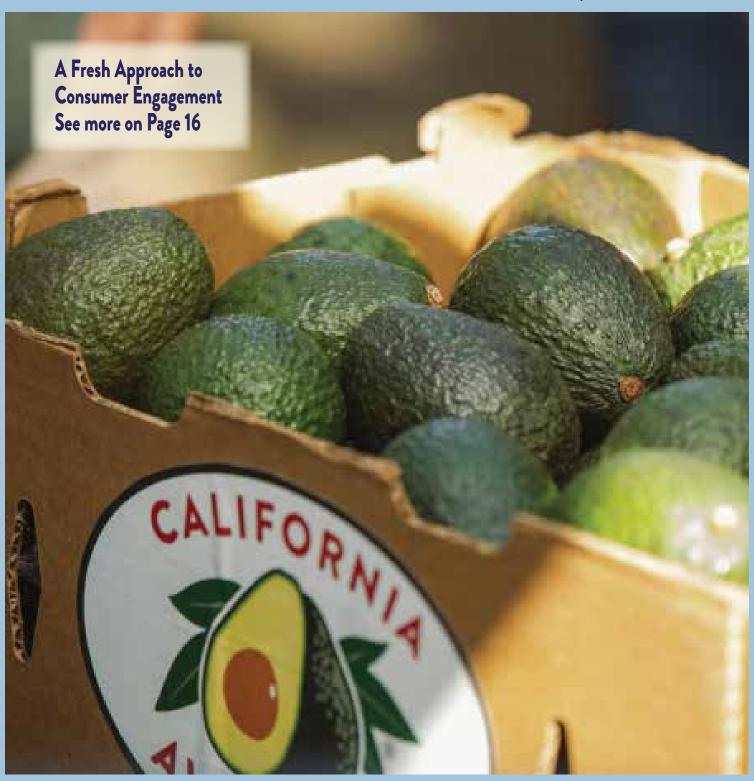
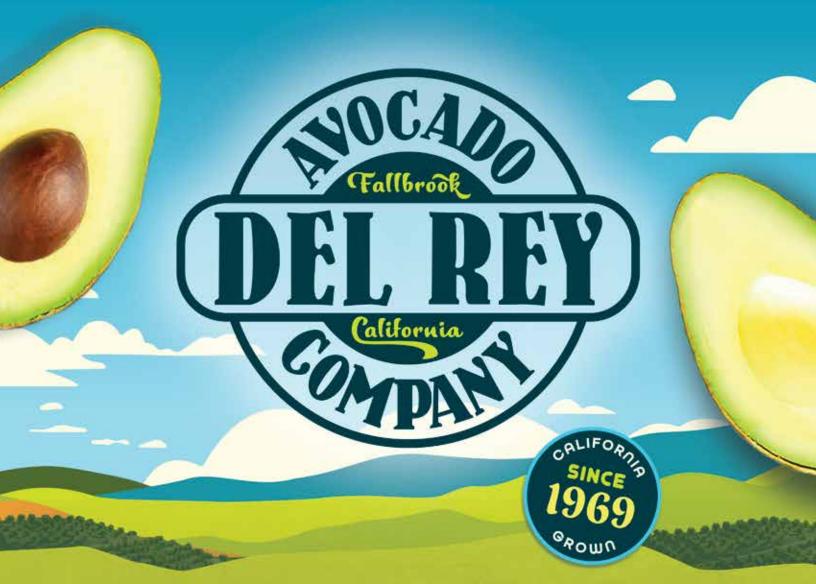


The Latest News from the California Avocado Industry





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From the Grove

Volume 14, Number 2

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The articles, opinions and advertisements presented in this magazine are designed to offer information. Inclusion in this publication does not presume an endorsement or recommendation by the California Avocado Commission for any particular product or cultural practice.

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Executive Notes

By Ken Melban Vice President of Industry Affairs & Operations



Ken Melhan

Politics of Trade

ith the 2024 U.S. presidential election in full stride, the political winds are raging. Although it may be hard to recognize the influence politics has on U.S. trade decisions affecting California avocado growers, the impact is real. As Billy Graham said, "I've never seen the wind. I see the effects of the wind, but I've never seen the wind."

During the last few months, we have seen reports of deforestation and criminal activity involving imports of avocados which help supply U.S. avocado demand. To be clear, the California Avocado Commission unequivocally opposes both. Understandably, calls have come from some California growers asking CAC to publicly call on the U.S. government to address this situation. CAC takes these calls for action seriously and in doing so is guided by the following: 1) CAC's statutory role; 2) possible courses of action; 3) potential for success; 4) unintended consequences; and 5) resources.

When the U.S. enters into trade agreements, political factors are often in play behind the scenes. For example, CAC recently submitted comments on the United States Department of Agriculture's Animal & Plant Health Inspection Services (APHIS) draft "Pest Risk Analysis for the Importation of

Fresh Hass Avocado From Guatemala Into the United States and its Associated Risk Management Document."

When a foreign country requests access to the U.S. market for avocados (or any commodity), access is granted only after a thorough phytosanitary review has occurred identifying any potential invasive pest and/or disease and establishing appropriate mitigation measures. Through an agreed-upon systems approach these mitigation measures are included in an Operational Work Plan between the U.S. and the respective country.

Here's how the U.S. presidential election affects the Guatemala request to access our country. Guatemala has one of the largest inflows of undocumented immigrants and the U.S. is committed to aid this impoverished country. In March 2024, Vice President Kamala Harris announced the "New Initiatives to Strengthen the U.S.-Guatemala Relationship and Address the Root Causes of Migration from Guatemala." One of these new initiatives is "The Enhancing the Agriculture Sector: Through extensive support from the United States government, more than 35,000 Guatemalan farmers have utilized innovative technologies to increase production and income on more than 33,000 acres

of farmland, creating greater income security and resilience to shocks, including environmental shocks."

So, on the one hand, the U.S. government (USDA APHIS) is responsible to protect American farmers from the introduction of invasive pests. On the other hand, the U.S. government is committed to supporting farmers in Guatemala, which will likely result in those Guatemalan avocado growers competing directly against U.S. avocado growers in our markets! Tough to reconcile.

As to the deforestation and criminal activity concerns, both governments are aware of the reporting we have seen, yet neither government has taken substantive action to correct the situation. CAC has had conversations with USDA on these matters and been told that modifying the OWP is on the table relating to deforestation. A positive outcome if it occurs. However, CAC also has been informed by USDA that if the OWP is opened, there may be other changes which may not result in a positive outcome (more detail below). This is the law of unintended consequences, and one which CAC remains very mindful of when considering strategies to benefit California avocado growers.

Continued on page 6





Commission representatives discuss the threat of invasive pests with California State Senator Caroline Menjivar.

CAC Calls on USDA to Maintain Current Inspections in Mexico

On June 26, 2024, CAC issued a press release calling for USDA to maintain direct responsibility for the inspection and certification of all Hass avocados grown in Michoacán and Jalisco for export to the United States.

Under the current OWP, inspections are conducted by Mexican citizens employed by USDA APHIS. The purpose of the OWP is to ensure that invasive pests do not invade the U.S. and devastate domestic avocado production. CAC firmly maintains that this direct inspection oversight is an essential component of the OWP and should not be changed.

CAC's release was prompted by two communications. First, a senior USDA official informed CAC that the State Department, specifically the U.S. Embassy in Mexico City, was recommending revising the current U.S./ Mexico OWP by transferring inspection responsibilities from USDA to the Mexican government. CAC was told this recommendation was a result of the February 2022 security incident where a USDA inspector was threatened.

