From the Grove

Spring 2021

The Latest News from the California Avocado Industry

TELLING THE CALIFORNIA AVOCADO STORY THROUGH VIDEOS

Read more on page 39

HOPE
ASPIRATIONS
PARTNERSHIPS

2021, a new year full of new hopes for our world, aspirations for our families and our businesses, and perhaps most importantly a renewed sense of partnership with our growers, employees, customers, and our industry. Del Rey remains committed to our extended grower family. Bringing people closer together is what we are all about.

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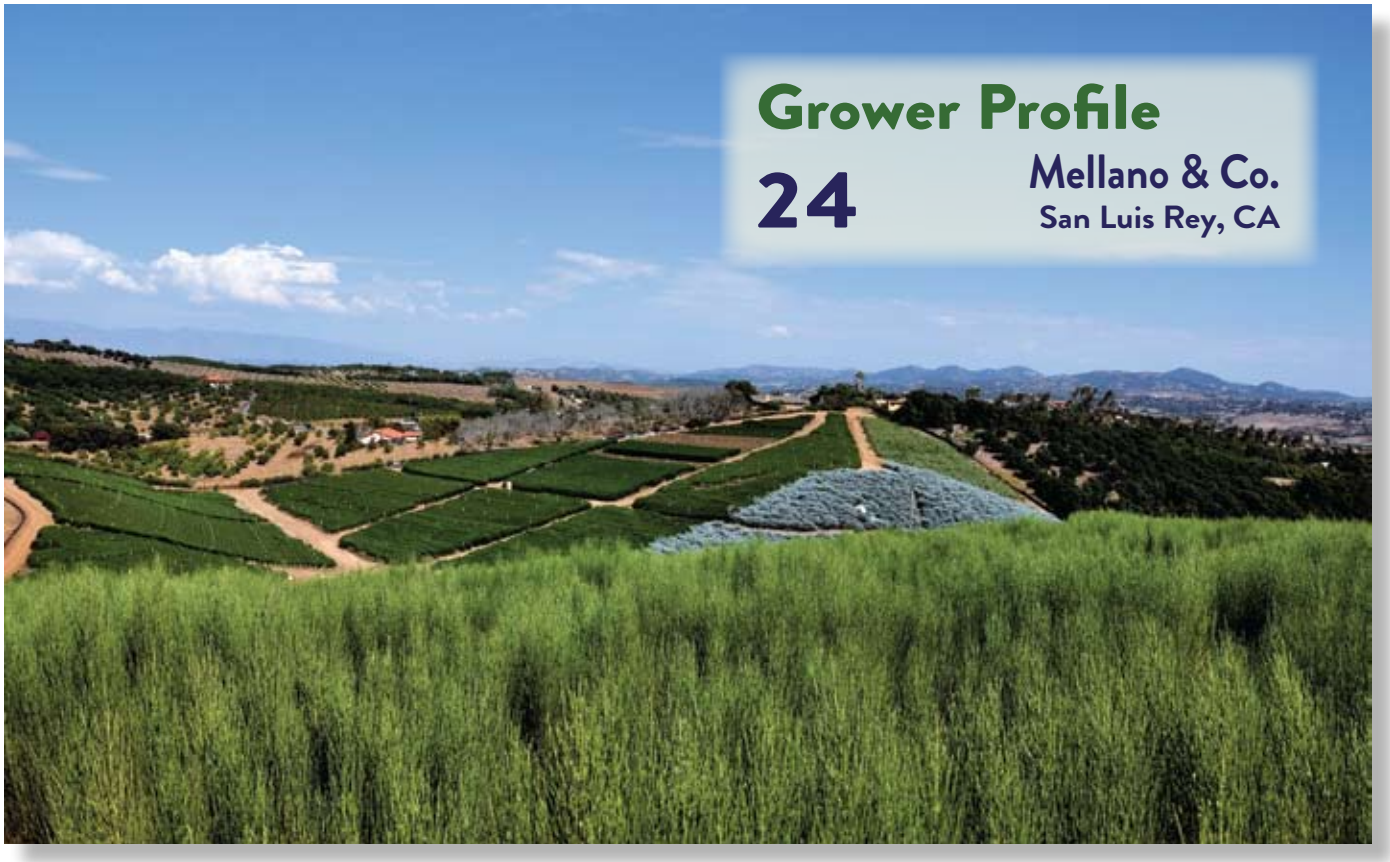

Grower Profile
24 Mellano & Co.
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From the **Grove**

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Spring 2021

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Message from the President

Tom Bellamore

Coffee Shop Talk

Profitability over time gnaws at every independent business operator and is certainly foremost in mind among California's 3,000 avocado growers. In recent months, the topic has surfaced with more frequency in part due to an early season market weakened by a surfeit of imports. Anxious growers closely followed the blueberry industry's attempt to secure government relief from imported fruit volumes, voicing the opinion that the Commission should follow suit, filing an action of its own. The Commission board voted not to do so, and the International Trade Commission resoundingly issued a 5-0 "no-harm" decision in the blueberry case. The debate over profitability continues.

Growers' expectations of the Commission are colored, to some degree, by how they are situated on the profitability scale. The limits of either end of the scale are a matter of conjecture, but a few indicators suggest that there are growers whose cost of production is quite low while others struggle to break even at fruit prices of $1.60 per pound. The Commission's mission to maximize grower returns by enhancing premium brand positioning for California avocados while improving grower sustainability is intended to serve all growers and yet the degree to which it does depends on a grower's individual circumstances. And at the end of the day, growers only know about their own set of books and no one else's.

It is easy to make assumptions about the health of the industry based on observation. Nursery stock cannot be produced fast enough, young trees in high density spacing can be spotted on hillsides along country roads, and late-model trucks arrive at field days and other grower gatherings, suggesting optimism in some farming operations. Drive a little farther down the road and you may see 30-year-old avocado trees with root-rot symptoms badly in need of pruning, or 10-year-old trees with severe tip burn because of prolonged, elevated soil salinity. Coffee shop talk draws heavily from this anecdotal information, which is used as supporting evidence on both sides of the debate. So little of it, however, can be deemed conclusive.

"It's all relative, and the truth about how growers fall out on either side of that premium price is a big unknown without hard facts. Coffee shop talk is not going to cut it."

What *would be* conclusive is the collective information from the ledgers of every commercial avocado grower in California, aggregated in such a way as to paint an accurate picture of bottom-line profit or loss for the totality of the industry. The difficulties in gathering this information are all too obvious—growers would have to voluntarily hand over proprietary details of their farming operation to an organization entrusted to keep it confidential. Try asking the Internal Revenue Service about how likely that is to happen.

Refinement of an industry strategy to improve profitability is nearly impossible without factually based information about how growers are faring as a group. As Yogi Berra said: *"if you don't know where you're going, you'll end up someplace else."* In this instance, if you don't know where you are to be-

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Daniella Malfitano

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

gin with, good luck trying to get somewhere you would like to be. The full range of Commission programs—from marketing efforts geared toward obtaining a premium price for every California avocado to production research projects designed to improve yields—could be so much more effective if we knew, definitively, specific details about the financial health of the industry. A grower confidant I know often remarks on the difficulty of defining a "premium" price. The answer depends upon the perspective of the beholder. A premium price for California avocados at the retail point of sale may be enough to put money in the pocket of one grower, while falling short of allowing another to pay his or her monthly water bills. It's all relative, and the truth about how growers fall out on either side of that premium price is a big unknown without hard facts. Coffee shop talk is not going to cut it.

