to check areas for upcoming restricted-use pesticide applications.

### Considerations for Growers

The introduction of SprayDays may come with some adjustments for growers. Public access to NOI data could lead to more inquiries or objections filed with county agricultural commissioners, potentially causing delays in planned applications.

“This system allows the public to file objections more easily, which could temporarily pause an application,” Ludwig said. “Growers should account for this possibility when planning their schedules, especially for time-sensitive applications like fumigants.”

### Preparing for the Change

With the launch of SprayDays, growers and applicators should:

- Review the system and understand its features by the end of March.
- Begin transitioning NOI submissions to the online platform, CalAgPermits.com, if not already using.
- Reach out to their county agricultural commissioner for guidance if electronic submissions are not feasible.

DPR has indicated that the system’s goal is to improve transparency to the public on pesticide use and maintain compliance with existing regulations. For more information or support, growers can review the SprayDays Program information sheet from DPR, contact their county agricultural commissioner’s office or visit DPR’s website.





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# California Avocado Commission Forecasts Healthy Harvest

## 375 Million Pounds of California Avocados Projected for 2025 Season

The 2025 California avocado harvest is now projected to be in the range of 375 million pounds, which is the largest crop



*"Photos are courtesy of the California Avocado Commission."*

The 2025 California avocado harvest is now projected to be in the range of 375 million pounds, which is the largest crop estimate for the locally grown fruit since 2020. Recent extremely high winds in California slightly dampened very early season projections, but the industry is still optimistic for a particularly good season. Investment by California avocado growers who have increased planting of new trees and improved the average per acre yield is contributing to this optimism. Fruit sizing and the actual harvest total will be influenced by natural factors, and growers are hoping for beneficial rain and sunshine to come. Meanwhile some growers are size picking now in time to support Big Game promotions with retailers. Peak availability of California avocados is expected to occur spring through summer this year.

Starting in spring, the California Avocado Commission will launch the latest evolution of its "What's Inside a California Avocado" creative campaign through advertising and social media. The creative takes consumers straight into California avocado groves to communicate key messaging of the

fruit's locally grown, sustainably farmed and ethically sourced attributes while reminding them how delicious and high-quality California avocados are. These ads were filmed in beautiful California avocado groves in San Diego, Ventura and San Luis Obispo counties. Consumer media will include streaming and connected TV, audio, outdoor and custom digital partnerships. There also will be hyper-local media outreach in key markets for the brand.

"The Commission is in full gear implementing marketing support programs for the quickly approaching California avocado season," said CAC Vice President of Marketing Terry Splane. "In addition to media and social media activity, customized marketing programs for retailers and food-

service operators who partner with the Commission are a cornerstone of CAC's trade support."

In many cases, priority communications for California avocados dovetail with strategic priorities for retailers, such as supporting local farmers, sustainability and ethical sourcing. The Commission often supports customers' own initiatives with unique materials featuring local California avocado growers. Programs can include traditional merchandising support such as point-of-sale materials, display bins, sales contests, demos and more. CAC also supports customer sponsored advertising, social and consumer public relations activities.

"This season, with additional volume projected compared to the last few years, we are excited to provide continued support to loyal partners and reach out to more customers whose strategic priorities and shopper profiles align with ours," said Splane. "We're looking forward to heightened creativity in our customer programs and our consumer marketing support."



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## ***Secretary Rollins Hosts a Roundtable with Forest Service Firefighters***

*Secretary Rollins values the perspectives and feedback of firefighters and frontlines workers.*

U.S. Secretary of Agriculture Brooke Rollins hosted a roundtable with U.S. Forest Service wildland firefighters to thank them for their heroic service during the recent California fires. She also spent time hearing their perspective on ways in which the Forest Service could better support our firefighters.

"Every time you respond to a call, you risk your lives to protect our people, our communities, and our beautiful homeland—and it doesn't go unnoticed," said Secretary Rollins. "Our entire country was horrified by the images of the raging winds, smoke, and flames during the fire that you all were fighting, most recently in the Palisades and Eaton. But in the middle of all of it—the sorrow and devastating loss—all of America was inspired by your bravery."

During the roundtable, Secretary Rollins spoke with the firefighters about their experience on the ground. She asked them for their recommendations to prevent and put out fires as swiftly as possible. She also listened to their input on ways in which the Forest Service could ensure that firefighters have

the support and resources they need to do their jobs.

U.S. Secretary of Agriculture Brooke Rollins hosted a roundtable with U.S. Forest Service wildland firefighters

The firefighters were from two exemplary crews that both played a critical role in the recent California fires: The Mark Twain National Forest Veteran's Crew based in Missouri—whose members are military veterans—and firefighters from a wildland fire engine in the Angeles National Forest in California. These crews travel across the country to respond to wildfires.

