
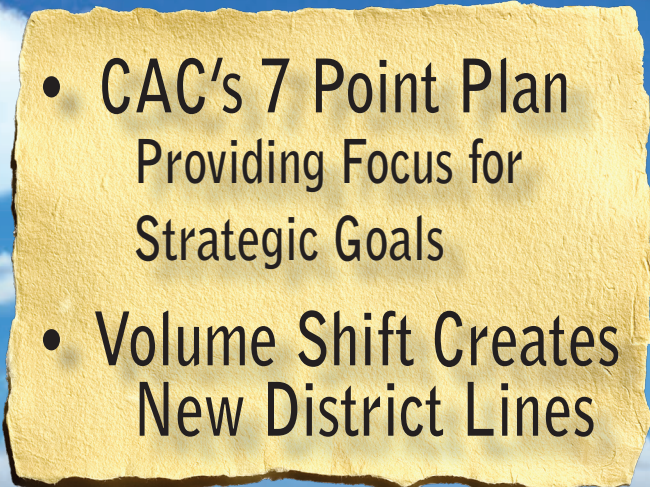
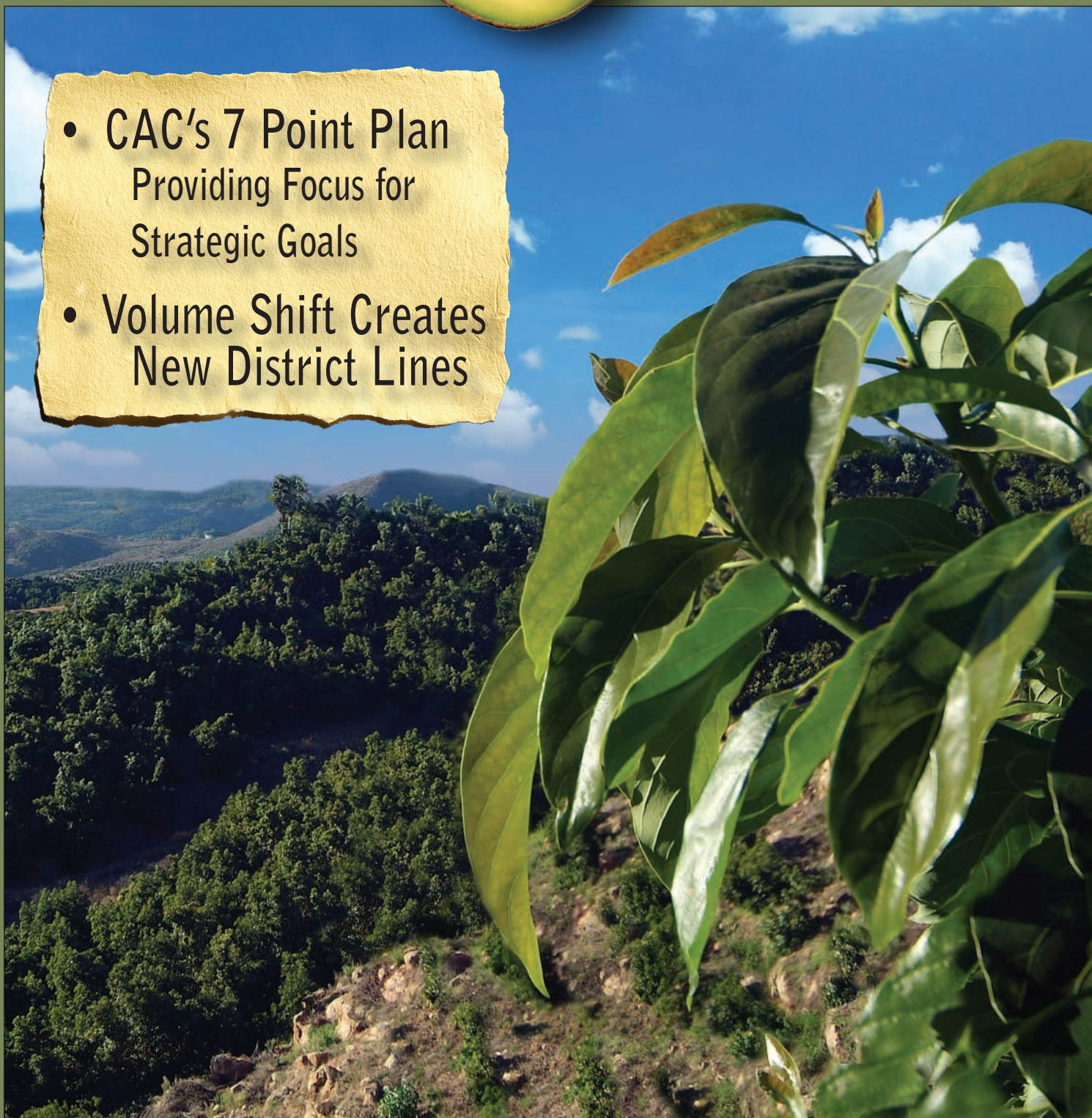


From the
Grove



The latest news from the California Avocado Industry

- 
- CAC's 7 Point Plan
Providing Focus for
Strategic Goals
 - Volume Shift Creates
New District Lines



Precious! Absolutely Precious!



Prevents Sunburn– Early applications prevent sunburn when the tender skin of the Avocado is most vulnerable like a baby's skin. Resting Budwood is protected from sunburn as well.

Increased fruit size- Eclipse is a top of the line anti-transpirant

- Eclipse protects the fruit and at the same time reduces the need for extra water.
- This is an extreme benefit to Avocados since they are shallow rooted.
- By reducing the amount of water, you will in turn see a decrease in phytophthora root rot and leaf drop due to stress.

Mixes with many other fungicides and insecticides

- Eclipse does not inhibit translocating and translaminar products

Unbeatable reflective ability

- No other sunscreen offers a .45 average micron size for thorough coverage

Supports normal transpiration

- Eclipse spreads a uniform film of diamonds that reflect the sun's harmful rays

Protect your valuable products with Eclipse.

Over eight years of field testing at Washington Tree Fruit Research Commission.



Manufactured by D&M Chemical • Moxee, WA • 509-454-8154 / Distributed by CPS.



Grower Profile

John Burr
Escondido, CA

22

From the Grove

Volume I
Number 1

President
Tom Bellamore
CA Avocado Commission

Editor
Tim Linden
Champ Publishing
925.258.0892
tim.linden@gmail.com

Ad Sales
Tom Fielding
Champ Publishing
818.563.2228
tomfielding1@mac.com

Design/Layout
Heather Gray
User Friendly, Ink.
562.427.2126
userfi@yahoo.com

April Aymami
CAC Industry Affairs Manager
949.754.0738
aaymami@avocado.org



Summer 2011

In This Issue

- 7 **CAC's 7 Point Plan**
Providing Focus for Strategic Goals
- 10 **Volume Shift**
Creates New District Lines
- 14 **Retail Merchandising Program**
Face-to-Face Still the Contact of Choice
- 19 **Hand Grown in California:**
Resonates with Consumers
- 22 **John Burr: Looking to Expand**
Grower Profile
- 29 **Escondido Growers**
Pushing Water Solution
- 31 **Avocado Nutrition Stock Soared**
When CAC Made Its Case

Departments

- 4 Message from the President
- 6 Chairman's Report
- 9 From the Field
- 12 Global Perspectives
- 16 Issues Watch
- 24 Better Growing
- 26 California AvoTech
- 33 A Grower's Perspective

Volume 1, Number 1

SUMMER 2011

FROM THE GROVE is published quarterly by California Avocado Commission; 12 Mauchly, Suite L; Irvine, CA 92618. POSTMASTER: Send address changes to California Avocado Commission; 12 Mauchly, Suite L; Irvine, CA 92618.

A Time of Optimism

There is currently an unmistakable optimism among California avocado growers unlike any I've witnessed in my 17 years in this industry. The season's record farm-gate prices certainly brought smiles to the faces of those growers who had fruit to harvest, but it's my observation that the positive feelings about the California avocado industry run deeper than that, extending beyond just one very good year.

Signs that growers are thinking about the future, and their place in it, are all around us. The successful referendum vote in March allowing CAC to continue operations for another five years confirmed that a majority of growers see value in the collective marketing effort they fund as well as CAC's research and advocacy activities. Rightly so. With roughly two-thirds of every assessment dollar now going to marketing, following the Commission restructuring in 2009, demand-building activity for California avocados has never been stronger. CAC's leading-edge Hand Grown in California campaign, designed to position California avocados as a premium product, no doubt contributed to the unprecedented market performance this year, and growers and packers have urged the Commission to stay the course.

Growers are bullish, too, about the untapped potential of the U.S. avocado market and the consumer's love affair with locally grown produce. In less than a decade, U.S. per capita consumption of avocados doubled, and there is every reason to believe that demand will continue its upward trajectory. Strong growth on the demand side lessens the impact of a burgeoning supply fueled primarily

by imports, and that helps California. That growth enabled us to break the \$1.99 retail price barrier this year, which resulted in more money in the growers' pockets.

In the field, the indicators are just as compelling. Attend a district meeting and it's hard to avoid a conversation about innovative cultural management techniques that are taking hold in California. High-density plantings, pruning to manage tree height and mitigate alternate bearing characteristics, and grove rejuvenation are all the buzz. Nursery orders for new trees are off the charts. New plantings continue by individual small-scale farmers and new entrants. Up and down the growing region it's getting easier to come across a new, younger generation of growers who have taken up interest or to whom the torch has been passed.

CAC is also trying to do its part on the production end. After 32 years of NOT giving cultural advice, we're doing an about-face. We're exploring new tools, such as Uniconazole, which have a proven track record abroad on avocados, and we've reformed the Commission's production research program to bring it into alignment with our long-term business strategy and make it more nimble. By striving for continual improvement in our outreach activities, we hope to put useful, cultural information in your hands to help you improve yield and be more profitable.

We know that plenty of challenges remain from invasive pests to water pricing, availability and quality, but even these are being tackled with renewed vigor and a large measure of creative thinking. While it may not be possible to solve all of the in-



Tom Bellamore

dustry's problems, a comprehensive strategy that includes marketing, research, advocacy, and outreach gives us the best chance of achieving sustainability over time. It's within our reach—your CAC Board feels it, your CAC staff believes and is passionate about it, and it's evident from all the signs surrounding us. It's an invigorating time to be a California avocado grower and to work for the betterment of the industry.

We are launching this magazine – *From the Grove* – as the newest information tool of CAC. This tool has been developed to put more information in the hands of the grower. There will be cultural and technical stories exploring new concepts that can be applied in the grove. We will keep you up to date on CAC programs and let you know how CAC is working for you to improve the profitability of the crop. And we will have a grower profile each issue so you can see how others tackle the daily issues that are the difference between profit and loss.

History tells us that next year's crop will be larger and present a new marketing situation. I am eagerly awaiting that challenge as it will give us another opportunity to put hand grown, premium quality California avocados in the hands of more consumers. It appears that many freshly optimistic growers are looking forward to that opportunity as well. 🥑

Calavo®

GETTING A BETTER RETURN IS EASY ONCE YOU KNOW THE COMBINATION.

Historically, Calavo® returns more to the acre than any other avocado handler. That's why many of the largest growers and farm managers in California bring their fruit to us.

We're more than the oldest packer in the industry. With state-of-the-art packinghouses, we're the largest. In fact, more volume goes through our packinghouses than all others combined. And in all the years we've been in business,



we've learned a thing or two about efficiencies. As a result, lower operating costs can mean a better return for you.

Need more convincing to grow for Calavo? Well, consider this: Demand for RipeNow! fruit is increasing and so is our ability to meet the demand with sophisticated ripe centers. Better still, we're the largest marketer and the preferred supplier of avocados to the world.

You and Calavo. Indeed, the perfect combination.



CALIFORNIA • MEXICO • HAWAII • CHILE • DOMINICAN REPUBLIC

SANTA PAULA PACKINGHOUSE
655 W. MAIN STREET
SANTA PAULA, CA 93061
(805) 525-4461

Calavo®

TEMECULA PACKINGHOUSE
28410 VINCENT MORAGA DRIVE
TEMECULA, CA 92390
(951) 676-7331

Challenges & Opportunities

The California Avocado Commission and staff have done an excellent job on the marketing front. We have been very successful in positioning the California avocado in the marketplace as the premium avocado, and we will continue those marketing efforts. But we also are addressing some of the production issues that are facing us and may well be the differences between success and failure. Our two biggest challenges on the near horizon are water and increasing our yields on a per acre basis.

Water Pricing

On the water front, we are very focused on establishing a pricing program that will allow us to continue to survive and thrive. The current water pricing in most of the avocado growing districts is not sustainable. We cannot afford to pay \$1200 per acre foot for water during an average year. This year, reduced production, high prices for our fruit and a wet year have given us some relief. But in the long run, these high water costs, which are rising every year, cannot continue.

At CAC, we are focused on developing a real-life solution to this issue. If we accomplish the goal we have established on water pricing, it will be monumental. At this juncture, it is impossible to measure the impact that we will have on the California avocado industry, but it will be enormous.