The second communication was an inquiry from a *New York Times* reporter. He attended a press conference

of U.S. and Mexico officials regarding USDA's June 17, 2024, suspension of avocado and mango export inspections in Mexico due to security concerns. According to the reporter, "officials [Mexico and U.S.] said that they would progressively start replacing APHIS inspectors with Mexican inspectors to avoid stopping exports whenever there's a security concern." CAC confirmed through other sources that those comments were made.

Although USDA has not officially proposed any modification of the OWP, CAC is taking no chances and proactively stated our adamant opposition to any consideration of such a change. In part, I was quoted in CAC's release saying: "As reports of corruption and violence in Mexico continue, including regions authorized for avocado exports to the U.S., it's unimaginable the U.S. government would consider abdicating inspection responsibilities to Mexico," and that "U.S. farmers will not be protected under such a program, one intended and designed specifically to protect U.S. farmers' economic interests."

CAC will continue to monitor these trade situations. If it appears a proposed change may be forthcoming, CAC will aggressively engage and ask that industry members submit comments as well. Stay tuned.



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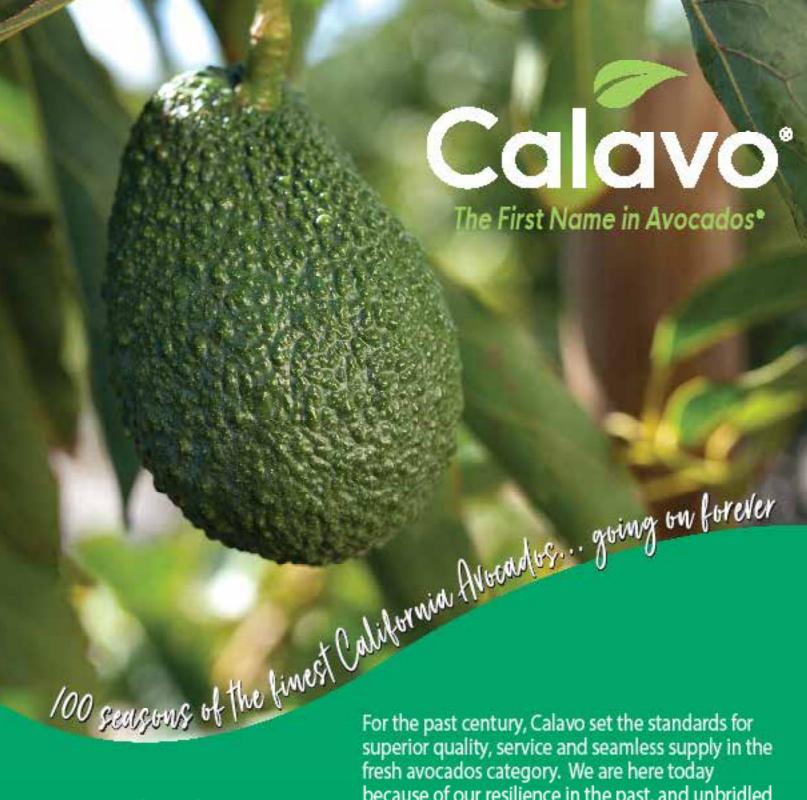
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To contact a CAC representative, please visit: CaliforniaAvocadoGrowers.com/Commission/your-representatives



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By Terry Splane
Vice President of Marketing

The Importance of Listening



California avocado growers are our constituents, so listening to them is paramount. The Commission actively and intently listens to growers at Board and Committee meetings, annual meetings and through myriad group and individual communications. The marketing staff members at key meetings observe, take notes and consolidate information based on what is said by attendees. As a team we share and discuss findings and learn from that information. When there is clear direction from the Board, we build that into our plans and actions.

When marketing does planning, we encourage creative ideas. Some ideas are wonderful, others a bit wild, but it is important to entertain even crazy ideas to find the true gems. And

sometimes the "out there" ideas – with a little tweaking and adjusting – become the big idea. We use input from growers and the Board as a filter for what programs and communications actually make it to the final marketing plan.

Customers – retailers, foodservice operators and their suppliers – are the ultimate gatekeepers determining if California avocados will be in distribution. If customers don't want California avocados, consumers won't have the opportunity to buy them. So, it is critical that we listen to our customers and potential customers to determine and meet their needs.

The CAC marketing team, especially the retail marketing directors and the foodservice team, meets with customers on a regular basis and conveys key learnings to the full team. Last year and this season we are hearing that many customers want to share with their consumers about their sustainability programs. Therefore, they appreciate the Commission's communications regarding California avocados being locally grown and sustainably farmed. We also listen to and act on customer requests for materials that help them promote California avocados, which range from display bins and point-of-sale signage to videos, recipes and photos. Some customers are most interested in assets featuring California



Terry Splane

avocado growers and groves, while for others "lifestyle" communication fits better with their marketing strategies.

Ultimately consumers are king, so we must have a pulse on their wants and needs. The Commission regularly conducts surveys of avocado consumers to track their awareness of avocado origins and advertising as well as their perceptions on assorted topics. Some of the annual business plan key performance indicators are measured via CAC's consumer tracking study and other information from the study informs our objectives, strategies and action plans.

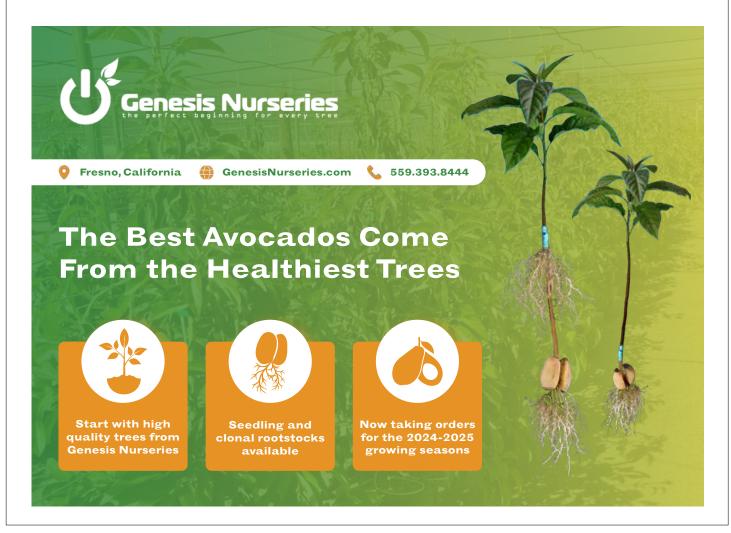
CAC and its marketing agencies keep an ear to the ground to discover consumer opinions, trends and topics of concern. These days, grocery shoppers are concerned about the cost of what is in their shopping baskets and some say they are cutting back. We have yet to see this play out with lower demand for avocados, but it is important to be aware of this concern. Targeted California avocado consumers also tend to be very interested in locally grown produce and sustainability, and that information has informed our new marketing campaign.

Since I joined the Commission one of the key things our team heard and acted upon was the need for a new agency to refresh the thought, strategy and campaign. We partnered with Curious Plot and have made significant strides evolving our consumer communications. We heard from growers that we needed to make the brand, California, even more prominent in communications, in all touch points. Within the new campaign there is significant value in focusing on locally grown and the California growers who deliver an amazing consumer experience. Finally, there is a big opportunity to attach sustainability to the brand, because it matters to our customers and consumers, and was conceived by growers. That said, we need to ensure what we communicate about sustainability aligns with grower realities.

I learned early on in business, the sum of one is never as great as the sum of many and I live by this today. Listening is valuable. Listening is vital for the business. We're listening to the people who buy California avocados and we are listening to you.