Secretary Rollins values the perspectives and feedback of firefighters and frontlines workers, and she looks forward to meeting with additional crews as she travels across the country. She is committed to ensuring that the United States has the strongest and most prepared wildland firefighting force in the world to save lives and protect our beautiful homeland.

In addition to the roundtable, on her first day in office Secretary Rollins sent a video message and a letter to all U.S. Forest Service firefighters to thank them for their service.

# *New Study Shows Eating Pistachios Daily Can Support Eye Health*

*2 daily handfuls of pistachios may help protect the eyes from blue light damage and could reduce the risk of age-related vision problems*

**C**ould 2 handfuls of pistachios a day help protect your eyes as you age? A new study from Tufts University says yes.<sup>1</sup> The research found that eating just 2 ounces of pistachios every day may significantly improve eye health by increasing levels of a key antioxidant that helps protect vision.

The study, led by researchers at the Friedman School of Nutrition Science and Policy at Tufts University, showed that pistachios, which have measurable amounts of a plant-based pigment called lutein,<sup>2</sup> can help increase macular pigment optical density (MPOD). This important part of the eye filters harmful blue (visible) light and protects against age-related macular degeneration (AMD), which is one of the leading causes of blindness in older adults.

Findings from this research are timely, as according to a national poll by the American Foundation for the Blind, Americans fear vision loss more than they fear other serious health problems.<sup>3</sup>

## What the Study Found

**Better Eye Health in Just 6 Weeks:** Middle-aged and older adults who were otherwise healthy and ate 2 ounces (about 2 handfuls) of pistachios every day saw significant increases in MPOD after only six weeks.

**Provides Antioxidant Lutein:** Pistachios are the only nut with measurable amounts of lutein, an antioxidant and blue light filter that may help protect eyes from light damage and supports long-term vision health. In the study, lutein intakes nearly doubled and blood lutein levels were significantly elevated.

**Age-Related Vision Protection:** The study suggests that pistachios could be a simple, natural way to help reduce the risk of AMD, a serious eye condition that affects millions of people as they get older.<sup>4</sup>

"Our study shows that pistachios aren't just a tasty snack—they may also be great for your eyes," said Dr. Tammy Scott, a research and clinical neuropsychologist and lead author of the study. "By eating a small amount every day, you may help protect your vision,

especially as you get older."

## How Pistachios Help the Eyes

"Lutein is an antioxidant that acts like sunglasses for your eyes," explains Dr. Scott. She adds that lutein is selectively taken up into the retina and helps filter out harmful blue light from computer screens and sunlight and may help reduce damage to the delicate parts of the eye.

Average lutein intakes are very low in the United States,<sup>5</sup> but eating pistachios may help change that. In the study, about 1.6 mg of lutein was provided from pistachios, which would be enough to double the average daily consumption of lutein in adults.<sup>5</sup>

"By simply incorporating a handful of pistachios into your diet, you can improve your intake of lutein, which is crucial for protecting your eyes," notes Dr. Scott. She adds that pistachios provide a source of healthy fat, potentially making the lutein from pistachios better taken up into the body the body.

## More Than Just Eye Health

Pistachios aren't just good for the eyes—they also have other antioxidants and plant-based compounds that could support overall healthful aging including brain health.<sup>6,7,8</sup> "As in the retina, lutein selectively accumulates into the brain, where it may help reduce oxidative stress and inflammation," notes Dr. Elizabeth Johnson, a co-investigator on the study. This makes them a great snack choice for people looking to improve overall health and well-being.

The health benefits from eating pistachios may also happen quickly. For example, this study found that it only takes six weeks of daily pistachio eating to start seeing possible eye health benefits. "Adding pistachios to your diet is an easy and simple change to make for your health," notes Dr. Scott. "It's never too early to start to think about what you can do to support healthy aging," Dr. Scott adds.

For more information about research on the health benefits of pistachios,

visit <https://americanpistachios.org/nutrition-and-health>.





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# E.M. Tharp and World Ag Expo® "We Believe in Growing"

World Ag Expo® and E.M. Tharp, Inc. have teamed up again for the 18th annual "We Believe in Growing" scholarship, supporting area high school students who will be attending four-year universities to major in an agricultural field. This year's winners, Ryan Ashford of Tulare, CA and Brayk Aguiar of Tulare, CA, will each receive \$2,500 scholarships to be renewed up to four years, totaling \$10,000 per student.

"Since 2007, we have partnered with the World Ag Expo to offer this scholarship. Each year, we provide financial support to two recipients, as E.M. Tharp recognizes the importance of education and agriculture, particularly in the Central Valley," said Casey Tharp, Vice President of E.M. Tharp, Inc. "We proudly support the World Ag Expo and are excited to continue our partnership to support the youth, who are our future leaders." The scholarship has helped over 30 students gain an education focused in agriculture.