In February, the Commission board took a first step at solving this puzzle. It tasked CAC's Production Research Committee with formulating a way to collect concrete data about the overall profitability of the industry. Of course, any methodology used would have to be statistically sound and rigorous, and presented in such a way as to elicit participation by a substantial portion of the grower base, to ensure its reliability. Mission impossible? Perhaps, but it is worth a try. Success would mean having a new tool to guide the industry strategy in the years ahead. By contrast, failure relegates us to relying on coffee shop talk, less than optimal strategies, and perpetual debate among the ranks about the overall condition of the industry…a circular conversation that, in the end, as Yogi would say, gets us nowhere.

Chairman's Report

Rob Grether

On behalf of all California avocado growers, I was thrilled to learn that there was overwhelming support for the continuation of the California Avocado Commission in the recent referendum. Of the growers who cast ballots, 75% voted in favor of continuation, affirming their confidence that this organization will productively support our industry for another five years. Support for the continuation of CAC has been exceptionally high in each referendum since its inception. As I related in the last issue, my confidence in CAC is built on four pillars: the staff, the marketing, the board and the growers. Others may identify a different set of reasons to support the preservation of the organization, but it is clear to me that the confidence most growers have in CAC has been developed over time and remains strong today. Nonetheless, I am mindful of the growers who voted against continuation in the referendum and the 9% of the state's total crop they produce. I won't be chairman when the next state-mandated referendum is held in 2026, but for the balance of my tenure I will work to better understand what drives dissatisfaction among some growers and strive to cultivate confidence among all growers.

Over the past few months, leading up to the referendum, I received numerous compelling emails regarding the effectiveness of the work CAC does to support our industry. Some were from growers I know well, and others were from growers I have never met, but in all cases, they were from growers willing to sign their name to statements of support, observations of opportunity, or constructive criticism. Everyone working for CAC—members of the staff, marketers on contract, directors on the board—is striving for this organization to excel so that our industry will flourish. We have thick skins and open minds, but we also have limited time and finite resources, so it is critical that feedback be productive and sent through appropriate channels. Our governance structure is built on district representatives who expect to hear from their growers and in turn are expected to lead with the growers' best interests in mind.

I am relieved we are finally on a rapid path out of the pandemic and back to normalcy. However, I am disappointed it won't come quite soon enough to permit CAC to hold annual meetings again this spring, but I hope by this summer or fall we will be able to see you all in person again. I can't capture the magic of this year's marketing campaign or the professionalism of the staff in this report, but I will give you my brief synopsis of how CAC will operate this year:

We are going to continue to spend your assessment dollars effectively and use our time efficiently. We are going to continue to target key accounts and hone our messaging to appeal to *Premium Californians*. We are going to continue to measure the efficiency of our advertising and strive to better measure the effectiveness of our investment. We are not going to ignore data and go with our gut, nor are we going to discount the critical role handlers play in our industry. We are going to continue to collaborate with retailers and restaurants to create programs that reach consumers at point-of-purchase, and we are going to continue to coordinate promotions with handlers so that ads run when fruit ships.

We are going to continue our advocacy work with regulators to keep water costs from climbing and labor availability from shrinking. We are not going to pursue trade injury claims at significant expense with a low probability of success, nor are we going to support every piece of protectionist legislation without first weighing the ramifications of an endorsement. We are not going to sacrifice long-term returns and hard-earned brand loyalty for short-term savings or a quick bump in demand. We also are going to focus on developing a robust program to help growers improve on-farm practices to drive higher productivity and profitability. Finally, we are going to humbly acknowledge that we are only temporary stewards of this organization, and one measure of our success as an organization this year will be the support from growers for the continuation of CAC in multiple referenda to come.

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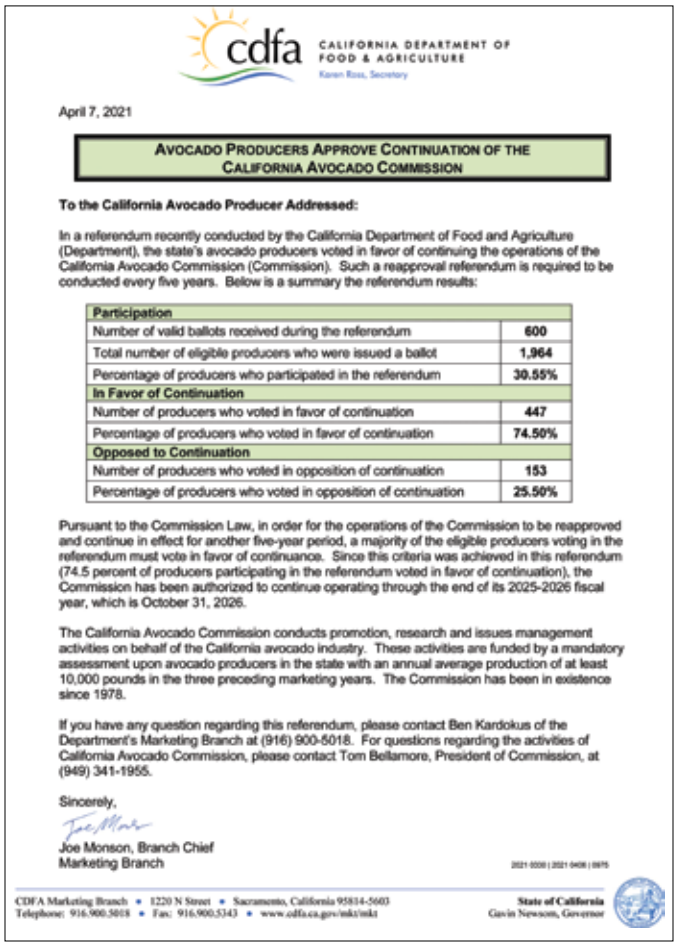
Statewide Grower Referendum Affirms Continuation of California Avocado Commission

The California Department of Food and Agriculture recently completed a state-mandated referendum vote that determined the California Avocado Commission is approved to continue in operation for the next five years. By law, a continuation vote among eligible commercial California avocado producers must be held every five years. This year's voting results showed that 75% of voting producers support continuation of CAC for another five years, well above the legally required percentage. This is the ninth reaffirming referendum since the establishment of the California Avocado Commission in 1978.

"California avocado growers have clearly affirmed the value they see in the California Avocado Commission," said Rob Grether, chairman of the CAC board of directors. "This vote allows the Board and management of the Commission to continue their critical work of bolstering grower viability through innovative marketing, industry affairs, production research and grower education."

This referendum is the first in which the voting was held among California's commercial avocado producers only. In 2017, the law that governs the California Avocado Commission was amended to exempt growers of California avocados who produce an annual average of less than 10,000 pounds of avocados in the prior three years from paying the mandatory assessments that fund the Commission operations and programs. Consequently, those exempt growers are not eligible to vote in CAC elections and referenda.