Our objective is to get a fixed price for water for a long time...and a price that is reasonable, and that is far

less than we are currently paying.

Is it attainable? I think it is.

Part of this challenge is a communication issue. We have to impress upon the water community that our survival depends on cheaper water. We are a large customer and we need to get this message across. The water industry needs us as much as we need them. They are in the business of selling water. If they price it too high and agriculture can't afford it, there is no other customer. It is a simple message but it is one we have to communicate to them...and we have started that process.

Production Research

The production issue is also a communication problem but this one is aimed at our own growers. Simple math tells you that the current rate of production per acre and the average return per acre cannot sustain the costs per acre. As mentioned above, we are trying to accomplish something on the water pricing front but this is a double edged sword. We also need to do something to decrease our cost per acre. The most logical way to do that is to increase our yield, which decreases our cost per pound.

The Commission is funding production research and we have insights into some of the alternatives to increase production. We need to communicate this to the growing community and convince them that it makes economic sense to make the investment for their long term financial health.

Increasing tree density in the grove does work. If you can get more



Charley Wolk

trees per acre and manage them correctly, you will reap the benefits with more pounds per acre. We know that requires writing a check and waiting as long as five years for the payback. While it is a difficult decision, it is the right one. And we know some people are ahead of the game and making that decision. I hear that right now the nurseries are taking tree orders two years in advance. That tells me that there are many growers out there that have made the decision and are investing in their future. We need to encourage that behavior.

We are also doing research in other areas to increase the profitability and marketability of the crop. Through research we are trying to develop varieties that are more salt tolerant and use less water. We are also doing research to eliminate the alternate bearing nature of our trees. It will be easier to market our crop over the long run if our volume is more consistent.

The science and will are there to turn these challenges into opportunities and to keep this industry thriving. We have all experienced great prices this year on a per pound basis. That has made for great cocktail hour discussions. But our goal is to turn this fun evening chatter into an everyday reality. There is no reason we can't accomplish that goal. 🥑

CAC's 7 Point Plan

Providing Focus for Strategic Goals

The California Avocado Commission has established a strategic goal of enhancing its premium position in the marketplace as the top supplier of avocados. Virtually all of its activities, in one way or another, support this theme. CAC President Tom Bellamore said California avocado growers face a myriad of challenges that result in higher production costs than their competitors from other regions of the world. Consequently, securing that premium position is a “must have” for all California growers. When the consumer has a preference and is willing to state that preference, it is typically accompanied by a willingness to pay premium prices when California avocados are in season, as compared to prices paid at other times of the year. High perception of value by consumers ultimately means increased profitability for retailers, foodservice operators, wholesalers and, most importantly, growers.

But Bellamore said that “premium position must never be taken for granted in the increasingly competitive U.S. market.” In fact, the California avocado industry and CAC must fight for that position on an ongoing basis.

“This spring CAC management developed a 7 Point Plan, which is designed to enhance the industry’s competitiveness, viability, and profitability over the next three to five years by articulating specific CAC strategies to reach those goals,” said Bellamore. “This gives us a clear direction on a number of fronts so that we can move forward and measure our progress as we do so.”

Bellamore said the 7-Point Plan is all encompassing as it addresses nuts and bolts issues such as improving technology and data collection; long range objectives such as improving yield per acre and addressing water issues; and strategic initiatives such as improving communications within the industry. Each of these goals will help the California Avocado industry keep its premium position in the marketplace.

7-POINT PLAN

Objective: Enhance industry competitiveness, viability and profitability over the next 3-5 years to maintain critical mass and an assured place in the market.

1. Dedicate ourselves to achieving real (measurable) gains in average yield per acre

Proposed Tactics:

- Select research/technical investment projects geared toward delivering results that can immediately be applied in the groves to improve yields
- Investigate ways to encourage successful replanting (e.g. seek federal assistance, establish a tree-rebate fund, collaboration with nurseries to reduce tree costs) in high density configurations
- Utilize research results and existing knowledge to educate growers on how to ensure tree survival when replanting, use of salt tolerant rootstocks, proper application of plant growth regulators, and other yield improvement techniques

2. Achieve industry-wide compliance with Good Agricultural Practices within the next 12 to 24 months

Proposed Tactics:

- Finalize the development of a standardized, avocado-specific GAP manual and collateral materials (web-based self audit, checklists)

- Identify audit options and select provider(s) with high credibility
- Reduce first-time audit costs for growers by identifying cost efficiencies and either negotiating group rates or incentivizing growers to become GAP compliant
- Increase grower awareness of proper food safety practices through seminars and web-based training and educational credits (using California Specialty Crop Block Grant funds, where possible)
- Facilitate GAP compliance audits and strive to have 45,000 acres operating under the program by 2013

3. Modernize our data collection methods, to provide a much-needed foundation for improving crop estimating, redistricting, traceback, and grower communications

Proposed Tactics:

- Sponsor state legislation that would provide the Commission with broad authority to implement a grove identification system and introduce during the current legislative session with the goal of having it effective January 1, 2012
- Expand CAC's geographic information system (GIS) database and develop a web portal to allow growers to input and access specific information about their groves, and to provide preferred method of contact and contact information for receiving CAC communications
- Coordinate with grove managers and packers to develop a system for tracking fruit origin and volume
- Develop a system for verification of grove location in instances where existing data are incomplete or flawed
- Require handlers and grove managers to provide volume data annually for each grove identification number to further improve statistical industry data and monitor yield improvement
- Modify Commission law to require the use of 5-years worth of data as the basis for redistricting

4. Solidify our premium positioning by making a commitment to quality, fortifying our core markets (California and the West) and staying on the leading edge of produce marketing

Proposed Tactics:

- Develop harvest/picking guidelines (and/or voluntary grade standards) to ensure high quality fruit production

- Establish voluntary guidelines for handling of windfall fruit
- Focus advertising and promotion resources in core markets
- Continue to cultivate relationships with "premium" retail accounts
- Expand digital and other new media offerings to cost-effectively reach more consumers

5. Engage locally on critical issues such as water pricing and quality

Proposed Tactics:

- Monitor issues that are exerting pressure on growers at the local level
- Assess the probability of success in positively influencing the issue if staff / resources are applied
- Engage with and advocate before local and regional agencies to establish a fixed or differential rate for agricultural customers based on value of agriculture to the local economy and/or level of service provided
- Build coalitions, and encourage non-traditional partnerships where possible
- Publicize the value of agriculture to the local and regional economy


6. Seek continual improvement in grower communications

Proposed Tactics:

- Constantly explore new ways to reach growers
- Implement field days, best practices forums, workshops, demonstration projects, electronic offerings
- Publish an industry magazine
- Offer content that has a practical value and can immediately be applied in the grove; broaden to include labor considerations, GAP information, basic cultural care, pruning strategies, grafting, tree health

7. Situate CAC facilities for grower accessibility

Proposed Tactics:

- Begin researching possible locations for a modest and affordable northern field office
- Explore lease options and rates
- Identify the best option(s), present recommendation to the Board, include in 2011-12 budget planning
- Plan to occupy space by January 1, 2012 



Board of Directors

District 1

Member/Steve Taft
Alternate/Nick Stehly Jr.

Member/Shane Tucker
Alternate/Jerome Stehly

District 2

Member/Charley Wolk-**Chairman**
Alternate/Donna Singmaster

Member/Ben Holtz-**Treasurer**
Alternate/Bob Schaar

District 3

Member/Gary Woodworth
Alternate/San Vaccaro

Member/Ohannes Karaoghlanian-**Vice Chair**
Alternate/Joanne Robles

District 4

Member/Tom Pecht
Alternate/John Lamb

Member/Ed McFadden-**Secretary**
Alternate/Keith Reeder

District 5

Member/Doug O'Hara
Alternate/Rick Shade

Member/Bradley Miles
Alternate/Jim Swoboda

Handlers

Member/Reuben Hofshi
Alternate/Ernie Arana

Member/Egidio "Gene" Carbone
Alternate/Todd Elder

Member/Bob Lucy
Alternate/Bob Witt

Member/Scott Bauwens
Alternate/Ron Araiza

Public Member

Andria Pontello

Ex-Officio

Jim Donovan, HAB Chair

2012 Crop Looks Good

It is certainly no surprise, but the early reports are that the 2012 crop will be bigger than this year...but not a barn burner.

This was the consensus delivered by several CAC board members after surveying fellow district representatives.

Shane Tucker of District 1 said: "Next year's crop will be heavier. The crop set is bigger and it is later. Because of the cool weather we had an extended bloom. In my district, I would say it is a bigger crop but it is no record breaker."

Doug O'Hara of District 5 has a similar viewpoint. "Because it has been cool weather, everything is coming on slowly and it has been tough to see what's out there. If I had to guess today (June 20) I'd say it is going to be larger than this year...probably an average year. If this year is 250 million pounds, next year could be about 350 million pounds, but it is still very early to say that."

Ben Holtz of District 2 agreed that it is too early to say anything definitive. "The crop set is a mixed bag. Some are suggesting slightly more fruit for next year. Others are seeing a similar crop to this year."

Speaking of this year's crop, however, the consensus is that the current estimate is close to accurate. Holtz said the cooler than expected weather "has kept the fruit size down as we have not had the heat units needed. I am seeing most groves following the projected yield."

Tucker agreed about the fruit size, but said: "Looking at what's out there is my district, I think we will be lucky to hit 235 million pounds."

O'Hara was pessimistic about reaching the preseason estimate but he now believes it is reachable. "If you look at what we have taken off the trees and what is still out there,


we will surpass my early estimate, but I estimated very low. I think we will be very close to the 250 million pound estimate."

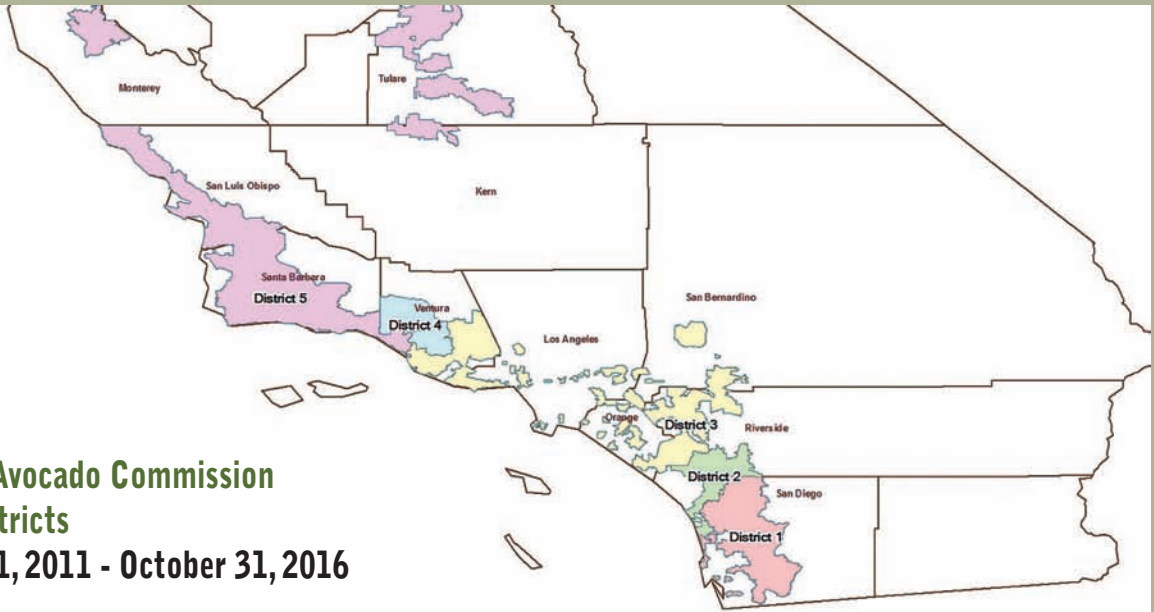
Because of the cool weather, pest pressure continues to be an issue longer than anticipated but Tucker said his area has not experienced major problems. Holtz, however, said in District 2 spraying for thrips has been a common occurrence this season. He added that growers are calling 2011 "a bug year."

Tucker said in other ways the cooler wet weather has been welcome. "I have 50 acres and every time I don't have to turn on the water that saves me \$5,000," he said.

Water, Holtz said, is chief concern that growers talk about. "People are actually stumping more trees and doing anything possible to conserve water. Water cost is driving growers' frustrations."

With regard to innovations, O'Hara said high density plantings are the way to go. "That is all we are doing. We are planting on 16 by 16 grid, which gives us a 160 trees per acre. That is a good density and still within five years we will have a full canopy that we have to start to prune. I think it would be very difficult to plant at a higher density than that. You could, but then within three years you are going to have a full canopy and will have to start pruning."

O'Hara is not concerned about the reported lack of trees. "I normally order 10,000-15,000 new trees two years ahead and I have no problem doing that. I don't think there is a backlog but you do have to order in advance. I usually order in advance and then release trees if I don't need them. If anybody is out there looking for trees, they can come to me. Nowadays you have to be your own nursery, and order the trees early." 