Ryan Ashford, a dedicated student at Mission Oak High School with a lifelong passion for agriculture and engineering, is taking the next step in his journey to shape the future of agricultural processing. As a member of the engineering academy, Ryan explored various engineering fields before deciding to pursue a degree in BioResource Agricultural Engineering (BRAE) at Cal Poly San Luis Obispo. Ryan's deep involvement in FFA and 4-H, including six years of raising and showing pigs at the Tulare County Fair, has reinforced his commitment to the agriculture industry. Through livestock judging competitions, and participation in FFA's Parliamentary Procedure team and the State B.I.G. competition, Ryan has demonstrated strong leadership and dedication to agricultural education.



Coming from a family deeply rooted in agriculture, Ryan is inspired to support and improve the industry. With a mother in trucking and farming, a father as a Crop Consultant, and a brother studying Plant Science and Ag Business at Cal Poly, agriculture has always been central to his life. His grandfather's contributions, including work at Garton Tractor and serving as Farm Show president, further influenced his decision to pursue

agricultural engineering.

Beyond academics, Ryan has gained real-world experience in the agriculture industry through work with Jason Proctor Transportation, learning about the logistics of growing and transporting agricultural goods. Participation in the COS Jumpstart program for Industrial Maintenance provided technical training and valuable factory tours at Nichol's Farm and Wonderful Citrus, reinforcing an interest in agricultural processing. Ryan is determined to contribute to the industry's growth and economic success. His goal is to develop innovative solutions that enhance factory operations and minimize waste, ensuring a stronger future for agriculture.

Brayk Aguiar, a senior at Tulare Union High School, is dedicated to both academic excellence and hands-on agricultural experience as he prepares for a future in agricultural education. Maintaining a GPA of 3.4 or higher, Brayk has balanced his academics with extracurricular activities, including four years of water polo, swimming, and showing pigs at the county fair. His passion for agriculture was cultivated through years of involvement in 4-H and FFA, where he gained valuable skills in responsibility, time management, and leadership. Participating in programs such as Farm Power, Ag Mechanics Welding, and the Sweet Corn Enterprise has expanded his knowledge of agricultural operations, solidifying his goal of becoming an agriculture teacher.



Beyond his academic and agricultural achievements, Brayk has taken on a leadership role through his internship with the youth pastors at Tulare First Baptist Church, where he has grown both spiritually and personally. His commitment to mentorship and guiding others has strengthened his ability to lead by example. Additionally, Brayk has gained hands-on work experience in agriculture, first through the Sweet Corn Enterprise, where he learned crop management and labor skills, and currently at Hettinga Trans, where he works alongside mechanics to maintain and service equipment.

Brayk plans to attend Fresno State University to pursue a degree in agricultural education, inspired by the impactful mentorship of his teachers. With a strong foundation in agriculture, leadership, and industry experience, Brayk is eager to give back to the industry that has played a significant role in his life and inspire young students to pursue careers in agriculture.

To be considered for the scholarship, students from across the Central Valley submitted letters of recommendation, high school transcripts, ACT or SAT scores, and must expect to graduate from high school during the 2024-2025 school year. The winners were recognized at the World Ag Expo® Opening & Awards Ceremonies on Tuesday, February 11, 2025.





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# Kubota's New MX4900: Highly Capable Cabbed Tractor at the Lowest Price Point in the Series



From the 2025 National Farm Machinery Show, Kubota Tractor Corporation unveiled the MX4900, its newest addition to the company's popular line of utility tractors. The MX4900 was designed to be the workhorse expected of a utility tractor, but at a new price point in the MX series lineup. From transporting hay bales to grading a driveway, or performing general property maintenance, this powerhouse provides a solution that ranchers, farmers, and municipalities have been waiting for. The MX4900 will be available at authorized Kubota dealers in Spring of 2025.

"We're hitting a lot of 'wish list' items with the introduction of the MX4900: not only is it the largest chassis with an HST that Kubota offers, but this model now includes a lower horsepower offering in both a ROPS and Cab machine, placing it at a more competitive price point for the customer seeking the capabilities of a machine this size," said Tyler Weyenberg, Kubota product manager, utility tractors. "Starting at an attractive \$32,012.00 MSRP (power unit only), the MX4900 is making the dream of owning a cabbed Kubota utility tractor a feasible option for many smaller operation farmers and ranchers. Plus, with the turf tire option, it will make for an affordable utility tractor to round out turf and municipality fleets."