Gaining insights from foodservice operators during a California avocado grove tour.



By Tim Spann, PhD Spann Ag Research & Consulting

Irrigation Basics: From the Ground Up

n early June, the California Avocado Commission held a grower field day at Pine Tree Ranch and irrigation was the primary topic of discussion. Irrigation and Water Management Farm Advisors Dr. Ali Montazar and Andre Biscaro discussed work underway to refine the crop coefficient for avocados and how this information is used to calculate irrigation needs. Feedback from some attendees after the meeting was that the information was good but was beyond their current knowledge and understanding of irrigation management. This article is an attempt to define some of the basic terminology used in irrigation management and clarify the underlying principles needed to properly manage avocado irrigation.

Evapotranspiration

Evapotranspiration, commonly abbreviated as ET, is the sum of water lost from the soil by evaporation and transpiration. Evaporative water loss occurs directly from the soil surface and can be reduced by using mulch. Transpiration is water lost through the tree: soil \rightarrow roots \rightarrow stems \rightarrow leaves

→ atmosphere. The primary drivers of transpiration are air temperature and relative humidity. Higher temperatures and lower humidity increase transpiration and vice versa. There is essentially nothing that can be done to reduce transpiration and doing so by using antitranspirants is not good for the tree since the loss of water by transpiration (essentially evaporation from the leaf surface) is how plants regulate their temperature. When transpiration stops, as happens if the soil becomes too dry, leaves heat up and severe damage, even plant death, can occur.

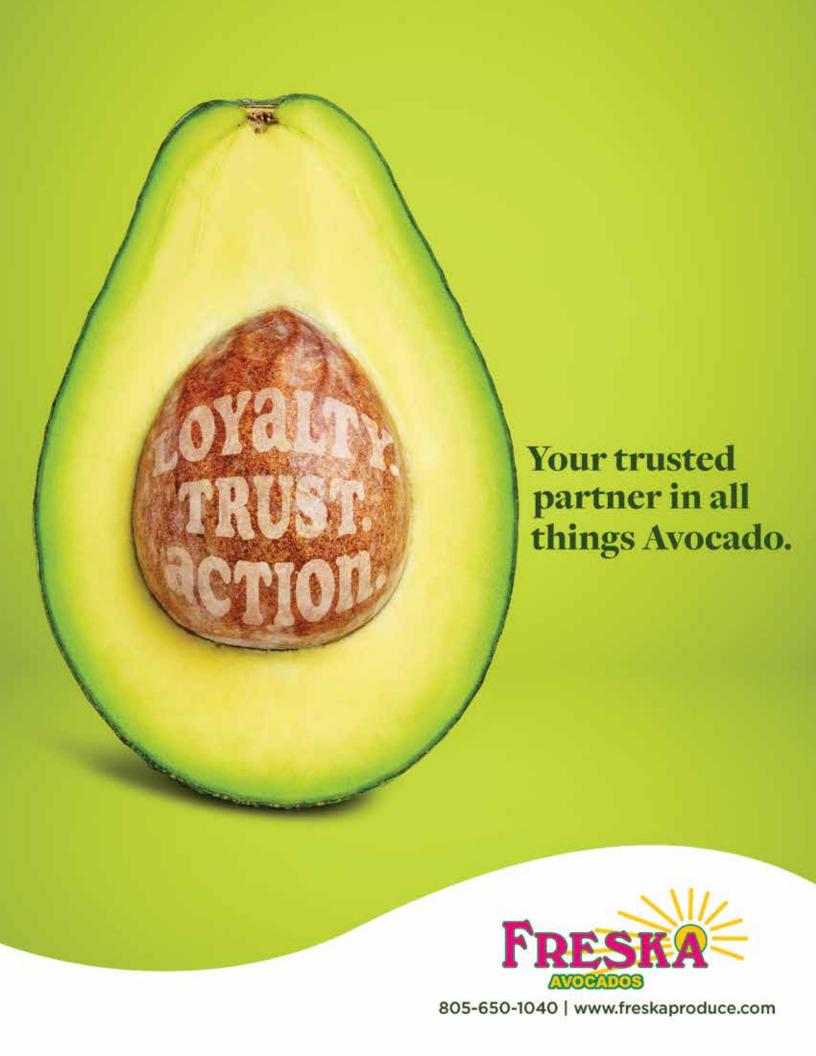
Reference ET

Directly measuring ET requires the use of expensive analytical equipment and serious number crunching that isn't practical for growers. Fortunately, most states have free tools available that provide growers with reference ET values. Reference ET (abbreviated ETo) is usually calculated using a weather station situated on a grass plot of a specific area and maintained at a certain height. Grass (or sometimes alfalfa) is used as the reference crop

because it has been extensively studied and all its biophysical properties needed to calculate ET are well known. In California, ETo values can be obtained from CIMIS (California Irrigation Management Information System), which maintains a network of about 200 weather stations across the state. In addition, there is also Spatial CIMIS data available, which uses satellite data to calculate ETo at a resolution of 2 km (1.25 miles). Spatial CIMIS data is particularly useful for growers who are not close to a physical CIMIS station or for growers who know that the data from their local CIMIS station is not representative of their grove due to their specific microclimate. CIMIS data can be accessed online at https://cimis.water. ca.gov.

Crop ET and Crop Coefficient

CIMIS tells you how much water grass has used in your area for a given period, but you're not growing grass. So, how do you know the actual ET of your avocado trees? The actual ET of your trees is known as the crop ET or ETc. To determine the ETc from ETo,



you need what is known as a crop coefficient (Kc). The Kc is a number that adjusts the ETo to ETc. Historically for avocados in California 0.86 has been used as the Kc. This means that if the ETo for a given period is 1.0 inch (i.e., a grass crop used 1.0 inch of water) the ETc for avocados is $1.0 \times 0.86 = 0.86$. That is, avocados used 0.86 inches of water for the same period that the grass crop used 1.0 inch of water. The problem with the Kc of 0.86 is that it does not account for seasonal variability, aspect of the grove, geographical location (coastal or inland), or other factors that can influence crop water use. The project that Dr. Montazar is conducting is collecting data from 12 different avocado sites in San Diego, Riverside, Orange and Ventura Counties with varying geographic locations and grove aspects. His early data show that the true Kc for avocados ranges from about 0.60 to 0.78 depending on season, grove location and aspect.

When To Irrigate

ET only tells you part of the story—how much water your trees are using. But how do you know when to apply water to meet their needs? The answer can be found under your feet, in the soil.

Every soil has a certain water holding capacity, which can be measured using soil moisture sensors. For a comprehensive review of soil moisture sensors please see "Using Soil Moisture Sensors to Improve Irrigation Efficiency" in the Fall 2015 issue of *From the Grove*. Briefly, soil moisture sensors tell you how much water is in the soil. This will either be measured as the percentage of the total volume of water held at saturation (volumetric water content) or as soil tension (a measure of how "difficult" it is for plant roots to extract moisture from the soil).