**California Avocado Commission
Grower Districts
November 1, 2011 - October 31, 2016**

Volume Shift Creates New District Lines

by April Aymami
CAC Industry Affairs Manager

A shift in production volume over the last several years from San Diego County to Ventura County has led to a required shift in the boundary lines of the five districts of the California Avocado Commission.

With the help of a computer-aided mapping program and volume figures generated by zip code, CAC's redistricting committee drew the new lines, which were subsequently approved by the full CAC board of directors in March 2011. Guiding the committee was the desire to make each district contiguous and comprised of approximately 20 percent of the average production volume, and to keep likeminded growers in the same district. The new district lines go into effect November 1, 2011 and will be used in determining eligibility for the upcoming 2011 election in October.


Though each district has been altered in some manner as the accompanying map and list of areas indicates, the major shift has occurred in Districts 3 and 4. Under the current configuration Districts 1, 2 and 3 are populated by San Diego, Riverside and Orange County growers. Under the new configuration, growers throughout San Diego County, as well as Temecula and Murrieta, are in Districts 1 and 2.

District 1	District 2	District 3	District 4	District 5
San Diego County	San Diego County	Riverside County	Ventura County	Ventura County
Alpine	Bonsall	All of Riverside county except	Ojai	Oak View
Cardiff By the Sea	Carlsbad	Murrieta and Temecula	Santa Paula	Ventura (93001 only)
Chula Vista	Encinitas	Orange County	Somis	Santa Barbara County
Del Mar	Fallbrook	All growing areas		All growing areas
El Cajon	Oceanside	Los Angeles County		San Luis Obispo County
Escondido	Riverside County	All growing areas		All growing areas
Jamul	Murrieta	Ventura County		San Joaquin Valley
La Jolla	Temecula	Camarillo		All growing areas
Lakeside		Fillmore		Monterey County
Pala		Moorpark		All growing areas
Pauma Valley		Oxnard		
Poway		Port Hueneme		All areas north of Monterey
Ramona		Simi Valley		
Rancho Santa Fe		Ventura (93003 & 93004 only)		
San Diego				
San Marcos				
Solana Beach				
Valley Center				
Vista				

District 3 now stretches from Orange County to southern Ventura County, and includes parts of Riverside County and all of San Bernardino and Los Angeles counties. District 4 is essentially a "new" district, reflecting the production growth in central Ventura County. It now is comprised exclusively of three Ventura County cities: Ojai, Santa Paula and Somis. District 5 has shifted a bit but it still includes all of the growing areas in Santa Barbara County, San Luis Obispo County, Monterey County, the San Joaquin Valley and a portion of western Ventura County near the coast.

As required by the law establishing the California Avocado Commission, the district boundaries were redrawn on a five year time table using production figures from the previous two years. The Commission is exploring the possibility of changing that law to rely on the previous five years of production data rather than just two as the consensus from the board is that a longer time period will give a more accurate assessment of average yield from each zip code.

With the reapportionment and redistricting, there will be more open seats than typical during the October election. Several members and alternates have become ineligible

to continue serving in their current seats, as redrawn lines have placed them in districts different than the one they currently represent. In total, there will be seven open Producer Member seats and eight Alternate seats in the five districts as well as two open Handler Member Seats and two Alternates. The length of terms for each district and the 2011 Election Schedule is detailed in the accompanying box. As the timeline shows, nomination packets were mailed to all producers and handlers on record on July 15, 2011. If you have not received a nomination packet, please contact the Commission. 

California Avocado Commission 2011 Board of Directors Election

<i>District</i>	<i>Member</i>	<i>Alternate</i>
1	One 2-year term	One 2-year term
2	One 2-year term	One 1-year term One 2-year term
3	One 1-year term One 2-year term	One 1-year term One 2-year term
4	One 1-year term One 2-year term	One 1-year term One 2-year term
5	One 2-year term	One 2-year term
Handler	Two 2-year terms	Two 2-year terms

2011 Election Schedule

July 15	Election announcement/self nomination notice sent to all Producers & Handlers
August 26	Deadline for receipt of nomination petitions, disclosure statements & affidavits and requests for voter access mailings at CAC
September 5	Deadline for CAC receipt of voter access mailings
September 26	CAC mails ballots to producers & handlers
October 22	Deadline for receipt of ballots by CDFA
November 7	CDFA advises staff of election results
November 17	CDFA announces election results to CAC Board and seats new Board Members and Alternates

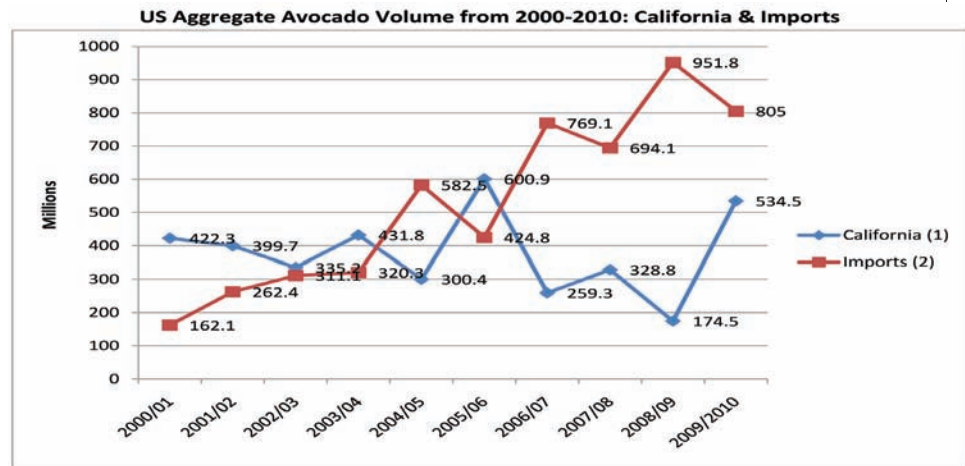
by Ken Melban
CAC Director, Issues Management

This “Global Perspectives” section is designed to examine the global avocado growing picture and how it relates to our U.S. domestic market. With globalization, California avocado growers are forced to compete with international avocado imports within our domestic market.

With U.S. per capita consumption of avocados increasing 85 percent over the last decade, the reality is that California growers alone do not have the ability to provide the volumes needed to meet this demand. In addition, imports are able to provide avocado supplies during California’s non-producing months which help maintain year round demand. While we are in some ways competing against the imports, it is prudent that we look at this as a *delicate partnership* which, if managed correctly, benefits all parties involved.

The accompanying table compares California’s total production with import volumes from 2000 through 2010. As you can see in the 2000/01 season, California produced 422 million pounds and imports were at 162 million pounds. For 2009/10 California increased to 534 million pounds and imports jumped to 805 million pounds. This trend shows that over the last decade imported volumes have generally increased while California production has remained steady and even declined. While this growth in imports has been necessary to provide the volumes our domestic market requires, it is imperative that California maintain our critical mass (see *Issues Watch* article on page 16) to ensure the long-term sustainability of California’s place in the U.S. domestic market. Over the last decade countries like Mexico, Chile and New Zealand have helped complement the

California Volume Increase Needed



Source: (1) California Avocado Commission, (2) USDA

California grown avocado supply in meeting this ever increasing consumer demand. Peru has also entered the market and others like South Africa are positioning for access.

For 2010 the Commission estimates 52,000 bearing avocado acres in California. Current industry estimates are that Mexico has about 146,000 acres of avocado production which are certified for US export, Chile in the area of 40,000 acres, Peru around 15,000 acres (and looking to grow), and New Zealand close to 10,000 acres. In future editions we will attempt to learn what some of these countries are doing in terms of cultural practices and see where we might glean some growing strategies for improving our production. Maybe, just maybe, there are some changes in California avocado growing we might make based on what we learn from our global partners that will strengthen us for the future as global market pressures continue.

We all know that the status quo is the biggest resistance to change. “This is the way we’ve always done things” is a common justification for

maintaining the status quo. We are all familiar with the story of the U.S. automakers and their entrenchment with the status quo. For decades the US automakers faced little global competition when it came to domestic auto sales and they became comfortable, unaware of what international automakers such as Toyota and Honda were doing to improve their production quality. By the time the U.S. automakers realized what had occurred they had lost their competitive edge on quality and their share of the domestic market was negatively impacted. Only recently has there been a resurgence in the US automakers which reflects an awareness of and adjustment to the foreign competition.

The California avocado industry is in good position to grow our share of the U.S. market, but that will depend on our ability to identify and make any necessary changes to contend with our global competitors. To remain competitive in the future we must first know what our global partners are doing, and second, adjust accordingly. 🥑



Avocado thrips

Avocado leafroller

Orange tortrix

Lepidopterous larvae

Delegate® Insecticide. The innovative mode of action of Delegate is broad-spectrum enough to control multiple pests, yet it maintains populations of most beneficials. Mites aren't flared, and secondary pests stay...secondary. You also get favorable pre-harvest and re-entry intervals, plus minimal personal protective equipment requirements. To learn more, talk to your PCA or visit www.dowagro.com.



®Trademark of Dow AgroSciences LLC
Always read and follow label directions.

Retail Merchandising Program

Face-to-Face Still the Contact of Choice

by Tim Linden

It has long been referred to as the “shoe leather” approach and its origin dates back to simpler times, but it is still the preferred method that the California Avocado Commission uses when reaching out to the retail community.

“We believe in face-to-face contact with our target accounts,” said Jan DeLyser, vice president of marketing for CAC. “And the more contact we have, the more successful we are in securing promotional opportunities for California Avocados.”

She said even in this era of instant communications via email or cell phone, the in-person retail merchandising call pays dividends time and time again. “We use those calls to provide the retailer with up-to-date crop data and key transitional timing information. We engage the retailer in discussions about their merchandising philosophy and can use our detailed sales data to make recommendations on fact-based display strategies and inform them of marketing opportunities.”

But just as important, DeLyser said these face-to-face meetings build relationships, and establish the CAC representative as the “go-to” resource for the avocado category, giving the retailer a point of contact for consumer data, sales data and point-of-sale materials.

CAC’s retail merchandising staff is anchored by full-time CAC employee Dave Howald, who handles the Northwest and also has corporate responsibility for Albertsons, Kroger and Safeway. Contracted regional merchandising directors include: Connie Stukenberg, who handles the Southwest and has corporate responsibility for Costco; David Ander-

son, who travels through Texas and the surrounding regions as well as up through the North Central portion of the country with corporate responsibility for Wal-Mart and Sam’s Club; and Cece Krumrine, who handles the Northeast, with its many retail contacts.

Howald explains that prior to each sales call, the CAC merchandising representative creates an agenda that allows for coverage of all aspects of the CAC marketing program including:

- Consumer insights (i.e. research and trends)
- Consumer promotions
- Retail Communication programs
- Public Relations & Nutrition programs
- Online Marketing & Social Media programs

“We tailor the agenda to the specific retailer making sure we convey the points we want to make, but we are cognizant of their needs and of the marketing tactics they utilize,” said Howald.

Each call has a primary purpose of helping the retailer identify opportunities to increase their sales performance with California Avocados. Toward this goal, the CAC retail merchandiser is armed with extensive retail data to help make the case for California Avocados. DeLyser said the retail data is key to the program and it encompasses almost 15 years of data collection. CAC was one of the first produce organizations to implement a data-based program utilizing information from multiple sources. CAC collects several data sets, including retail cash register data (sales by PLU) for most retail chains, and advertising and promotional data. In addition, CAC compiles information on retail



(From L to R) Roger Schroeder of Stater Bros. goes over the 2011 California avocado marketing plan with Steven Muro of Fusion Marketing and Connie Stukenberg of CAC.

display size, number of displays and actual in-store pricing. The data is analyzed and turned into multiple reports to give the merchandiser promotional ammunition and actionable recommendations for the retailer. The data is presented in several ways:

- AvoScore Card: Simple one-page overview of the retailers' California Avocado business
- Mini-Review: 10 page "at a glance" highlighting key findings
- Full Review: 25 page in depth, detailed report
- Regional Composite: Key sales trends for each region of the country
- Special: Customized report that provides information requested by the retailer

DeLyser said the ultimate goal of a retail merchandising call is to give the retailer a clearer picture of their own performance and stimulate increased sales. "Ultimately, we want the retailer to be aware of their own California Avocado sales performance compared to region, market and key competitors. This allows us to calculate, with them, the opportunity to realize actual increases in volume and dollar sales."

The CAC Retail Merchandising Program has yielded impressive results, according to the CAC vice president of marketing. "The efforts of our staff have given our retail partners pertinent information which has resulted in tangible evidence of increased avocado sales. We know with certainty that retail chains have maintained prominent primary avocado display locations, added secondary displays and added bagged avocados to their merchandising mix."

Of course, the retail merchandising program doesn't end with the face-to-face visits from a retail merchandising director. The program has several other components including constant communications, retail trade advertising and

participation in industry shows, events and organizations.