Powered by a Durable and Reliable Kubota Engine

There are two types of transmissions available on the MX4900: a gear drive transmission that boasts a 50.3 horsepower\* turbocharged engine with eight-forward and eight-reverse speeds, and an HST transmission model with a 51.8 horsepower\* turbocharged engine and three-range speed. Both models come equipped with a Kubota engine and Common-Rail System (CRS) with electronically controlled fuel injection. The Kubota diesel engine is designed to maximize performance and provide a com-

fortable operating experience.

Introducing Kubota's new MX4900, a capable cabbed utility tractor at the lowest price point in the series.

**Added Comfort and Simplified Ergonomics**

The MX4900 provides comfort features in both the ROPS and Cab models with simplified and ergonomically placed controls, making work easier regardless of the task at hand. Some of the MX4900 comfort features include a spacious operator station, optional suspension air ride seat with optional armrests on the cab model, and standard rubber floor mats as well as all-new optional dealer-installed LED lighting kits. The cab model is heated and air-conditioned and comes with an optional rear defogger and rear wiper.

**Performance-Matched Implements for Ultimate Versatility**

The MX4900's optional LA1065A front loader is performance-matched to the unit to allow them to work in perfect harmony. This means that the loader was engineered, built, and manufactured by Kubota to meet Kubota's pristine quality expectations. With a high lift capacity, lift height, and breakout force, the front loader provides the power needed for heavy-duty jobs and features simultaneous lift and dump capabilities of the loader and bucket to help improve productivity. Additionally, the LA1065A front loader comes standard-equipped with a two-lever quick coupler that allows for easy attachment and detachment of other optional front attachments like grapple buckets or bale spears to help reduce transition times between attachments.

The MX4900 will be available in Spring 2025 at authorized Kubota dealers. For more information or to find an authorized Kubota dealer near you, visit [www.KubotaUSA.com](http://www.KubotaUSA.com).





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# The Dark Side of Biochar

By Russell Taylor

## A critical examination of this trending soil amendment

Biochar is marketed worldwide as a climate-smart solution for improving soil management practices and crop production. What could be better for the planet than turning waste into a soil amendment that can enhance soil and plant health while improving crop yields?

For all of its exciting possibilities, biochar can also possess harmful properties that farmers would do well to consider when deciding how to improve their soil health. Crop advisors and farmers should look closer to understand the hidden downsides of biochar, which proponents of the soil amendment tend not to mention. A critical review of recently published research on biochar use offers a more comprehensive insight into the soil amendment.

Biochar generally only benefits specific soil types (e.g., acidic soils). A majority of published research and reviews lead readers to believe it's a viable solution for all soil types. However, recent biochar trials and published research papers provide data and information that should make experienced agronomists and farmers hesitant to use this soil amendment.

Biochar's benefits are overshadowed by the one-size-fits-all approach that ignores agronomic principles. The primary purpose of biochar use is to provide a climate solution — i.e., we should all use it because it helps to sequester carbon and reduce greenhouse gas emissions. This universal push ignores the variability of its benefits in different soil types (either acidic or alkaline). While biochar use does sequester carbon in all soils, the claimed soil benefits are not universally observed.

Broad biochar use as a soil amendment is a waste disposal solution, not an agronomic solution for all soils.

**What is biochar?** Biochar is a waste-derived, carbon-rich substance that is created through pyrolysis — a process of combusting organic matter at high temperatures (200°C to 900°C) with limited oxygen. Made at different temperature ranges and with a novel branding approach, biochar is a particular kind of charcoal. Unlike certain forms of charcoal, the product's intended use is as a soil amendment rather than as fuel. Those who support biochar use claim it improves soil health, boosts agricultural crop yields, and facilitates carbon sequestration.

However, meta-studies confirm that carbon sequestration and pH increase (towards alkaline) are the only consistently observed benefits. Biochar elicits benefits in some micro-conditions, commonly found in soils, more precisely acidic soils, but it's not a wide-reaching solution to our diverse agricultural challenges. What yielded terrific results in Costa Rican soil may not generate the same results in Illinois. When reviewing published papers, it's notable that the research showing micronutrient tie-up and crop yield decreases fail to make it into the climate-smart headlines.

**What are the benefits of biochar in soil?** There are benefits associated with biochar. It's an excellent waste management tool that converts waste into something potentially useful. According to the USDA, biochar can improve soil health, raise pH, remediate polluted soils, sequester carbon, lower greenhouse gas emissions, and improve soil moisture.

The International Biochar Initiative (IBI) claims that biochar fights global warming, produces a soil enhancer that holds carbon, makes soil more fertile, reduces agricultural waste, and produces

clean, renewable energy. Moreover, farmers can get carbon credit and certificates for using this amendment due to its role in carbon sequestration. Other researchers point to how using biochar as a soil amendment can increase nutrient availability and nitrogen retention, boost crop yields, and bind with heavy metals to support soil quality and environmental remediation.

