

Summer 2013

From the

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Field Office
In Santa Paula



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Grower Profile

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Morro Bay, CA

28

From the Grove

Volume 3
Number 2

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Summer 2013

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Message from the President



Tom Bellamore

Swimming in Small Sizes

At the beginning of the 2012-13 crop year, there was considerable optimism among growers about entering the market early. There was a relatively large crop on the trees—around 500 million pounds—and the fruit seemed to be sizing nicely, giving some growers the Super Bowl “itch.”

Unfortunately, as the winter holidays passed, the market buckled under the weight of tremendous volumes from Mexico, dimming that optimism. Then, Mother Nature put the brakes on fruit development. A dry winter, unseasonable temperatures, and the heavy load on the trees combined to stall sizing, and when market prices finally recovered, the industry found itself awash in 70s and 84s. Déjà vu? Many will recall that size disparity haunted us early in the prior crop year, too.

Of the fruit harvested from November 2011 through May 2012, 60s accounted for 24 percent of the volume, 70s were 16 percent, and 84s were 8 percent. That spring it appeared we would never clear out the inventory of small sizes, which seemed to just keep coming. Compare that to this year’s harvest over

the same period. The size curve for fruit harvested from November 2012 through May 2013 shows that 27 percent, 21 percent, and 12 percent, respectively, have been 60s, 70s, and 84s. Is the high percentage of small sizes at this time of year an anomaly or a trend? That’s the question the commission’s marketing advisory committee is attempting to sort out.

In the southern portion of the growing region, the combination of a dry winter and high water prices leaves many groves short of the moisture needed to promote tree vigor and optimal sizing. It is not difficult to find stressed trees that need a rest and you find yourself wondering if they will fare any better if another winter with below-normal

rainfall follows. A lighter 2013-14 crop, should it occur, would spell some relief for the trees, but it is also possible that lack of size in the early part of the season may be a recurring problem. That was one scenario the CAC Board contemplated as it continued to work on its long-term mar-

Size Curve Comparison (November-May)		
Size	2013	2012
36+	2%	2%
40	5%	10%
48	33%	37%
60	27%	24%
70	21%	16%
84	12%	8%
96	1%	2%



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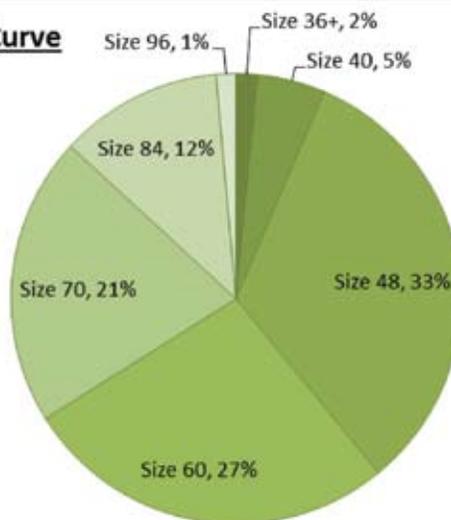
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To contact a CAC representative, please visit:
CaliforniaAvocadoGrowers.com/commission/your-representatives

Nov '12 - May '13 Size Curve



ket strategy at the directors meeting held in Ventura County on May 30.

Whether a trend or an isolated event, a predominance of small sizes early in the season must be addressed, if growers are to remain profitable and realize the highest value possible for their fruit. It is not sufficient to get an acceptable price on 48s and a significantly lower price on everything smaller.

Only the application of a well-conceived and flawlessly executed marketing strategy will solve the problem. The board recognized, too, that near and long-term programs will likely be needed to address the issue. Short-term activities, such as working with key retail accounts to encourage placement and promotion of size 60 and smaller fruit when inventories rise, must be built into each year's marketing plan. Those plans must be nimble enough to adjust as the season unfolds, and that requires available, uncommitted resources. Over the long-term, the commission's programs must also build demand for smaller size fruit—demand that will be there, consistently, from year to year.

As part of its continuing quest to position California avocados as a premium product, the commission board recently examined various ways to increase the inherent value

of smaller-sized fruit. Among the topics discussed in May were innovative packaging concepts, emphasis on foodservice menu development that would lead to greater utilization, and export market development, as a means of providing additional outlets for small sizes. Not one of these ideas, by itself, will transform the 70s market overnight. Doing so will take a concerted effort by the commission, the industry's packers and key trade customers committed to the California avocado brand.

Picture going into your favorite, casual-dining restaurant and seeing *California Avocado Sliders* on the menu—halved, size 70 avocados, four or six to a plate, with delicious, creative fillings where the pit once resided. A chef who once preferred size 40 or 48 avocados because of labor preparation concerns may suddenly decide that 70s are more appetizing to his customers and more profitable for his operations. It will take all of that and more to close the gap in the field price paid for 48s and 70s, and, anomaly or otherwise, there surely will be years ahead when early season, smaller size fruit make the size curve bulge disproportionately. Careful planning today will enhance our prospects for better returns when those smaller avocados are coming to market. 🥑

Springing into Summer!

In my last column I wrote about the excitement of a long, cold winter changing into the lively flush and bloom of spring. By the time you read this, spring will be over and summer will be upon us. For many, the spring flush will be hardening off. Most of our bloom will be finished and we will be watching to see how much of our set will stick. While much of the state seems to be heading into an “off” year, some areas are setting well. May your grove be one of those that will be “on” for next season.

It would be an understatement to say that so far the early summer has been challenging. Where I farm we have had three early heat waves since late April, each followed by a cool period and even a bit of unusually late rain during the first week of May. Our trees must be thinking “what the heck?” Fruit seems to be reacting to the hot/cold/lack of rain by maturing early without normal sizing. Returns for large sizes are great, but there is very little to be found. Early maturity is limiting potential growth and forcing growers to pick more of their crop earlier than planned. Harvesting smaller than expected fruit will have an impact on our crop yields. A shortage of harvesting labor has slowed the pick for many, even as fruit begins to darken in weaker areas.

We are not alone with fruit challenges this year; citrus and berry growers are also having a tough time. The same lack of rain and unseasonable weather has caused some local citrus to stop growing, color and threaten to drop. Berry growers have had such a bad year that some

have turned off their water. All things considered, I would rather be farming avocados this summer than most other California crops.

Scarcity of winter rain is causing other concerns. I attended a meeting this week held by our local fire department heads, sheriffs, CHP, other emergency responders and National Weather Service meteorologists to prepare for the fire season. The meeting was originally scheduled as a pre-fire season preparation. During the past month, we have had three local fires, including the 25,000 acre Spring Fire, so the preparation meeting became a review of the fire season to date and a time to discuss what was done right, what needed correction and how to best prepare for the next six months. This year our fire season started very early and the native vegetation moisture content is as low as it has ever been. Our local agencies are preparing for a very long, dry summer and fall with above average temperatures.

For those of us with exposure to wildfires, it is time to dust off our grove fire prevention and protection plans, talk to local fire officials and do everything we can right now to prepare for what is shaping up to be a very dangerous fire season. Touch up those firebreaks, and mulch or move all prunings, wood and other flammable materials out of the grove. We know from hard experience that old firewood in groves lives up to its name in a fire and increases damage to our trees. I have been encouraged to find that there is a growing understanding among local fire departments that our groves are important assets that need to be protected as



Ed McFadden

carefully as structures.

Check out Ken Melban's report in “Commission Hosts Congresswoman Julia Brownley”. Ken did a great job bringing the Congresswoman to our groves. It is hard for me to describe how valuable it is to bring our elected representatives to our farms to hear our story. During the Congresswoman's time with us we did a grove tour. For those who may not have experience with our crop, it is eye opening to see and experience firsthand harvesting techniques, irrigation systems, hillside plantings and other practices we growers take for granted. Labor issues become easier to understand when you have a picking sack over your shoulder and are trying to do an 8 oz. size pick with a 9-foot picking pole. Picking a dozen fruit for the first time may be difficult but how would you like to pick many thousands in a day? Water issues are more tangible when you are walking through a grove irrigated with an efficient micro-sprinkler system. [Hand Grown in California](#) becomes real and important when you pick fruit from a family-owned California grove just an hour drive from one of the largest west coast markets.

Lots of challenges, but if we weren't optimists, and did not love what we do, we would not be growers of California avocados. 🥑



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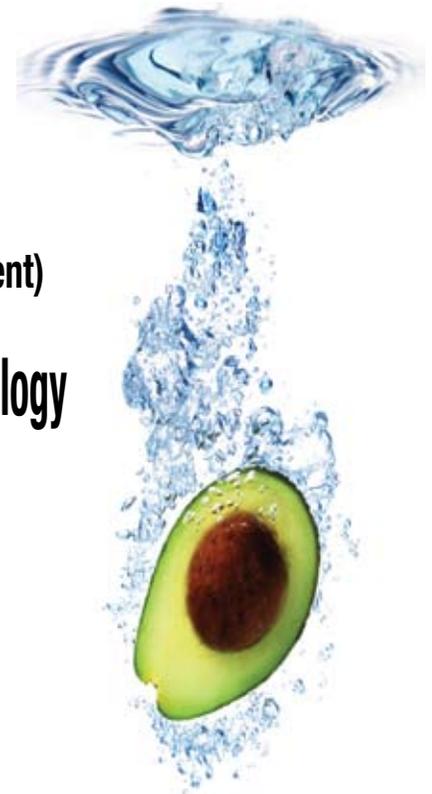
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Premium Positioning Offers Bright Future for California Avocados

By Tim Linden

With a great geographic advantage and a defined marketing window, the future of the California avocado industry could be very bright if the industry capitalizes on these advantages to seek out a premium position for its fruit.

In recent years, U.S. avocado consumption has more than doubled yet California's production has remained in the same range, which is allowing the fruit to be marketed in tighter windows both geographically and in terms of timing. While this could be considered a negative it also allows the industry to position itself in a niche premium position within the growing avocado category, in much the same way that Vidalia onions and top shelf wines position themselves in their respective sectors.

This was the message that CAC President Tom Bellamore and two well-known veterans on the buy side of the equation delivered to growers during a series of annual meetings in the state's three major growing districts: San Diego, Ventura and San Luis Obispo counties. The discussions featured a review of the supply side situation as well as California's inherent advantages as a producer. The facts, as laid out by Bellamore, include the overarching reality that U.S. consumption of avocados is increasing dramatically, but so is the supply from several sources with Mexico looming as an avocado production giant. Supplies from Peru are also on the rise, while Chile remains a fall/winter source and several other countries are trying to gain access to the growing U.S. market. For much of the past 40 years, California's production, which has typically been in the 300-500 million pound range, defined the supply situation. But in the past 10 years, Mexico's exports have increased mightily with their projected U.S. volume in 2013 approaching one billion pounds.

The majority of California's crop has always been sold in the western half of the United States, but Bellamore said there may be a time in the near future when most of the state's supplies are sold within California. This speaks both of the growing popularity of the fruit as well as the increase in supplies from other sources. That situation would give California growers some marketing opportunities including highlighting the "locally-grown" aspect of the product as well as the geographic advantage, which allows the fruit to be delivered to consumers closer to its harvest time.

Joining the discussion was longtime retailer Reggie Griffin, who retired from the Kroger Company after 40 years of service last year, and Chef Ray Martin, who has spent more than three decades opening restaurants and expanding menus, most notably at the Cheesecake Factory and BJ's Restaurant chains. Both men said creating a premium position is achievable and works well with the goal of retailers

and foodservice operators to attract loyal customers. Griffin said it is all about getting customers to come to your store and retailers will do anything they can to attract those customers, including featuring premium products that have an enhanced value or a perceived premium value. In fact, he said perception is a huge part of the game. For example, Griffin said Washington State apples, have a perception of superiority, even though in blind taste tests they don't score higher than other apples.

California avocado producers believe their product does taste better and would outscore other avocados from other regions in the world in a blind taste test, especially during the peak of their season that stretches from spring to fall. Griffin says if an advantage does exist California avocado producers could market their fruit for a premium throughout the United States as there are pockets of consumers, serviced by upscale retailers, who will purchase the best products in virtually every metropolitan area in the country. He said there is no reason to limit the sale of that fruit to California if it truly has an advantage.

Bellamore continually discussed other advantages including the locally grown aspect. There are people throughout the United States who prefer U.S. grown products and will pay a premium for that distinction. California growers, he said, need to exploit this advantage.

Chef Martin revealed that when selling product to chefs the main focus needs to be on the advantages that product has and why it should make a difference. He indicated that a superior taste is a very important attribute. He also said growers should be able to find homes for their small "egg-size" avocados as the smaller the fruit the greater the ratio of pulp to pit, an important measurement when using avocados to make guacamole or other sauces. He said those small avocados could be used in innovative ways such as a small slider-sized salad. He said one of the best ways to get chefs to try a new product is give them some product. 🥑

CAC Establishes Northern Field Office in Santa Paula

By April Aymami
Director of Operations

Situate CAC facilities for grower accessibility. It's been just over two years since this component of CAC's Seven-Point Plan was first introduced, and as of May 2013, with the establishment of a northern field office in Santa Paula, the commission has taken steps to accomplish this goal. Upon receiving unanimous board approval at its March 2013 meeting, CAC management finalized negotiations on the lease of a property on Main Street in Santa Paula, taking possession of the premises on May 1, 2013. The small suite, roughly 1,000 square feet, consists of three offices and a small conference room. It will be shared with the Avocado Inspection Program and is conveniently located in downtown Santa Paula.

May 29, 2013, marked the official grand opening of CAC's field office wherein local area industry stakeholders were given the opportunity to tour the facilities and chat with commission staff and board members. The open house was followed by an official ribbon cutting ceremony with Congresswoman Julia Brownley, representing the 26th District of California which encompasses a large portion of Ventura County, and other local officials, in attendance. Brownley, no longer a stranger to avocado farming operations (check out article on page 34/35) addressed the crowd stating: "We're having a symbolic ceremony here today, but this really represents a great investment into Ventura County. Agriculture and avocados are so important to our economy here in Ventura County, and when our economy is strong, and people are consuming avocados, it's good for the entire county, and really, good for the entire State and our country."



The purpose of the establishment of this field office is for CAC staff to be more accessible to the grower community. In the coming months, CAC will communicate through The Greensheet when members of the commission staff or board will be available at the Santa Paula office. In addition, the facility will be utilized for industry meetings as necessary, and will also be a base for outreach efforts at CAC's Pine Tree Ranch site.

As Congresswoman Brownley stated, this office is an investment in the future of the California avocado industry throughout the state, and we hope growers will take advantage of the availability of commission staff, right in their neighborhood, and drop by to provide the valuable feedback and input necessary to a making that future a success. 🥑



Behind the Scenes ~ Co-Marketing Promotions

CAC Vice President of Marketing Jan Delyser and Naturipe Vice President of Marketing Robert Verloop meet to discuss components of the co-marketing promotion.

Most of the California Avocado Commission's marketing communications focus exclusively on California avocados. However, at times CAC can leverage the strength of other brands to maximize the impact and reach of marketing programs that fit strategically with marketing partners, and extend the budget by sharing costs.

Co-Marketing Planning

Program planning and execution is a little bit like courtship, first getting to know what each brand wants and needs, then negotiating, working together to exchange and develop assets, building on each other's strengths and taking advantage of opportunities to make the program stronger.