In the communications arena, one of the ways CAC keeps the information flowing to retail is through its communication with supermarket dietitians. Many supermarkets have registered dietitians on staff and CAC works with these dietitians on an ongoing basis. CAC has made presentations at symposiums for this group and also publishes a newsletter throughout the season aimed at this target. The newsletters are published in-season and provide the dietitians with ready-to-use nutrition-focused content about California Avocados to share with their customers via the various communications tools they use, including traditional editorial, social media, web pages, blogs and cooking schools.

"We constantly target key retailers and provide them with nutritional information, recipes, images as well as selection and handling tips to reach their consumers through their publications via in-store or their websites," DeLyser said.

CAC's retail trade advertising program visually follows CAC's consumer advertising format but communicates messaging that resonates with retailers. The key messages include the retail value proposition of displaying California Avocados throughout the entire California season. In 2011 to build awareness early in the season, CAC utilized a 4-page gloss insert in the leading industry trade publications, The



Packer and The Produce News as a launch vehicle for the season with a broad California message that encouraged retailers to contact CAC for more information. This insert was soon followed by two full-page ads -- one featured retail promotions and the other highlighted the retail benefits and consumer preference for California Avocados.

CAC staff also participates in several industry events and serves on a number of industry association boards and committees. According to DeLyser, these networking opportunities provide an invaluable opportunity to "demonstrate our industry leadership and cement our position as the go-to resource for avocado marketing, consumer trends and data analysis. 🥑"

by Ken Melban
CAC Director, Issues Management

Maximizing Grower Returns

With unprecedented farm gate prices this year it is a great time to reflect on the California Avocado Commission's Mission Statement: "To maximize grower returns by maintaining premium brand positioning for California Avocados and improving grower sustainability."

Maximizing grower returns! This is definitely the year to talk about maximized returns.

But what about the second part of the Mission Statement, the part that talks about "improving grower sustainability." What does that mean? As the California Avocado Commission continues to lead all of agriculture with our marketing, we are now renewing our commitment to growers through focused issues management activities. Let's review some of the many efforts that are underway through the leadership of the CAC to ensure California avocado growers are able to remain profitable and sustained for generations to come. While it is easy to identify the challenge imported avocados bring to the California avocado industries' viability, what is often times more difficult to recognize are those issues within our own industry. These issues, if not addressed, will threaten the life of the California avocado industry and we will have missed a great opportunity to determine our own destiny.

The following sections will provide a report on some of the recent CAC-led industry activities along with some insight on why these issues will play an increasingly important role and their impact on the profitability of California avocado

growers as we look to our future sustainability.

Good Agricultural Practices (GAP) Manual

The Commission has been working for more than a year on the development of a GAP manual that is avocado specific and sensible. The GAP Committee has spent many hours developing a California Avocado Commission GAP manual that will assist growers to demonstrate compliance with fundamental food safety practices. One impetus behind the development of the GAP manual for California avocado growers is the implementation of the Food Safety Modernization Act (FSMA), which was signed into law in January of this year. The FSMA provides the U.S. Food & Drug Administration increased oversight of the food supply chain specific to food safety and requires that processes be put in place and tracked which will mitigate potential food safety hazards. CAC charged the GAP Committee with development of a comprehensive, but simple to understand manual so that regulators could see the industry's continuing commitment to produce a safe product. The focus of the committee has been to craft a manual that is both applicable and workable for avocado groves and not full of unnecessary requirements. Avocados have a good food-safety history, and this GAP manual will provide a concise avocado specific set of cultural principles, most if not all of which are already being utilized by growers.

CAC has applied for Specialty Crop Block Grant funds to conduct

a multi-faceted outreach effort that will ultimately enable the industry to achieve industrywide compliance with good agricultural practices accepted by regulators and customers alike.

Water Price Controls

In many avocado growing areas the cost of water continues to speed out of control with no slow-down in sight. Some growers in the southern part of the state are paying upwards of \$1,100 an acre foot, and CAC has ramped up our activities in an attempt to achieve some set price controls. The concern over out-of-control water costs is nothing new, but at today's rates some growers are paying 70 percent of their input costs for water. Understandably this is not sustainable, and has forced some growers to shut off the water to their groves. The Commission has been involved in ongoing discussions with many of the various water agencies, and has seen periodic success in mitigating rate hikes at the local level, such as in Goleta and Escondido. These successes are tempered by the skyrocketing water costs in the southern counties. CAC has been participating with other agricultural interests in the development of a strategy aimed at achieving rate reductions and price controls. Although the strategy was not yet complete at press time, it is bold in its construction, which is obviously commensurate with the challenge presented. The Commission is committed to make every attempt possible to get water costs manageable for growers. We will keep you posted.

Season	Utilized California production	Utilized Florida production	Imports	Total supply	Exports	CA % of total US sales	Consumption Per Capita	
							million	pounds
	-million pounds-							
2000/01	422.3	50.3	162.1	634.7	3.9	74.5%	630.8	2.21
2001/02	399.7	63.0	262.4	725.1	4.1	63.8%	721.0	2.50
2002/03	335.2	35.6	311.1	681.9	2.7	54.4%	679.2	2.34
2003/04	431.8	56.9	320.3	809.1	3.5	60.4%	805.6	2.75
2004/05	300.4	26.4	582.5	909.3	2.9	35.9%	906.3	3.06
2005/06	600.9	28.1	424.8	1,053.8	14.5	59.7%	1039.3	3.48
2006/07	259.3	60.9	769.1	1,089.3	4.9	29.4%	1084.4	3.59
2007/08	328.8	57.1	694.1	1,080.0	13.6	35.7%	1066.4	3.50
2008/09	174.5	57.2	951.8	1,183.6	5.4	19.6%	1178.2	3.83
2009/10	534.5	50.3	805.0	1,389.8	8.0	37.0%	1381.8	4.10
Ten yr. ave. 378.7			Ten yr. ave. 39.63%			Source: USDA and California Avocado Commission		

Labor Shortage

As the season winds down, it has become increasingly evident that many California avocado growers experienced difficulty in finding skilled labor for harvesting and cultural care this year. This shortage is the result of a failed U.S. immigration policy and stepped up border enforcement. Legislation has been introduced in both houses of Congress that will mandate employers utilize the E-Verification system. This system compares information from an employee's I-9 with government records to determine legal US residency. The impact the E-Verification system will have on farmers is expected to be devastating, since some estimates place 70-80 percent of the agricultural workforce as being improperly documented. Without a workable program that allows for the current workforce to remain, labor for avocado farming will be constrained. The current H-2A program does not work and it is highly unlikely it can be reworked to the level necessary to provide the amount of labor farming requires.

The Commission has been working in partnership with the Agricultural Coalition for Immigration Reform (ACIR) in representing your concerns to Congress. ACIR is made up of more than 300 commodity groups and is continuing to oppose E-Verification without the development of a workable guest worker program that will allow for a stable, legal workforce, including those workers who are already here. ACIR is dependent upon grassroots support to make its concerns known to Congress, so don't sit on the sidelines. Any effort you can make to contact your Congressional representative is encouraged.

Critical Mass

CAC has been discussing the concept of establishing a "Critical Mass" for our industry as it relates to the total U.S. avocado consumption. While there is no set definition yet, it is generally viewed as two-fold. First, to retain our current percentage of total U.S. sales, which averaged close to 40 percent over the past 10 years (see table above); and,

second, to maintain or increase that same percentage of total sales as the U.S. market continues to increase. U.S. per capita consumption of avocados has nearly doubled over the last decade and every prediction is that consumer demand will continue to rise. With existing market competition from Mexico, Chile, Peru, and New Zealand, and other countries like South Africa looking to jump into our market, it is imperative that we look at long-term strategies targeted at maintaining our share of the US market.

While marketing will continue to be extremely important, equally as critical to the future sustainability of California avocado production is our ability to increase volume. This increase in volume is an absolute if we are to maintain a Critical Mass of at least 40 percent of the market. The California grown supply of avocados will have to increase significantly to keep up with the expected growth in consumer demand. This can occur through increasing producing acres, increasing yields per acre, or a combination of both.

Industry projections are that by the year 2020 there will be two billion pounds of avocados consumed in the U.S. Using that number, California would need to produce 800 million pounds of avocados to maintain a 40 percent share of the domestic market. This represents an increase of more than 100 percent in California's production. Is this an ambitious goal? Yes, but not an unrealistic one if we focus our resources on modernization, growth and the rejuvenation of our industry. The point here is that for California growers to remain a force in the market, we are going to have to identify a strategy to significantly increase volume and begin industry-wide implementation before we lose our Critical Mass.

The following sections will highlight areas the Commission has been examining as possible strategies in support of such an ambitious goal.

High-Density Planting

California avocado groves are typically planted in density patterns somewhere in the 20 x 20 foot range. Due to this amount of space trees are able to grow out and upward at an almost limitless rate, and reach heights of up to 40 feet and overcrowding results. Growers then either thin or stump the trees. Trees this high inevitably become labor intensive to harvest as pickers must ascend ladders to successfully harvest the fruit. Workers must then descend down the ladder with their harvest, and continue to move the ladder to reach new fruit. This time-consuming practice is far from being cost effective.

High-density planting has been implemented in other avocado growing countries such as Chile, Australia and New Zealand with reported success. Not only is tree height managed, but fruit yields are frequently, and often consistently high. As California avocado growers continue to face skyrocketing water costs along

with high land costs, high density planting might be a viable strategy to increase yield per acre. I have seen first-hand high-density plantings (as close as 8 x 8 feet) here in California on some very steep terrain. Growers are indicating they are getting yields as high as 15,000 pounds per acre and sizable yields in the second year after planting. This is a strategy that the Commission is exploring and we hope to have more information soon. One key component to high-density planting seems to be the use of plant growth regulators as discussed in the next section.

Exploring the Registration of Sunny®

Sunny® (uniconazole-p) is a plant growth regulator that is currently registered for use on commercial avocados in Australia and New Zealand (and possibly Chile). Uniconazole-p is currently registered in the U.S. and California under the trade name SuMagic® for greenhouse use on avocados, with a much more diluted formulation than Sunny®. Sumitomo is the manufacturer of Sunny® and their subsidiary company, Valent holds the license on SuMagic® in the US.


In June, CAC and Valent representatives met to explore the possibility of securing a commercial avocado registration in California. All of the required scientific studies were discussed along with potential costs. The process for registering a product in California is to first file a registration packet with the Environmental Protection Agency and, if approved, then a separate application must be filed with the California Department of Pesticide Regulation. While the Commission representatives left the meeting with some level of hope uniconazole-p could be registered commercially, this hope was tempered with some question about Valent's interest in registering the material.

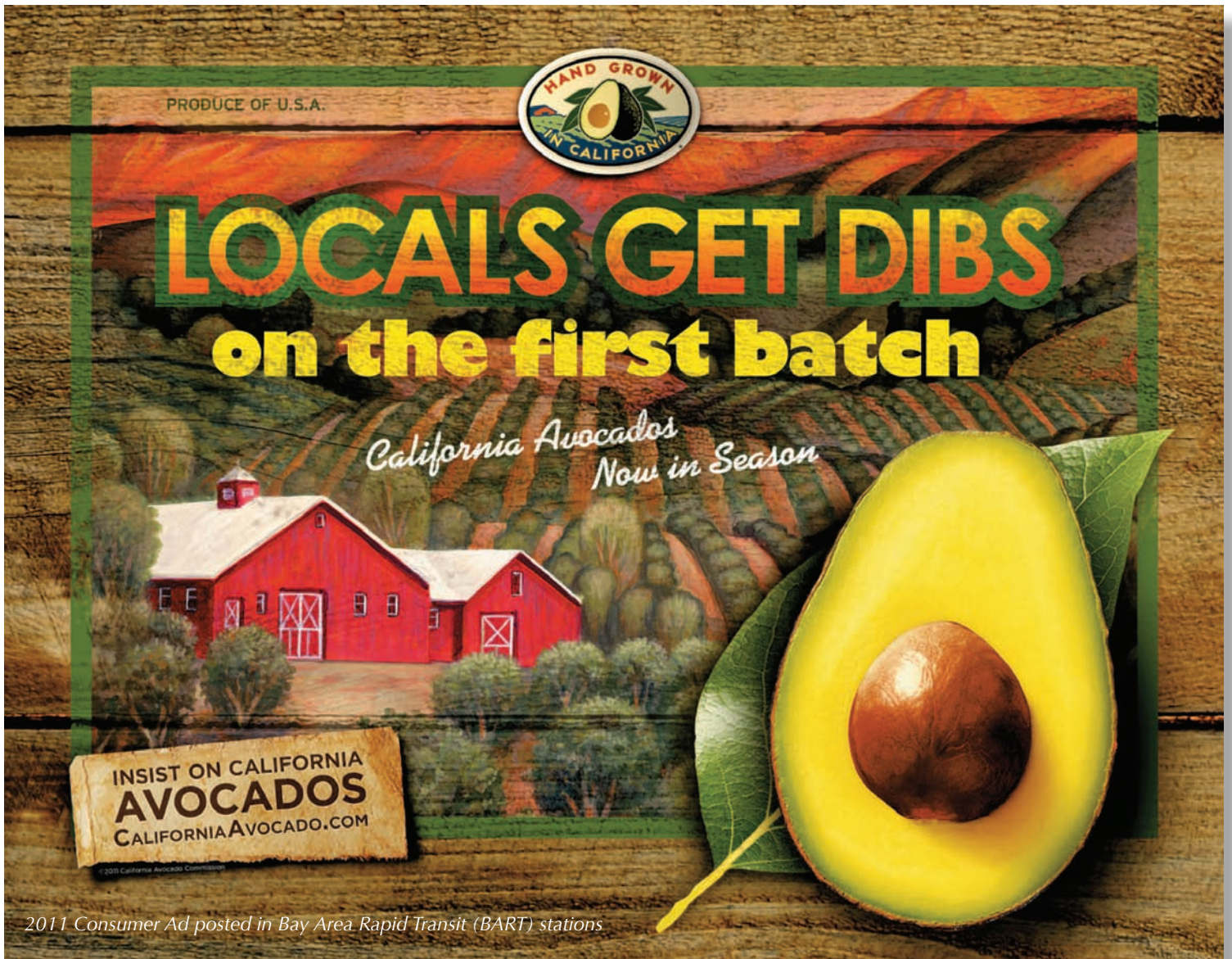
Commission staff is in the pro-

cess of determining if Valent is willing to work with us in the registration of uniconazole-p for commercial use on avocados in California and will keep you posted of our progress and any outcomes.