These benefits sound pretty great, but as we dig into the research papers and meta-studies, it becomes clear that only a few types of biochar elicit the benefits mentioned above and only work in specific soil types. In several published papers, a significant portion of the attributed benefit comes from biochar's liming potential, which raises soil pH. According to a U.S. Biochar Initiative promotional brochure, applying biochar increased wheat production by 280%. The brochure author failed to highlight that the soil pH in the trial was 3.95, making the addition of ag lime or any product with liming potential to this soil beneficial. Unlike the severely acidic soil in the reference biochar trial, most of the world's arable soil is near neutral or alkaline and will not react significantly to items that raise soil pH.

**Concerns about biochar** - The primary issues with biochar are the notable differences in composition between the feedstocks used in the pyrolysis process and the byproducts produced throughout the process. Additionally, the research doesn't demonstrate the agronomic (soil management and crop production related) benefits we see in the media hype.

This point is emphasized in the UC Davis Biochar Database, a resource aiming to provide open access to the ever-evolving biochar data, which states, "This deficit in basic biochar science makes it difficult for biochar end users to make informed decisions regarding the specific biochar properties to consider when selecting a particular biochar for their use."

It simply means that we should take caution while utilizing biochar, even though it may still have a role in agriculture and carbon sequestration. Using biochar shouldn't be dictated by climate initiatives, disregarding agronomic principles.

One review of 259 studies conducted by researchers at Mendel University in Brno, Czech Republic, painted a less pleasant picture than the current biochar narrative. The study revealed inconsistent findings. It showed that biochar reduced soil fertility and increased soil salinity in some soils, while increasing erosion and particulate matter emissions in others. They also found that biochar causes adverse impacts on the reproduction, growth, and DNA integrity of earthworms, and negative results in the soil microbiome, such as a shift in the fungi-to-bacteria ratio.

**Charging the char** - After a quick search for biochar-related reviews online, you see a consistent mantra: "You gotta charge the char." The fundamental idea is that biochar is sterile due to the pyrolysis process, and combining it with other amendments or soil inoculants would be more advantageous. Some researchers have tested blending biochar with other organic materials, like humates.

Humates are decomposed plant matter that supports nutrient absorption and soil health. They have also been shown to support heavy metal elimination in the soil when blended with biochar.

In this research trial, both the vermicompost and the humate blended with biochar considerably lowered the human health risk index of heavy metals compared to biochar alone. However, the study did not test humate and vermicompost independently from



the biochar, suggesting that further research is needed to isolate the specific contributions of each amendment and assess whether the observed benefits are derived from the biochar or the additional materials.

In another study, researchers mixed wood biochar with arbuscular mycorrhizal fungi, concluding that the mixture inhibited phosphorus and nitrogen uptake and possibly had phytotoxic effects on potato growth. This finding is consistent with meta-studies on biochar, demonstrating a wide range of beneficial or detrimental microbial population variations observed in biochar experiments.

The USDA vaguely recommends mixing biochar with other soil amendments “to address a wide range of environmental, agricultural, and forestry challenges.” The NRCS Conservation Practice Standard Code 336 details that users should “use manure, compost tea, or compost to inoculate biochar to help an application by stabilizing pH, balancing nutrients and their interactions, and improving the moisture content of changes.”

Unfortunately, using beneficial soil amendments that provide advantages independent of biochar is not the same as recommending blending those amendments with biochar to increase soil health.

Future research is needed to demonstrate the long-term benefits of blending biochar with humates, microbes, and compost. Current knowledge is limited, and the benefits depend highly on biochar feedstock and the soil environment (rhizosphere microclimate) in which it is applied.

#### **Additional biochar concerns**

**Feedstock Viability** - Not all biochar products are equal. Biochar products vary significantly depending on their composition. Biochar is made from a wide assortment of feedstocks, including wood debris, poultry litter, switchgrass, and walnut hulls, to name a few. Naturally, varied compositions of biochar result in highly distinct products, each of which has a different effect on soil ecosystems. For instance, biochar manufactured from wood debris or crop residues does not contribute significant levels of plant nutrients like nitrogen and phosphorus. Unlike most biochar products, manure-derived biochar is a source of minor nutritional value.

**Regulatory Concerns** - As a result, biochar faces regulatory and labeling challenges because varied feedstock origins produce different nutritional content, pH, and adsorptive capacity. The Association of American Plant Food Control Officials (AAPFCO) recently established definitions and standards for biochar products that emphasize accurate labeling is necessary to help remove potential hazardous goods from the supply chain.

In 2016, AAPFCO approved an official definition of biochar for product labeling, underscoring the need for growers to know precisely what is going into their soil amendment.