CAC Co-Marketing Examples ~ Multi-Level Promotions

CAC co-marketing activities usually fall into one of two camps: multi-level brand tie-ins and online/social media exchanges. Multi-level brand tie-ins may involve recipe exchanges, retail point-of-sale materials such as recipe booklets, display materials, joint in-store product demonstrations,

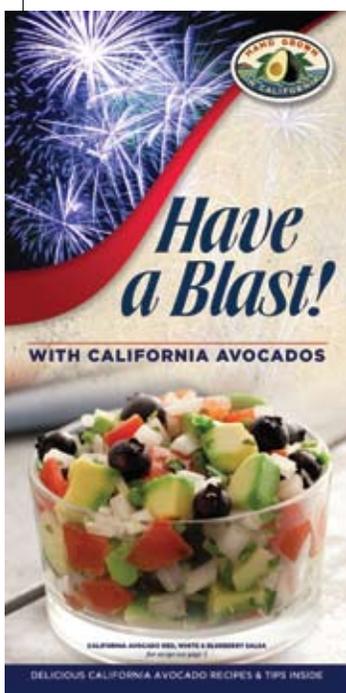
press releases and more. A good example of a multi-level co-marketing program is the commission's 2012 partnership with Dulcinea melons. CAC wanted to closely tie California avocados to picnics and parties for American summer holidays. What says American summer picnics? Watermelon. So CAC created *Firecracker Guacamole*, a concept to serve a large batch of guacamole in mini watermelon shell, and approached Dulcinea with the co-promotion idea.



The resulting program grew as each partner included the other in various activities, including CAC's recipe booklet, Dulcinea's watermelon display header cards, online and social media, trade press interviews and a press release, and Dulcinea even included avocados in their trade advertising. Trade press coverage was extensive. Supermarket registered dietitians promoted the recipes to their shoppers. A few even demonstrated the recipe during their television broadcasts. Today both CAC and Dulcinea continue to use the joint recipes when possible, further extending reach to consumers.



For this year's 4th of July program, CAC sought to work with a produce item that had added caché with retailer produce departments, and something that could help carry a red, white, blue and green theme. As one of nature's only truly blue foods, blueberries came to mind. CAC approached former CAC vice president of merchandising, Robert Verloop, now vice president of marketing for Na-



turipe Farms, about the possibility of a co-marketing effort with California avocados and Naturipe® berries. Verloop, who proudly proclaims to have some "avocado green running in his veins," agreed that a co-marketing program could benefit both parties.

The joint promotion with Naturipe includes recipes for use throughout the day, including muffins and parfaits for breakfast, salads, salsa and more that are being featured



in both the *Wake up to Breakfast with California Avocados* and *Have a Blast with California Avocados* promotions. Naturipe also will feature recipes with California avocados and the *Hand Grown in California* logo on packages of strawberries and blueberries starting in July. These co-marketing promotions provide retailers who support the brands with merchandising support as well as content ideas for in-store and dietitian programs. Importantly the promotions create a higher basket ring for retailers when shoppers purchase both products.



last year and continues to be very popular with California avocado fans. Recipes included *Sushi Rice Balls with California Avocado* and *Wasabi and Avocado Potato Salad*, a fan favorite.

Sometimes the exchanges simply involve providing a recipe for a partner to promote, which helps expand the recipe library and the reach of the usage idea without having to develop a new recipe or photograph. For Cinco de Mayo this year, CAC secured the permission of Tajín Seasonings to promote *Tuna Ceviche Tajín*, which is served in an avocado half.

A few of CAC's co-marketing programs are unique opportunities that come our way. In 2013 CAC is partnering with both the California Beef Council and the American National CattleWomen, Inc. (ANCW) through The Beef Checkoff program to promote the pairing of California avocados and lean beef through their bi-annual Beef Cook-off recipe contest. The California Beef program will also include a regional recipe booklet promoting avocados on hamburgers in the summertime.

Another co-marketing promotion in 2013 is a display and coupon program in cooperation with Anheuser Busch. When retailers in California and Arizona agree to build displays that include both Bud Light® beer and California avocados, Anheuser Busch representatives use point of sale materials and affix coupons for both products to packages of beer on the displays.

CAC Co-marketing Examples ~ Online and Social Media Exchanges

Online/social media exchanges are easy-to-execute co-marketing activities that usually only involve limited staff and agency time. These programs are very efficient at broadening the reach of California avocado messages because both brands share them with fans on their respective websites, email newsletters and social media networks. These simple exchanges also promote the versatility of California avocados through partner brand recipes.

An exchange with Kikkoman started





Sherry Hill

Cook-off Program Director for the ANCW Sherry Hill, a contractor to the Beef Checkoff Program explains the partner activity, "Our organizations' joint co-marketing strategy will leverage California avocado grower and Beef Checkoff dollars to broaden our programs' foundation, increase our influence as well as funding and extended reach. The partnering of our organizations allows us to engage consumers through multiple content and sharing opportunities," said Hill. "Our organizations will co-fund a 3-column newspaper release, distributed in late summer or early fall to 10,000 newspapers as well as tens of thousands of online sites, blogs and RSS feeds to thousands of editors. A second co-funded activity will include hosting a recipe media luncheon, featuring 'Craveable Fresh Beef and Fresh California Avocado Recipes' to media and bloggers in November. Lastly, The Beef Checkoff grants CAC a non-exclusive, limited, license to use the beef and avocado recipes submitted by finalists through December 2016."

An additional benefit of co-marketing promotions is the coverage garnered in trade press and consumer press that can generate interest in merchandising and purchasing California avocados as well as promote industry goodwill. 🥑

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By April Aymami
Director of Operations

California Avocados Grow Here ~

A Quick Tour of the New California Avocado Growers Website

Setting the stage — a website designed around avocado grower input.

In September 2012, the California Avocado Commission (CAC) and our partner agency TMA+Peritus (TMAP) held a series of Grower Listening Sessions in three distinct California avocado grower regions — San Luis Obispo, Santa Paula and Fallbrook — in an effort to enhance grower communications and redesign the California avocado grower website (www.CaliforniaAvocadoGrowers.com).

The purpose was to:

- Identify the information you need
- Determine how you prefer to receive that information
- Understand how we can better facilitate sharing, interaction and ideas

What we discovered was this:

- You need relevant, actionable, easy-to-understand information from a trusted resource that meets the needs of avocado growers who have varied levels of experience.
- You value the insights of other growers and realize that collaboration amongst California avocado growers is critical to the success of our industry.
- You want the grower website to be an easy-to-navigate hub of information with the latest industry news and research front-and-center.
- You're busy — so email notices

regarding new content, and alerts regarding adverse weather events, important legislative news and pests are important.

- You'd prefer a more robust and timely understanding of CAC's marketing efforts and promotional calendar so you can adjust your harvesting strategies as needed.

Based on the input received during these listening sessions, the development of a new, updated and redesigned grower website began in early 2013 and was launched on June 20, 2013. For those of you who frequented the old site, you will immediately notice a difference, and so this article hopes to help you navigate to find those old faithful pages you come to our site for; however, we hope after finding your favorite pages you'll stick around the site and make a few new pages favorites as well. For those of you who have never visited the grower site, read through the tour below and see everything you've been missing; then go to www.CaliforniaAvocadoGrowers.com and take a look around!

A guided tour — highlights of the new grower website.

Command Central

The first thing you'll notice about the new California avocado grower website is the homepage — or, as we like to call it, command central. The new website has a clean



look — a simplified design intended to make it easy to find what you're looking for.

Designed with a nod to your busy schedules, the homepage has been laid out to put the content you deem most important right there in front of you:

- Three dominant navigation tabs take you to the information most critical in helping you optimize productivity and profitability

NOTHING BUT THE BEST.
Be the best. For the best. Ask the growers of the California Avocado Commission and we are committed to quality, sustainability and good agricultural practices.

OUR MISSION.
Our Mission is to maximize grower returns by maintaining premium brand positioning for California avocados and improving grower sustainability.

HAND GROWN IN CALIFORNIA.
We are American-made and born from the needs of knowledge, our avocados grow from 90% percent of avocados under California's favorable climate on business, quality and taste.

GROWING AVOCADOS **SELLING AVOCADOS** **MARKETING AVOCADOS**

LATEST NEWS **ACTION CENTER**

Avocado Trunk Canker Disease Symptoms
Phytophthora mangifera (P. mangifera) and P. cinnamomi have been associated with trunk canker and collar rot of avocados. The pathogen infects the crown, lower trunk and limbs of older trees. The disease develops after pruning, limbing, or trunks become infected through wounds, such as injuries from equipment, pruning, vertebrate chewing, and wind damage.

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Upcoming Meetings
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Call to Action on Immigration Reform
Call your Senators today to support Senate Bill 744. If we are going to win this opportunity to secure a stable and legal workforce, you need to join the effort to make sure Congress passes a viable guestworker program.

FSMA Raises Serious Concerns over Dropped Fruit

Culinary Innovations with Avocados from the Cafe Sucez Farine
See the latest culinary creations featuring California avocados from the Cafe Sucez Farms — avocados, artichoke, side dishes and desserts with...

The most current information is always just a click or two away

As you told us at the listening sessions, information is very important to you, but your time is limited — you don't have time to visit the website and search for new information.

The only exception to this is the Publications page — where we opted to provide an overview of the publications and make it easy for growers to subscribe. That said, simply click on either publication, The Greensheet or *From the Grove*, and you will arrive at a landing page featuring — you guessed it — the latest issues.



— Growing, Selling, and Marketing avocados.

- Two distinct news feeds — one concerning the latest industry news, trends and research; the other focused on legislative, labor, water and food industry updates.
- Easy-to-find contact information and upcoming meeting notices.
- The latest avocado industry market statistics — size, price and volume.
- Three distinct portals that help growers interact — to share ideas, subscribe to Commission publications, or network with others via grower groups, seminars or meetings.

So, we've ensured that information is very easy to find.

The main navigation bar (which is present on every page of the website) leads you to six distinct landing pages — Growing, Selling, Marketing, Research, Advocacy, and Publications. Click on these tabs and the landing page you arrive at provides a list of articles featuring the most recent:

- Cultural management articles (Growing)
- Avocado sales data (Selling)
- Consumer and industry ads and promotions (Marketing)
- CAC-funded research (Research)
- Industry news concerning water, legislation, pests and labor (Advocacy).

Better yet, going forward we will utilize The Greensheet to send you email notices concerning new content you may be interested in, and to send timely email alerts about adverse weather conditions, pest outbreaks and opportunities to speak for or against legislative actions that may affect our avocado industry.



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Cultural management information for all avocado growers — no matter where you live or how much experience you have

The one thing all avocado growers agreed on at the September sessions was the importance of the commission providing information regarding cultural management best practices and outreach of CAC-funded research. That said, many of you had difficulty understanding the materials available to you and some of the newer growers didn't feel they had enough materials to help them get started.

To that end, the new grower website has four very distinct libraries of cultural management materials. The Research Library, located under the "Research" landing page, is a collection of domestic and global technical research papers and reports.

The Cultural Management Library, located under the "Growing" landing page, is a collection of easy-to-understand articles and fact sheets featuring California avocado grove best practices. Topics include disease management, flowering, freeze protection, fruit/size quality, harvesting, irrigation, managing alternate bearing cycles, mulching/soil, nutrition, pest management, pollination, post

harvest, pruning, salinity, wind protection and yields/productivity.

Finally, we've created two sections of importance for newer growers. One is, aptly, called New Growers; the second is labeled How a California Avocado Tree Grows. Both sections cover topics of interest to new avocado growers with a focus on the importance of the avocado tree's two-year growth cycle as it affects productivity.

Keep in mind — the articles you see in these sections upon launch of the website are just the beginning. CAC will continue to provide new articles in all four of these libraries in order to keep California avocado growers abreast of the latest cultural management practices. Relevant ar-

the fence — what my fellow avocado grower is doing and how it's working." Collaboration is key to success of our industry — we can all learn something from one another. To help facilitate collaboration between California avocado growers, we've created a series of online tools to help growers connect, learn and share.

Both The Greensheet and *From the Grove* are popular publications — each for very different reasons. By adding a "Send Us Your Ideas" link under the "Publications" page, we've made it easy for you to share your ideas — tell us what you'd like to see, what we're doing right and how we can improve these publications and our communications in general. And because so many of you requested



ticles from The Greensheet and *From the Grove* will also be funneled into these libraries in order to provide growers with multiple access channels to these critical pieces of information.

Get involved, share your ideas

As one of the growers put it, "I like to know what's going on over

more grower profiles (after all, it's one of the best ways to see what methods other avocado growers are using), we've also created a form inviting avocado growers to submit a request to be interviewed for a grower profile.

And let's not forget networking — regional grower groups, seminars, and industry meetings are excellent

means for avocado growers to share ideas, receive updates on research and see live demonstrations of avocado grove cultural management practices. We've streamlined the new website, adding a "Network" section on the homepage, making it easier for you to find the information you need to participate in any of the aforementioned events.

In addition, we'll keep you abreast of legislative, water, labor and food safety issues that affect you — with a homepage newsfeed featuring the latest updates, an advocacy section that features the commission's latest initiatives on behalf of avocado growers, and email alerts that provide you with the opportunity to get involved in issues that may affect you and your grove.

Keep tabs on our marketing program, consumer and industry trends

Without exception, participants at the listening sessions raved about CAC's marketing efforts — they simply



wanted to know, in advance, what the planned promotions were.

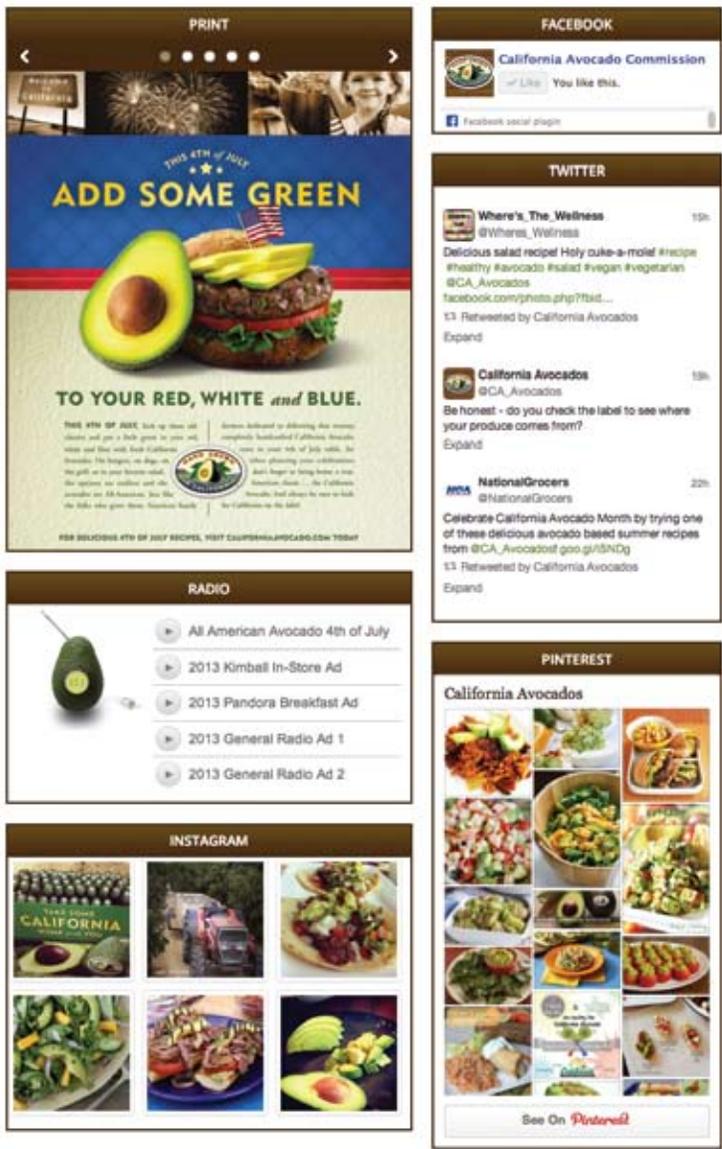
We've created a robust Marketing landing page that features current CAC promotions including commercials, radio ads, print ads and feeds from the commission's consumer Facebook, Twitter and Pinterest accounts. As always, marketing reports and dashboards are available — but we've also added a newsfeed that features articles concerning consumer trends relevant to our articles. On the Selling page, we've mirrored this newsfeed and added a twist — this newsfeed shares the latest relevant trade articles. Together, these feeds will provide growers with an up-to-date picture of trending consumer and industry preferences that affect our avocado markets.