"What was unknown was any potential effect exempting smaller growers might have in a referendum vote, as there were significantly fewer eligible voters this year," said Tom Bellamore, CAC president. "We are pleased that the 2021 results once again affirmed the industry's support for the Commission and its work, which has benefited California avocado growers for more than four decades and will continue to do so."



cdfa CALIFORNIA DEPARTMENT OF FOOD & AGRICULTURE
Karen Ross, Secretary

April 7, 2021

AVOCADO PRODUCERS APPROVE CONTINUATION OF THE CALIFORNIA AVOCADO COMMISSION

To the California Avocado Producer Addressed:

In a referendum recently conducted by the California Department of Food and Agriculture (Department), the state's avocado producers voted in favor of continuing the operations of the California Avocado Commission (Commission). Such a reapproval referendum is required to be conducted every five years. Below is a summary the referendum results:

Participation	
Number of valid ballots received during the referendum	600
Total number of eligible producers who were issued a ballot	1,964
Percentage of producers who participated in the referendum	30.55%
In Favor of Continuation	
Number of producers who voted in favor of continuation	447
Percentage of producers who voted in favor of continuation	74.50%
Opposed to Continuation	
Number of producers who voted in opposition of continuation	153
Percentage of producers who voted in opposition of continuation	25.50%

Pursuant to the Commission Law, in order for the operations of the Commission to be reapproved and continue in effect for another five-year period, a majority of the eligible producers voting in the referendum must vote in favor of continuance. Since this criteria was achieved in this referendum (74.5 percent of producers participating in the referendum voted in favor of continuation), the Commission has been authorized to continue operating through the end of its 2025-2026 fiscal year, which is October 31, 2026.

The California Avocado Commission conducts promotion, research and issues management activities on behalf of the California avocado industry. These activities are funded by a mandatory assessment upon avocado producers in the state with an annual average production of at least 10,000 pounds in the three preceding marketing years. The Commission has been in existence since 1978.

If you have any question regarding this referendum, please contact Ben Kardokus of the Department's Marketing Branch at (916) 900-5018. For questions regarding the activities of California Avocado Commission, please contact Tom Bellamore, President of Commission, at (949) 341-1955.

Sincerely,

Joe Monson, Branch Chief
Marketing Branch

2021 0330 | 2021 0408 | 0975

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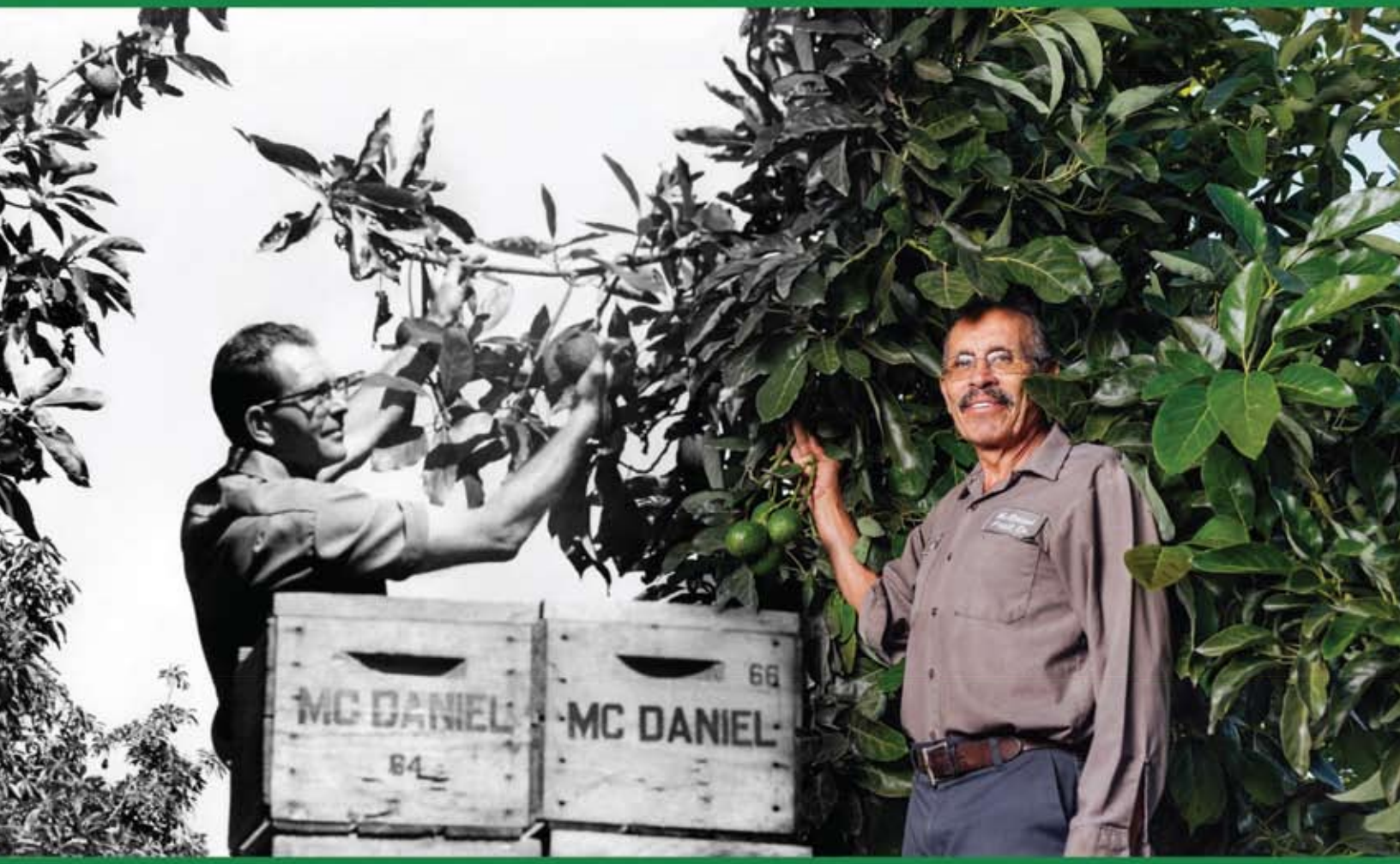

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2020 California Avocado Acreage Update

By April Aymami
Industry Affairs Director

The California Avocado Commission partners with Land IQ to conduct annual acreage surveys that are used by CAC for yield forecasting, to make informed budgeting and marketing decisions, and provide an update on the health of the industry and acreage trends. Data from the acreage survey is compiled in a spatial database for use by the Commission. In addition, an annual Statewide Avocado Acreage and Condition report is released to the industry. Highlights from the 2020 report include:

- Planted avocado acreage in the state totaled 54,017
- The planted avocado acreage for avocado growing counties is as follows:
  - Riverside – 5,046
  - Santa Barbara – 6,741
  - San Diego – 16,488
  - San Luis Obispo – 4,043
  - Ventura – 19,754
  - Minor Counties* – 1,945

**(Fresno, Kern, Los Angeles, Monterey, Orange, San Bernardino, Tulare)*

- As concerns the growing regions, their acreage classifications are illustrated in the chart below:

2020 Avocado Acreage Classification Summary

County	Producing Acres	New/Young Acres	Topped/Stumped Acres	Planted Acres
San Diego	14,421	783	1,284	16,488
Riverside	4,335	446	264	5,046
Ventura	17,056	1,825	874	19,754
Santa Barbara	5,828	629	284	6,741
San Luis Obispo	3,894	82	67	4,043
Five County Total	**45,534**	**3,766**	**2,772**	**52,072**
Minor Counties				
Orange	*990*	*91*	*11*	*1,092*
San Bernardino	*467*	*22*	*3*	*492*
Monterey	*222*	*0*	*7*	*230*
Tulare	*104*	*2*	*1*	*106*
Los Angeles	*14*	*3*	*0*	*17*
Fresno	*1*	*3*	*0*	*4*
Kern	*3*	*0*	*0*	*3*
Minor Counties Total	**1,800**	**121**	**23**	**1,945**
GRAND TOTAL	**47,334**	**3,887**	**2,795**	**54,017**

New for the 2020 Statewide Avocado Acreage and Condition survey was the addition of an age analysis, as well as review of planted acreage density.