*“Biochar is a solid material obtained from thermochemical conversion of biomass in an oxygen-limited environment (pyrolysis) containing at least 60% carbon. Feedstocks may be composed of crop residue, wood or other forest waste, and animal manures. Materials transported in salt water, painted, or treated with preservatives are not permitted. When listing biochar in an ingredient statement, the feedstock shall be designated by prefixing the term biochar with the feedstock from which it was produced, i.e., poultry litter biochar, green waste biochar, papermill biochar, etc. When more than one feedstock is involved, all feedstocks greater than 10% of the total volume are to be listed by decreasing volume. Their uses include soil amendments.”*

Coal can also be used to create char amendments, and research shows that coal char and biochar produce similar results in terms of soil health. In a recent study, biochar was inferior to coal char in

terms of many soil health indicators. However, the benefits of using fossil fuels (e.g., coal) to make biochar don't fit the climate-smart narrative and didn't make headlines.

**Biochar and alkaline soils** - One of the main issues with biochar use as a soil amendment is that it may adversely affect alkaline soils, which are prevalent in many regions worldwide. The liming effect of biochar leads to micronutrient deficiencies, soil health damage, and decreased yield in the environments mentioned above. Notably, much of the research touting biochar's benefits was conducted in acidic soils where biochar's alkalinity helps neutralize soil pH, such as in Brazil, Japan, and Costa Rica. The following statement related to pH and micronutrient binding is found on the International Biochar Initiative (IBI) website:

“One study that compared the effect of adding biochar to an acidic and an alkaline soil found greater benefits on crop growth in the acidic soil, while benefits on the alkaline soil were minor. In another study, adding biochar to soil caused increases in pH, which had a detrimental effect on yields, because of micronutrient deficiencies which occur at high pH (>6). Care must be taken when adding any material with a liming capacity to alkaline soils.”

Another study conducted by researchers at Delaware State University and Sichuan Normal University indicates that the best practice for biochar is to prescreen soils based on pH being less than 7.5 to avoid micronutrient availability problems caused by biochar.

**Environmental and health risks of biochar** - Biochar is credited as an environmental superhero, but the picture painted doesn't give farmers the whole story. This amendment has an environmental dark side. According to the IBI, many testing parameters, including known carcinogens, are present and must be below acceptable thresholds. Biochar may contain toxic compounds such as dioxins, furans, chlorinated hydrocarbons, and polycyclic aromatic hydrocarbons (PAHs), and its disposal may lead to secondary pollution, potentially harming human health.

Germination inhibition assays are one of the pass/fail tests needed to obtain IBI accreditation. A farmer who grows crops from seed should be highly concerned about the potential for biochar to hinder and reduce crop germination.

Many media outlets have jumped on the hype of biochar as the environmental cure to carbon removal. Microsoft announced it would buy 95,000 tons of carbon removal credits generated by a biochar production facility.

But we must ask ourselves: What is the actual impact of these credits? Is this an example of virtue signaling rather than a solution reached by listening to the insight of expert agronomists? Will this biochar be applied to soils solely to achieve carbon credits without thorough consideration of their agronomic merit?

**A call for further biochar research** - Although biochar use in agriculture has demonstrated some encouraging results in specific circumstances, many experienced agronomists agree that we must approach this soil amendment cautiously. A growing body of research confirms that biochar can be ineffective or harmful for most western soils. The scientific community will continue to conduct and review research on specific use cases in which biochar can be beneficial.

Perhaps the solution that serves farmers and environmentalists equally well is out there waiting to be realized, but we need more research on particular feedstocks, biochar variability, and their impact on specific crops' health, nutrient absorption, and yield. Crop experts and growers should wait patiently, ignore the media hype, and proceed cautiously.



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# UPCOMING EVENTS

MARCH 2025

8-9: Statewide Meeting of California Women for Agriculture  
March SWM 25', Lodi, CA. Questions? Contact us @  
statecwa@gmail.com

12: Steak & Eggs Breakfast + Lobby Day @ 8:00 am - 2:00  
pm. Sutter Club 1220 9th St., Sacramento, CA. For informa-  
tion call the CCA office at (916) 444-0845. Join us in Sacra-  
mento!