Course textured soils such as

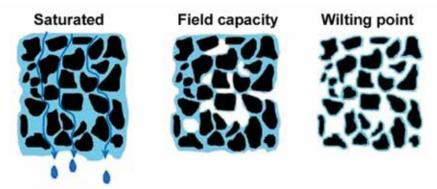
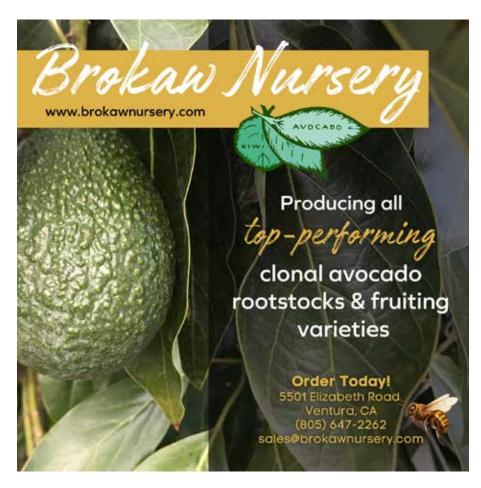
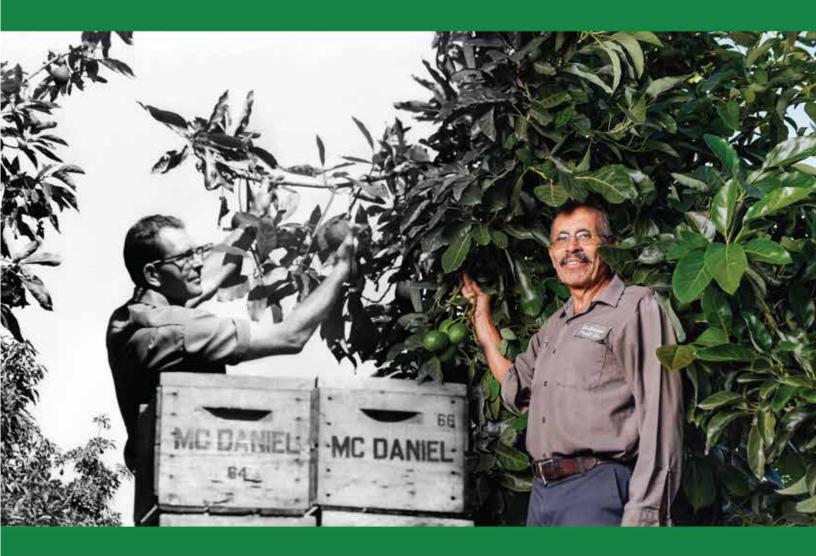


Figure 1. A cartoon showing the three stages of water in a soil. At saturation, all soil pores are filled with water. At field capacity, gravity has drained water from the largest pores. At the wilting point, the remaining water is held very tightly by adhesive forces and the plant cannot extract any more water from the soil. The amount of water in a soil between field capacity and the wilting point is the plant available water.

sand, have large pore spaces and have lower water holding capacity than fine textured soils such as clays, which have small pore spaces. However, water holding capacity doesn't tell the whole story. There are three stages of soil moisture that are important to understand: saturation, field capacity and the wilting point. These three stages are illustrated in Figure 1. At saturation, every pore in a soil is filled with water and there is no oxygen in the soil. At field capacity, gravity has pulled the water from the largest pores and the remaining water is held between soil particles by adhesive forces. At field capacity, there is a







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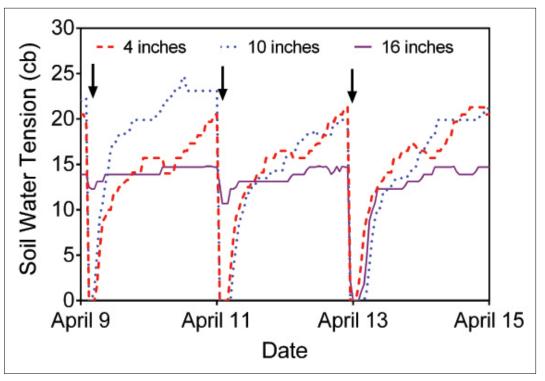


Figure 2. Sample soil moisture data from tensiometers installed at three different depths in a new planting of trees at Pine Tree Ranch.

balance of water and oxygen in the soil and the soil has the most plant available water. At the wilting point the water that remains in the soil, typically in the smallest pores, is held extremely tightly and cannot be extracted by plant roots. Thus, at the wilting point there is no plant available water. The difference in the volume of water between field capacity and the wilting point is the amount of water available in your soil for your trees to use.

In a coarse-textured soil with large pores, there may actually be very little water held at field capacity and, thus, little plant available water. Similarly, a very fine textured soil may hold a lot of water at field capacity, but much of that water can be held so tightly that there is little water available between field capacity and the wilting point. The coarse-textured soil is often called "droughty" because there is so little water available for plant use. Whereas the fine soil would be called "saturated" because managing the fine line between saturation and the wilting point is very

hard. This is why monitoring your soil moisture is critical to good crop management.

Soil moisture sensors help you understand how much water your soil can hold so you know how often you need to irrigate. You need to have at least one pair of sensors in each soil type in your grove and in a representative block for each different aspect (north, south, east, west). For groves on hills, it's also a good idea to have sensors at the top and bottom of slopes to be sure your system is not overwatering the downhill trees and underwatering the uphill trees. Lastly, you will want a pair of sensors in blocks of different age trees since young trees have different water requirements than mature trees.

A pair of soil moisture sensors is composed of one sensor placed at a shallow depth (usually about 4 inches) and one near the bottom of the root zone (typically 12-16 inches for avocados). You can add additional sensors in between but they're not critical. The shallow sensor will tell you when to

turn on your irrigation. It also lets you know when, during your irrigation set, the water has begun moving into the soil profile. The deeper sensor tells you when you have fully wetted the soil profile. When your deeper sensor reaches your target soil moisture reading you can turn your system off. If you are doing a leaching irrigation to move salts below the root zone, leaching begins when your deeper sensor reaches your target reading.

Figure 2 shows some soil moisture sensor data from tensiometers installed at Pine Tree Ranch on a new planting. Tensiometers measure soil moisture in the form of soil tension—how much force does it take to pull water from the soil, like a root would—and the data are reported in units of centibars (cb). A reading of zero (0) correlates to no tension or soil saturation and numbers increase as the soil becomes drier. For most of our avocado soils, a very dry soil will likely be in the 60 cb range, and it should not be wetter than about 10 cb except following a rain or briefly follow-

ing a leaching irrigation. In these sample data, the arrows indicate when an irrigation occurred. Note that following the first two irrigations on April 9 and April 11, the 16-inch sensor (solid purple line) did not reach zero, indicating that no leaching took place with these irrigations. Also note the separation between the 4- and 10-inch sensors and the 16-inch sensor prior to irrigation (this is easiest to see at the far-right edge of the graph). This separation is showing the drying of the soil (higher reading) at the shallower depths with more moisture present at the deeper depth (lower reading). Based on CIMIS data, the ETc for April 9-10 was 0.38 inches, April 11-12 was 0.31 inches and April 13-14 was 0.42 inches.

Putting It All Together

You now know how to check CIMIS to determine how much water your trees have used over a certain period. You have also installed some soil moisture sensors to see how much moisture is in your soil. So how do you know when to irrigate? The answer is that you're going to have to do some grunt work. Here's my recommendation on how to figure out when to irrigate.

You will need to record your soil moisture sensor readings on a regular basis. If it's during the summer, you may want to record the readings daily; during the cooler months of spring or fall you may be able to collect the readings every other day or maybe even every third day. Plot the readings so you can see what is happening like is shown in Figure 2. This is relatively easy to do in Microsoft Excel or Google Sheets and you can find excellent tutorials on how to make simple graphs for both programs on YouTube if you don't know how. Along with your soil moisture sensor data, record the ETo and calculate the ETc for the same period. When your soil moisture sensors start to get into the 30 to 40 cb range you probably want to plan an irrigation. You will also want to add up the ETc values you've recorded so you know how much ET it has taken for your sensors to tell you that you need to irrigate.