Developing New Production Areas

As discussed previously, the two options for increasing production in California involve increasing yields and/or acreage. In California's southern and central coast avocado growing regions land costs are typically higher than in other areas. Additionally, especially in the southern counties, high cost for water along with increasing salinity levels continue to bring into question the feasibility of increasing acres of avocados in that region. These factors have led to some discussion about the possibility of developing new production areas in California. Currently there is limited avocado growing in the San Joaquin Valley (SJV), and the idea of increasing the grower base and acreage in that valley has been floated. One of the major reasons for considering this strategy in support of attaining "Critical Mass" is the lower land and water costs in SJV as compared with other California avocado growing regions. In addition, it has been suggested that SJV would provide an earlier harvest region (from December to March), thereby helping to establish California growers' foothold in the market at an earlier date.

The idea is to possibly develop new growers in the SJV and even in the Monterey area along with encouraging existing growers to expand production into those areas. The Commission is exploring the feasibility of increasing production areas and what options might be explored such as the identification or development of varieties that are more tolerant of a more dramatic climate along with possible changes in cultural practices. 



2011 Consumer Ad posted in Bay Area Rapid Transit (BART) stations

California Avocado Marketing Program

Hand Grown in California: *Resonates with Consumers*

by Jan DeLyser

CAC Vice President, Marketing

The California Avocado Grower Campaign featuring the Hand Grown in California thematic launched in 2008 in response to several consumer trends indicating increased consumer interest in connecting more closely with the “who, how and where” of the food they eat. The California Avocado Commission’s (CAC) integrated marketing program focused on telling the grower’s story with the goal of communicating the face and the place behind California Avocados.

In developing the campaign, we wanted to make sure that message resonated with our consumer target audience as well as our industry partners in retail and foodservice. Part of our challenge originally was developing a thematic that would communicate “local”, without actually saying

the words. The definitions for local vary greatly depending on who you ask, so we needed to come up with the language and an icon that delivered that message. Market research showed that premium avocado consumers have a keen interest in where their food comes from and who

grows it. Our Hand Grown in California campaign speaks to that interest.

The Commission conducted a full review and search for its consumer advertising agency in the summer of 2007 and appointed DGWB, Santa Ana, Calif. The **Hand Grown in California** logo and thematic was part of their creative pitch and when we tested in both consumer and trade settings, it was amazing to hear the response. When asked what Hand Grown in California meant to them, consumer responses ranged from local, fresh, grown with care, small family farms to organic. We felt confident moving forward with the campaign and it's been a key component of the overall marketing communications over the past four years.

Since 2008, CAC's marketing programs; consumer advertising, consumer public relations, online, social media, retail merchandising and foodservice have featured California avocado growers in or near their groves, often with other family members, sharing their stories. They are

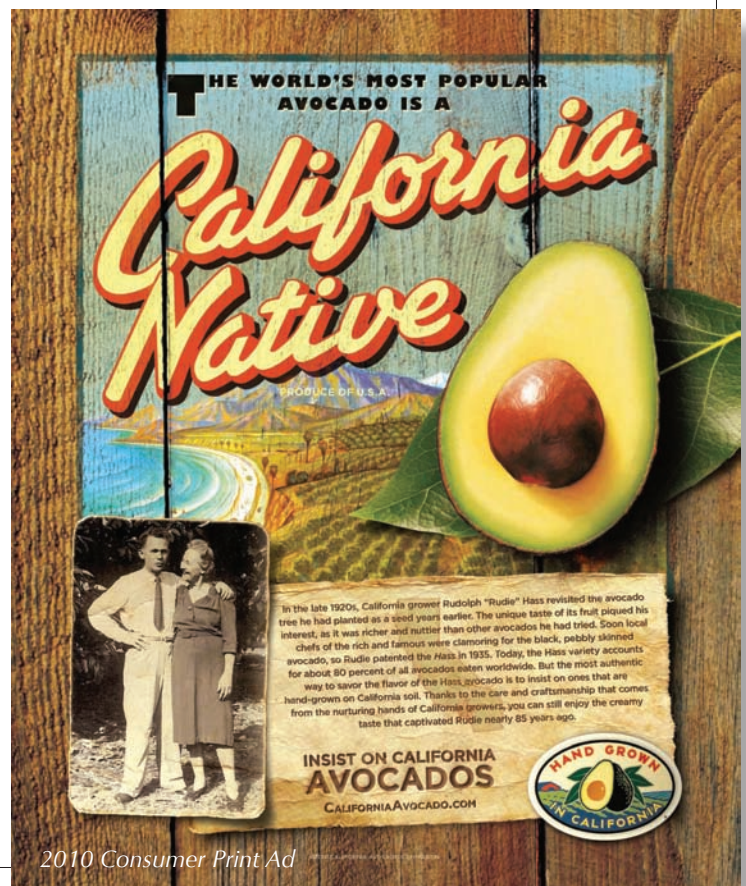


the "stars" of the show, relating personal stories that convey key benefits of their **Hand Grown in California Avocados** and the personal care of crops from planting to harvest.

We continue to monitor consumer trends and evaluate the results of the campaign via the Avocado Consumer Advertising Tracking Study, conducted by Cooper and Roberts Research, San Francisco, Calif., and funded by the Hass Avocado Board. The consumer trends, such as sustainability, authenticity and pragmatic patriotism provide support for CAC's marketing approach. Additionally, the bi-annual ad tracker indicates that 69 percent of consumers who purchase avocados say it is important that their avocados are grown in the United States. This number has nearly doubled over the past four years. And overall preference for California Avocados has increased to an all-time high in the last year with more than 90 percent of those who have a preference choosing California.



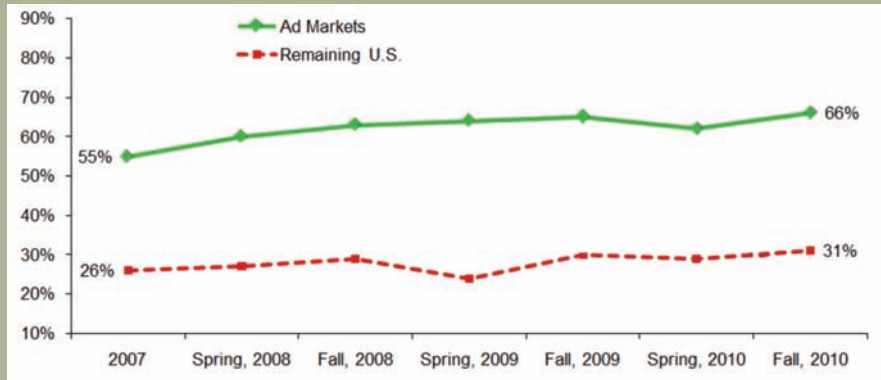
2008 Consumer Print Ad



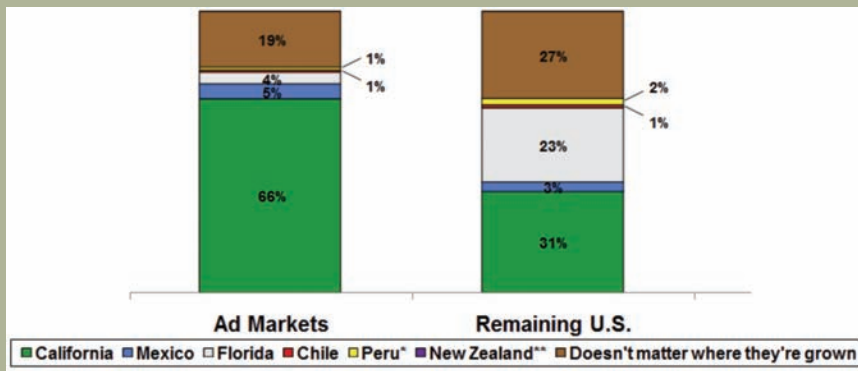
2010 Consumer Print Ad

Another aspect of the campaign is that though the consumer may be miles away when buying California avocados, the connection with the grower seems to transcend those miles and provides an important link with the grower and California. The Hand Grown in California thematic communicates the special care California growers put into growing each avocado, from planting the trees, to the care and nurture throughout the year and to the hand picking and packing of the fruit.

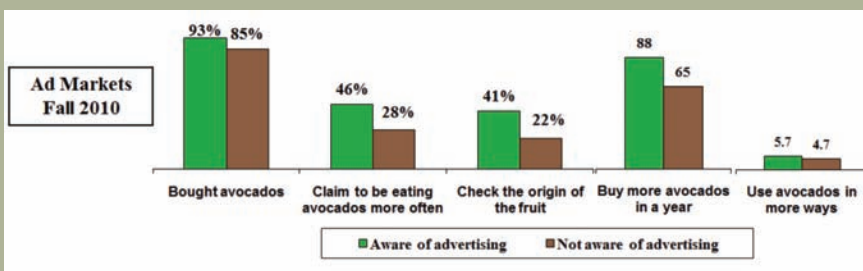
The integrated campaign has been effective in reaching CAC's target consumer and trade targets with ad-



To track awareness, purchase frequency, California identity, usage and information regarding consumer attitudes about origin, 1,996 grocery shoppers were surveyed, via an online questionnaire. The results: avocado consumers in CAC-ad markets overwhelmingly prefer California Avocados.



Preference for California avocados in ad markets is increasing, while responses stating no preference is shrinking. The above graph shows the results, when close to 2,000 consumers were asked: "If given a choice, which avocados would you pick? Avocados grown in..."



Entering its fourth year, awareness of the California Avocado Grower Campaign with **Hand Grown in California** continues to experience strong growth. In fact, awareness of avocado advertising is significantly higher in Ad Markets compared to the remaining U.S. The graph above illustrates behavior differences between those aware of avocado advertising versus those who aren't.

vertising, public relations and digital messaging featuring genuine California Avocado growers. They come in all sizes, shapes and ages, but each is a real grower and that authenticity comes through loud and clear in the California grower campaign. The messaging introduces consumers to multi-generational growers, husband-and-wife teams, ecologically advanced farmers, growers who left the industry only to return to their true passion, growers of all ages, growers with big farms, growers with small farms and beyond. Their personal stories bring to life the meticulous care and craftsmanship that California avocados require.

Our goal with the California Avocado Grower Campaign is to reach our target consumer throughout their day with consistent messaging about California avocados. We're proud of the results we have been able to achieve and continue to explore opportunities to maximize grower returns as a result of CAC's marketing program.

Check the next issue of *From the Grove* for updates and results of the 2011 marketing initiatives. 🥑

Grower Profile



John Burr

Looking to Expand

by Tim Linden

Escondido grower John Burr sees the same set of circumstances confronting the avocado industry as everyone else, and he has concluded that this is a great time to invest in a new grove.

“We are looking for land in the Escondido area. It is the prime growing district; there is no other area just like it,” he says.

Burr, whose first foray into the avocado business occurred when he bought a home with a grove several years ago, is very interested in expanding his avocado holdings. “I am intrigued with the avocado business,” he said. “I think agriculture is a very good investment as part of your investment portfolio.”

But it’s not just his interest in a diversified portfolio or the experiences of a backyard farmer that have led Burr to believe that an investment in avocados is a good one. He has examined the industry closely, followed the trends, looked at the research and crunched the numbers. “Simple math tells me it will work,” he says.

But who is John Burr and how did he get to this point in his life?

He begins his story in the middle of the 19th Century when his great grandfather, John Burr Jr. -- was living in Scotland and specializing in botany and plant life. “You’d probably call him a landscape architect today,” he said.