- The age of planted acreage breaks down as follows:
  - Planting to 4 years – 4,417 acres (8%)
  - 5 - 8 years – 9,289 acres (17%)
  - 9 - 15 years – 7,717 acres (14%)
  - 16 - 20 years – 8,989 acres (17%)
  - 21 years + – 23,604 acres (44%)
- Density was classified according to high density (15x15 or closer and 20x10) or standard density (15x20 or greater) with the percentage of high-density acreage planted as follows:

County	Producing Acres	New/Young Acres	Topped/Stumped Acres
San Diego	15%	43%	14%
Riverside	28%	31%	19%
Ventura	18%	39%	14%
Santa Barbara	14%	65%	23%
San Luis Obispo	11%	32%	5%
Other	5%	59%	17%

The complete report can be found on the Commission's website at http://bit.ly/2020-CA-Acreage-Report and includes tables detailing acreage by zip code, new acres by county and planting year, a breakdown of avocado acreage by planting density (high density versus standard), the net change in producing/young/stumped acreage by county, and various maps noting the acreages of avocados planted.


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Introducing the New California Avocado Consumer Ad Campaign

The California Avocado Commission is entering 2021 with some fresh ideas for the continuation of its consumer advertising campaign, "The best avocados have California in them." By utilizing a new combination of traditional and digital media, the campaign further showcases how a fun and creative play on the word "avocados" captures the premium California lifestyle, and the qualities that make California avocados the best.

The insight behind the 2021 campaign, "The best avocados have California in them", is an extension of its launch in 2020: There's a piece of California, inside *every* avocado... literally. We are playing up the "CA" in "avo-CA-dos" because the best avocados have California in them. Everything that makes California special is what makes California avocados special too. But with a growing competitive landscape, it's important to help people see the California difference by dialing up the connection between California avocados and the California lifestyle. That's why we partnered with 10 new artists who will transform the "CA" in "avocados" into unforgettable representations of our great state.

The Commission chose 12 new attributes that encompass a few of the things that represent the best of the California lifestyle and partnered with artists to create work inspired by the line: "The best avocados have California _____ in them." The attributes include California colors, creativity, culture, drives, hope, kindness, sights, skies, taste, waves and wonder. By developing a variety of new artwork within the campaign, the Commission expects to improve brand linkage and consumer loyalty, thereby increasing the demand for California avocados among consumers, retailers and foodservice operators.

To bring some buzz to the brand, we've also teamed up with renowned street artist, Shepard Fairey, and his design team, Studio Number One, on the California "creativity" design. This partnership will bring a custom art piece to life as a painted mural in the heart of Venice, CA, giving consumers and passersby a chance to immerse themselves in the "The best avocados have California in them" campaign.

Beginning in March, the 2021 extension of the consumer ad campaign will leverage insights from last year to bring new ideas to the table and increase California avocado perceived value, preference and loyalty with our targets. The campaign will accomplish this by addressing the shift in consumer needs in terms of engagement, positivity and grocery shopping. Ads will lean into the connection between California avocados and the aspirational California lifestyle.

Unforgettable images of CA in the middle of the word AVOCADOS will come to mind when consumers wonder where the best avocados are grown.

Playful and clever, the new consumer ad campaign brings to life what makes California the best — the atmosphere, culture, people, and of course the avocados!!

By transforming the CA into California-themed art, the Commission continues to illustrate that "The best avocados have California in them."

Better Growing

By Tim Spann, PhD; Spann Ag Research & Consulting
& David Holden; Holden Research & Consulting

GEM Avocado Fruit Scarring Causes and Preventive Measures

The GEM avocado is becoming more popular every year in California, and for good reason. It is a compact tree well suited to high density plantings, the fruit are well covered with foliage protecting them from sunburn, and it produces early, high yields of large fruit. However, every new variety has its quirks — some may say flaws — which sometimes do not become evident until significant acreage has been planted and many growers have had their eyes on the variety.

GEM Scarring

For the GEM variety, one such quirk is peel scarring. Several years ago, a number of growers started talking about the sensitivity of GEM fruit to avocado thrips (*Scirtothrips perseae*), which caused large scars to develop on the fruit as they matured. However, not everyone agreed the scarring was caused by thrips.

In May 2018 while visiting Westfalia Technological Services in South Africa, we were shown GEM trees planted in a large screenhouse (see the Fall 2018 issue of *From the Grove*). The region where these trees were located is subject to hailstorms and high winds. An analysis by Westfalia in 2016 showed that 25% of fruit loss (downgraded fruit) in this region was due to wind, exceeded only by sunburn (32%). Maximum average wind speed outside the screenhouse was 4.5 miles per hour compared with less than 1 mile per hour inside the screenhouse. Westfalia told us the screenhouse resulted in a 6.2% increase in grade #1 fruit compared with the non-screened control, and a 17% reduction in wind scar.

A large screen structure constructed in a grove in Soekmekaar, Limpopo Province, South Africa to protect trees from hail and wind damage.

At the same time David Holden was observing increased scarring in GEM plantings in wind prone areas adjacent to Hass plantings that had little scarring and both cultivars were treated for thrips at the same time. With that knowledge, Holden suggested and started a private study in spring of 2019 to investigate if the scarring that was being seen on GEM was due to the wind and not thrips.

In late 2019, Dr. Jonathan Dixon from Seeka Ltd. in New Zealand visited California and talked about his company's experience with GEM avocados. He noted the difficulty they experienced getting GEM trees established in high wind areas and how using small screen shelters around each tree has been beneficial (see the Winter 2019 issue of *From the Grove*).

It is important to note that neither South Africa nor New Zealand have avocado thrips. This information from South Africa and New Zealand, along with observations of California plantings in different areas led some to believe the scarring was more wind damage — occurring at a very early stage of fruit development — than thrips damage. Thus, in 2020, the California Avocado Commission funded David Holden to establish a two-year trial to determine for certain the cause of GEM fruit scarring in California.

GEM Scarring Trial

In spring 2020, two growers, Bryce Bannatyne and Gary Nichols, with GEM plantings in wind exposed and wind sheltered areas, agreed to cooperate with CAC for the trial. Bannatyne's Orr Ranch in Santa Paula is subject to regular afternoon west winds, whereas Nichols' Rancho Largo in Somis is much more sheltered from the strong afternoon west winds. At each location, plots were established with and without added wind screens. Additionally, within each wind screen treatment trees were either treated or untreated for thrips control. The treatment details are shown in Table 1. Wind speed measurements and thrips counts were both conducted weekly at each site.

Year One Trial Results

Wind speed data collected weekly in the early afternoon from spring through early summer 2020 at each site showed that, on average, the Santa Paula location experienced nearly 50% greater wind speed than the Somis location. Wind speed outside the grove averaged about 6.6 miles per hour in Santa Paula but only 4.5 miles per hour in Somis. Similarly, wind-speed measurements inside the grove averaged 2.4 miles per hour in Santa Paula, but only 1.5 miles per hour in Somis.