And that's just the tip of the iceberg...

It's important to remember this — the California avocado grower's website is always a work-in-progress. And that's as it should be. Our website is a robust, easy-to-use platform that will streamline our abilities to add fresh content. And we're always conducting new research, holding new seminars, producing new ads, convening new meetings. What you see today will change tomorrow and the day after, and the day after. Why? Because — as you, the growers, so aptly put it — growing avocados is a continuous learning process. And with that in mind, this website will continue to change — fresh content, new topics, more videos, and a larger library of assets.

As we move forward, the commission is committed to providing you with the latest information you need to be successful, profitable avocado growers. We'll record more seminar sessions, help you create successful regional grower groups, and send emails that help you get involved and stay informed about the topics that matter most to you.

This is just the beginning. 🥑



By Ken Melban
Director, Issues Management

Immigration Reform Takes Center Stage

During the week of June 10, I traveled to Washington, D.C., for meetings with congressional members and federal agency staff on a variety of issues impacting the California avocado industry. The trip proved to be timely as the primary purpose was to advocate in support of pending legislation on Immigration Reform and the Farm Bill. Below is an update on those issues and others, based on the most current information at the time of this writing.

Farm Bill Fails House Vote

With the extension of the Farm Bill (bill) due to expire on September 30, 2013, on June 20th the House of Representatives failed to pass a bill by a vote of 195 to 234. The failure in the House to move a bill into conference occurred a mere ten days after the Senate passed their version on June 10th. Although bipartisan support within the House was hoped for, in the end members of both parties voted in opposition. Within the Republican Party, the primary disagreement centered on proposed production limits on dairy producers. House Speaker John Boehner, who typically does not vote on legislation, voted for an amendment that would remove dairy production limits from the bill. In a rare “dear colleague” letter, Boehner wrote, “By bringing some free market reforms to our dairy programs, this amendment will help our economy grow, protect farmers and families, and save taxpayers an additional \$15 million over the changes in the underlying bill.” The proposed amendment failed, causing many in the majority to oppose the bill. The concern for

Democrats was the level of cuts to the Supplemental Nutrition Assistance Program (SNAP), also known as the food stamp program. According to Rep. Barbara Lee (Calif.), “The [Farm Bill] reauthorization includes more than \$20 billion in harmful and fiscally irresponsible cuts to the food stamp program, our Nation’s first line of defense against hunger. Not only is cutting SNAP morally wrong, it’s economically bankrupt. Cuts to nutrition programs will cost the government more money in the long run, but also it is just probably the worst thing that I have ever seen proposed.” There is some chance the House will take the bill up again in the near term, but if a bill is not passed before the August recess it will become even more difficult. “If we don’t get the bill done this summer or early this fall, if we get into next year it’s going to be very difficult to get it done in an election year,” said Collin Peterson, House Agriculture Committee Ranking Member.

At stake for avocado growers is funding for specialty crops in areas such as the Specialty Crop Research Initiative and Clean Plant Network. Funding for those programs is not part of the baseline funding, and therefore is not continued under any extension. The Commission will continue to work with Congress for the authorization of a new bill.

Immigration Reform Legislation

On June 11, the Senate voted overwhelmingly, 82-15, to proceed with the Border Security, Economic Opportunity, and Immigration Modernization Act, and began debating the bill and proposed amendments.



Senator Charles Schumer (NY), member of the Senate Gang of Eight, and Ken Melban discuss immigration reform.

The debate, expected to last for a few weeks, may result in a Senate vote before the July 4 recess. The architects of the bill, known as the “Gang of Eight,” are aiming for a lofty goal of 70 votes in the Senate. Their thinking is simple- show a strong level of bi-partisan support and thereby improves the chances of a divided Congress passing immigration reform legislation. Senator Marco Rubio, one of the authors of the bill, stated, “The goal here is not to pass a bill out of the Senate. The goal here is to reform our immigration laws. And that requires something that can pass the House, the Senate, and be signed by the president.”

House conservatives are primarily concerned over two parts of the legislation: providing a pathway to citizenship and border language that they consider not strict enough.

Within the House an a la carte approach has been suggested that will address immigration changes through individual legislative pieces rather than a comprehensive bill. Agriculture advocates are concerned this course will not lead to a favorable outcome because it will fail to establish a system that guarantees a stable ag workforce. As with the Farm Bill legislation, if immigration reform isn't passed before the August recess the chances for success become less likely.

Food Safety

Over the last few months more and more California avocado growers have become GAP (Good Agricultural Practices) certified, with the amount of certified California avocado acreage approaching thirty percent. At the same time, handlers are reporting a rise in inquiries from retailers and food service on the availability of GAP certified fruit. Just recently, a major retailer announced they will require that all fresh produce be GAP-compliant by September, 2013. Once the comment period for the draft Food Safety Modernization Act (FSMA) Produce Rule closes in September, it will only be a matter of time before it becomes mandatory for growers to demonstrate their compliance with the FSMA standards.

Growers who elect to become GAP certified under the CAC-GAP program will be able to demonstrate compliance with the FSMA standards. Becoming GAP certified hasn't necessarily meant big changes for growers, and in many cases improvements in their documentation has been the biggest adjustment.

I would encourage you to learn more about the CAC-GAP program by reviewing our website (www.californiaavocadogrowers.com/gap/) or sending an email asking for more information on GAP to cac.iaf@avocado.org. As a reminder the commission is offering a rebate to growers of



up to \$300 for actual audit costs (dependent upon availability of funds). Complete guidelines may be found here: (www.californiaavocadogrowers.com/cac-gap-incentive-rebate-resources/).

Water Pricing Campaign

The commission continues to pursue a solution to the escalating cost of water in the Southern California region through a number of strategic activities. Commission representatives are engaged in ongoing outreach to Metropolitan Water District (MWD) board members and staff and regularly attend their board and committee meetings. In addition, over the last year avocado grove tours and one-on-one meetings with MWD representatives have been held. The commission also participates in water meetings and workshops, and recently the commission shared our story at the OC Water Summit. The Summit was attended primarily by staff and board members from Southern California water agencies, and each of the nearly five-hundred attendees were provided with a bag containing two avocados and an insert (see page 20). The objective of these activities is to educate those who set water rates on the benefits agriculture provides to the region, with the ultimate goal of seeing solutions implemented that combat the increasing cost of ag water.

At the CAC Board meeting in May additional public affairs activities were approved for the purpose of intensifying the reach of our story. So what is our story? Well, our story

is straightforward: That agriculture, in addition to playing a pivotal role in the history of Southern California, is very much alive and provides tremendous economic, environmental, and societal value. We communicate how agriculture, for years, has adapted to increasing water costs through the implementation of technologies that improve efficiencies, and that we are, as a whole, pretty darn efficient in our water use!

Also, that the commission has spent hundreds of thousands of dollars to fund research, for example, to develop a salinity resistant rootstock. And finally, we are not afraid to speak candidly and say that the future of agriculture in Southern California is inextricably linked to controlling the cost of water. That we must have affordable water for agriculture!

Although different ideas have been floated, unfortunately no "silver bullet" has yet been identified. However, we have received commitments from some of the decision makers to work with us in determining what, if any, price relief opportunities may exist. One idea is that of Take or Pay agreements, which you can learn more about in the Take or Pay article in this issue (page 23). We will keep you posted as the Water Pricing Campaign continues. While the challenge before us is difficult, many of us remain optimistic that a solution will be identified that works for both agriculture and the water agencies. I believe this expression captures it well- "How do you eat an elephant? One bite at a time." 🥑



THE FUTURE OF SOUTHERN CALIFORNIA AGRICULTURE DEPENDS ON AFFORDABLE WATER

WATER is arguably the most precious resource in today's farming operations. California Avocado growers have implemented numerous practices throughout the years to utilize water efficiently.

THE CALIFORNIA AVOCADO INDUSTRY IS DEDICATED TO IDENTIFYING A SOLUTION FOR THE ESCALATING COSTS OF WATER, WHICH HAVE INCREASED 234% IN THE PAST 11 YEARS.

- **Advanced technologies and modernization:** To improve water use efficiencies, California Avocado growers have implemented a variety of technologies, including reverse osmosis, high-density groves and managed tree heights.
- **Research:** California Avocado growers have dedicated millions of dollars to fund research, with one of the goals to develop salt-tolerant varieties of avocado trees.
- **Environmental benefits:** Avocado groves help improve air quality, provide a barrier to fire spread and reduce urban sprawl.



- **Value to the community:** Southern California agriculture and related businesses contribute \$40 billion and 450,000 jobs to the local economy, and provide access to safe, locally grown produce, including avocados.*
- **Proactive and progressive:** The California Avocado industry has been instrumental in telling the story of California avocados at water meetings and workshops, promoting the importance of an affordable agricultural water rate for more than three decades.

THE FUTURE OF SOUTHERN CALIFORNIA AGRICULTURE AND THE AVOCADO INDUSTRY DEPEND ON AN AFFORDABLE WATER RATE.

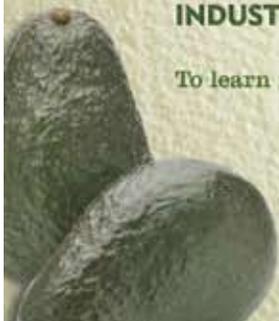
To learn more about Hand Grown In California avocados, visit californiaavocado.com



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*University of California Agricultural Issues Center study, July 2012



Wake Up to Breakfast With California Avocados

Campaign Overview

Only 10 percent of avocado consumers in the California Avocado Commission's ad markets responding to CAC's 2013 avocado tracking study say they eat avocados at breakfast weekly, indicating a big opportunity to increase California avocado consumption by promoting breakfast usage. (Tracking study conducted by Bovitz in 2012.)

Research indicates that breakfast is the most important meal of the day, and the commission is positioning it as one of the most important meals throughout the California avocado season. To increase the demand for and value of California avocados in target markets this season, CAC highlighted breakfast as a key consumption opportunity. The commission's marketing programs including online, advertising, public relations, foodservice and retail have worked together to develop an integrated campaign, *Wake Up to Breakfast with California Avocados*, featuring a landing page on the website, a widely successful Pinterest contest to drive traffic to the website, email promotions, online and mobile advertising, a special PR media event and a retail promotion with a breakfast-themed recipe booklet.

Website

The Breakfast landing page on the website (CaliforniaAvocado.com/avocados-for-breakfast) is designed to act as a hub for campaign content and information. Visitors are made aware of the breakfast themed landing page on the site through print materials like a recipe booklet, online banner ads, social media posts or the monthly recipe e-newsletter. Once they visit the landing page, they discover appetizing recipes and nutrition tips highlighting the importance of a nutritious breakfast. Images of each recipe are available to be "pinned" on Pinterest and shared across the web. The information on the landing page is organized by day of the week – the more time-intensive recipes reserved for the weekends. Additionally, the page features Chef Neal Fraser who partnered with CAC for the PR media event, and includes a downloadable cook-booklet full of California avocado breakfast recipes and messaging.

Pinterest Contest

CAC launched a Pinterest contest in March asking participants to pin or "re-pin" their favorite breakfast recipes



from the CAC website for a chance to win fresh California avocados in order to create excitement and incentive to view and share recipes. The entry form collected emails addresses and two random winners were selected each month through June. Generating Pinterest "pins" from the CAC website is important because each time someone pins, they are sharing a link and image to their Pinterest followers which in turn drives traffic back to the website. To date, the *California Avocado Chorizo Egg-in-the-Hole* has been one of the most popular recipes with over 1,360 combined pins and repins.



CAC's Jan Delyser interacts with popular bloggers at the media event at BLD® restaurant in Los Angeles.

Online Promotions & Advertising

After launching the *Wake Up to Breakfast with California Avocados* campaign landing page and Pinterest contest, CAC spread the word via its online channels. Email continues to be an important tool for driving awareness and action, so CAC highlighted the contest and recipes in a newsletter to its 177,000 subscribers. On social media, a banner was added to the *What's New* tab on the CAC Facebook page, which acts as a landing page for Facebook ads. CAC also promoted the campaign to its community of 178,000 Facebook fans, 5,500 Twitter followers and 5,000 Instagram followers.

CAC leveraged online advertising to drive traffic to the landing page. In addition to Google and Bing pay-per-click (PPC) ads, CAC developed Pandora radio ads focused on California avocados for breakfast. The *California Avocado on Toast 3 Ways* recipe was promoted with online banners on epicurean sites and integrated recipe text links on All-Recipes.com.

PR Initiatives

Offline, the campaign launched with a media and blogger event at BLD® restaurant in Los Angeles on March 12. Nearly 30 media outlets and bloggers were in attendance, including NBCLA.com, LAist, Los Angeles Magazine's Digest blog, La Fuji Mama and LatinoFoodie. Guests' taste buds were wowed at this exclusive breakfast-for-dinner event by Chef Neal Fraser, recognized as one of California's finest culinary talents and co-owner of BLD®, Fritz Dog®, Redbird and The Strand House®. He developed and demonstrated innovative California avocado breakfast dishes, including *Chilaquiles de California Avocado* and *California Avocado, Egg and Smoked Salmon Blini* – both recipes he shared with CAC for use on its website and a larger media outreach effort. The event garnered more than 400,000 consumer media impressions in one evening.

Retail and Foodservice

The *Wake up to Breakfast with California Avocados* recipe booklet brought the campaign to consumers at retail locations on displays of California avocados. Shoppers were encouraged to include California avocados in traditional and new breakfast applications. Booklet recipes included traditional egg dishes such as *Anytime Omelet* and *California Avocado Eggs Benedict*, baked goods such as *Avocado Blueberry Muffins*, a *Power Breakfast Parfait* and more. CAC also promoted California avocado breakfast usage ideas through supermarket registered dietitian outreach and trade public relations. In foodservice, CAC is promoting breakfast menu concepts that have already resulted in an outstanding chain promotion with Denny's.



CAC's online, social media, advertising, PR and retail programs integrated creatively to increase awareness of breakfast as an important California avocado eating occasion with the *Wake Up to Breakfast with California Avocados* campaign. These programs increase consumption by providing consumers with creative ideas to use California avocados at a time of day when few currently do, and offer information about the nutritional benefits of eating California avocados for breakfast. This program will be available on CaliforniaAvocado.com with new information and recipes added in the years to come. 🥑



Water Purchase Agreements May Help Secure Rate Relief

For growers who are dependent on municipal water delivery, the rising price of water is an ever present concern. About 60 percent of California's avocado growers are situated within the service area of the region's major wholesaler, Metropolitan Water District of Southern California (MWD). As part of its continuing discussions with the MWD regarding agricultural water pricing, the California Avocado Commission is exploring the possibility of multi-year, fixed volume, water purchase contracts that reach down to the farm level.

A fixed volume water purchase contract is a buyer-seller agreement in which the buyer's obligation to pay is unconditional whether or not the agreed-upon volume of water is delivered or taken. A water buyer and seller agree to a minimum volume of water that the buyer agrees to purchase whether that quantity is needed or not. In such cases, the seller receives a firm commitment for the purchase of that minimum volume, and the buyer receives a more favorable price. The minimum volume would be over an established period of time (e.g. monthly or annually). In the event the seller cannot supply the agreed-upon volume of water, the buyer would not be obligated pay for undelivered water.