When you irrigate, watch your soil moisture sensors carefully. How long does it take before you start to see the shallowest sensor reading start to change? When do you see the deepest sensor reading start to change? When your deepest sensor reading begins to

change, you can turn the system off. The soil above the deepest sensor will be nearly saturated and that water will drain down past your deepest sensor when you turn your system off.

After a few sessions of recording data like this you will start to see some patterns. What you should see is that the total ETc between irrigations is about the same (assuming you are starting your irrigation at about the same sensor reading each time). This will tell you the water holding capacity of your soil. Maybe you find your ETc totals 1.5 inches between irrigations. Thus, your soil can hold 1.5 inches of water in the root zone. What will change over the season is how long it takes for your trees to use the water your soil can hold. In cooler months maybe you can go 10 days or more between irrigations, but in hot periods maybe you can only go a few days.

Since it is unlikely you will have a set of soil moisture sensors associated with each sprinkler in your grove you will want to make sure your system is in good working order and that each sprinkler is putting out a similar amount of water (system distribution uniformity). But that is another article.





Gelson's in-season reminder ads drove traffic to the Commission's online store locator.

California Avocado Social Media: A Fresh Approach to Consumer Engagement

he California Avocado Commission's social media program is a fundamental part of CAC's marketing campaign — providing both a widespread reach and the ability to specifically target audiences where California avocados are available. Further, social media platforms offer the Commission the opportunity to engage with consumers, track which content is most impactful and review detailed analytics and insights to make real-time optimization adjustments in strategies.

The California avocado audience is highly active on social media with Facebook, Instagram and TikTok particularly popular. Millennials are the most active demographic on social media with 77% active on the platforms daily. To effectively engage these audiences, CAC crafts clever, creative assets that encourage users to stop scrolling and view, click, like, share or comment on the content. CAC creates two-way conversations by responding in kind, answering questions and provid-

ing key messaging about the peak California avocado season, where to find them, the online store locator and local growers' sustainable farming practices. Combined, the Commission has more than 368,000 fans across Facebook, Instagram, Pinterest and TikTok.

CAC focuses its efforts and investments on the social platforms that provide the strongest impact. An audit of the previous season's social media performances was used to determine optimal content types, formats and benchmarks in advance of the 2024 season. This year, CAC has identified Instagram as the platform with the best potential to increase share of investment and raise awareness of the fruit's availability particularly through videos and influencer partner content. Facebook continues to provide steady consumer engagement around the new ad campaign, store locator and availability of the fruit at local retailers. Together, these channels provided more than 8 million impressions so far this year with 105,000

link clicks, 200,000 engagements (5% rate), a 40% lower year-over-year cost-per-click and a doubling in click-through rates.

CAC also has unlocked the power of the foodie-forward Pinterest channel (40% of the content relates to food) to drive traffic to the consumer website. This season, California avocados branding has been featured more prominently to build awareness of the brand and remind consumers that the avocados in the showcased recipes are locally grown. Currently, Pinterest is the Commission's top driver of impressions and link clicks with posts and ads driving 145,000 website sessions.

As for TikTok, CAC continues to grow its influence on this channel by promoting video content and retargeting visitors to the CaliforniaAvocado.com website. This community has shown a steady growth of 8% since the start of the year and generated 1.3 million paid video views to date with the "Now in Season" retail locator ad driving the majority of view and link clicks.

With 76% of users reporting making a purchase based on a social post, the Commission's ability to showcase the fruit and its availability are a powerful means to encourage demand for California avocados. This year CAC has supported retailers with dozens of highly targeted posts and ads, driving more



The season opener giveaway post on Instagram was a top performer with a 19% engagement rate (exceeding the 6% Instagram average).



The California Avocados 101 & Kitchen Tips post has been the top performer on Facebook with a 23% engagement rate (exceeding the 6% Facebook average).

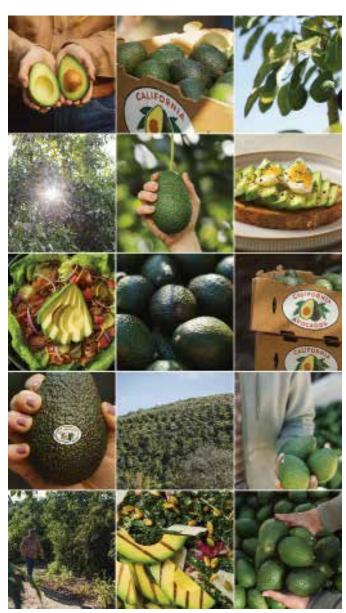
than 50,000 clicks to the online store locator. For example, Gelson's California avocado Facebook ad has garnered a 2.5% click-through-rate to its store locator page — above the platform's 1.3% average. Overall, CAC's retail social media ad campaigns have provided 53,000 link clicks to retail partner store locators and more than 4 million impressions among shopper audiences.

By providing quality content, CAC captures the attention of its audiences and spurs higher engagement. Video is critical to this mix. This season's "What's Inside" video has proven to be a strong storytelling medium that continues to outperform benchmarks. In fact, this video ad drove more than 4,000 link clicks to the CAC store locator page at an efficient \$.049 cost-per-click rate on TikTok (demonstrably better than the industry benchmark of \$3.03 CPC).

Further, by leveraging current trends (such as "POV" videos) and meme formats, the Commission delivers relevant content such as the "Grower POV" videos showcasing grow-

ers as they inspect their trees. Eye-catching photos of the fruit and California avocado recipes inspire social media users, driving them to click through to the store locator and determine where they can purchase the fruit nearby.

CAC's partnerships with social media influencers help build trust and interest in the California Avocados brand. Social media influencer content, like the Avocado Crème Brulée recipe by California-based What Erica Craves, builds trust and piques interest with targeted audiences. Initial results indicate CAC influencer content ads have outperformed Facebook and Instagram averages with a higher 4.21% click-through rate and lower \$0.24 cost-per-click rate, and promoting influencer content from CAC social platforms has provided top results.



Social content highlights the beautiful California avocado groves and dedicated growers.



The Avocado Bacon Grilled Cheese Pinterest post provided a 2.3% click-through rate and low \$0.09 cost-per-click rate, contributing more than 23,000 link clicks and 1 million impressions. (See Featured Recipes article on page 26.)



The "What's Inside a California Avocado" campaign video has been the most effective TikTok ad in 2024 to date.



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California Avocado Month graphic featuring California avocado grower Ricardo Serrato.

Retailers, Influencers and Media Partners Celebrate Peak-Season California Avocado Month

or more than a decade, California Avocado Month has provided the California Avocado Commission and its targeted partners with the opportunity to celebrate peak season, build awareness of the fruit's availability in local markets and inspire consumers to purchase the locally grown and sustainably farmed fruit. This year, CAC's cross-platform California Avocado Month promotions — via public relations, in-store events, social media and digital channels — built awareness and demand for the fruit in targeted local markets and garnered broader reach in markets farther afield.

To secure media coverage in markets where California avocados can easily be purchased in local stores, CAC distributed a press release announcing June as California Avocado Month and celebrated the peak season with two easy-to-prepare summer recipes to inspire California avocado purchases. The press release garnered coverage with media outlets in local

targeted markets, including a story placement in The Orange County Register, which was syndicated in other key media outlets, resulting in comprehensive coverage in various outlets including the Daily Breeze, Inland Valley Daily Bulletin, LA Daily News, Long Beach Press Telegram, Pasadena Star News, The Oakland Press, The Press Enterprise, Redlands Daily Facts, The San Bernardino Sun, San Gabriel Valley Tribune and Whitter Daily News.