Thrips count data for both sites from early May through early July are shown in the accompanying figures. In Somis, the thrips treatments were applied on May 20, 2020, and in Santa Paula the treatments were applied on May 28, 2020. At both locations, the untreated control trees, with or without windscreens, had the highest thrips counts. At the Santa Paula site, the thrips treatments generally held the pest populations below five nymphs per five leaves, which is generally regarded as the treatment threshold for this pest, while the untreated controls with and without windscreens had populations that well exceeded the treatment threshold. Results were similar at the Somis site; however, the organosilicon only treatment without windscreens did not control the thrips population. Also, at the Somis site, all treatments saw a sharp rise in thrips populations in early July, with all treatments exceeding the treatment threshold except for the abamectin/oil with windscreen treatment.

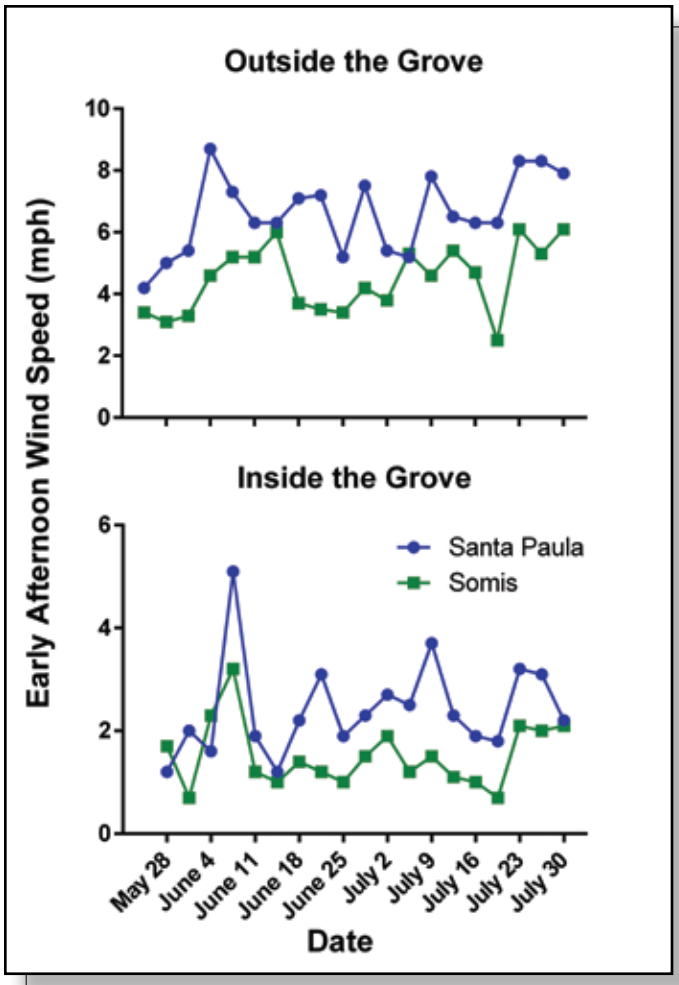
Table 1. Treatments for assessing damage to Gem avocados.

Treatment		Rate[1]	Spray volume[1]	Application timing
No windscreen	Untreated	N/A	N/A	
	Abamectin 415 Oil	15 fl oz/ac 1% v/v	75 gal/ac	Approx. petal fall
	Organosilicon spreader	48 fl oz/ac	75 gal/ac	Approx. petal fall
With windscreen	Untreated	N/A	N/A	
	Abamectin 415 Oil	15 fl oz/ac 1% v/v	75 gal/ac	Approx. petal fall
	Organosilicon spreader	48 fl oz/ac	75 gal/ac	Approx. petal fall

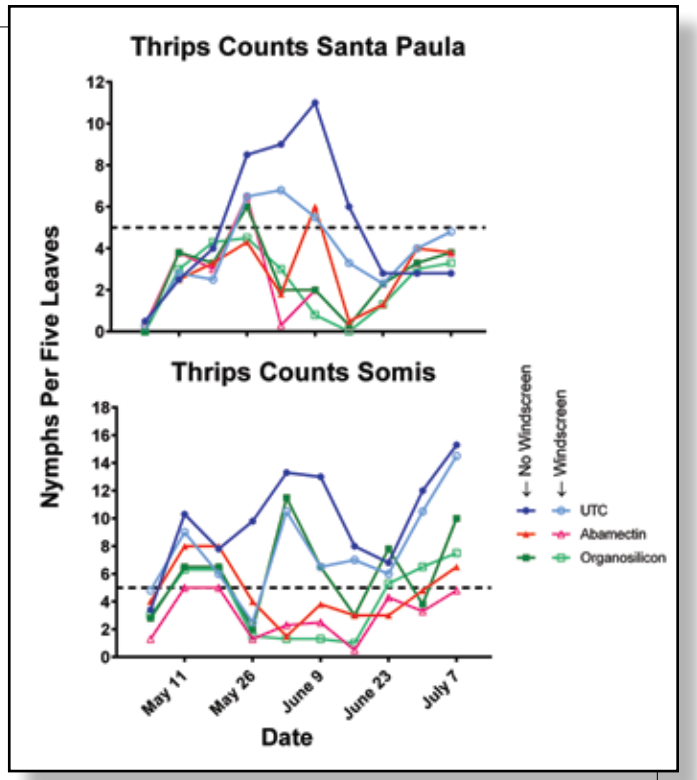
[1]Rate and spray volume are per acre equivalents. The actual treatments were applied by hand to each treatment plot.

An example of GEM fruit with damage from wind rub (left) and avocado thrips feeding (right). Note the difference in the texture of the damage from the two different sources as well as the position of the damage.

On September 30, 2020, fruit from all treatments at both locations were rated for the percentage of fruit with damage as well as the severity of damage. In Santa Paula, the percentage of fruit showing thrips damage was low in all treatments, and there was no statistically significant difference among the treatments. Wind scar damage was quite high in all treatments, with no treatment having less than 15% wind scar damage. That said, there was a large separation between treatments with windscreens (20% average damage) compared with treatments without windscreens (34% average damage). Damage severity was rated on a scale from 0 to 3 (0=no damage, 3=severe damage), with fruit having a se-



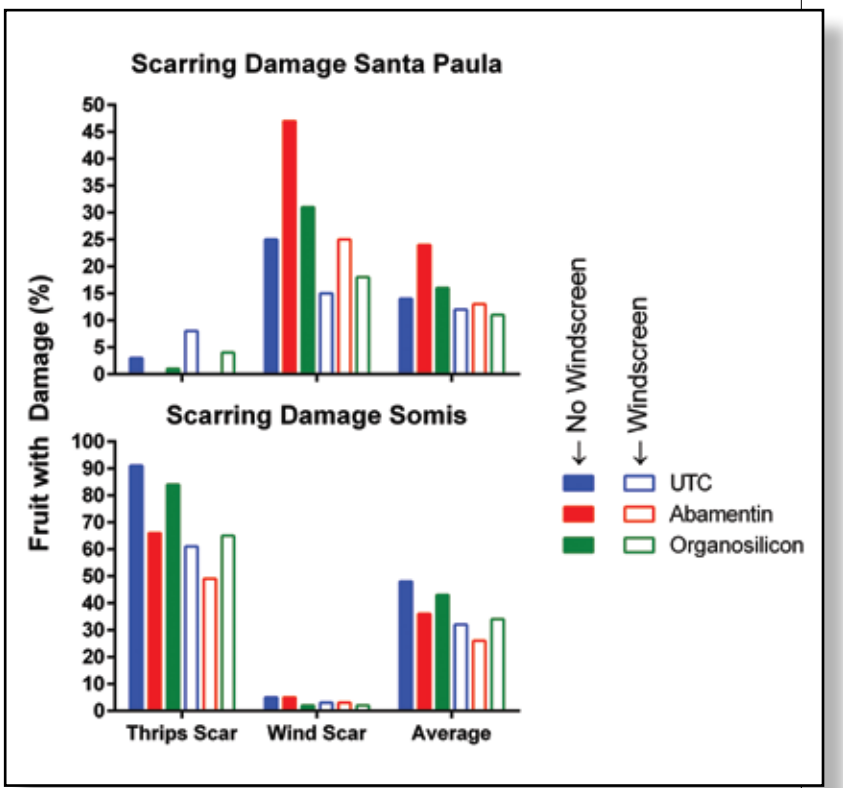
Wind speed data outside and inside the two trial locations in Santa Paula and Somis.