In recent years, MWD's water sales have been below projections, in part because of successful efforts to get customers to conserve. This can be problematic for MWD, since

fixed costs represent a high percentage of their expenditures, and revenue from water sales is highly variable. Water purchase agreements could provide MWD with a predictable revenue stream, a point which may resonate with the water wholesaler's directors, who are concerned about the agency's bottom line. It may also provide those same directors—many of whom represent urban areas where there are no agricultural water customers—with a reason to support an affordable, agricultural water rate that would benefit the state's avocado growers.

The idea is presently at the conceptual stage and details are still being worked out. For example, an affordable agricultural water rate established by MWD would likely have to be extended through its member agencies to the local water retailer.

The commission will be meeting with MWD directors and staff in the upcoming weeks to discuss water purchase agreements and other innovative ideas that might yield savings for avocado growers. Watch for more information on this subject and give some thought to whether a water purchase agreement would have a place in your own farm management practices.

For more information email the commission at cac.iaf@avocado.org, or call (949) 341-1955. 🥑

By Jonathan Dixon
Research Program Director

Avocado Fruit Set, Is it Just a Lottery?

The avocado crop in California tends to be erratic with highs and lows that generally follow an alternate bearing pattern. This year the crop is expected to be more than 500 million pounds, which will be the third historically large crop in four years. Based on the cropping history of the California avocado industry, the expectation would be for the next crop to be small.

The reason for a small crop is often attributed to a fruit set failure. For many growers what determines the amount of fruit their avocado trees set each year is somewhat mysterious, making an apparent fruit set failure hard to understand. Some years the reason for a small crop is obvious, for example it was too cold at flowering. Whereas in other years, fruit set may be just average even though everything seems to be the same as a year when fruit set was large. Achieving consistent fruit set each year is important as large swings in the amount of fruit causes large swings in income, often resulting in financial hardship for growers. Thus, to maintain the economic viability of avocado groves, consistent fruit set each year is a very necessary goal.

The most common, strongly-held opinion is that temperatures below 50°F (10°C) during flowering cause poor fruit set. The theory is that a few nights below 50°F destroy the newly created viable embryos of recently-pollinated flowers. Therefore, avocado fruit set depends on “warm” temperatures (greater than 50°F at night) with an increase in the number of warm nights resulting in

a greater fruit set. Those fruit whose embryos are killed by low night temperature either drop or develop as seedless avocados. The idea that low temperatures could damage fruit set is not unreasonable as avocados are subtropical plants and are chilling sensitive. Mature avocado fruit are damaged by exposure to temperatures below 40°F (5°C) and freeze damage occurs just below 32°F (0°C). It is possible that avocado flowering and fruit set is also chilling sensitive with poor fruit set being another symptom of chilling injury.

Avocado fruit set is also vulnerable to high temperatures. An upper temperature limit for avocado fruit set has been observed at about 90°F and above. Above this temperature a severe drop of newly set fruit and

flowers often occurs. If warm temperatures essentially define avocado fruit set, there is the opportunity to create a temperature model predicting yield that would be a great aid in crop estimation. For a grower, predicting how much fruit is on trees would be useful for planning inputs like water and fertilizer as well as labor requirements for harvesting and pruning.

If avocado fruit set is solely determined by temperature, the implication is the avocado grower is gambling each year, betting that the weather will be warm, which suggests that cultural management has only a minor influence on fruit set. However, it's commonly observed in a poor fruit set year that some groves or individual trees within groves can

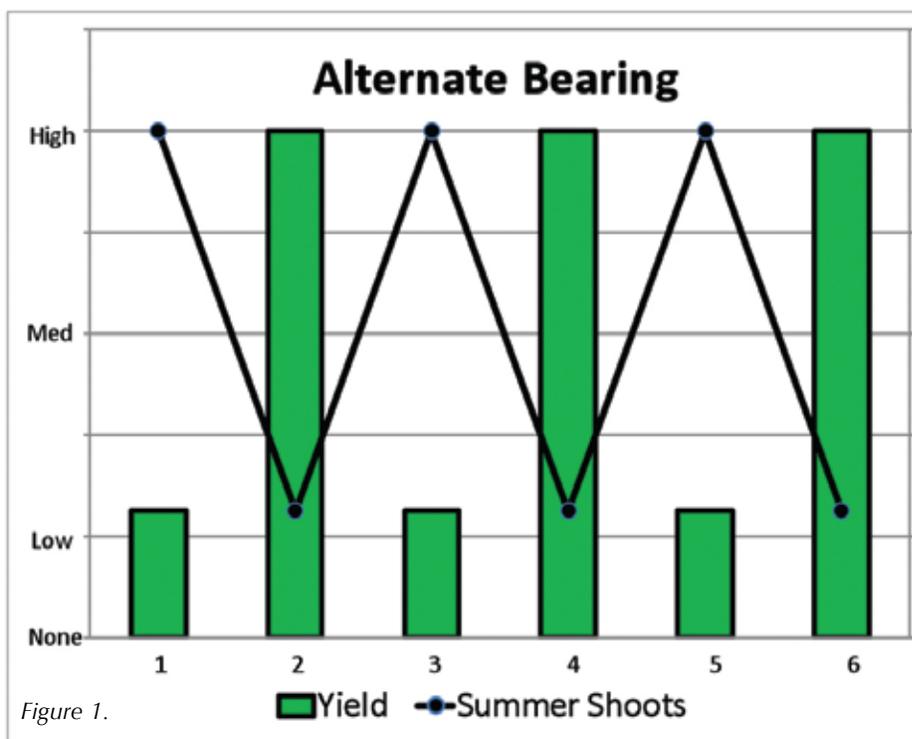


Figure 1.

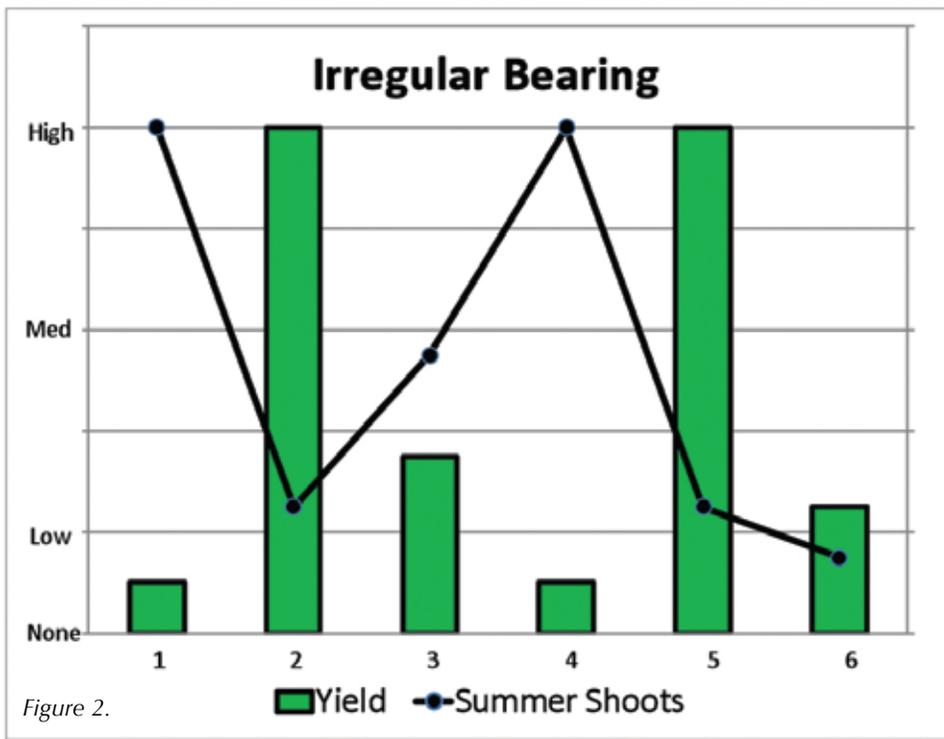


Figure 2.

set a heavy crop even though they were exposed to the same weather. Additionally, if fruit set depends solely on warm temperatures it leaves unexplained how winter set fruit are possible when night temperatures are colder than in spring. In my opinion, avocado fruit set is not solely explained by warm or cold temperatures at flowering. Temperature is important in a general sense because avocado trees are exothermic, like all plants, but is not the only determinate of fruit set. This article outlines my thinking on what may be controlling the avocado fruit set process and how cultural management helps to achieve good fruit set.

The Avocado Fruit Set Process

This article does not describe in detail the full complexity of avocado flowering as there are a number of excellent reviews on flowering to be found on www.avocadosource.com.

Avocado fruit set is a complex process composed of many sequential steps, some of which may form critical control points (see table on page 27). When the steps in the fruit set process are identified it becomes

apparent there are factors other than temperature to consider, such as: how many flowers the tree produces, how readily is pollen transferred, and will the new fruit be held by the tree until harvest? Failure to adequately achieve the best result at each critical control point will result in poor fruit set. For best management of fruit set, the critical control points need to be

identified along with the best cultural management activities.

In briefly describing the fruit set process, I have defined a starting point as the breaking of the vegetative buds for the new summer flush. In the Fall 2012 issue of *From the Grove* I described a two year growth cycle using the same starting point for possible best practice for high yields. The mature fruit on the tree strongly influence the flowering potential of the tree, and the harvest of mature fruit has been chosen as the end point of the fruit set process. Between the starting and ending points, intermediate fruit set steps have been added to describe fruit set more fully.

Cropping Patterns

In a classic alternate bearing cropping pattern (Figure 1) on and off crops are preceded or followed by low or high amounts of summer flush. The amount of summer flush determines fruit set as the flush sets how many flowers are produced in spring each year. If flower numbers are low then the fruit set is poor irrespective of other factors. From year

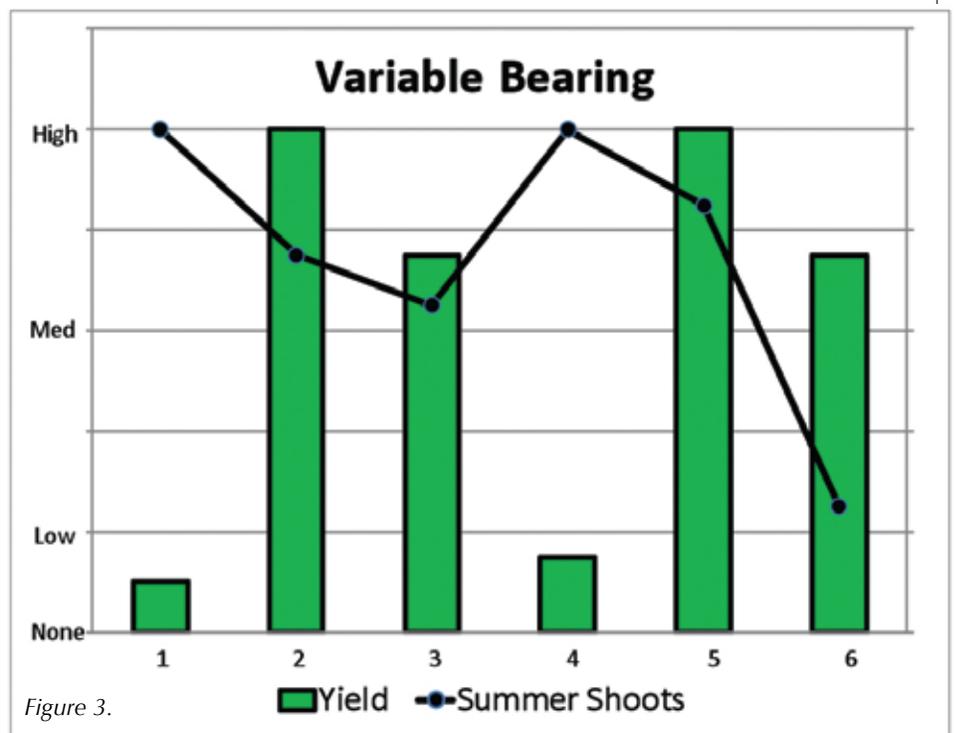
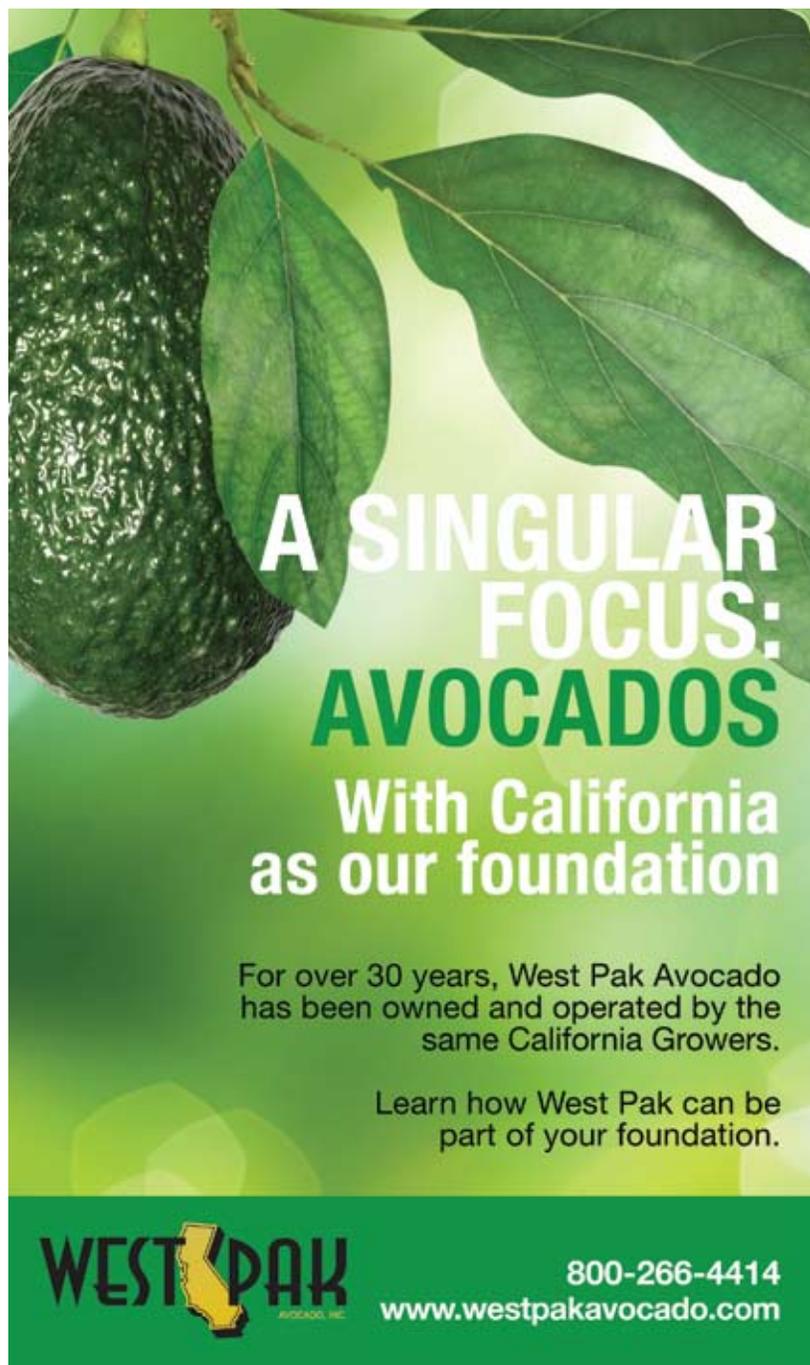


Figure 3.

to year the percentage of flowers setting fruit is similar. The critical control point in this pattern is the amount of summer flush the trees produce. Cultural management practices that result in a similar amount of summer flush each year will result in more consistent crops.