The elder Burr studied at the Edinburgh Royal Botanical Gardens and was recruited, along with the famous Golden

Gate Park landscape architect John McClaren to come to the United States. He, in fact, worked with McClaren on the development of that park.

But the Burr family eventually moved to the San Joaquin Valley where John’s grandfather started a citrus grove with his brother in 1898. They called their citrus operation Burr Sunny Slope Ranch and it still exists today. Avocado grower Burr grew up in Lindsay on that citrus ranch and maintains part ownership of it today.

John left the ranch to attend and graduate from Cal Poly San Luis Obispo where he got his degree in ag management and began a diversified career in many innovative pursuits. In fact, Burr has spent most of his working life on the cutting edge of technology. As he relayed his 40 years in the working world it included stints with some of the top research companies and minds in and out of agriculture. He has worked with firms using enzymes to improve wine, robotics to improve harvesting of crops and biological solutions to improve pest management. He has worked with the founder of Intel on therapies for Parkinson disease and with corporate giants such as Boeing, Dow and Ciba-Geigy on various progressive ideas. Burr also spent time managing the family farming operation in Lindsay after his father passed away.

Besides tending to his avocado grove, Burr is the current president and CEO of iDiverse, Inc., a privately-held biotechnology company dedicated to developing and com-



but even at a pedestrian 80 cents per pound, he said yields between 15,000 and 20,000 pounds per acre pencil out very well. And that is factoring in water at \$1200 per acre foot.

Burr admits his thinking is not that of others in the industry, but he says the numbers back him up. He believes growers that have been in the business longer are still tied to traditional thinking and it is difficult to change. "I don't have tired eyes and I am not buried in the old paradigm," he says.

But he admits that for a grower with an established low density grove of very tall trees, it is expensive to rip those trees out and plant in the newer high density formats. Though it might be difficult, Burr said it does make economic sense. "High density works best on a fresh block and you can get those trees to produce in two to three years," he said.

But he added that avocado trees are very expensive. In fact, when he got into the business he was surprised to learn that a new avocado tree is about three times more expensive than a citrus tree of the same age. That's a big investment and explains why he is only looking to buy a 10-20 acre plot of land rather than a larger one. "We would need an outside investor if we go larger...and that is possible," he added. 🥑

mercializing genetically enhanced cell lines for use in the bioproduction of ethanol fuel, industrial enzymes, and pharmaceuticals. It also provides genetic technology for creating plants that are resistant to a wide range of biological and environmental stresses.

The Carlsbad location of that firm led Burr to the North County area of San Diego where he bought his home and grove in the San Pasqual Valley. It was that purchase that got him in the avocado industry, and that research background that caused him to cast an analytical eye on the industry.

He said the typical mature grove is planted on 20 by 20 foot grid, which will allow for about 100 trees per acre. He is currently experimenting with high density planting on a 10 by 12 foot grid that will allow 363 trees per acre. His grove is a combination of new trees and established ones so his fruit yield isn't optimum but it is impressive nonetheless. "We are three years into this mission and what we have found is that we are already producing over 10,000 pounds per acre," he said.

Crunching the numbers, Burr believes he can get average yield per tree above the 50 pound level and total production per acre at a figure approaching 20,000 pounds.

Adopting other innovative technologies, such as limiting the height of the trees to reduce labor costs, Burr said the numbers show that growing avocados can be very profitable. He admits that this year's price per pound back to the grove is very high

BROKAW NURSERY

Premium Certified Avocado Trees on Clonal Rootstocks

Dusa™ (Merensky 2)
Toro Canyon
Duke 7
Borchard

AVOCADO
KIWI
CITRUS

BROKAW NURSERY, Inc.
P.O. Box 4818 / Saticoy, CA 93007-0818
(805)647-2262 / Fax (805)647-6493
www.brokawnursery.com

Strategies for Grove Improvement

At the recent CAC/CAS/UCCE seminars Professor David Crowley created a lot of excitement over an ancient product for conditioning the soil, known as “Biochar”. The claim for the benefit of Biochar is that it provides a stable platform for the growth of microbes that attract earth worms and beneficial soil insects. Biochar is also claimed to greatly help with water and nutrient storage in the soil.

Biochar

Biochar is a specific state of charcoal resulting from heating a carbon-rich biomass (this is organic material like wood chips, leaves, crop left-overs) at somewhere between 250 F° and 1,000 F°. Biochar is made in an enclosed oven in which air is restricted, causing a chemical decomposition due to heating in the absence of oxygen (the technical term is pyrolysis), so that the biomass doesn't undergo complete combustion to ash. This process is similar to the production of charcoal. Biochar retains the original cell structure of the organic material and vaporized organic compounds are deposited as bonding agents on the now empty cells. This gives Biochar a vast increase in surface volume, making it ideal for water and plant nutrient storage. Biochar is claimed to remain stable and “active” for a very long time.

Biochar is a way for carbon to be drawn from the atmosphere and is seen by some as a solution to reducing the global impact of agricultural waste. Supporters of Biochar claim

it can sequester carbon in the soil for hundreds to thousands of years, making it a potential tool to slow global warming. The burning and natural decomposition of trees and agricultural matter releases a large amount of carbon dioxide into the atmosphere. Biochar potentially stores this carbon in the ground and at the same time can improve water quality, increase soil fertility and raise agricultural productivity.

However, critics of Biochar have pointed out that the long-term stability of Biochar carbon in soils is highly debatable. Such a solution could, like biofuels, ultimately lead to an increase rather than a reduction of carbon dioxide emissions.

Currently Biochar is only produced in small amounts that, at present, have little impact on the overall global carbon budget. Research on Biochar is in progress with dedicated research units in the USA at Cornell University and the University of Georgia.

You can download a full description of the Biochar process and potential use from the following URL: www.csiro.au/files/files/pnzp.pdf.

Irrigation

The grower seminars in June were very well received and there was a lot of information given to those who attended the meeting. From the presentation and discussion among those in attendance, it was clear that irrigating to a fixed schedule is often wasteful of water, and at today's water prices, could prove costly to

growers. Irrigating according to how much water is needed and measuring the effect of irrigation on soil moisture are best management practices growers can take to be sure one of the largest grove costs is managed effectively. To help growers make informed decisions about irrigating, there are three web based tools.

The first is an easy-to-use irrigation scheduling calculator created by Reuben and Shanti Hofshi, which is located at www.avocadosource.com.

The second is the CIMIS (California Irrigation Management Information System) system at: www.cimis.water.ca.gov.

The third tool is the Web Soil Survey at: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

Each of these tools helps to collect detailed information about grove conditions and in turn provide suggested practices so that irrigation scheduling can be carefully planned to be the most efficient.

The precise amount of water an avocado tree needs is not well understood. Knowing just how little water can be applied while maintaining good production is important in controlling production costs. An estimate of avocado trees water needs, based on information from around the world, and practical experience would suggest 3.6 acre feet an acre per year is the minimum amount of water needed. By the time leaching and evaporation loss is factored in, somewhere around 4.3 acre feet an acre per year may be needed. Any less water than this and yields could



be decreased.

Research in Australia by Dr. David Turner at the University of Western Australia showed that even short periods of water stress at the wrong time in the tree growth cycle have long term effects on the trees. This was due to the tree blocking some of the water conducting channels in the wood with a gum when under water stress. The blockages permanently reduce the ability of the existing wood in the tree to take up water, and are only overcome once the tree grows new wood. Avoiding water stress, wherever possible, seems to be necessary for maximum yields. Therefore, getting irrigation scheduling right is an essential skill for California avocado growers.

This year rainfall has been

above average with the result that less irrigation overall has been needed. When rain occurs, it is helpful to know what the rain has been equivalent to in irrigation so it can be factored into the irrigation scheduling. An approximation of the irrigation equivalent of rain can be made by calculating the depth of water from the irrigation rate in gallons per minute and then comparing the rainfall to the depth of water in a normal irrigation cycle. A word of caution: not all rainfall is sufficient to wet the soil or is retained by the soil so it cannot be assumed 100 percent of all rainfall is available to the trees.

Heavy Fruit Set

For most California avocado

growers the crop harvested this season has been light. It is likely that the next crop will be significantly larger and that branches will be carrying heavy loads of fruit. Avocado wood tends to be brittle and can break if there is too much fruit on the limb, causing tree injury and worse, loss of fruit.

For many avocado growers propping of limbs or strapping of branches can help avoid fruit loss. Groves should be inspected to determine if the fruit set is heavy and branches will need propping. Growers with small trees and with pruning strategies that give strong tree structure will have an advantage in avoiding the need to support many of their trees. 🥑

Technical Investment for Better Profits

When considering the technical needs of any agricultural business in the 21st Century, it is important to be very clear about why the agricultural enterprise exists. For most owners and grove managers the mark of a successful avocado grower is not just how much high quality fruit they can consistently produce but how profitable they are. Though a simple goal, making a profit does require a great deal of activity as well as investment of time and money.

In the most simplest form, profit is the difference between the amount, quality and price of the fruit and what it costs to produce and sell the fruit. Clearly, the marketing success of the fruit strongly influences the price of the fruit and defines what high quality is. Most of the California avocado industry stakeholders would agree that CAC, and others, are very good marketers. Less well appreciated is that to have large amounts of fruit of the quality desired by markets also requires technical investment on research and development. While research is easy to understand, development is usually difficult to visualize, involving outreach and implementation of systems that increase production efficiency.

The essential message is that to be profitable, California avocado growers need a strong marketing program and technical support. The vehicle for this is CAC. The California Avocado Commission does devote a considerable effort to help California avocado growers increase their profitability. The CAC Board has the

task of helping California avocado growers be profitable by their leadership. In the leadership role, the Commission board defines what is needed to ensure a profitable industry now and into the future, as well as monitoring the success of CAC activities. On January 19, 2011, the full CAC Board met and defined the technical strategic imperatives for the California avocado industry. They are:

- Grower-driven research management system
- Effective grower education
- Increase average per acre production
- Achieve and sustain critical industry mass
- Maintain a premium quality product

These imperatives were chosen after discussion of the current state of the California avocado industry as seen by the California grower and packer community. The good news is that despite high prices for water and fluctuating yields, the economic fundamentals of the avocado market in the United States are remarkably solid. There is high demand for California avocados and the value of the fruit remains strong resulting in robust economic drivers to grow more fruit and to invest in avocados with more acreage and more trees per acre.

However, there are challenges to capitalizing on these strong fundamentals all too familiar to California avocado growers. Yields are too low and may even be declining over time in some areas making sustaining a critical industry mass of fruit

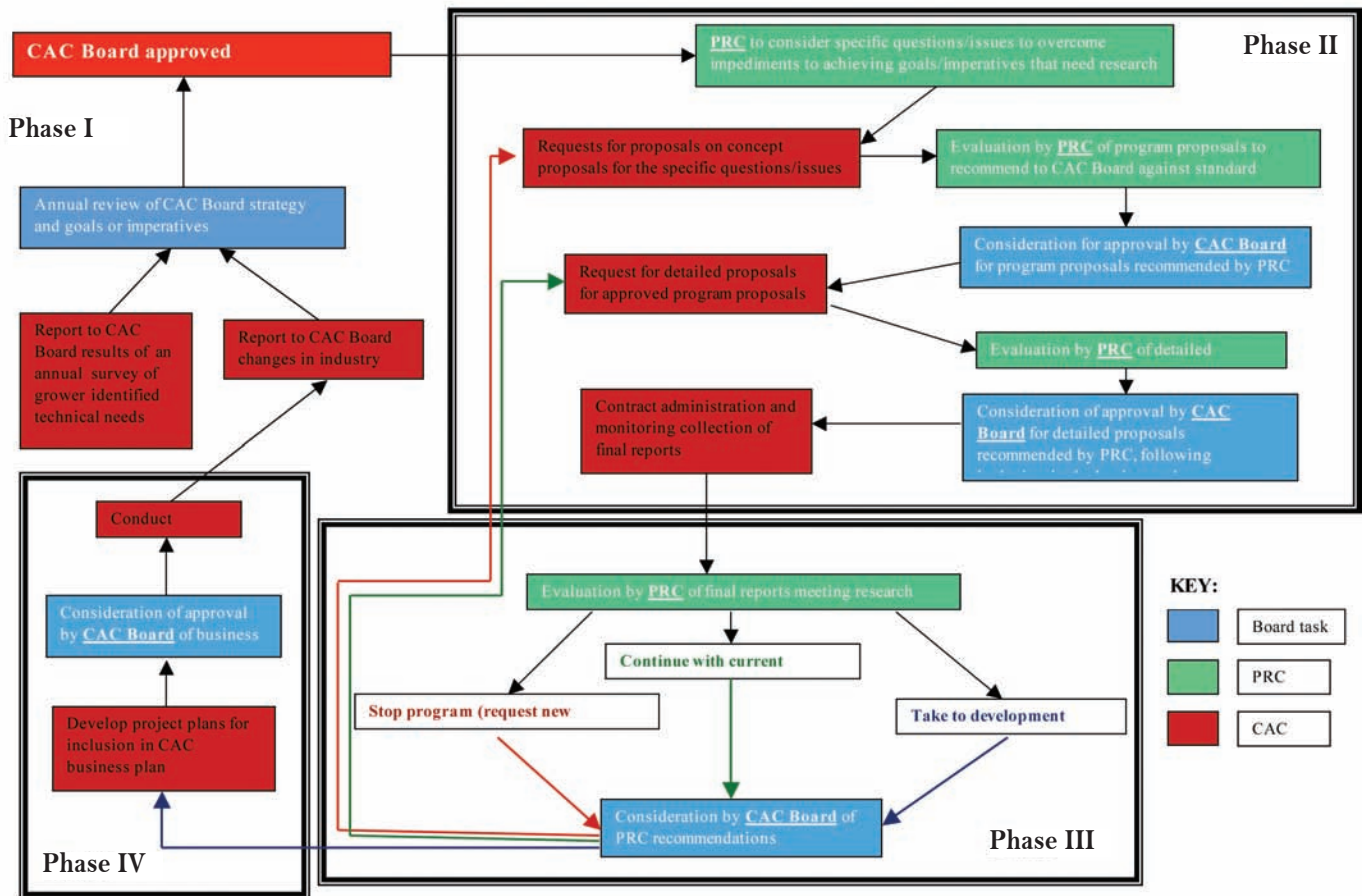
supply difficult. Regular supply of high quality California fruit is needed when marketing California avocados but requires significant technical investment to have increased and reliable production each year.