Avocado thrips count data at the two trial locations in Santa Paula and Somis. The dashed line indicates a thrips count of five nymphs per five leaves, which is generally regarded as the action threshold for this pest.

verity rating less than 1 likely being first grade fruit. In terms of damage severity, there were no significant differences among treatments for thrips damage. Treatments without windscreens had an average severity rating of 0.54 for wind scar and treatments with wind screens averaged 0.25. Holden has worked in this grove for several years and noted the wind damage was considerably less in 2020 than what he observed in 2019.

At the Somis location, fruit damage was primarily due to thrips, ranging from 49% to 91% of fruit showing thrips damage across all treatments. On the other hand, wind scar damage at the Somis location was less than 5% in all treatments. Damage severity (Table 2) at this site due to wind was negligible. Damage severity due to thrips was greatest in the untreated control without windscreens and the organosilicon only treatment without windscreens, 1.34 and 1.22, respectively. Interestingly, at the Somis location, thrips populations were lower in all windscreen protected treatments compared with those without windscreens.



Percent of fruit with thrips and wind scar damage at the two trial locations, assessed on September 30, 2020.

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An example of the wind screens erected in the two trial groves in Santa Paula and Somis.

Following the first year of this trial, it is apparent wind speed does influence the damage that can occur to fruit from limb, leaf, and fruit-to-fruit rubbing. The lower average wind speeds at the Somis location and low level of wind scarring suggest there may be a wind speed threshold below which wind speed does not adversely affect the fruit. The second conclusion that can be drawn is that wind screens do reduce the level of fruit damage from winds.

Another factor that may be important, but cannot yet be concluded from these data, is the influence of tree age on wind-induced damage. There was less wind damage in Santa Paula in 2020 than was observed in 2019. Also, the trees at the Somis site are one or two years older than those in Santa Paula. Thus, it cannot be ruled out that as the trees mature, they naturally become more resistant to wind-induced fruit scarring.

Recommendations

This trial will be repeated in 2021 and until the second year of data is analyzed final recommendations cannot be made. However, growers considering planting GEM trees in areas susceptible to strong spring winds may want to conduct their own trials with wind breaks or other windscreens. Remember, wind breaks (trees, walls, or any other barrier) generally have an effective range of 10 times their height. For example, a 10 foot tall wind break will protect trees within 100 feet downwind of the wind break. When considering natural windbreaks, be sure to consider the effect those trees will have on your avocado trees since they will be competing for the same water and nutrients.

Table 2. Damage severity rating of damage caused by avocado thrips and wind at two trial locations assessed on September 30, 2020.

Treatment		Thrips Scar	Wind Scar	Average
Santa Paula Trial Site				
No windscreen	Untreated	0.03	0.33	0.18
	Abamectin 415 Oil	0.00	0.81	0.14
	Organosilicon spreader	0.01	0.47	0.24
With windscreen	Untreated	0.08	0.22	0.15
	Abamectin 415 Oil	0.00	0.31	0.16
	Organosilicon spreader	0.00	0.23	0.12
Somis Trial Site				
No windscreen	Untreated	1.34	0.05	0.70
	Abamectin 415 Oil	0.95	0.05	0.50
	Organosilicon spreader	1.22	0.02	0.62
With windscreen	Untreated	0.89	0.04	0.47
	Abamectin 415 Oil	0.64	0.03	0.34
	Organosilicon spreader	0.98	0.02	0.50

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2020 California Avocado Tracking Study Highlights

The California Avocado Tracking Study has been conducted regularly since the mid-1990s, traditionally every year. The consumer tracking study results help the California Avocado Commission set objectives and performance measures in the annual business plan, some of which are measured by the tracking study results. It also provides a wealth of information that helps the marketing team direct consumer communications.

For the 2020 tracking study, surveys were conducted from August 13 through September 3, and the results were presented to the Commission Board at its November 18 CAC Board Meeting. More than 1,400 avocado shoppers were interviewed from Arizona, California, Colorado, Oregon, Utah and Washington in the West region, as well as from the Central, South and Northeast regions. From these interviews a sample also was balanced to project to the total United States.

Key 2020 California Avocado Tracking Study Learnings

- Avocado purchasers buy avocados fairly regularly: 67% of Californians and 81% of the Commission's "Premium Californian" target consumers say they buy avocados on at least half their shopping trips
- The main reasons consumers buy avocados are for their taste and health benefits
- Being grown in safe conditions is the most important factor avocado shoppers say they consider when choosing which avocados to purchase; expected taste is the second most important factor
- California is the preferred growing region among avocado shoppers in California, the West region and in the U.S. overall (see chart)
- California exceeds Mexico and all other origins on positive product perceptions among avocado shoppers in California and the total U.S. (see chart)
  - 65% of Californians and 53% of avocado shoppers in the U.S. say California avocados are the best
  - While consumers state that California avocados are the most expensive, 53% of Californians and 50% of avocado shoppers in the U.S. say they are worth paying more for