Irregular bearing is a cropping pattern where fruit set is variable and there is a general alternate bearing pattern that occurs across more than two years (Figure 2). The amount of flowers is determined by the amount of summer flush for the first couple of years. Then there is a year when the fruit is held longer than usual and the fruit set is much poorer than expected. The summer flush is also reduced as a result of holding the fruit longer. The result is two years of low fruit set.



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Variable bearing is a cropping pattern where the amount of summer flush is generally managed well so the flowering potential is usually good but other factors are now more important in affecting fruit set (Figure 3). A low fruit set may be due to poor pollinator (bee) activity or the fruit retention was poor. Trees not well-managed for nutrition, water or which were pruned to remove a large amount of summer flush can have a lower fruit set than would be indicated by the amount of summer flush alone.

Conclusions

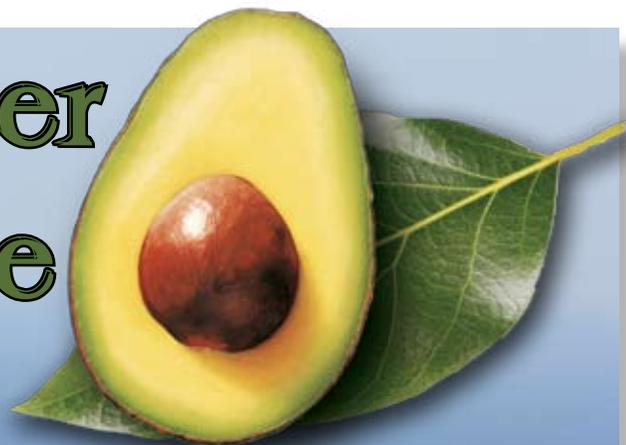
In the avocado fruit set process, there appears to be at least three critical control points: 1) create flowering wood, 2) flower opening and 3) pollination, and new fruit growth and retention. Creating flowering wood does not appear to be well related to temperature and as the first step in the creation of flowering shoots defines the fruit set potential for the year when those shoots flower. If there are few flowers, the weather during flowering, pollinator activity or high sink strength embryos doesn't really matter. A small number of flowers means a small crop. Effective pollen transfer requires bees to be present in large numbers and very active when the flowers are receptive to pollen and again when they are shedding pollen. When there is little bee activity or the flowers have a small overlap in time between the genders, little pollen transfer occurs and fruit set is poor. The last critical step is for the newly created embryo to be a strong sink so that the new fruit will accumulate resources (carbohydrates, nutrients), grow quickly and be held by the tree until harvest. Large numbers of poor embryos results in a large fruit drop and poor fruit set.

Avocado fruit set is not simply enough warm days during flowering. By following the cropping history and observing the growth pattern of the trees, in particular noting the amount of summer flush, a reasonable guess of the fruit set potential should be possible. An understanding of why a particular cropping pattern has occurred should also allow identification of the most appropriate cultural management activities needed to improve fruit set. 🥑

Generalized Avocado Fruit Set Process

Year	Step	Description	Cultural Management
Year 1 starting June/July	Create flowering wood	Vegetative bud break in summer and growth of summer shoots.	Summer flush is controlled through the use of fertilizer, pruning, plant growth regulators and harvest of the mature fruit before June.
	Critical control point: The amount of summer flush determines the amount of fruiting wood available to initiate and develop flowers in fall and over winter.		
	Initiate flowers	Summer flush stops growing and the vegetative buds are converted to flower buds.	Flower bud development can be forced by girdling and plant growth regulators.
	Create flower buds	Flower buds develop over winter until early spring.	
Year 2 March to May	Flower growth	Flower buds “break” and grow into flowering panicles.	Ensure trees are well-watered and fertilized.
	Flower opening and pollination	Flowers open in a pattern mediated by the weather with more flowers open under warm conditions and pollen is transferred from flower to flower by an insect agent.	Avocado flowers are best pollinated by insects. Honey bees at 2 – 4 hives per acre will ensure large numbers of bees will be available at flowering time.
	Critical control point: Pollinator activity determines the amount of pollen transferred. Few bees forage below 60°F. In cool weather avocado flowers will still open but the bee activity will be too low for good pollen transfer.		
	Create new fruit	Creation of a new embryo through the merging of the pollen and egg.	Ensure trees are well-watered with good nutrition.
	New fruit growth and retention	New embryo growth along with the rest of the fruit.	Avoid water stress by good irrigation practice.
Critical control point: Fast growing fruit with high sink strength embryos (seeds) are required for good fruit retention. Slow growing fruit, those with a probable poor genetic makeup, are the most likely to be shed.			
Year 3 from March	Harvest	Remove a significant portion of the crop early.	The amount of mature fruit affects potential flower number during flower bud development, fruit set through competition for resources with flowers, and reduces the amount of summer flush after flowering is completed.

Grower Profile



GREAT VIEWS

Led to Avocado Career

By Tim Linden

It's not quite fair to say that Jim Shanley is an accidental avocado grower, but neither was it a goal in his life. In fact, if it wasn't for the love of great ocean views that he shares with the fruit, he would probably be doing something else today...but be sure it would be innovative with an esoteric justification.

Shanley grew up in Northern Illinois and received a degree from the University of Illinois. His first career-type job was as a runner for the Chicago Board of Trade, which did set him on a fairly direct path to Morro Bay. He learned about commodity trading during that first job which led to a career in the feed and grain manufacturing business. He soon found himself in Visalia, where he settled into a fairly long career with a family owned company that he says "did very, very well."

Shanley found his niche in senior management and the owners treated him like family, even to the point that they let him use their beach house in Cayucos...and thus a love affair with the Morro Bay area began.

The financial success he achieved with the grain company allowed him to help his brother start a medical equipment start-up. The company eventually went public again giving Shanley some capital as well as the opportunity to

pull the trigger on an early retirement a few years later.

While he does credit his financial success for allowing him to retire early and fast start his progression in the avocado business, he believes he would have arrived at the same place eventually one way or the other. "When I first started coming to Cayucos I quickly set a goal of figuring out how to make a living while living in this place."

He did quite a bit of research and eventually narrowed his choices to farming either wine grapes or avocados. He planned to continue working while he built up his farming credentials to create an income stream that could subsidize his retirement. He bought a 113-acre parcel, which he called a "train wreck" as it had basically been abandoned by the previous owner and was littered with three barns, two trailers, a duck pond and even a goat. He spent quite a few dollars getting it in farming shape and chose avocados over wine grapes as his crop for the future.

His decision was based on his grasp of economics and his observation that while wine grapes can be grown just about anywhere, avocados need specific micro-climates that tend to be coveted by homeowners as well. Seeing a potential scarcity of California avocados, Shanley planted his first 4,000 avocado trees in the spring of 1999.



By the time he started getting significant production around 2004, he had retired and moved to the area full-time.

He did hire a grove manager to handle the day-to-day management while he was still in Visalia, but Shanley said his nature is to be “impossibly curious” so he was always a hands-on grower.

Like many entering the farming business, the spread sheet projections were a bit optimistic. “We had two frosts in the first seven years so the economics I had penciled out didn’t quite come to pass.”

But by that time Shanley was hooked. He had achieved a dream. “One day early on, circumstances had me sitting on my deck all alone with a glass of wine in hand one evening looking out over a beautiful vista. I knew I had taken a damaged piece of land and turned it into something beautiful. It felt right.”

He readily admits that when he planted his avocado acreage, he did not know that local growers laid claim to producing the best tasting avocados in all of California. But early on he talked to other local growers and learned that this had been an “open secret for years.”

The Morro Bay area has different growing conditions than any other area in California. Shanley said the temperature is typically 15 degrees cooler than any other district, and often the differential is 20 or 25 degrees. He said this creates a longer gestation period with the fruit staying on the

tree for as long as 15 to 18 months. Shanley said the result is a higher oil content, which, combined with other traits, leads to a better tasting avocado in the September, October, November time frame.

“Some local people think we have better tasting fruit all year long, but I don’t agree. I wouldn’t want to run a taste test against Fallbrook right now,” he said on May 22. “In July and August we can compete with anybody but in September, October and November we will win every taste test.”

And he said at that time of year, the fruit is far superior than the early season imports coming in from Chile and Mexico. With Shanley’s encouragement, many of the Morro Bay growers have banded together to brand their particular growing region and have started the process of marketing those avocados to retailers. Shanley fully expects that within 10 years, Morro Bay avocados will enjoy the same lofty perch as Vidalia onions or Copper River salmon.

However, he said, from a grower’s viewpoint, there is a price to pay for the fruit being on the tree so long. A tree has to use more energy supporting two crops at one time and yields suffer. While there are years where yields are off the charts, Shanley said a good grower in Fallbrook can average 12,000 to 15,000 pounds per acre, while a great grower in Morro Bay will do well at 10,000 pounds.

While the Morro Bay region does not have the same water price concerns as the southern growers, Shanley said “water is always a concern” and this year Mother Nature did not fill the local reservoirs.

Of course, any discussion of water leads to a discussion of the economics of growing avocados. This Morro Bay grower sympathizes with his brethren down south as he said starting out any balance sheet with a water bill in the \$6,000 per acre range makes for a tough hill to climb.

He believes that one way to improve the economics is to engage in some out-of-the-box thinking with regard to crop land utilization. U.S. producers of most crops have long adopted a “mono-culture” method of farming, but Shanley believes there are opportunities to grow other crops on the same acreage...as vines on border fences, under the canopy of a mature orchard or even as fruit vines climbing a tree past its prime. He has tried these various options on his land with good results. In fact, he has entered into a nursery partnership to provide some of the trees and plants necessary to move down this path.

He said crops that have shown some promise sharing space in an avocado grove include passion fruit, dragon fruit and even coffee plants. He said both dragon fruit and passion fruit are climbers while coffee plants have done well planted between trees in the open space.

“Some of our groves are under-utilized resources. I am interested in doing anything I can to make it profitable to grow avocados, especially up here in Morro Bay,” he said. 

2013 CAC General Election

The California Avocado Commission Board of Directors is comprised of 29 individuals serving as producers, handlers and public members. The state's avocado growing region is broken down into five districts, with two producer members and two alternate producer members elected to serve each district for a total of 10 growers on the board. In addition, there are four handler members, four alternate handler members, along with one public member.

Each seat on the board serves a two-year term, unless the seat is affected by redistricting, with expiring terms alternating so that there is continuity from one board to the next.

This year the commission will have one member and one alternate seat in each of the five districts available. In addition, two handler member and two alternate handler positions are available. On this page is a summary of the seats that will be filled in the coming 2013 election, along with the names of incumbent board members who presently hold those seats. Also included is the 2013 Election Schedule indicating dates of importance for those interested in serving on the Board of Directors.

Should you have any questions regarding the election process, or serving as a commissioner, please contact April Aymami at (949) 341-1955 or aaymami@avocado.org.

SUMMARY OF OPEN SEATS*

District	Member	Alternate
1	Carol Steed	Bill Rice
2	Charley Wolk	Joanne Robles
3	Ed McFadden	Keith Reeder
4	John Lamb	Robert Grether
5	Gabe Filipe	Will Carleton
Handler	Reuben Hofshi	Vacant Seat
Handler	Steve Taft	John Dmytriw

* Names shown are incumbents presently holding producer/handler seats

2013 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 3	Deadline for CAC receipt of voter access mailings
September 23	CAC mails ballots to producers and handlers
October 21	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

2013 Mid-Season Crop Update

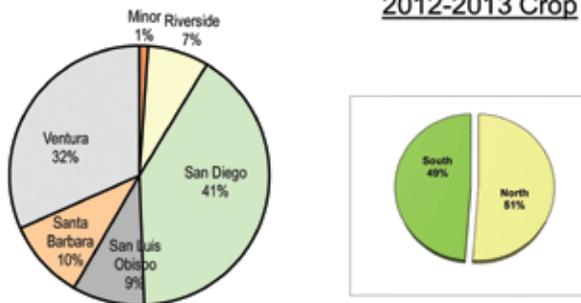
The California Avocado Commission would like to thank all of the growers who participated in the recently concluded Crop Estimate Survey. Survey forms were mailed out in mid-April with a return date of May 10, 2013. While the Crop Estimating Team typically prefers a response rate of at least 50 percent of the industry's acreage, this year's 41 percent response rate, along with additional industry feed-

back, has given us the data necessary to assess the current crop production. The commission will also hold a series of committee and field meetings throughout the month of June to evaluate the accuracy of the mid-season survey results.

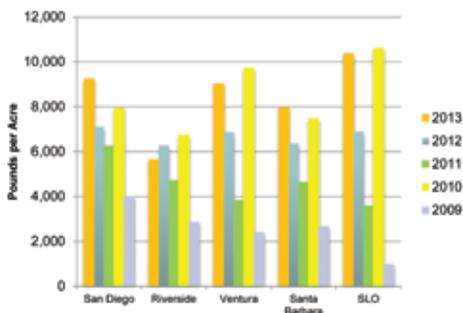
Using various statistical analyses to evaluate information gathered through the crop survey, satellite imagery and acreage inventory results, the CAC Crop Estimating

Team has estimated the 2012-13 California avocado crop to be coming in at 505.4 million pounds, about 10 million pounds less than the initial pre-season estimate of 515 million pounds, but on par with the 500 million pounds CAC used for 2012-13 budgeting purposes. Below, find details of the mid-season crop estimate results including variety breakdowns and production by county. 🥑

Crop Distribution by County



Last Five Years Estimated Hass Yield By County



California Avocado 2012/13 Mid-Season Crop Estimate Update

Variety	Bearing Acres	Estimated Yield		Response %
		Lbs/Acre	Lbs (MM)	
Hass	54,802	8,893	487.4	41%
Lamb-Hass	1,922	7,190	13.8	33%
Other	1,114	3,770	4.2	28%
Total	57,838	8,738	505.4	41%

County	Bearing Acres	Hass Only		All Varieties		
		Lbs Per Acre	Lbs (MM)	Bearing Acres	Lbs Per Acre	Lbs (MM)
San Diego	20,203	9,243	186.7	21,529	9,083	195.6
Riverside	6,412	5,634	36.1	6,588	5,569	36.7
Orange	1,198	9,115	10.9	1,250	8,756	11.0
Ventura	16,186	9,692	156.9	17,261	9,518	164.3
Santa Barbara	6,044	7,975	48.2	6,165	7,901	48.7
San Luis Obispo	4,194	10,373	43.5	4,329	10,115	43.8
San Joaquin	143	4,587	0.7	210	3,752	0.8
Other	422	10,345	4.4	506	8,927	4.5

Estimated yields are on tree forecasts and do not attempt to adjust for weather factors or project carry-out. Bearing acres include producing and topped/stumped trees four years or older. ACE Statistics: 05/23/13

Systemic Pesticides Being Evaluated

Since 2008, Drs. Frank Byrne and Joe Morse in the University of California (UC) Riverside Department of Entomology have been working on a 5-year California Avocado Commission funded project to evaluate the use of different systemic pesticides for controlling avocado pests. This project arose from the need to develop effective and efficient modes of application of this valuable group of pesticides to ensure they remain effective. The project was recently completed, providing another tool to growers in the fight against arthropod pests.

The California avocado industry is under increasing pressure from arthropod pests, such as avocado thrips (*Scirtothrips perseae*). In California, helicopter-applied foliar applications of pesticides are the predominant means of controlling arthropod pests. However, helicopter applications can be expensive, may not be available immediately when a pest outbreak occurs and may not provide complete coverage with the low application volumes typically used. Also, as urban encroachment on agricultural land continues, aerial applications of pesticides are becoming less practical in many areas. Although foliar applications are often preferred because of their rapid effect on pest populations, they can have unintended effects on non-target natural enemies or honey bees.