15: Non-Toxic Gopher Control Workshop. Gophers! Every  
backyard gardener's nemesis. Join vertebrate pest con-  
trol expert Thomas Whittman for this informative class on  
effective gopher control methods that are safe for humans  
and the environment. Gophers and other vertebrate pests  
take a huge toll in agriculture as well as your own back-  
yard; as much as 10 to 50% of crops can be lost to animal  
pests. Thomas Whittman has been working on this issue  
for over 35 years and has come up with innovative meth-  
ods and tools to reduce crop damage by managing pest  
populations in several ways. 1008 Ranch View Road., Santa  
Cruz, CA 95064

25: 2025 Farm Focus: California Dairy Sustainability Sum-  
mit/Davis. Will focus on equipping California dairy families  
and employees with information to further enhance and  
future-proof farming operations. The one-day confer-  
ence and tradeshow will promote innovative, practical,  
and workable approaches to advance environmental and  
economic sustainability, enabling California's family dairies  
to continue producing nutritious milk and dairy foods for  
local and global communities. Visalia Convention Center,  
Visalia, CA. Information- Website: <https://www.dairycares.com>

APRIL 2025

11-13: California Antique Farm Equipment Show™  
Volunteers started the equipment show about 30 years ago  
because they wanted somewhere to go where they could  
appreciate vintage equipment. QUESTIONS: Contact the  
International Agri-Center® 559.688.1030 or 800.999.9186.  
Email: [info@farmshow.org](mailto:info@farmshow.org)

To list your special event in California Farm Equipment  
send details to CFEM, PO Box 1128, Visalia, CA. 93279. or  
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**Call John - leave message or text (209) 988-8440**

## Resources for Those Affected by the California Wildfires



The statewide coalition of California Chambers of Commerce has compiled a comprehensive list of resources to assist those affected by the wildfires, including the following:

**Emergency Assistance:** Links to federal and state evacuation maps, shelter locations, and immediate aid.

**Financial Support:** Guidance on accessing disaster relief funds for individuals and businesses.

**Legal and Employment Guidance:** Information on employee safety, wage issues, and compliance related to disaster circumstances.

Visit the California Chamber of Commerce's website to access these resources:

<https://www.calchamber.com/wildfires>.

The California Department of Food and Agriculture also has a webpage

dedicated to wildfire resources: <https://www.cdfa.ca.gov/firerecovery/> and the USDA has an online Disaster Resource Center: <https://www.usda.gov/forestry/disaster-resource-center>.

CCOF offers financial assistance to food producers facing emergency hardship: visit our website to apply. In addition, CCOF has partnered with the California Department of Food and Agriculture to administer drought relief grants through the California Small and Underserved Producer Program, and we anticipate additional funding for extreme weather and climate impacts.

For more information on this program, click here: <https://www.ccof.org/foundation/grants-education/hardship-assistance-fund/>

CCOF members may email [memberservices@ccof.org](mailto:memberservices@ccof.org) to learn about additional support offered by CCOF.

## Are you a Specialty Crop Employer? CDFA wants to hear from you.

by Jessica Gonzalez, Policy Advocate

The California Department of Food and Agriculture (CDFA) and Specialty Crop Ag Workforce Development Program are conducting a survey of agricultural employers – and they need your help.

As California's agricultural system evolves with new technologies and practices, the workforce requires new skills. To address these needs, CDFA and the Specialty Crop Ag Workforce Development

Program are gathering input from employers. Survey results will help identify necessary trainings, classes and certifications needed across the state's production regions, promoting long-term career opportunities. The survey is part of a partnership with the Agricultural Council of California, California Farmworker Foundation, Central Valley Community Foundation, and Western Growers.

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### 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.farmerstractorandequipment.com

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

Grasshopper  
.....www.grasshoppermower.com

Hanford Equipment Company  
.....www.hanfordequipmentco.com

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

Precision Air Systems Inc  
.....www.precisionairsystems.com

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

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

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

San Joaquin Tractor  
.....www.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 Poultry Federation  
.....www.cpfif.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 Ag Real Estate  
.....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