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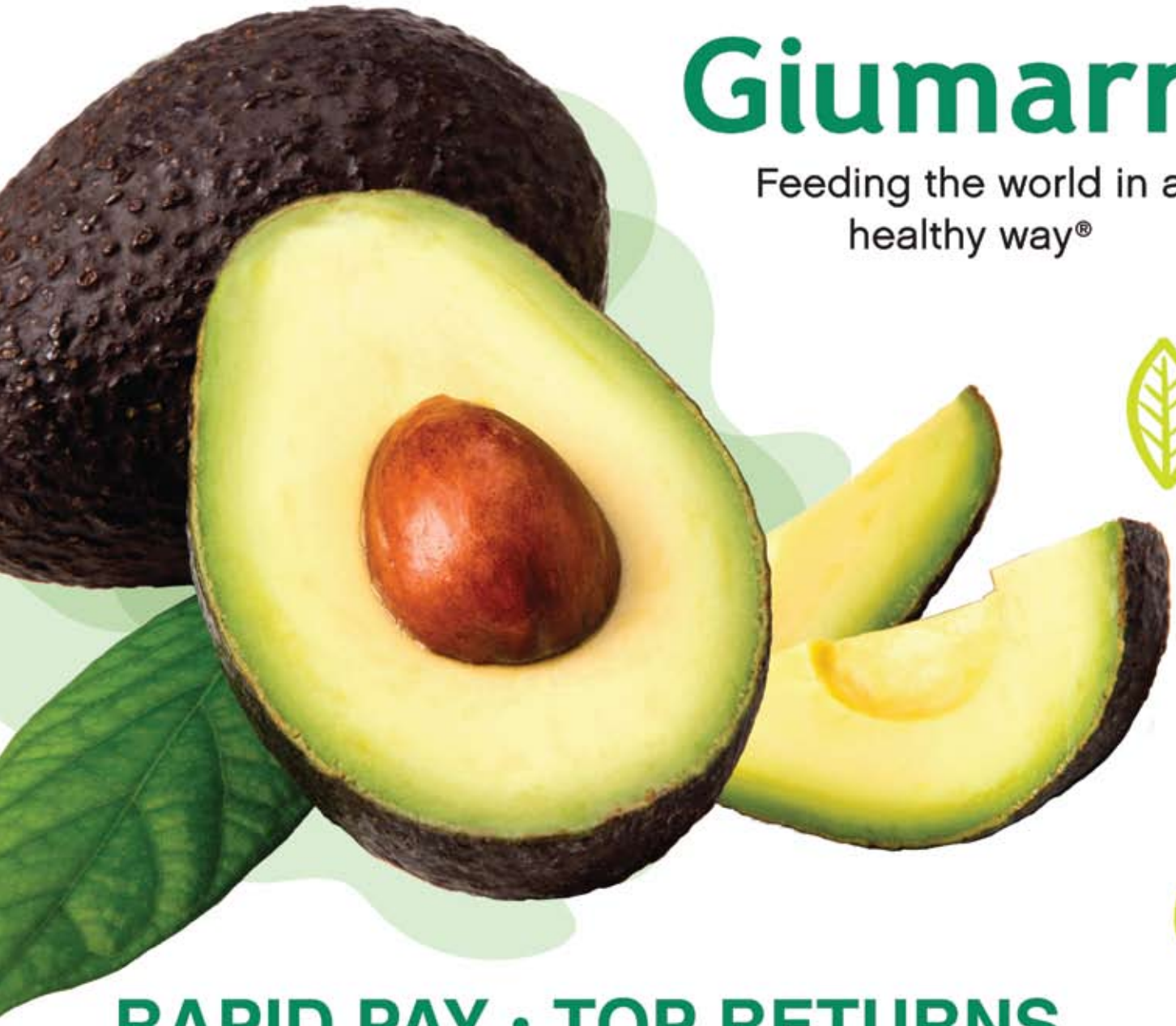

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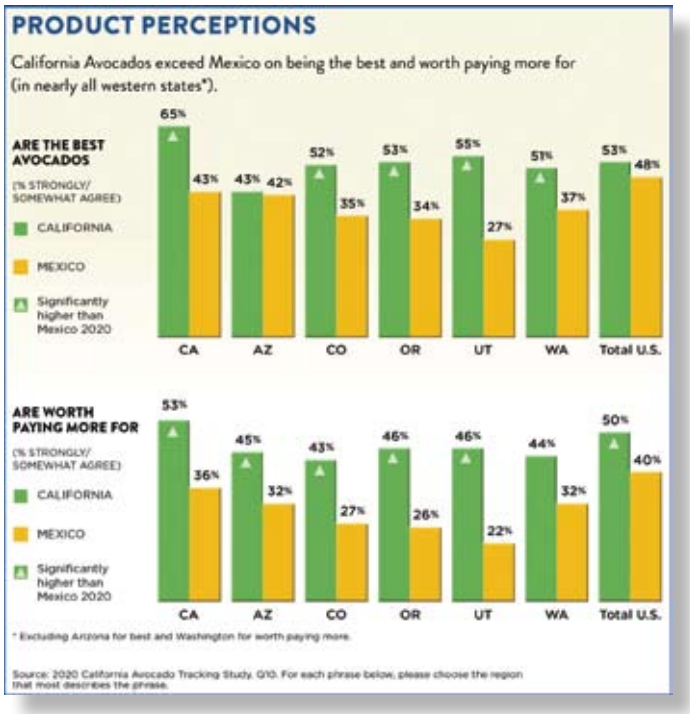
- Unaided awareness of California avocados increased significantly in 2020 to 39%, boosting overall awareness to 83%
- California avocado unaided advertising awareness also increased significantly to 24%, and overall advertising awareness increased to 47%; this is on par with Mexico, which is notable because Mexico's advertising spending is significantly higher than California's
- About 80% of avocado shoppers throughout the country say it is important that the avocados they buy are grown by California farmers; this is significantly higher in California at 86% (see chart)