To continue to improve the management of arthropod pests, this project was undertaken to evaluate the use of systemic insecticides, particularly neonicotinoids, as management tools. Neonicotinoids offer a

different mode of action from the foliar insecticides currently used, which would be beneficial in managing pesticide resistance. And although neonicotinoids can be applied foliarly, they are best used as systemic treatments applied through the irrigation system or via trunk injection, overcoming many of the disadvantages of foliar applications.

Treatments Tested

Over the course of the five-year study, imidacloprid (Admire Pro®), dinotefuran (Venom®), clothianidin (Belay®) and acephate (a systemic organophosphate) were evaluated. Although dinotefuran is not currently labeled for avocados, it has an 80-fold higher water solubility than imidacloprid, which would allow the comparison of two chemicals (imidacloprid and dinotefuran) from the same class (neonicotinoid) to see if their solubility is important to mobility within the tree. Acephate on the other hand allowed for a comparison of a different chemical class as well as a chemical with much greater water solubility than the others. In addition, acephate is available in commercial formulation ready for injection.

The trials compared application of the different chemicals by soil application, trunk injection, and basal trunk applications. Trunk injections were tested with the pesticide alone as well as in combination with phosphite fertilizer to determine if it would be possible to apply both pesticide and *Phytophthora* treatments at the same time. The basal trunk applications also compared application with and without the addition of a

specially formulated surfactant (Pentra-Bark®) to aid in bark penetration. Not all chemicals were tested by all application methods.

To test the efficacy of the different treatments, leaves were removed from treated trees at different times after application, and avocado thrips were exposed to the leaves and monitored for mortality. Also, chemical analyses were conducted on the leaf tissue to quantify the level of the different pesticides in the leaves. Fruit samples were collected from treated trees and analyzed for residues.

Soil & Basal Trunk Applications

Neither soil nor basal trunk applications were effective in achieving toxic levels of the neonicotinoid insecticides in leaf tissue. The rates of absorption and translocation of the pesticides applied by these methods was too slow to achieve adequate levels in young leaf flushes where avocado thrips feed. Drs. Byrne and Morse believe that the slow uptake is likely due to the mulch and other organic material that accumulates beneath most avocado trees. This organic matter binds the neonicotinoids and disrupts their uptake.

Trunk Injections

Trunk injections proved to be an effective means of applying both the neonicotinoids tested and acephate, successfully delivering toxic levels of insecticides to young flush leaves. However, by comparing different application times, it was clear that understanding the biology of the tree (flushing pattern) and the pest of concern (e.g., avocado thrips) is very

important to achieving good results.

When applied during early stages of the spring flush, acephate quickly reached toxic levels in new flush leaves, but there was a loss in efficacy after just three weeks. This is likely due to the rapid development of new foliage and the dilution of the chemical. However, when applied during mid to late flush, acephate remained effective for about six weeks. The mid to late flush timing would knock down the thrips population and prevent them from moving to young fruit when the flush hardens off. By the time the residues decreased, the young fruit have grown to sufficient size to be less susceptible to damage from thrips feeding.

Fruit residues of acephate were detected at two weeks after application in all timings (early, mid and late flush), but by four weeks after applications the residue levels drop nine-fold (early flush timing), six-fold (mid flush timing) and were undetectable (late flush timing). Beyond four weeks after injection there were no detectable residues for any of the timings.

The neonicotinoids showed similar patterns to acephate. Neither imidacloprid nor dinotefuran were effective when injected during early flush, even when the injection rates were increased 3-fold. Mid to late flush injections were much more effective and had longer residual times, up to 10 weeks, compared with early flush injections. Overall, imidacloprid was much more effective than dinotefuran. It appears that dinotefuran, with greater water solubility, moves into the leaf tissue more quickly than imidacloprid, but is then diluted by the rapidly expanding leaves. Whereas imidacloprid takes a longer time from injection to reach toxic levels in the leaves, but once it does get there it is more persistent (up to 10 weeks). Even with this lag, Drs. Byrne and Morse believe that imidacloprid would provide adequate thrips control to prevent fruit dam-

age, since it would reach toxic levels in time to knock down the population before the final leaf flush fully hardens and would then persist long enough to protect the young fruit during a critical time. Unfortunately, the injection of imidacloprid in combination with phosphorous acid almost completely inhibited the movement of the imidacloprid.

There were no detectable residues of imidacloprid in fruit tested for 12 weeks after injection for mid and late flush timings at 1x (0.6 g/tree) and 3x (1.8 g/tree) rates. With the exception of fruit from a single tree at 12 weeks after injection, there were no detectable residues of dinotefuran either.

Conclusion

Soil and basal trunk applications were not effective methods for apply-

ing neonicotinoids to avocados because chemical concentrations needed to kill insects were never achieved in the leaf tissue. However, imidacloprid, dinotefuran and acephate all showed good efficacy when applied by trunk injection. Acephate and dinotefuran, with their high water solubility, moved quickly within the tree following injection and rapidly reached toxic levels within young leaves. However, they were not very persistent. Imidacloprid on the other hand was slower to reach toxic levels within the leaves, but was persistent for a much longer time. Given these differences, acephate and dinotefuran (currently not labeled for avocado) would be best used in response to a sudden thrips outbreak, whereas imidacloprid would provide longer sustained control and prevent thrips feeding on leaves and young fruit. 🥑



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Polyphagous Shot Hole Borer/ Fusarium Dieback Update

By Tim Spann

CAC Research Project Manager

Significant progress has been made on several fronts in the past few months with respect to the Polyphagous Shot Hole Borer (PSHB) and Fusarium dieback disease complex. The California Avocado Commission was successful in applying for United States Department of Agriculture (USDA) funding under Section 10201 of the Farm Bill to help broaden our current PSHB outreach efforts. CAC requested three years of funding (maximum allowed) totaling almost \$300,000 to help with survey and outreach efforts related to PSHB/Fusarium Dieback, in cooperation with the California Master Gardener program, County Agriculture Commissioners, County and State Parks personnel, nursery and landscape industries, and the California Association of Pest Control Advisors. We believe this will be a big help in getting other industries involved in the CAC-led efforts on this pest and disease. And it will allow for an expansion of our current outreach efforts into those industries who are currently affected by this pest, but who have not been active in the survey and outreach efforts to date.

Dr. Richard Stouthamer, professor of entomology at University of California, Riverside, has been making great strides in figuring out where the PSHB's native range is. In the last issue of *From the Grove* we reported that Dr. Stouthamer had received two beetle samples from Thailand that were genetically very similar to the beetle here in California. Recently, he received two additional beetle samples from the same region of northern Thailand and they too were similar to the California PSHB. In addition, he received eight beetles from Japan for testing, and determined that those too are similar to the Thai and California beetles. These data strongly indicate that the beetle originates from the region of Southeast Asia from Thailand to Japan. Unfortunately, the beetle is difficult to find there, which is slowing the collection and analysis of additional samples. However, this does indicate that natural enemies – predators, parasites or pathogens – are at work keeping population levels low, and these natural enemies may eventually be able to be introduced to California.

Dr. Tim Paine, professor of entomology at UC Riverside, has been actively working on understanding the biology of PSHB and developing control strategies. His lab has suc-



Sugar volcanos surrounding PSHB entry holes on an avocado trunk. Photo from: Dr. Akif Eskalen, UC Riverside.

cessfully established a colony of PSHB in the quarantine facility at UC Riverside. This will allow them to conduct life history studies (temperature requirements, generation time, etc.) of the beetle, as well as have a ready supply of beetles to continue their work on host preferences. With respect to controlling the beetle, Dr. Paine and his team have recently completed an initial study to test whether solarization could effectively reduce beetle survival in intact logs. They used infested logs of castor bean and box elder, and placed them under black or clear plastic. Logs were



PSHB entry hole on an avocado tree trunk. Photo from: Dr. Akif Eskalen, UC Riverside.

removed from beneath the plastic sheeting at two and four weeks and placed into buckets for two weeks to monitor for beetle activity. Clear plastic was much more effective than black plastic, reducing the level of infestation by about 90 percent compared to the black plastic after just two weeks. However, there were still live, active beetles present in the logs covered with clear plastic after four weeks. This study will be repeated and extended for a longer duration. Dr. Paine's group is also working on determining the beetle's host preferences, and they are seeking your help in obtaining samples of as many different varieties of avocado wood as possible. If you have freshly pruned avocado wood that they could use, please contact Michele Jones in Dr. Paine's lab at michele.eatough@ucr.edu or (951) 827-4488.

Dr. Akif Eskalen, extension plant pathologist at UC Riverside, has recently found that, in addition to the *Fusarium* and *Graphium* species of fungi the PSHB carries, a third fungus, *Acremonium* sp., is also present. Initial assays indicate that all three fungi are plant pathogenic. The *Graphium* sp. appears to be the primary food source for the larvae, whereas the adults feed mostly on the *Fusarium* sp. The *Acremonium* sp. has only recently been identified and it is uncertain what role it plays in the beetle's diet. Dr. Eskalen emphasizes that these are very preliminary data, and they are doing more work to verify these results. Also, prelimi-

nary work in which they have infected young (nursery size) avocado trees with the *Fusarium* and *Graphium* species has indicated that the *Graphium* may be more aggressive within the tree than the *Fusarium*.

It was hoped that the winter would slow the spread of the PSHB, unfortunately the recently compiled data from spring scouting is showing that there has been significant movement since December. We encourage all growers to be vigilant and to familiarize themselves with the symptoms of PSHB attack on avocado. The beetle entry holes are quite small (about the size of the tip of a ballpoint pen), but at this time of year the tree responds by exuding copious amounts of sugar, forming very visible "sugar volcanos" around the entry holes. If you see anything in your grove resembling these symptoms you are encouraged to report it immediately either to the CAC office at 949-341-1955 or to Dr. Eskalen either by phone 951-827-3499, or email at akif.eskalen@ucr.edu for confirmation of the pathogen.

DO NOT transport suspect material from your grove, but wait for someone to visit the grove and collect samples for confirmation. More information about this pest/disease complex and pictures of the beetle and symptoms on a variety of species can be found on Dr. Eskalen's website (<http://eskalenlab.ucr.edu/avocado.html>). 🥑



Ventura County growers and commission staff meet with Congresswoman Brownley in Fillmore

Commission Hosts Congresswoman Julia Brownley

By Ken Melban
Director, Issues Management

Recently California Avocado Commission representatives met with freshman Congresswoman Julia Brownley to discuss potential federal legislation that has a direct impact on California's agricultural industry.

The meeting, near Fillmore, lasted for more than an hour and provided Brownley, whose 26th District includes most of Ventura County, an opportunity to hear directly from avocado farmers. Following the meeting, Brownley participated in a tour of Rancho Simpatica, conducted by CAC Chairman Ed McFadden, allowing her to get up close and personal with an avocado grove. "I believe it was the first time Congresswoman Brownley had been in an avocado

grove, and I'm sure it was the first time she'd ever used a picking pole," joked McFadden. "She seemed genuinely interested in California avocado farming, the issues we face, and hearing our concerns."

A total of 12 growers attended including CAC officers, Vice Chairman Doug O'Hara and Treasurer John Lamb.

One of the key discussions was on the issue of immigration reform, and the importance of passing legislation that addresses the needs of the farming community. Brownley was told any legislative fix must allow for a flexible, market-oriented program that includes an opportunity for agricultural guest workers. Brownley said she supports immigration reform and pledged to work within the House of



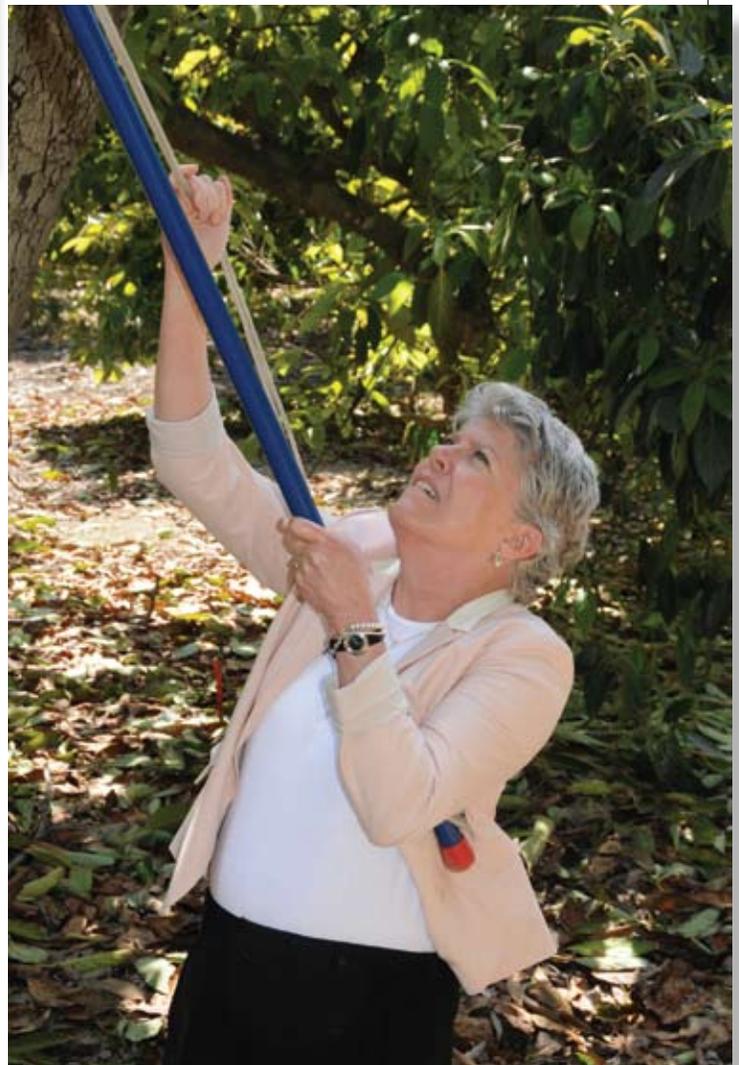
CAC's Ken Melban presented Rep. Brownley with a basket of avocados while they toured the grove.

Representatives to ensure elements important to agriculture are maintained in any proposed legislation.

Growers also explained to Brownley the threat from invasive pests to farming, and how critical it is for the authorization of Farm Bill funding. She suggested efforts are underway in both the House and the Senate to approve the Farm Bill, and that funding for specialty crops looks strong, which will help to maintain funding for pest detection, eradication and exclusion activities.

Brownley, elected in November, 2012 to the 113th Congress, was sworn in on January 3, 2013. New congressional districts were established prior to the November 2012 election, and much of the new 26th District was previously part of the 24th District, which had been represented by Elton Gallegly who retired. Prior to being elected to Congress, Brownley had served three consecutive terms (2006-2012) in the California State Assembly representing the 41st District.

The commission will continue to educate elected officials about the needs of California's avocado growers. 🥑



Congresswoman Brownley picking avocados

The Cost of Growing Avocados

By Tim Spann

Research Project Manager

& Jonathan Dixon

Research Program Director

The California Avocado Commission Mission statement: *“To maximize grower returns by maintaining premium brand positioning for California avocados and improving grower sustainability,”* defines the activities undertaken by the Commission. An important measure of the success of the initiatives undertaken by CAC to fulfill the Mission is that over time California avocado growers retain or improve the profitability of their groves. Understanding the costs to produce avocado fruit is one way to identify the impediments growers face when growing avocados. It also helps the Commission Board to decide where to focus its resources. The Production Research Committee in particular has been interested in identifying those production costs that have rapidly increased over time. These then become the cultural care practices that should be targeted for improvement and increased research effort. Thus, one measure of success for Production Research is a reduction in cultural costs and/or greater yields, which results in avocado growing remaining profitable.