Further, to build awareness with trade audiences, the Commission distributed a retail trade press release demonstrating how CAC supports California Avocado Month and providing updates on the season's crop. This release garnered coverage with key trade publications, resulting in more than 500,000 impressions.

Sacramento-based retailer Raley's also partnered with CAC to kick off California Avocado Month by hosting a hyperlocal exclusive influencer event at the supermarket's iconic



California avocado grower Michael Craviotto, Raley's communication team and CAC's Terry Splane and Lori Small joined hyperlocal Sacramento-based influencers at Raley's California Avocado Month Influencer Event.

Sacramento/Freeport Boulevard location. More than 15 Sacramento-based social media influencers gathered at Raley's mezzanine event space and were hosted by CAC team members Terry Splane, Lori Small and Dave Cruz. Raley's Executive Director of Fresh Faith Garrard, Category Manager Produce Gary Ruggiero and members of the retailer's communication team also joined the event, demonstrating their interest in providing customers with locally grown peak-season fruit and partnering with local influencers who can help drive consumers in-store for purchase.

The influencers sampled an array of chef-prepared California avocado-centric dishes and captured images of the eyecatching displays of the fruit — all of which they shared across their social channels. They also met California avocado grower Michael Craviotto of Moorpark's Grace Farms and Orchards, who shared his family's storied history with California avocados and their passion for growing the fruit.

The influencers then visited the produce department and sampled more fresh California avocados, capturing additional video and photography they could convert into creative social content around California Avocado Month. Throughout June, the influencers shared their content on their social platforms, highlighting California Avocado Month, the fruit's availability in-store at their local Raley's and sharing delicious California avocado recipes with their fans. The influencers' combined consumer reach across their social platforms is 1.8 million targeted consumers.

Loyal California avocado retailers Albertsons-Vons-Pavilions and Mollie Stone's Markets also celebrated California Avocado Month with social media posts across their platforms that featured California avocado growers, sustainability messaging and how-to videos and recipes. Albertsons-Vons-Pa-

vilions shared weekly posts on Facebook and Instagram, while Mollie Stone's gave a nod to the peak California avocado season in June with a series of posts on Facebook and Instagram.

In addition to these retail-based activities, the Commission also partnered with four well-known food influencers — Maxi's Kitchen, Herman at Home, What Erica Craves and Erin O'brien — who created original, inspirational California avocado recipes and shared them across their social channels. The content posted by these brand advocate partners reached a combined 4.2 million consumers.



Raley's Director of Fresh Faith Garrard and Category Manager Produce Gary Ruggiero joined the California Avocado Month in-store influencer event at Raley's Freeport Boulevard Location.

California AvoTech

By Mark S. Hoddle

Department of Entomology University of California Riverside

New Things to Know About Avocado Lace Bug

Background Information

In 2004, avocado lace bug (ALB), Pseudacysta perseae (Hemiptera: Tingidae), was found infesting non-Hass varieties of avocados (e.g., Bacon) in Chula Vista and National City in southern San Diego County. This leaf feeding pest, first described in 1908 from Florida, is quite destructive in parts of the southeast United States, Caribbean and eastern Mexico. Understandably, there was considerable concern that ALB would cause similar levels of damage in California as populations would not remain in backyard gardens for long. In response to this potential threat, foreign exploration for ALB natural enemies was undertaken in what was presumed to be the native range of this pest, the southeastern portion of the U.S., eastern Mexico and the Caribbean. Surveys also were conducted in western Mexico. In all areas surveyed, adult ALB were collected for genetic analyses to determine two different things. First, to figure out if ALB was indeed one true species or instead a collection of cryptic species spread across all these widely distributed collection areas that couldn't be separated based on morphology. Second, to determine, if possible, where the invading ALB population in California had originated.

Unfortunately, foreign exploration efforts failed to find natural enemies, especially egg parasitoids, which could be effective against ALB in Cali-



fornia. The molecular work determined that ALB is one species throughout the entire geographic region it is found. Further, it was determined the evolutionary area of origin for ALB is probably western Mexico and not eastern Mexico, the southeastern U.S. or the Caribbean as originally thought. California's original invading population likely originated from the state of Nayarit on the Pacific Coast of Mexico.

As it turned out, initial concerns about massive ALB outbreaks and rapid spread into commercial Hass orchards didn't eventuate. Reports of outbreaks in the backyards of southern San Diego diminished as well, and ALB pretty much dropped off the radar. Curiously, this situation changed abruptly in 2017 when reports of ALB outbreaks were reported in commercial Hass orchards

in Oceanside and Bonsall in northern San Diego County, and Temecula and Riverside in Riverside County. By 2019, reports of infestations in backyard trees were coming in from homeowners in Los Angeles County, and Hawaii was invaded as well. Infestations in Orange County and commercial orchards in Santa Barbara were reported in 2022 and 2023, respectively.

Molecular Analyses to Determine Source Populations of ALB

Molecular studies using specimens collected from these new outbreaks demonstrated that a new haplotype, not previously recorded from California, had established itself and was associated with spreading ALB populations that were causing damage

to Hass trees in backyards and commercial orchards. This new haplotype was the same as that found in Florida and the Caribbean. Despite its rapid spread, the Florida haplotype has not, at least yet, replaced the original Mexican haplotype that established in southern San Diego County in 2004. The Hawaiian ALB population has the same genetic signature as the spreading damaging populations in California. Based on these findings, we have tentatively concluded that the new ALB population infesting Hass in California may have originated from Florida, and California may have been the source of the population that invaded Hawaii.

These molecular studies were conducted by Paloma Dadlani, a M.S. student in the Hoddle Lab at UCR. Marco Gebiola, in the Kerry Mauck Lab in the Department of Entomology at UCR, and Paul Rugman-Jones, also in the Entomology Department at UCR, assisted with this work. Ivan Milosalvjević, formerly in the Hoddle Lab, and now working for the Citrus Research Board, helped with statistical analyses that fitted non-linear models to data sets.

Assessing the Effects of Temperature on ALB Development and Survivorship

Another part of Paloma's Master's work was to investigate the effects different temperatures have on ALB development and survivorship rates. These studies were conducted in temperature cabinets that were programmed to simulate six fluctuating temperature profiles that averaged 15°C (59°F), 20°C (68°F), 25°C (77°F), 30°C (86°F), 32°C (90°F) and 35°C (95°F) over a 24-hour period. These fluctuating temperature cycles oscillate over a 24-hour period and are representative of climatic conditions across ALB-infested areas in southern

California. To determine what these hourly temperature cycles looked like, five years of weather data were downloaded from various weather stations and the hourly mean temperatures were calculated and used to program the 24-hour temperature steps in the cabinets. When these hourly temperatures were averaged over the 24-hour period they hit the desired overall 24-hour temperature average (e.g., 32°C [90°F]).

Statistical analyses of developmental data for ALB eggs and each of the four nymphal instars indicated that the optimal temperature range for development and reproduction was 25-32°C (77–90°F). The minimum temperature above which ALB can develop is around 9-10°C (48-50°F), and it takes about 476 days with temperatures above the minimum threshold for ALB to complete development. The upper

lethal temperature range predicted for ALB by statistical models ranges from 34-39°C (93-102°F). The high mortality rates observed among eggs, nymphs and adult ALB at the upper threshold temperature — that averaged 35°C during a 24-hour period — underscores the negative impact of upper-level temperature extremes on survivorships rates. This finding may support in part why ALB tends to be more problematic in cooler Oceanside orchards when compared to inland Bonsall orchards that tend to have higher summer temperatures.