It will not be easy to meet the challenges presented by the strategic imperatives. If the challenge were easy, the California avocado industry would have different strategic imperatives. Clever thinking and a sound research system is critical to meeting the challenges. Just doing research and expecting the information to be used on the grove is not successful, so considerable effort is needed for grower education. An effective grower education system is a work in progress at CAC.

To implement the imperatives a new process for technical investment was adopted by the CAC Board late in 2010. The process map is presented on the facing page. A necessary part of the process is to have a Production Research Committee (PRC) to consider the strategic imperatives and formulate the requirements for technical initiatives to meet the strategy. These technical initiatives are broadly based and consider not just research but also how the information is implemented to benefit California avocado growers.

To meet the imperative of a grower-driven research system, the PRC was reformed with six members tasked with advising the Commission board on technical matters. The first task of the PRC has been to take the imperatives and develop the broad initiatives that will be needed in research

Process Map for Technical Investment by the California Avocado Commission



and outreach efforts. The required initiatives are presented to research providers for their ideas within concept proposals. The concept proposal is not a description of a specific research project but a holistic explanation of the solution being proposed that can be multi-disciplinary, multi-experiment and multi-year in scope. Also expected within the concept proposal is a description of how the ideas presented would be taken to the grove for growers to use.

The new process integrates four phases vital to the technical investment success of the California avocado industry. The strategic direction set by the CAC Board is reviewed continually for relevance and the impact of technical initiatives in overcoming industry problems. There is an inclusive process between the CAC Board, the PRC and CAC

staff, and the research community on technical activity both at the macro and micro levels.

A holistic, multi-year and multi-disciplinary program to meet industry challenges is encouraged where the objectives of what is being attempted are clear. A review process is used that identifies the success of the research and determines when implementation of the technical initiative into the industry will occur.

A separate implementation stage for the research is integral to the process and is designed to ensure that the research is used and that the solutions are taken to the grove. Then in looping back to the strategy is an evaluation of the impact on industry statistics to identify if real change has happened. This is through the use of California avocado industry Key Performance Indicators. The process is a

systems approach that is iterative and has checks and balances throughout that should give confidence to the California avocado grower that their assessment dollars are being spent in a determined effort to meet their challenges in having a profitable enterprise now and in the future.

The following is a narrative of the process described by the process map.

Phase I: California Avocado Commission Strategic Imperatives

1. Strategic imperatives were set at a strategy meeting of the CAC Board in January 2011 and will be reviewed in detail every five years thereafter.

2. Annually: The CAC Board reviews the technical investment strategy and imperatives as still meeting California avocado growers needs following two inputs: results of an annual survey of California avocado growers technical needs, an update of industry Key Performance Indicators

Phase II: Deciding What to Research

1. The Production Research Committee: Develops requirements for technical initiatives to achieve strategic imperatives, CAC Board agrees by consensus to the requirements

2. CAC staff issue a request for concept proposals for solutions or systems to overcome the impediments to the strategic imperatives. The proposal includes:

- an outline of the concept that can be multi-year, multi-project and multi-disciplinary in scope of a research idea or program that offers a comprehensive solution to an impediment;
- contains sufficient information to allow a business case to be considered;
- includes an implementation stage;
- an indicative budget for the entire research program.

3. The Production Research Committee evaluates and reviews the concept proposals for recommendation to the CAC Board using criteria that includes:

- the business case against the indicative budget;
- the credibility of the researchers ability to deliver;
- the research program and implementation effort;
- an assessment of risk.

4. The CAC Board considers approval of concept proposals after considering the recommendation

of the Production Research Committee (and if required others).

5. For the CAC Board approved concept proposals, CAC staff will issue a request for a detailed research program description and budget covering the life of the whole research effort.

6. The Production Research Committee evaluates and reviews the detailed proposals for inclusion in the annual business plan.

7. The CAC Board considers approval of the Business Plan.

8. CAC staff implements the approved Business Plan taking responsibility for:

- research contracts;
- progress reporting;
 - a. Progress reports of the project results collected and communicated by CAC staff.
 - b. CAC staff collect individual project progress reports against contract milestones (activity).
 - c. CAC staff evaluate that milestones have been met for approval of progress payments.
 - d. Where an individual project is not meeting the expected contracted activity, as described in the milestones, or the research is unable to continue for technical reasons, CAC staff will make a recommendation to the CAC board for continuing or stopping the project.
 - e. CAC staff will also bring the project to the PRC for evaluation to also make a recommendation to the CAC Board for continuing or stopping the project.
 - f. The CAC Board then considers the CAC staff and PRC recommendations for individual projects with issues.
- collection of final reports.

Phase III: Evaluate Success of the Research

1. The PRC evaluates the Final Report at the conclusion of an individual research project as to having met the research goals and to monitor progress of the research program as described in the concept proposal with three main pathways for recommendation to the CAC Board:

- stop the research program, with the option to seek a new solution through a different concept proposal, return to Phase II, step 2;
- continue with the research program but revise the research, return to Phase II, step 5;
- the research findings are sufficient to take the research program to the implementation phase, Phase IV.

2. The CAC Board considers the PRC recommendations to stop a research program, continue the research program or to implement the research. This step is needed as the recommendations have budgetary implications.

Phase IV: Implementation of Research

1. CAC staff develop implementation plans outlined in the concept proposal for inclusion in the Business Plan.

2. The CAC Board considers approval of the Business Plan.

3. CAC staff implement CAC Board approved implementation projects taking responsibility for:

- contracts;
- progress reporting;
- final reports;
- collection of industry statistics to evaluate Key Performance Indicators. 🥑

Escondido Growers Pushing Water Solution

by Tim Linden

By any measure Karen and Eddie Grangetto are progressive avocado growers. They have adopted best practices techniques, are utilizing field to fork data to run their farm, are up to date on the latest pest protection tools and utilize science to analyze their soil and water quality. All of these growing techniques are designed to make their farming operation more efficient and economically viable.

But Eddie Grangetto is very straight forward about the futility of these actions if he can't get his water costs down. "Water is the number one issue. If we have no water (at a reasonable price), nothing else matters."

Farming under the moniker Grangetto Ranches Inc., the family farm at its present location was purchased and developed by Eddie's father in the 1970s. Over the years, the family operation has grown a number of crops including grapes, citrus and avocados. Today the operation consists of 52 acres of mostly avocados with 17 acres of lemons as well. The oldest avocado acreage dates back about 50 years. Karen serves as farm manager while Eddie wears both his grower hat as well as a representative of Grangetto Farm and Garden Supply Company, an agricultural supply business store that has been serving both the local farmers and homeowners since 1952.

About two years ago, the Grangettos took stock of the rising water prices and decided they had to do something about it. "We got to the tipping point," said Eddie. "We figured we would either be out of business in two years or we had to do something to lower the cost of water."

The short crop this season accompanied by high prices and ordinary rains, has given the operation a reprieve, but Eddie is serious when he says the future of the avocado in



Karen and Eddie Grangetto

San Diego County is tied directly to the cost of water. It is no secret that acreage and production has been lost over the past five years and more is sure to go if water prices

continue to climb.

With this as the back story, Eddie began to poke around about 18 months ago asking questions and enlisting the aid of others – most notably John Ruetten of Resource Trends, Inc., a marketing expert dealing with natural resource and environmental issues, and John Burr, a local grower and accomplished businessman. That effort has resulted in the recent forming of a new group called EGAP – Escondido Growers For Ag Preservation, co founded by Grangetto and Burr. The group is dedicated to the mission of preserving

agriculture in the area. Eddie says the most surefire way to do that is to provide area growers with a reliable and affordable water supply. Toward that goal, EGAP is encouraging the use of reclaimed water, an idea spawned by Burr's insight.

Grangetto explained that the city of Escondido is in a position where it needs to upgrade its wastewater treatment capacity in the very near future, or face significant fines. EGAP believes now is the perfect time to work with the city to upgrade its wastewater treatment processes so that the water can be used by agriculture. Grangetto said that there is a great opportunity to forge a win-win partnership between growers and the city that gives agriculture less expensive water, while at the same time solving Escondido's wastewater capacity issues.

Ruetten said the technology exists to treat wastewater so it can literally be utilized for any use, including irrigating avocado farms. Grangetto has discussed with city officials the possibility of developing a piping system that will transport this wastewater to storage tanks and companion treatment facilities located throughout the area. The result: recycled water acceptable for irrigation delivered directly to local farmers. City officials are very positive about the idea of transforming its wastewater into recycled water, and the current proposal calls for a feasibility study and pilot project.

Grangetto knows this is an expensive project but he said when measured against required upgrades of a new ocean outfall pipe and the fines that Escondido currently faces, it offers a long-term solution for both the city and avocado growers. Of course, the ultimate question at the end of the day is how much this water cost agricultural users. Grangetto said a cost of \$500 per acre foot would be reasonable...and would be a price that avocado growers would eagerly pay.

Although there are challenges to overcome, Eddie Grangetto said it is imperative that things move forward quickly, especially if Escondido would like to preserve its rural nature and an agricultural base that provides over \$100 million in farmgate revenues. If agriculture leaves Escondido, wave goodbye to the economic engine and rich history that originally put Escondido on the map. "The clock is ticking," he says, meaning agriculture's days are numbered if a water solution isn't found. 🥑



California is our foundation

For over 30 years, West Pak Avocado proudly services the best in the industry, California Growers.

Learn how West Pak can be part of your foundation.



800-266-4414
www.westpakavocado.com

**CALIFORNIA AVOCADOS
HAND GROWN
TASTE SO GOOD**

Avocados act as a “nutrient booster” by enabling the body to absorb more fat-soluble nutrients, such as alpha- and beta-carotene as well as lutein, in foods that are eaten with the fruit

A 1-ounce serving of fresh avocados contains 0mg of cholesterol, 0mg of sodium, 0.5g saturated fat

Visit CaliforniaAvocado.com for more information and recipes

*Insist on
California Avocados*

Spread and Dip Nutritional Comparison

Portion (2 Tbsp. or 30 grams)	Fresh Avocado	Butter, Salted	Mayonnaise, with salt
Calories	50	204	109
Total Fat (g)	4.5	23	9.4
Sat Fat (g)	0.5	14.6	1.4
Cholesterol (mg)	0	61	7
Sodium (mg)	0	164	199

Reference: USDA National Nutrient Database for Standard Reference, Release 18 (2005) and FDA Food Labeling Guidelines for Voluntary Nutrition Labeling of Raw Fruits, Vegetable and Fish (Vol. 71, No. 159); Appendix C to Part 101 – Nutrition Facts for Raw Fruits and Vegetables (2006).
*Nutritional values are for the item listed only, not as consumed with other foods or ingredients.

©2008 California Avocado Commission

Avocado Nutrition Stock Soared When CAC Made Its Case

by Tim Linden

It really is a remarkable story. Once considered a high fat, high calorie food to eat only sparingly, the avocado has now gained status as an essential ingredient in a healthy diet and is heralded as a “Super Food” by many nutrition experts.

This 180 degree turn didn’t happen overnight, nor did it happen on its own.

The California Avocado Commission (CAC) took direct aim at the less-than-stellar nutritional reputation of the avocado when it launched its California Avocado Nutrition Program more than 25 years ago. At its inception, the goal of the program was to debunk the negative press about avocados. In all respects, you have to say, “Objective achieved.”

It wasn’t that long ago that news and food page stories discussed the fat content of avocados in a negative tone. Today you can hardly read a story without the fat content being praised as being “good fat.”