A series of studies identifying the typical costs of production and income for an “average” California avocado grove in the main growing regions repeated every 10 years has become a benchmark to indicate the fiscal health of growing avocados in California. A detailed survey of the establishment and production costs for conventional and organic avocados in Ventura, Santa Barbara, San Luis Obispo, San Diego and Riverside counties was recently completed by Eta Takele, UC Cooperative Extension Agricultural Economist. The project used information gathered from grower surveys as well as from UCCE Farm Advisors Dr. Gary Bender and Dr. Ben Faber. The information in the reports can assist growers and investors when considering investment analyses and decision making, conducting business transactions, and developing risk management strategies.

Considerable caution should be used when reviewing the numbers presented in the reports as there is a large amount of variation between groves in terms of inputs and yields. For example, the cost to harvest fruit is likely to be much lower for growers who do not use contract labor. Additionally, the costs are only a snapshot of when they were collected. The costs of production are always changing and some are likely to be different when this article is published. In addition the surveys do not present information that de-

scribes the relationship between inputs, like water or fertilizer, and yield. The assumption in the reports is that the cost of production is the same for different yields, i.e., the cost of production for 5,000 pounds is the same as for 10,000 pounds with the 5,000 pounds increase essentially “free.” The surveys are useful indications of the production costs and potential profitability of growing avocados in 2011, but do not describe the potential value of changing inputs, e.g., would increasing the amount of fertilizer increase yield and would this increase profit?

The studies were based on establishment and production practices considered “typical” of the five different counties. For groves in San Diego and Riverside counties, the land was assumed to be steep-sloped hillside; in San Luis Obispo, Ventura and Santa Barbara the land was assumed to be flat to moderately sloped. For all counties, conventional groves were 21 acres and organic groves 11 acres. This is a change from the 2001 reports which were for conventional avocado groves of 11 acres only and did not report the costs of producing organic avocados. For both conventional and organic groves, 1 acre was assumed to be occupied by roads and farmstead so that the actual planted acreage was 20 and 10 acres, respectively. For avocado groves of these sizes, it was assumed that most growers will

TABLE 1 Production costs breakdown for growing conventional avocados in five California counties based on 2011 data.

Expense	San Diego	Riverside	Ventura & Santa Barbara	San Luis Obispo
Cultural care (not including water)	\$1,847	\$1,847	\$1,792	\$1,792
Irrigation*	\$4,403	\$2,471	\$882	\$570
Harvesting	\$1,762	\$1,762	\$1,808	\$1,409
Interest on Operating Capital	\$109	\$95	\$100	\$90
Cash Overhead Costs (insurance, soil & leaf analysis, taxes, etc.)	\$965	\$913	\$1,304	\$1,305
Non-cash Overhead (land, equipment, buildings, tools, amortized establishment costs)**	\$3,894	\$3,526	\$5,027	\$5,031
Total	\$12,980	\$10,613	\$10,912	\$10,196

*Irrigation includes actual water costs and labor to check irrigation lines. It is included under cultural care in the cost studies, but has been separated out here for clarity of presentation.

**Many California avocado growers have older, mature groves and may have little or no debt on their land, buildings and other non-cash overhead costs, effectively reducing their production costs by the amounts shown in this category.

have their house on the property and manage the grove, but the analyses tried to separate household and grove costs. All costs and figures presented are on a per acre basis.

Input prices, contract fees, and service expenses were all based on 2011 prices. The reports are very detailed and separate establishment costs (years 1 through 6) from production costs (year 7 and beyond). As the reports average the costs and yields across a number of avocado groves in each county the actual costs may not describe well the costs for individual groves. Notwithstanding this limitation of the study, it is possible to see where there are differences in costs between counties and how costs of production may have changed since 2001 as the same methodology has been used in the 2001 and 2011 studies.

This article summarizes the production costs of established avocado groves and looks at the cost differences among counties, between production systems and the changes in costs between 2001 and 2011.

The complete reports for 2011 and 2001 can be found www.californiaavocadogrowers.com/research/research-library/yieldsproductivity. Earlier production and establishment reports can be found at <http://coststudies.ucdavis.edu/archived.php>.

The high cost of water

The production costs for San Diego, Riverside, Ventura, Santa Barbara and San Luis Obispo counties are summarized in [Tables 1 and 2](#) for conventional and organic groves,

TABLE 2 Production costs breakdown for growing organic avocados in five California counties based on 2011 data.

Expense	San Diego	Riverside	Ventura & Santa Barbara	San Luis Obispo
Cultural care (not including water)	\$2,842	\$2,842	\$2,850	\$2,850
Irrigation*	\$4,403	\$2,471	\$882	\$570
Harvesting	\$1,555	\$1,555	\$1,599	\$1,261
Interest on Operating Capital	\$142	\$127	\$122	\$113
Cash Overhead Costs (insurance, soil & leaf analysis, taxes, etc.)	\$1,164	\$1,112	\$1,384	\$1,386
Non-cash Overhead (land, equipment, buildings, tools, amortized establishment costs)**	\$4,314	\$3,945	\$5,386	\$5,400
Total	\$14,420	\$12,053	\$12,222	\$11,579

*Irrigation includes actual water costs and labor to check irrigation lines. It is included under cultural care in the cost studies, but has been separated out here for clarity of presentation.

**Many California avocado growers have older, mature groves and may have little or no debt on their land, buildings and other non-cash overhead costs, effectively reducing their production costs by the amounts shown in this category.

respectively. The production costs differ across counties; for example, San Diego County has water costs about \$2,000 per acre higher than the other counties for both conventional and organic production. While the total costs appear to be similar for Riverside, Ventura and Santa Barbara and San Luis Obispo counties the non-cash overhead is greater in the northern counties by about \$1,000 per acre. However, many growers who own their land and have been farming for some time don't usually consider non-cash overhead costs, which includes land, equipment, buildings and other costs, in their overall production costs. When non-cash overheads are removed, the difference among counties becomes clearer to see. For San Diego County, costs less non-cash overhead are about \$2,000 greater than River-

side County, and between \$3,200 and \$3,900 greater than Ventura, Santa Barbara, and San Luis Obispo counties for conventional production. The increased cost of production is almost solely due to the increased cost of water in San Diego County. This confirms what many growers already know; the high cost of water has increased the cost of production in San Diego County more than in the other counties.

Without non-cash overhead costs, cultural care (i.e., pruning, pest control, fertilizer, irrigation) is the largest component of production costs in both organic and conventional production. In San Diego and Riverside counties, cultural care accounts for 69% and 61% of conventional production costs, respectively, and water alone accounts

for 70% (\$4,403) and 63% (\$2,471) of cultural costs (Note: this is not for total costs where water accounts for 34% and 23% of the total costs). In Ventura, Santa Barbara and San Luis Obispo counties, cultural care accounts for about 45% of conventional production costs, but water is only a relatively minor component of that: 32% (\$882, Ventura and Santa Barbara) and 24% (\$570, San Luis Obispo) of cultural costs. In 2001, see [Table 3](#), water accounted for a lower proportion of cultural care costs at 62% and 54% of the

cultural care costs in San Diego and Riverside counties, respectively. Water costs were 36% of cultural care costs for Ventura and Santa Barbara counties. The amount needed to pay for water has increased as a proportion of the cultural care costs in San Diego and Riverside counties and slightly decreased in Ventura and Santa Barbara counties.

Inflation in the cost of water in the southern most growing counties is not new and does not look to slow down in the future. More effective water use and greater emphasis on

TABLE 3

	Year			Change from 2001
	1992 ¹	2001 ²	2011 ³	
San Diego County				
Irrigation	\$1,060	\$1,896	\$4,403	\$2,507
Harvest	\$650	\$1,189	\$1,638	\$449
Cash overhead	\$753	\$907	\$1,065	\$158
Fertilizer	\$96	\$151	\$204	\$53
Miscellaneous**	\$42	\$94	\$754	\$660
Pruning	\$180	\$429	\$541	\$112
Pest Control	\$228	\$465	\$296	(\$169)
Root rot	\$2	\$3	\$60	\$57
CAC Assessment	\$262	\$261	\$106	(\$155)
Total	\$3,272	\$5,395	\$9,067	\$3,672
Riverside County				
Irrigation		\$1,356	\$2,471	\$1,115
Harvest		\$1,189	\$1,656	\$467
Cash overhead		\$880	\$998	\$119
Fertilizer		\$151	\$204	\$53
Miscellaneous**		\$94	\$754	\$660
Pruning		\$429	\$541	\$112
Pest Control		\$465	\$296	(\$169)
Root rot		\$3	\$60	\$57
CAC Assessment		\$261	\$106	(\$155)
Total		\$4,828	\$7,086	\$2,258
Ventura and Santa Barbara County				
Irrigation		\$532	\$882	\$350
Harvest		\$630	\$1,662	\$1,032
Cash overhead		\$825	\$1,395	\$570
Fertilizer		\$58	\$141	\$83
Miscellaneous**		\$87	\$848	\$761
Pruning		\$324	\$420	96
Pest Control		\$458	\$369	(\$89)
Root rot		\$3	\$60	\$57
CAC Assessment		\$271	\$146	(\$125)
Total		\$3,188	\$5,923	\$2,735

*Slight differences in values from Table 1 are due to separating out of the different cost components and rounding errors.

**Costs for a pick-up truck and ATV were not included in previous years making this item much greater in 2011.

¹Costs based on 11 acres; ²Costs based on 11 acres; ³Costs based on 21 acres.

helping growers in San Diego and Riverside counties with outreach to get the most out of their irrigation system were given the highest priority at the Production Research Committee meeting on April 23 for new research proposals. The cost of production survey supports this greater production research effort on the efficient use of irrigation.

Labor costs continue to rise

The two most labor intensive activities on the grove are harvesting and pruning. The cost of both of these activities has increased since 2001. Harvesting costs increased 38% and 39% for San Diego and Riverside counties and by a whopping 162% for Ventura and Santa Barbara counties. Pruning costs increased by 26% for San Diego and Riverside counties and by 30% for Ventura and Santa Barbara counties. Better canopy management systems would help in reducing some of the labor cost involved with pruning and harvesting. The trend towards higher density plantings and smaller trees can reduce harvesting costs, as can higher yields, which increases the efficiency of the pickers. To get smaller trees, more pruning or the use of plant growth regulators, e.g., Tre-Hold (NAA), may be required which increases the labor requirement. The Production Research Committee rated research on canopy management as the fourth highest priority for new research proposals.

Non-cash overhead increased by inflation in land price, equipment and establishment cost

Non-cash overhead accounts for the value of the land, buildings, equipment, etc. Since 2001 the non-cash overhead has doubled. In 2001 the value of an acre of agricultural land in San Diego County was estimated at \$8,450 and in 2011 at \$22,000, a 2.5 fold increase in value. In Ventura and Santa Barbara counties an acre of agricultural land was valued at \$16,200 in 2001, by 2011 the value had increased to \$50,000 an acre, a 3 fold increase in value. In addition, irrigation systems and the amortized establishment cost has doubled since 2001. The increase in value is outside of growers control and points to the increasingly high cost of entering the avocado industry.

Pest control is cheaper

The cost of pest control has fallen to levels similar to those reported in 1992. The decrease in the cost of pest control has occurred during a period, 2001 to 2011, of new pest introductions increasing the need for good pest management. The reduction in pest control cost may be a result of the substantial and sustained investment in pest control research over the last decade that has led to more effective pest control. Currently, about one third of the production research budget is allocated to research on pests and diseases. The Production Research Committee has rated re-

search on pests and diseases as the second highest priority.

CAC assessment lower

Although a minor cost, the reports indicate that 2011 CAC assessment was about half the 2001 level. Important to note, these reduced assessment costs did not factor in the Hass Avocado Board (HAB) Assessment which was introduced in 2003, at which time the CAC assessment had been reduced accordingly. The 2011 data uses an average production of 9,000 pounds per acre to calculate a per acre CAC assessment of \$225 for San Diego and Riverside counties, \$310 for Santa Barbara and Ventura counties and \$280 for San Luis Obispo County, decreases of over \$100 from the 2001 data. However, the HAB assessment, when added to the CAC assessment, represents an overall increase in assessments of \$70 for San Diego and Riverside counties and \$186 for Santa Barbara and Ventura counties. There is no 2001 report for San Luis Obispo County.

Profitability Analysis

To determine the profitability of growing avocados, the break-even costs per pound of fruit and the gross margins were calculated. Break-even costs are the total cost of production per acre divided by the yield per acre, resulting in per unit cost of production (\$/lb.). What growers usually call profit, or what economists call gross margin or return to management, is the gross returns (yield times price) minus the production and overhead costs. Assuming there is no debt on the operation and you are not paying someone to manage the grove for you, this is actual profit. What economists call the economic profit is the return above total costs, including debt and management costs. A zero economic profit is not necessarily bad, assuming that all costs, including the owner's labor and any management costs, have been included in the production costs. As mentioned earlier, the studies assumed owner management so no management costs were calculated in the profitability analysis. The break even costs and gross margins for 2001 and 2011 are summarized in [Table 4](#).

Conventional production break even costs have increased and gross margins have decreased since 2001.

Break even costs.

In 2011 for San Diego County the break-even price was calculated, including non-cash overhead costs, to be \$1.44 per pound and Riverside County \$1.18 per pound using an average production of 9,000 pounds per acre for each county. However, if non-cash overhead costs are removed, the break even prices fall by \$0.43 per pound to \$1.01 per pound for San Diego County and by \$0.39 per pound to \$0.79 per pound for Riverside County. In 2001 the break

TABLE 4

County	Year	Yield lbs/acre	Average price	Breakeven price	Gross margin (Profit) ¹	
			\$/lb	\$/lb	\$/lb	\$/acre
San Diego	2001	9,000	1.07	0.65	0.42	3,734
	2011	9,000	1.07	1.01	0.06	544
Riverside	2001	9,000	1.07	0.58	0.49	4,428
	2011	9,000	1.07	0.79	0.28	2,543
Ventura and Santa Barbara	2001	10,000	1.1	0.35	0.75	7,498
	2011	12,400	1.07	0.47	0.6	7,383
San Luis Obispo	20012	-	-	-	-	-
	2011	11,200	1.07	0.46	0.61	6,819

even costs without non-cash overheads were \$0.65 per pound and \$0.58 per pound for San Diego and Riverside counties, respectively.

For Ventura/Santa Barbara counties in 2011 the break-even price was calculated to be \$0.88 per pound and for San Luis Obispo County \$0.91 using an average production of 12,400 pounds per acre for Ventura/Santa Barbara counties, and 11,200 pounds per acre for San Luis Obispo County. Again, if non-cash overhead costs are excluded, the break-even prices drop by \$0.41 per pound to \$0.47 for Ventura/Santa Barbara counties and by \$0.45 per pound to \$0.46 per pound for San Luis Obispo County. In 2001 the break even costs without non-cash overheads were \$0.35 per pound for Ventura/Santa Barbara counties. There is no 2001 report for San Luis Obispo County.

Conventional returns above cost (profit margin and gross margin).

Given the assumptions in the previous paragraphs, the profit margin for 2011 (return to management above costs) in San Diego County are -\$0.37 per pound (-\$3,350 per acre) using the five year (2005-2011) average price per pound of \$1.07. In Riverside County, the profit margin is -\$0.11 per pound (-\$983 per acre), but these calculations include non-cash overhead. If non-cash overhead is removed from the calculations, the gross margin for San Diego County becomes slightly positive at \$0.06 per pound (\$544 per acre), and positive for Riverside County at \$0.28 per pound (\$2,543 per acre). This is down significantly from 2001 when the gross margin was \$0.42 per pound (\$3,734 per acre) for San Diego County and \$0.49 per pound

(\$4,428 per acre) for Riverside County.