Unusual temperature peaks over summer caused by heat domes or intensive heat waves of short duration — such as Santa Ana winds — may have significant and deleterious impacts on ALB populations.





Foodservice chain partner Dog Haus featured a California avocado giveaway as part of its social media promotions.

Restaurant Chain Promotions Build Peak-Season Demand with California Avocado Menu Offerings

estaurant chains looking to differentiate themselves from their competitors choose California avocados as a means of positioning their chain as a premium option among diners. By showcasing the fruit's seasonal, local and sustainably farmed traits with unique menu items and digital promotions, the California Avocado Commission helps its foodservice chain partners stay top-of-mind and relevant with their dining patrons.

Beginning in May, the California Avocado Commission partnered with 12 California-based chains and national chains with a strong foothold in California and western markets. To reach a broad consumer base, CAC partnered with chains ranging from quick-service to family dining restaurants. Northern California partners included Buckhorn BBQ & Grill (9 units), Erik's DeliCafé (28 units), Ladle & Leaf (9 units), Mixt (17 units) and Super Duper (17 units), while Southern California chains included Flame Broiler (82 units), NORMS



We love avocados (duh). But we've only got eyes for California Avocados—our supplier of choice for their sustainable and ethical business practices, and delicious local fruit.



Huge thank you to California Avocados for helping to make our salads and bowls shine. So go ahead, add avocado to any salad or bowl and unlike everyone else, we don't charge extra.



Restaurants (23 units) and Wahoo's Fish Tacos (25 units). National chains promoting California avocados on their menus included Del Taco (258 California units), Denny's (270 units in Arizona, California and Nevada), Dog Haus (32 units in Arizona and California) and Robek's (52 units based in California).

The Commission supports its foodservice chain partners with a menu promotion fund that helps chains develop impactful promotional materials that are shared with targeted diners through email blasts and on the chain's website and social media platforms. These assets create a sense of urgency among targeted consumers by encouraging diners to enjoy California avocados while they are in peak season. By actively sharing promotions across their social media platforms, the foodservice chains reach a broader audience and are not simply reliant on diners having to visit a chain's location or website to view the point-of-purchase materials. Ultimately, by encouraging diners to try the locally grown and sustainably grown fruit when dining out, the Commission leverages the opportunity to have consumers experience the California avocado difference as part of their dining experience.



Denny's featured this tri-panel tabletop sign encouraging diners to add fresh California avocados to any dish in 270 units located in Arizona, California and Nevada.

Northern California-based Mixt showcased peak-season California avocados in email blasts to loyal club members and on its social media channels.

Featured California Avocado Recipes

his edition of From the Grove features two simple recipes that have resonated with consumers in a big way. The first recipe, Avocado Bacon Grilled Cheese Sandwich, was created because the recipe title is a very popular term that consumers search for online. Also, because the recipe is simple it could be easily showcased with retail and social media programs. Created for this fiscal year, by June the sandwich recipe had already been "pinned" 22,000 times by visitors to the social media platform Pinterest and viewed more than 1 million times.

The second recipe, Best Guacamole Ever, is an example of a

California Avocado Commission marketing investment that continues to deliver results long after the initial activity. The guacamole recipe was a winner in a CAC consumer recipe contest in 2011. It has been popular on CaliforniaAvocado.com ever since, reaching more than 1 million views in 2024 so far.

Growers, do you agree with the recipe creator that this featured recipe is the best guacamole ever? Do you have an even better recipe? Sharing one of your family's California avocado recipes for use in marketing communications would be valuable and appreciated. Please call 949.341.1955 if you have a recipe to share.

Best Guacamole Ever

Serves: 8

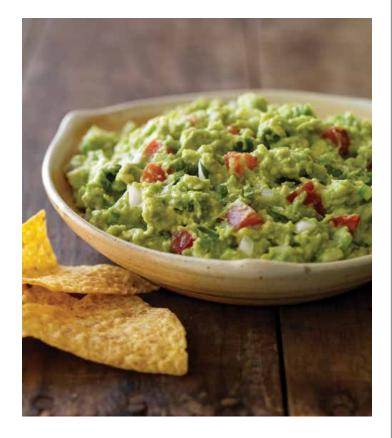
Time: 10 minutes

Ingredients

- 4 ripe, Fresh California Avocados, seeded and peeled
- 3 limes, juice only
- 2 medium tomatoes, chopped
- 1 medium white onion, chopped fine
- 1/4 tsp. ground black pepper
- 1/2 tsp. salt
- 2 cloves fresh garlic, minced
- 1/8 tsp. cumin
- 1/8 tsp. cayenne pepper
- 1/8 tsp. sugar
- 1 serrano chile, chopped fine
- 1 bunch cilantro, chopped

Instructions

- 1. Place avocados in a bowl and mash with a fork.
- 2. Mix in remaining ingredients; serve immediately.



^{**}Large avocados are recommended for these recipes. A large avocado averages about 8 ounces. If using smaller or larger size avocados adjust the quantity accordingly. As with all fruits and vegetables, wash avocados before cutting.



Avocado Bacon Grilled Cheese Sandwich

Serves: 1

Time: 10 minutes

Ingredients

- 2 slices seeded whole grain bread, or sliced bread of choice
- 2 (1-oz.) slices cheese (such as cheddar, cheddar jack, gruyere etc.)
- 1/4 ripe, Fresh California Avocado, seeded, peeled and sliced
- 2 slices crispy cooked bacon, cut or folded horizontally in half
- 1/2 Tbsp. butter, melted
- 1/2 Tbsp. mayonnaise*

Instructions

- 1. Preheat an individual sandwich maker or see below for skillet instructions. Place one cheese slice on one bread slice.
- 2. Spread avocado slices over the cheese slice leaving a small border of cheese around the edges. (Tip, if using a sandwich maker, place the avocado slices to either side of the sandwich maker's diagonal bar.)
- 3. Top with the second slice of cheese, the bacon slices and the remaining bread slice.
- 4. Combine the melted butter and mayonnaise; spread half the mixture onto the top slice of bread.
- 5. Carefully place the sandwich into the sandwich maker with the butter-mayonnaise spread side down.
- 6. Spread the remaining butter-mayonnaise mixture on the other side of the sandwich and close the sandwich maker. Cook for 2 to 5 minutes or until the sandwich is golden brown and the cheese is melted. With a heat resistant spatula or tongs remove cooked sandwich and place on a plate. Cut in half and serve immediately.

Recipe editor's notes: *Using a combination of melted butter and mayonnaise gives a crisp texture to the grilled cheese sandwich along with a buttery taste. The sandwich can also be cooked for a total of 5 minutes in a skillet or grill pan on the stove top.

By April Aymami
Director of Industry Affairs and Operations

CALIFORNIA AVOCADO COMMISSION 2024 BOARD OF DIRECTORS ELECTION

The Annual CAC Board Election will be held in October 2024 for one Producer Member Seat in each of the five CAC districts. In addition, one Handler Member Seat also is open. All seats in the 2024 CAC Election are for two-year terms. The California Department of Food and Agriculture will announce the results of the 2024 Annual CAC Board Election and seat new Board Members at the CAC Board meeting on November 14, 2024. Individuals interested in participating in the upcoming Board Election can find further information at CaliforniaAvocadoGrowers.com/commission/cac-general-election.