CAC began its assault on the bad press by forming the Nutrition Advisory Committee (NAC) in the late 1980s. This group was made up of preeminent experts in health and nutrition. The committee examined the nutritional content of

the avocado and found much to like. This provided a solid foundation for CAC’s nutrition communications messaging. From 1990 to 2007, the NAC met annually to update the nutrition platform, present the latest avocado nutrition research and identify new research opportunities. Throughout the history of the NAC, nutrition research was conducted and communicated widely via the media to educate health-care professionals and consumers about the health benefits

of California avocados. Accurate information regarding the fruit's important monounsaturated fats contributed mightily to overcoming barriers associated with the purchase of avocados. NAC members also included California avocados in their interviews and research papers over and above those solicited by CAC. The impact of having third-party nutrition experts speak about the benefits of consuming California avocados cannot be overstated.

Whenever research opportunities were presented to CAC, the NAC members evaluated them and provided valuable input. The NAC also assisted in the development of nutrition messaging for approval by USDA and FDA.

The NAC yielded a massive return on investment for CAC and California avocados, including:

Phytonutrient research from UCLA conducted in 2007-08 that identified four carotenoids in California Hass Avocados which had not been previously quantified. Carotenoids are a class of phytonutrients thought to help prevent many chronic diseases.

The research, led by David Heber, M.D., Ph.D., Director of the UCLA Center for Human Nutrition, found that the total carotenoid concentrations were greatest in the dark green flesh of the avocado closest to the peel. The result is a new nick and peel message; CAC now informs avocado consumers that they can get the most nutrients out of an avocado by peeling the fruit before slicing it in order to capture the maximum amount of carotenoids from the darker green flesh found directly under the skin.

Avocado Extracts Anticancer Effects in Human Oral Pre-malignant and Malignant Cell Lines from The Ohio State University in 2008 that stated that California Avocados may help in the prevention of oral cancer.

The Effects of Avocados on Cognition and Neuronal Communication in Aging was conducted in 2005-06, by the USDA Human Nutrition Research Center on Aging. This study provided a foundation for message points for USDA-approved nutrition messages that have been used in marketing communications.

Carotenoid Absorption Enhanced with Avocado conducted in 2005-06, by The Ohio State University. This was a feeding study, which concluded that avocados, when consumed with other fruits and vegetables, provide the beneficial fats needed to help the body absorb more bio-available nutrients.

These studies and others funded by CAC resulted in the development of nutritional messages and created positive news coverage for California Avocados. The following are a few examples of USDA approved key messages from the CAC funded research:

- Avocados contain "Good Fats".
- Avocados contain more than 20 essential nutrients and various phytochemicals.
- Avocados are naturally sodium and cholesterol free.

- Avocados provide satiety and should be part of a healthy diet program.

A true marker of the success of the CAC Nutrition Program is that with their status as a "Super Food", avocados are now featured in almost every popular diet, including the Mediterranean Diet, Flat Belly Diet, South Beach Diet and Weight Watchers. The fruit is listed as one of the most nutrient-dense foods, and its nutritional benefits are well accepted.

CAC has maintained a position of advocacy in avocado nutrition through its strong association with many groups including the Nutrient Rich Food Coalition (NRFC), which promotes a healthy eating plan comprised of nutrient-dense foods; Oldways/Med Mark – a non-profit association dedicated to advancing the science of the Mediterranean Diet; Produce for Better Health Foundation (PBH), a non-profit consumer education foundation whose purpose is to motivate consumers to eat more fruits and vegetables; and American Dietetic Association (ADA) the world's largest organization of food and nutrition professionals.

Twenty years of CAC nutrition research has linked avocados in a positive way to many health issues, including: cardiovascular health; weight management; Type 2 diabetes; aging; cancer; eye health; nutrient composition; nutrient absorption; and osteoarthritis.

Today, the avocado's nutritional message is as strong as it has ever been. With the obesity epidemic and other diet related diseases spiraling out of control, the focus on a healthy diet is an increasingly popular trend. Even though awareness of avocados as an important part of a healthy diet has improved, CAC knows this is not the time to stop driving that message home. CAC includes nutrition in every aspect of its consumer and trade programs. New for 2011 this year is a special outreach to the supermarket registered dietitians with a monthly newsletter that provides California Avocado nutrition information for their customers, who are consumers.

CAC's website and social media platforms also provide avocado nutrition information. CAC's website continues to rank as a top source for avocado nutrition searches. The site includes information for consumers, health professionals as well as content for the media.

In 2009, CAC's Board of Directors voted to handoff the leadership role in avocado nutrition to the Hass Avocado Board (HAB) to benefit the overall category. CAC continues to support nutrition communication by publicizing the role avocados play in a healthy diet as well as HAB's nutrition research program and the HAB Nutrition Committee. For the latest on CAC's nutrition initiatives, visit www.CaliforniaAvocado.com/nutrition. 🥑

Challenges Need to be Met

EDITOR'S NOTE: Marv Crumb has been growing avocados in Valley Center for 32 years. He has seen many changes in the industry and has strong opinion on what the important challenges are that will ultimately determine the survival of many California avocado growers in 2011 and beyond.

Water

The pressing challenge is water availability, cost and quality! Historical water usage has been based on abundant availability and reasonable cost and cannot continue. We are growing a tropical tree in the desert and to do so requires large amounts of quality water. At 3.5-4 acre feet of water per year with the cost for water in San Diego County currently running to \$1,200 per acre ft., it is by far our highest expense item.

Water cost is not going to magically come down or supply increase. In fact, one should suspect that in the future more water will be allocated to support population growth and development.

To address water cost pressure I have started looking at increasing tree density up to 600 trees per acre. They still use the same amount of water per acre but a single sprinkler covers six trees vs. one tree in a standard planting.

With tree cost of \$25-\$35 per tree, a grower must have deep pockets and a strong will to make the planting investment of \$15,000-\$21,000 per acre for a dense planting. This huge investment has given rise to the idea of creating an association for growing trees for a much lower cost. This embryonic idea needs serious consideration and support.

Without adequate and reasonable prices for water, it is very challenging to see how the California avocado industry can survive, in the

face of low growing-cost imported fruit without a paradigm shift in our cultural practices.

Environmental Regulation

It is clear that as an industry we apply too much water. This has been needed to leach the harmful chlorides and salts out of the avocado tree's shallow root zone. In the process, we also leach nitrogen and other fertilizers, such as phosphate, thereby contaminating the environment. Regulation is on the very near horizon that will force us to change our practices to control the runoff of nitrogen and phosphates into the streams. This will compel growers to closely regulate, monitor and record the water runoff content for contaminants or be faced with heavy fines. This imposes extra cost that we will be required to deal with and should have addressed/considered in our farming standard practice. This issue will cause some to drop out of the industry!

Alternate Bearing and Small Fruit Size

As the California avocado groves have matured, alternate bearing and small fruit size has become a more critical issue. The market window for California avocados is getting smaller and the demand for larger size fruit increasing. Smaller fruit is becoming an increasingly larger percentage of total production. The CAC marketing program has been successful in



moving large volumes of small fruit through the market, but in most years at a price disadvantage to the grower. The retailers are moving the fruit at a nice profit for them but historically the growers are lucky to break-even on 70 size fruit. I believe, as well as some industry consultants, that the alternate bearing and small fruit sizing are self-inflicted by cultural practice.

In my grove I work on having balanced soil nutrition available to the tree during critical demand situations such as bloom, root flush, budwood growth and periods of rapid fruit growth. Large fruit set places a greater nutrition demand thus requires more fertilizer to support the fruit load, sizing and budwood development. In addition, under fertilized fruit stems will be smaller, fragile and susceptible to breakage and fruit loss. The fruit will be slow in sizing and/or will not size to the desired 48 and larger. I have found it pays to maintain a nutrition and soil moisture reserve for the tree to draw on during



these critical growth periods.

When I maintain close field observation and ensure that nutrition reserves are maintained and adjusted based on the trees demand versus fertilizing to a set plan, the trees have less severe alternate bearing and produce on average larger fruit. Recent publications and training sessions by CAC are very good grower aids to understanding the root cause of alternate bearing and how to address the problem.

Quality Fruit, Disease and Insect Attack

The California avocado industry has not overcome the phytophthora root rot problem and is continually plagued with expensive control of one insect or another. My view is that our California avocado grove soils are unhealthy and out of balance. Maintaining good nutrition balance is critical to maintaining a healthy vigorous avocado grove resistant to disease and insect attack.

Most of our industry's soils are critically short of available calcium, which has a profound impact on the cation balance of magnesium, potassium and sodium. This calcium needs to be in the form of calcium sulfate because of the high magnesium problem. These cations have a profound impact on the uptake of phosphorus, zinc and iron. Most California avocado producing soils have excessive magnesium, sodium, chlorides and zinc and low calcium, phosphorus and potassium. In tissue tests, shortages of potassium, zinc and calcium are common. I work with a desired 1:1:1 ratio of potassium, nitrogen

and calcium but this is frequently not achieved and difficult to maintain with unbalanced soils.

A number of growers I know with well water often face water quality issues of high chlorides and salts. A solution to this problem is improved rootstocks having less chloride and salt sensitivity. I have had success addressing chloride and salt problems by balancing soil cations to achieve 75% calcium, 15% magnesium, 7% potassium and 3% sodium. For me it is critical to always have potassium greater than sodium on the exchange.

Need for Improved Rootstock: The Dream Tree

My dream tree would be a Hass-like fruit, because of its broad market acceptance, frost tolerant, grafted on dwarfing, root rot, sodium and chloride tolerant rootstock that will abundantly produce year to year. The fruit should tend to be larger than Hass, but have improved flavor and will not oxidize upon preparation.

Of course, this tree needs to be moderately priced so it can be dense planted at reasonable return on investment. CAC should provide strong support for development efforts in this area.

The California Avocado Market Differentiation

For the California avocado grower to remain competitive we need to do more than just say our fruit is superior to imports. It is very difficult to market differentiate a commodity like the Hass! We must actually grow a superior fruit. If our soils are critically short of balanced nutrition there is no way we can grow superior fruit.

Having a measurement and standard for fruit quality is the first step and a simple Brix-type test can be used to measure the fruit against the standard. Having a standard for

superior fruit will allow market differentiation and lead to a premium market price for our nutrition dense California avocado.

The Good News

The good news is that we are operating at a fraction of the avocado tree's genetic potential and have abundant learning opportunities. The electronics industry, where I worked for 28 years, and military have used the learning curve technique to evaluate operations and as a planning tool since WWII. Those familiar with the learning curve idea know it is common to think that we know something to be true that is really not true and is referred to as the unknown-unknown.

Unfortunately, our industry has more unknown-unknowns than is considered acceptable. This means there are many gaps in our knowledge and we have a lot to learn. The result is that our industry productivity, as measured in pounds of fruit sold per acre, has steadily declined over the past 20 years.

The electronic industry and military would use this declining productivity as a valuable indicator that the industry is not learning and improving and is likely to be operating on false assumptions and information.

The avocado tree with its large leaves and canopy is a sizeable sugar factory that is ultimately only producing a small amount of fruit. Our cultural practices are allowing yield-limiting stresses to occur frequently through the growing cycle. It will be necessary to go through a period of unlearning some of the things we thought we knew to make progress.

Far from being a disadvantage, this gives us an important advantage in a competitive world market, but only IF we are open to new ideas and concepts, and not fixed in our thinking that we know it all. 🥑

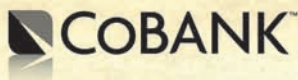
STRENGTH IN NUMBERS

You are not alone. And neither are we. As part of the Farm Credit System, we've been lending money to all aspects of agribusiness - farmers, ranchers, growers, cooperatives - since 1916.

Farm Credit offers the financial services and programs you need today, tomorrow, and for years to come.



FARM CREDIT



800.542.8072
www.cobank.com

American AgCredit

800.800.4865
www.agloan.com

FARM CREDIT WEST

800.909.5050
www.farmcreditwest.com

CULTIVATING GROWERS

Alden Broome's family are longtime avocado growers in Ventura County. Alden has managed avocado groves for his family's farming operation for six years. Presently, he farms 130 acres of avocados.

"Index Fresh has been our avocado packer and marketer for over 15 years. During our long relationship, we have found real value in Index's commitment to helping its growers progress and relne key good agricultural practices and food safety programs. We feel that this cooperation helps us to maximize our potential as growers."



ALDEN BROOME
Avocado Grower

"Getting the best price for our fruit is very important, too. On an average price-per-pound basis, it seems to be well known that Index regularly out-performs others in returns to its growers. I like to recommend Index Fresh to other growers because we have had nothing but a good experience."

"We like that Index is a grower owned company, and that they really make an effort to support the California Avocado as a premium piece of fruit during its marketing season."

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

Sign up for our "Fresh Facts" for updated crop information at www.IndexFresh.com/Fresh



INDEX FRESH INC.TM

www.IndexFresh.com
18184 Slover Avenue • Bloomington, California 92316