In 2011 for Ventura/Santa Barbara counties, the profit margin is estimated to be \$0.19 per pound (\$2,356 per acre) when non-cash overhead is included, but jumps to \$0.59 per pound (\$7,383 per acre) when non-cash overhead is removed. In San Luis Obispo County, the profit margin with non-cash overhead included is estimated to be \$0.16 per pound (\$1,792 per acre), and the without non-cash overhead the gross margin is \$0.61 per pound (\$6,819 per acre). In 2001 the gross margin for Ventura/Santa Barbara counties was calculated as \$0.75 per pound (\$7,498 per acre).

The increase in break-even costs has been the greatest in San Diego County followed by Riverside County. Greater break-even costs have occurred despite the calculations assuming higher average yields. The greatly increased cost of water appears to be the main factor in the increased break-even costs in San Diego and Riverside counties and the subsequent reduction in gross margins. Growers have responded to increased costs by increasing production, but the increase in yield appears to be barely keeping pace with increased costs and has not been enough to maintain profit margins. While the increase in break-even costs has not been as great in the more northern counties, costs there have also been rising and profits falling. The average price per pound for the fruit has remained relatively steady from 2001 to 2011 requiring growers to increase the productivity of their groves to remain profitable. Therefore, increasing average per acre production remains one of the most important production research imperatives.

Organic production.

The survey also covered the costs of production for organic avocados for the first time. For organic production, cultural costs are a slightly greater percentage of the production costs in all counties. This is a result of slightly lower harvesting costs because of lower estimated yield in organic production, and slightly higher organic fertilizer costs. Water costs are the same for organic and conventional production, but on a percentage basis water accounts for a slightly lower portion of total cultural costs in all counties as a result of the higher fertilizer costs.

Organic break-even costs. In San Diego and Riverside counties, the average organic production was estimated to be 7,700 pounds per acre. This results in a break-even price of \$1.87 per pound and \$1.57 per pound for San Diego and Riverside counties, respectively. As with conventional production, if non-cash overhead costs are eliminated, the break-even prices drop to \$1.31 per pound and \$1.05 per pound for San Diego and Riverside counties, respectively.

In Ventura/Santa Barbara counties the average per acre production for organic groves was estimated to be 10,500 pounds per acre, and in San Luis Obispo County it was estimated at 9,500 pounds per acre. These figures result in break-even prices of \$1.16 per pound and \$1.22 per pound for Ventura/Santa Barbara counties and San Luis Obispo County, respectively. Removal of the non-cash overhead results in the break-even price for all three counties dropping to \$0.65 per pound.

Organic returns above cost. Based on grower input, organic avocados were assumed to receive a \$0.20 per pound premium over conventional, so an average price of \$1.27 per pound was used for all calculations. In San Diego County, organic profit margins when non-cash overhead is included are estimated to be -\$0.60 per pound (-\$4,641 per acre). This estimate improves if non-cash overhead is excluded from production costs, but still remains negative at -\$0.04 per pound (-\$327 per acre). In Riverside County, the profit margin with non-cash overhead is -\$0.30 per pound (-\$2,247 per acre), but moves positive without non-cash overhead costs to \$0.21 per pound (\$1,671 per acre).

In Ventura/Santa Barbara counties, organic production is projected to be profitable with or without non-cash overhead, at \$0.11 per pound (\$1,113 per acre) and \$0.62 per pound (\$6,499 per acre), respectively. Similarly, in San Luis Obispo County organic production is profitable with

or without non-cash overhead, but slightly less so than in Ventura/Santa Barbara counties because the yields are projected to be lower. San Luis Obispo County's profit margin with non-cash overhead is estimated at \$0.05 per pound (\$486 per acre), and without non-cash overhead at \$0.62 per pound (\$5,886 per acre).

Conclusion

There are considerable risks associated with growing avocados, including insects, diseases and frosts. There are also uncertainties that cannot be ignored, especially increasing water costs and dynamically variable fruit prices. It is unlikely that the estimated costs of production in the reports exactly match real production costs for individual groves. Yields will be different from the averages used, and fruit

prices received will vary depending on size profiles and time of harvest. However, these types of studies are beneficial in helping growers to understand all of the various costs that should be considered when looking at the economics of their grove. Reducing costs and increasing yields are both required to improve profitability. The surveys reported here indicate the price needed and the minimum amount of fruit required to be produced thereby serving as the benchmarks for evaluating cultural management success.

The information in the reports for 2011, when compared to those from 2001, highlights those items where inflation has increased costs and indicates the success of CAC activities in improving the profitability of growing avocados in California. The reports also identify the general activities that could be improved through investment in technical initiatives or other CAC activity so that California avocado growers' assessments are used to add to grove profitability. The major costs will be no surprise to growers: the high costs of water, labor for harvesting and pruning, and non-cash overhead. Improving the productivity of water use, i.e., more pounds per acre foot, and labor use through outreach and research are a major focus of the CAC production research program and priorities. The management of pests is costing growers less and is probably having an unmeasured benefit on yields and fruit quality. The effort to maintain good pest control needs to continue and suggests the production research support for pest management projects is a good investment. Lastly, it would appear that organic production of avocados needs significant yield improvements to be more profitable as the higher production costs are more than the premium received for organic fruit. 🥑

Increasing average per acre production remains one of the most important production research imperatives.

Columbia Eyeing U.S. Market

(Editor's Note: Juan Camilo Ruiz, the executive director of Avocado Antioqueña Corporation (CORPOHASS), Colombia's new avocado grower and marketing organization, recently answered questions via email about the size and scope of that country's avocado industry. The answers and questions have been edited for clarity because of translation issues.)

FTG: When did Colombian avocado producers begin to switch to the Hass variety of avocados?

Avocados have had a long history in Colombia, to the point of saying that avocado is as innate to us as the sun, wind or water. We have 24,657 hectares under production. About 20 years ago there were some steps to plant some different avocado varieties including the "Hass", the "Reed", the "Loud" and "Collin Reed", but those efforts failed for several reasons: mainly lack of knowledge of growing techniques. About 10 years ago, another effort was made to grow the Hass. This has been expanding geometrically in Colombia, to the point of having grown today to more than 9000 hectares, with most of that being planted in the last five years.

What is the breakdown of production in Colombia?

In Colombia there are 27,657 hectares of avocados distributed as follows: 11,401 hectares of native or Criollo; 9,696 hectares of Hass avocados and 6,560 hectares of green-skinned native varieties. (Source: National Council Avocado Colombia.)

In Colombia the avocado is concentrated mainly in four regions:

1. Caribbean Coast Region: in this



area, the Departments (states) of Bolivar and Cesar are the major producers of avocados. In Bolivar, a native criollo avocado is the main variety. Cesar includes "Serrania del Perija" which is a West Indian avocado producing area of importance.

2. Santanderes Region: In this Department, traditionally grown criollo avocado, mainly in the municipalities of Carmen del Chucuri and San Vicente de Chucuri, are the dominant avocado variety.

3. West Central Region: This is where the Hass avocado is grown in the Department of Antioquia. The Department of Valle also has Hass avocado plantings and the region of Cauca in Popayan Plateau, also provides an important area of

Hass avocado.

4. Central Region: The state of Tolima is very heavily populated with avocados including varieties like Hass, Confetti, Choquete, Semil, Booth, and different varieties of native avocados. The state of Huila has also started interesting projects with the Hass avocado.

How is the production of Hass avocados progressing?

Hass avocado cultivation has been created and developed in three productive zones that are beginning to bear fruit with the recent export of 30 containers of fruit to Europe and will have a significant increase in the short term. Do not forget that Colombia, being a tropical country, has avocado production throughout

the year.

As I said, the cultivation of the Hass avocado has been very dramatic over the past five years. An example is the case of the Department (state) of Antioquia, which has pioneered the development of the crop. The first exports of avocados have been made from this Department. In 2013 it shipped 30 containers of Hass avocado to Europe, specifically the Netherlands entering through Rotterdam, with very good results and great success. For the 2014 season we expect to export 100 containers from Antioquia, with exponential growth in the coming years, according to the rate at which crops are being planted.

What is the total production of avocados in Colombia?

It is difficult to determine the total production volume of Hass avocado for several reasons: there is no census of producers on a regional or national level. The industry is only now beginning negotiating efforts with the United States to establish a national organization to start trading. The quality parameters are far from homogeneous yet. However, our production is probably in the order of 7 or 8 thousand tons (16 million pounds) of Hass avocados in 2013.

But there are several reasons for not achieving the total volume exported:

Many producers are not GLOBAL GAP certified as is required by the European Community.

It can be said that the number of certified producers does not exceed 15 production units. At this time several government entities, including a regional agency in Antioquia, are promoting, helping and sponsoring this certification process. It is expected that by the end of 2013, approximately 100 producers will have acquired the certification, which enables them to export.

In relation to the United States,

although Colombia has signed a free trade agreement with the United States, the standards and requirements for eligibility have not been met yet. We have initiated efforts and are on track with APHIS (Animal & Plant Health Inspection Service) to achieve eligibility with our goal to achieve this in 2014.

Do Colombians also consume a lot of avocados?

The experts estimated that the per capita consumption of avocados in Colombia is 4.5 kilos per person year. We are 45 million Colombians. It is worth noting that the highest consumption of the Hass avocado is in the upper-class sectors who know and appreciate them as a high quality product.

For many people the Hass avocado is not as attractive as the native or green avocado because it is very small relative to the native varieties. Its external appearance when mature makes many people believe that it is damaged, broken or rotten. In the immediate future (July 2013) we will start a campaign to promote the Hass avocado in the Department of Antioquia.

In Colombia we consume about 200,000 tons of all varieties of avocado, but especially native varieties that occur seasonally, especially in the months of March, April and May. We also consume the “confetti” or “green skin”.

As the Hass avocado production is still small, their presence in the markets is not very abundant and there are regions of the country where it is not yet known. But their consumption is increasing.

Does Colombia import avocados?

Paradoxically, though in FAO statistics we appear among the top

five producers worldwide, we are a country that does not fully supply our domestic market. Colombia is an importer of avocados.

Many avocados are not imported legally. Much of the imported product is smuggled from Venezuela, a country that shares a border with us of more than 3,000 kilometers with many crossings unregulated. A similar situation exists in Ecuador, where the border is not so large, but there is very lax or relaxed controls concerning customs.

This is one of the biggest struggles that are currently facing avocado producers. We are asking the government, and specifically the Ministry of Agriculture and the Colombian Agricultural Institute (ICA), for plant protection in Colombia. There is an optimistic attitude regarding these requests.

What is the purpose of the new CORPOHASS and when was it founded? How is it funded?

CORPOHASS was recently established to establish dialogue and negotiation with the United States primarily for the purpose of admissibility to the U.S. market. This is a requirement of the APHIS, because that agency wants to deal with a national organization. This process of creation and formalization has been done in the last two months and is expected to be fully completed in one more month.

It is intended that funding will be similar to Mexico, Peru and Chile, with financial input from producers on a per kilo basis, based on the amount exported. Currently we have only two packing sheds that qualify so the amount has not been established. 

TOGETHER WE GROW

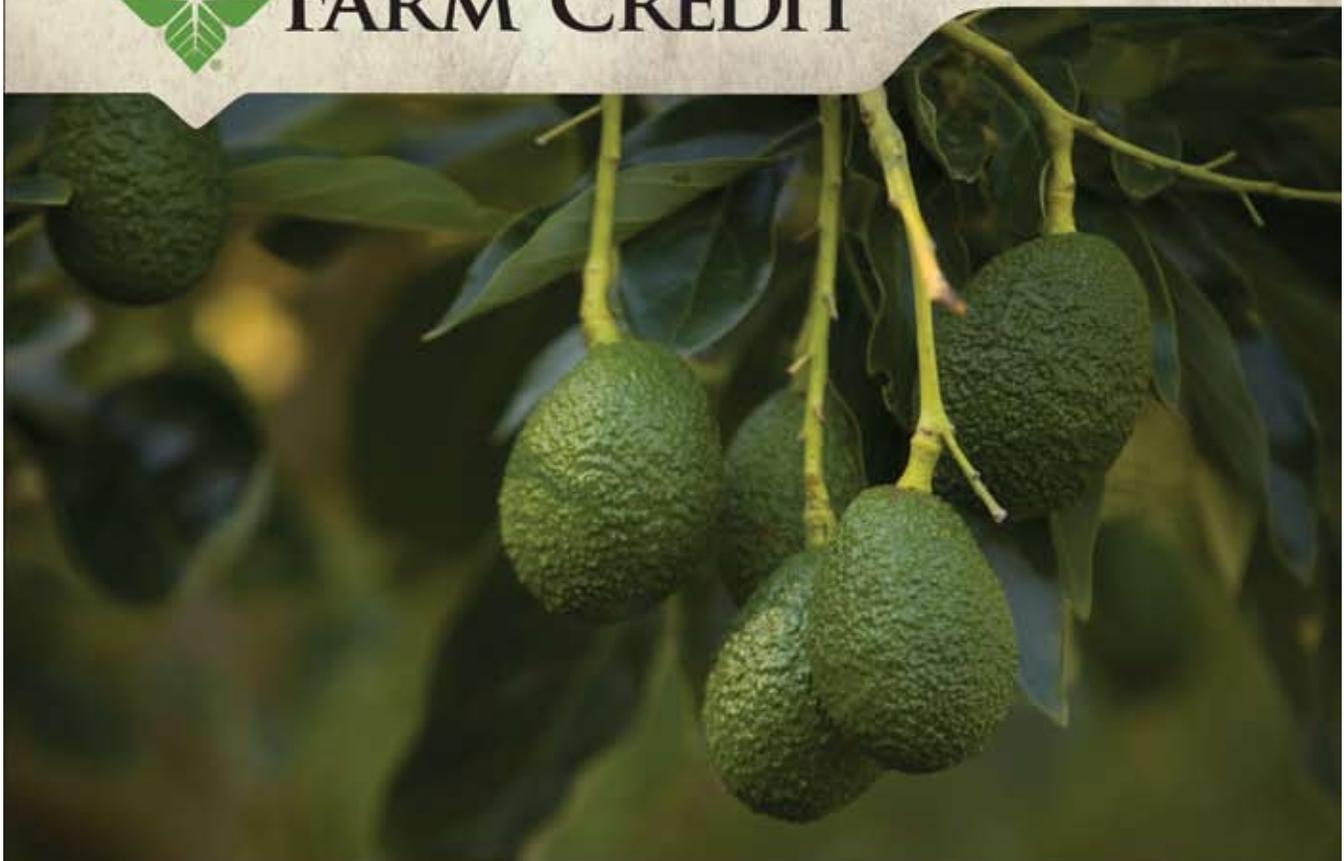
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CULTIVATING GROWERS

Kelly Haesecker, avocado grower in Montecito—

"My grandfather grew citrus with pride and care, and I loved the groves as a child. I ventured into the avocado business three years ago after acquisition of an 84-acre avocado ranch. The forty-year-old orchard was in a weakened state due to many years of neglect and mismanagement. Having no formal ag training, I welcomed the expertise of my Index Fresh field man as we began the process of rescuing the trees and increasing production. With determination, cutting edge science, and hard work, we witnessed a transformation nothing short of a miracle.

About eight months ago, another avocado grower had heard about the turn-around of our ranch and shared her experiences with me, about a different large packer that was handling her crops.

She felt she wasn't getting sufficient attention or service from them and that their prices weren't competitive. I told her, "You really should try Index Fresh."



KELLY HAESEKER
Avocado Grower

From our 2008 harvest to present, we've increased our production eight-fold and increased the size of our fruit dramatically.

With the guidance of Index Fresh, we have successfully saved the last large coastal ranch in Montecito."

Contact our local field staff for a look at Index's historical returns:

Ventura County:

Gary Nichols (805) 659-4929

Santa Barbara & San Luis Obispo Counties:

Giuseppe Bonfiglio (805) 341-3059

Southern Counties:

Jose Avina (951) 676-8696

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