SUMMARY OF OPEN SEATS*

<u>District</u>	Member
1	Jessica Hunter
2	Ohannes Karaoghlanian
3	Maureen Cottingham
4	Rachael Laenen
5	Will Carleton
Handler	John Dmytriw

^{*} Names shown are incumbents presently holding producer/handler seats

2024 ELECTION SCHEDULE	
July 15	Election announcement / self-nomination notice sent to all Producers and Handlers
August 26	Deadline for receipt of signed nomination petitions, candidate disclosure statements & affidavits and requests for voter access mailings at CAC
September 5	Deadline for CAC receipt of voter access mailings
September 25	CAC mails ballots to producers and handlers
October 25	Deadline for receipt of ballots by CDFA
November 8	CDFA advises CAC staff of election results
November 14	CDFA announces election results to CAC Board and seats new Board Members and Alternates

Handlers' Report

2024 Crop Produces Surprising Volume;2025 Should Surpass It

By virtually all accounts, 2024 was a stellar year for most California avocado growers as volume surpassed pre-season estimates by about 50% and the average grove price was also better than expected. And topping off that good news is the fact that the trees are currently carrying the makings of an excellent crop into the fall with veteran observers noting that a 400-million-pound crop is certainly within reach.

Peter Shore, vice president of production management for Calavo Growers Inc., Santa Paula, CA, told From the *Grove* in late July that the fruit is on the trees to hit that lofty number. He did add that there are about six months of outside factors to contend with - including wind, heat and rain, or lack thereof - that can greatly alter that reality. In fact, when looking at the 2024 crop and how it far surpassed the October 2023 pre-season estimate, Shore reminded me that estimating the crop so far in advance is more of a guess than anything else. It certainly is not the result of a perfect scientific equation. Rather it is based on the collective observations of hundreds of growers spread across many miles looking at thousands of acres.

The Calavo executive indicated the weather factors cannot be under-

estimated as they can greatly increase the size of a crop as they did in 2024, or reduce it as has happened many times before.

He did note that the increased volume in 2024 was extremely beneficial for California growers as a very good field price accompanied that volume for much of the season. Prices were above average when picking began in earnest in early spring and they were still very good in June, at which point more than 215 million pounds had been harvested and sent to market.

Shore did report that the market was at a very high level in June, buoyed



by excellent demand and a suspension of shipments from Mexico to the U.S. market for about a week because of a security incident with U.S. Department of Agriculture packinghouse inspection staff. "We have come off of that very high market we experienced in June and now we are expecting some stability in the market as we move through the summer crop," he said in late July, adding that both California and Peru have hit their peak weeks and will see volume taper off significantly moving into August.

Keith Barnard, senior vice president of global sourcing, Mission Produce Inc., Oxnard, CA, agreed that California's 2024 volume was a pleasant surprise, which beat the company's expectations. "We saw a plentiful fruit set out of Ventura County, and orchards across the state responded positively to the above normal rainfall from the past two winters," he said. "For this reason, California volumes have been strong and steady this summer, and our California pack house has been hitting record volumes. The eating quality of our California avocados this year has been top notch."

Mission Produce is well-positioned in Ventura County, close to many of the company's growers, with a state-of-the-art forward distribution center, where it has the capacity to pack up to 1.2 million pounds of avocados a day.

In reviewing 2024, Barnard noted that the California crop estimate was updated three times during the season, with the most current number revealing that the final packout number will surpass 315 million pounds, 50% more than the 208 million pound initially forecast.

Barnard explained that the abundant rains and favorable temperatures in the state allowed the California fruit to grow larger and heavier than in the last couple of seasons. "Additionally, some growers in Ventura County experienced unexpected and unprecedented yields in their orchards, which was difficult to predict early on," he said. "Lastly, the state encountered next to no freeze damage and only moderate wind damage compared to a typical growing season."

Because of the larger crop and a decrease in volume from Peru due to weather issues, Mission was able to expand its sales of California fruit this season. Barnard said Peru is typically a marketing focus for Mission during the summer months, but this year "we pivoted to increasingly focus on California as a premier origin for summer supply. We've highlighted California as a key origin as part of our diversified sourcing strategy."

He added that new to the marketing mix for 2024 was the GEM variety, which Mission marketed as a new, California-grown variety known for its buttery, creamy flavor profile.

"California avocados are marketed throughout the U.S., especially on the West Coast, in addition to Canada, China, Korea, Japan, and Hong Kong," said Barnard. "We offer California avocados in both bags and bulk as part of our customer-specific ripening programs."

He revealed that the avocado category overall has seen growth across bagged avocados, which doubled from 2019 to 2023, growing at an annualized rate of 19%.

Barnard added that Mission uses California avocados across its entire packaged avocado product portfolio, including conventional and organic fruit, and several other bagged options. "Bags are an easy, grab-and-go solution that brings value to shoppers," he said.

Also commenting on the 2024 California avocado season was Keith Blanchard, California field manager for Index Fresh Inc., Bloomington, CA. "2024 was a good season for California avocado growers. Both price and volume were better than expected," he said.

Blanchard noted the discrepancy in the crop estimate from pre-season to final total and offered that when groves outperform the norm, it is difficult to predict fruit volume, as there is a tendency to underestimate.

"The crop was significantly larger than expected in Ventura County. Typically, when we see crops in excess of 20,000 pounds per acre, these crops tend to be challenging to estimate," he said. "Heat, wind events, and other environmental conditions that are out of growers' control are difficult to predict. Growers' past experiences with the negative impacts of such conditions create understandable hesitations in predicting excessive swings in supply. We find extremely high estimates can seem unbelievable even to the most experienced growers and often the tendency is to estimate conservatively."

He also indicated that the suspension of shipments from Mexico had a positive impact on the season's ultimate volume. "The Mexico supply shutdown that started in mid-June created an immediate increase in California avocado demand," Blanchard said. "The larger crop allowed us to market California avocados to fill this unexpected gap. In addition, the larger crop allowed us to extend our programs a few weeks longer than expected."

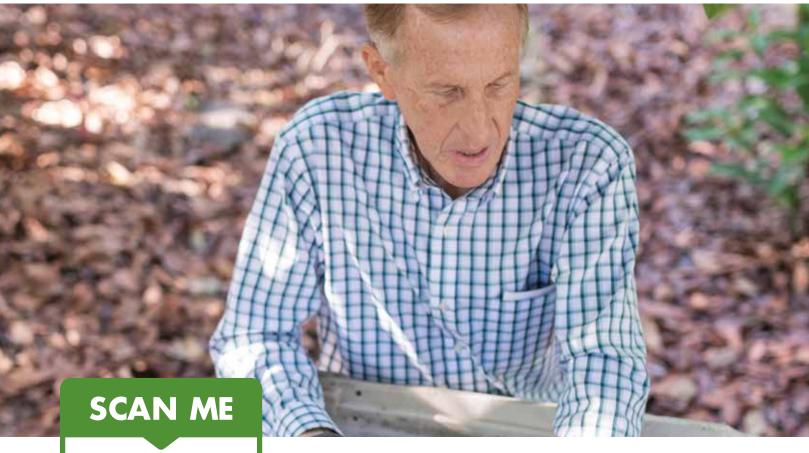
He added that Index Fresh saw a significant increase in bagged orders, which helped expand the company's distribution of California avocados.

Turning his attention toward the 2025 crop, Blanchard agreed that the optimism appears to be warranted. "The 2025 crop is looking very strong," he said. "This crop will provide for more promotional opportunities at retail and allow us to extend the program longer."



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SCAN FOR SMORE INFO



Index Fresh presents a range of educational seminars throughout the year, designed to provide growers with practical tips and advice to help optimize their avocado cultivation. Stay tuned for upcoming seminar dates and join us to learn how to keep your avocados thriving.

SEMINAR 2



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