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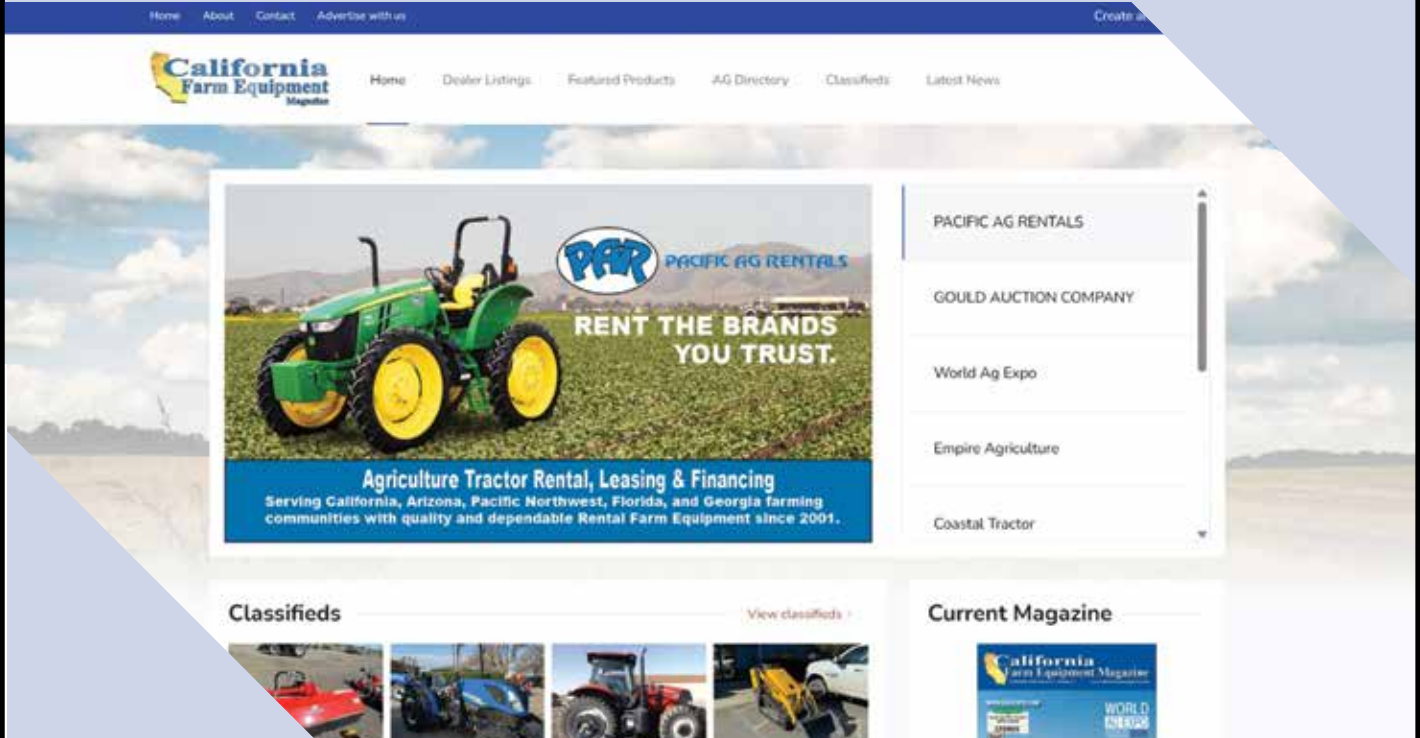
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Case IH introduced the latest iteration of the Farmall C series tractor, building upon the legacy of the popular Farmall tractor while elevating performance, comfort and power. It was on display at the 2025 World Ag Expo and National Farm Machinery Show, attendees could see how the upsized Farmall C tractor series is purposefully designed to meet the varied needs of farmers, ranchers and rural communities across the country.

“Today’s farmers need equipment that can handle the increased and varying demands of their operations,” said Leo Bose, customer segmentation lead at Case IH. “The upgrades to the Farmall C lineup give farmers just that – the flexibility and heavy-duty performance to complete a wide range of on-farm and in-field tasks.”

The new Farmall C lineup offers a 12-speed PowerShuttle and 24-speed Hi-Lo transmission, catering to varied operational needs, while offering factory-installed technology to drive on-farm efficiencies.

In addition, operators can complete a wider range of farm operations and efficiently streamline workflows with the Farmall C’s larger, reinforced front axle, boosted hydraulic flow, heavier gross vehicle weight and increased rear lift capacity.

“The new Farmall C not only offers

heavy-duty performance and maneuverability, it delivers an improved operator experience,” said Bose. “With the new ActiveClutch II™ brake to clutch feature, greater visibility, and the new L635 loader, operators can enjoy significantly increased comfort and reduced fatigue.”

The Farmall C tractor series is available in two transmission options: the 12-speed PowerShuttle transmission and the 24-speed Hi-Lo transmission. The 24-speed Hi-Lo transmission offers a new cab suspension for a smooth ride and increased comfort; an auto PTO function to automatically engage and disengage the PTO, providing seamless headland management; and an advanced loader joystick to simultaneously lift and shuttle control for fast material handling with an engine speed memory button.

The 12-speed PowerShuttle transmission – available for Farmall 100C, 110C and 120C – and the 24-speed Hi-Lo transmission option – available for Farmall 90C, 100C, 110C and 120C – comes with fully integrated base telematics to geo-locate the tractor and monitor the machine for service.

To find out more about the latest product introductions, reach out to your local dealer or visit [www.caseih.com](http://www.caseih.com).

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For more information visit [caseih.com](http://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 Maxxum Series tractors. See your participating Case IH dealer for details and eligibility requirements. Down payment may be required. Offer good through December 31, 2025. 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, 2025. Available on new Case IH Maxxum series 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](http://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.

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