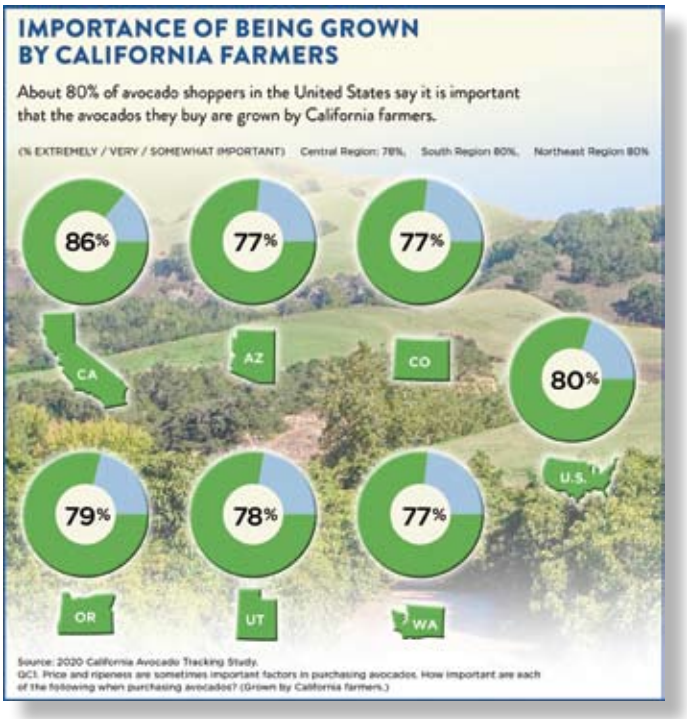


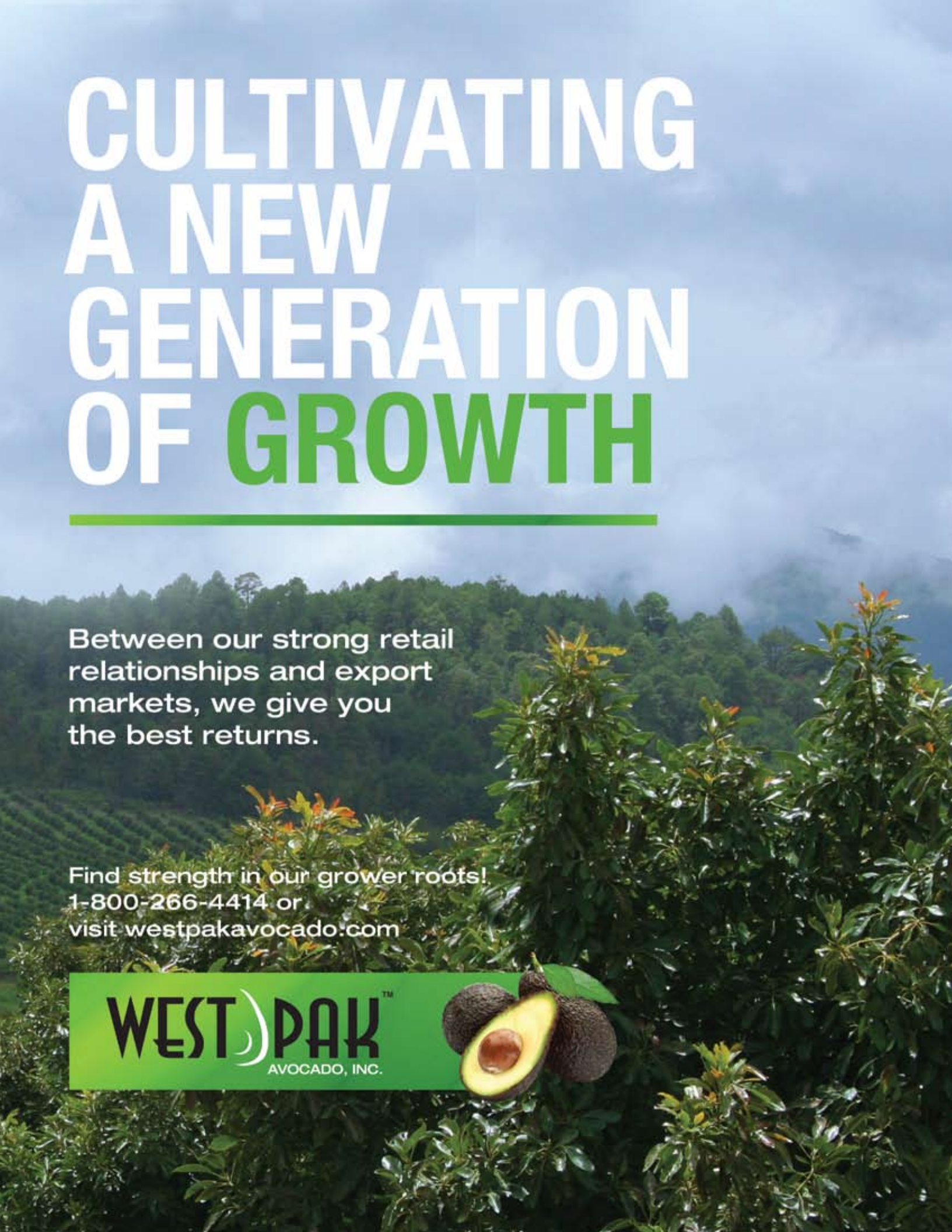
- In 2020 the Commission asked consumers about COVID-19 and if it had any impact on their purchases of avocados, finding that:
  - about 20% said they are buying more avocados; the two main factors are that avocados are comforting and they perceive avocados to be healthy/nutritious and they are more concerned about their health
  - COVID-19 has not affected checking for region for most avocado buyers, but about 35% say they are more likely to check. Among those shoppers 62% say they want to support local/U.S. farmers as much as possible, 59% say they want to help the U.S. economy and 55% say they know the U.S. has the best food safety practices

The Commission shares key information from its tracking studies with avocado handlers and customers, using highlights to encourage retailers to carry California avocados in season. Understanding consumer behavior and attitudes helps the CAC marketing team determine how best to communicate with target consumers, which in turns encourages brand loyalty and purchases of California avocados at a premium price.

Notes on the 2020 California Avocado Tracking Study Methodology

- 15-minute online surveys
- Sample sizes: California 505, other western states (Arizona, Colorado, Oregon, Utah and Washington) about 100 each for a total of 502; non-western markets 405; for the total U.S. the sample was weighted to be representative and the sample size was 530
- Statistical significance was reported at the 95% confidence level
- Sample qualifications:
  - Age 18+
  - 60% female, 40% male
  - Primary/shared grocery shoppers who had purchased avocados in the past year
- Unless otherwise noted, results listed are for the California region

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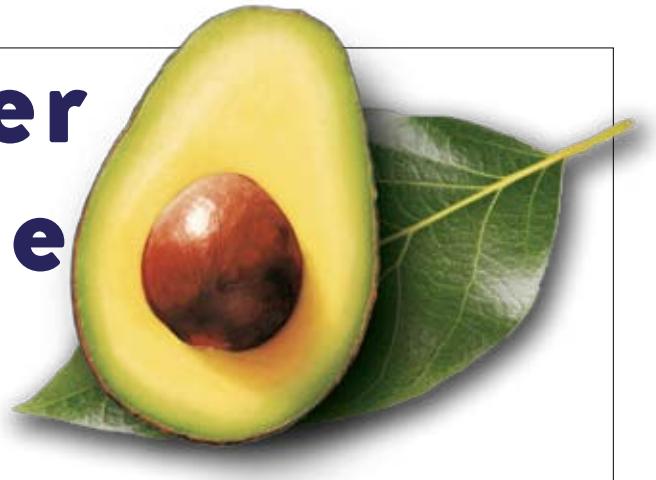

Avocados Help Diversify Mellano & Co.

By Tim Linden

In the mid-1990s, well-known North San Diego County flower grower Mellano & Co. bought a 100-acre parcel adjacent to its flower farm in San Luis Rey that included nine acres of avocados.

"We were just going to harvest that crop of avocados and then convert the acreage to flowers," said Mike Mellano Sr., a member of the second generation of his family to run the operation, which began its life 96 years ago in 1925. "But the production on that first crop worked out well and returned good income for the avocados," which he said were relatively young trees at the time.

He added that the grove was on a steep piece of land that wasn't particularly well suited to flower production. For the past 25 years, the company has continually maintained that grove and upgraded it along the way. Mellano Sr. said the company is constantly re-evaluating its land use and determining which crops survive and which are given the ax, so to speak. Avocados have made the cut during each one of those evaluations. "We keep the grove in good shape using up-to-date techniques," he said. "Our average yield is about 8,000 to 10,000 pounds per acre though we have had a little less in the last couple of years since we embarked on a three-year program to trunk our trees. We have trunked one-third of the trees each year and trunked the final third this season."

Mellano Sr. added that when the company bought the acreage the grove was on a 15-foot by 20-foot planting scheme. Over the years, trees have been replaced and removed and he said the grove is now on a 30-foot by 20-foot schematic, with the oldest trees having been in the ground more than 30 years. The trees have been tall and majestic but in recent years, Mellano & Co. have done aggressive pruning to reduce the height to decrease the labor costs associated with picking the crop.

Mike Mellano and Mike Mellano Sr.

Even at 82 years old and semi-retired, Mellano Sr. is in charge of the avocado grove, helping to determine cultural practices and the picking schedule. Over the years, more pollinators have been added to the grove. He said recent trials with gibberellic acid have produced excellent results relative to the yield and size of fruit. "We apply it when the fruit gets

to the cauliflower stage as recommended," he said.

Mellano Sr. is a fan of picking the fruit early in the season to get it off the trees and allow for the following year's crop to have a clear path to be the best crop it can be. "I like to do an early size pick and then a second one before stripping the grove in May," he said. "Everyone has different ideas. We get pretty good production, so it appears that what we do works pretty well."

The company also closely monitors the salt content of the well water that is used on the trees. For 2021, he said the lack of rain means more salt in the groves from their well water. Consequently, he expects to use more district water this year than in past seasons.

Mellano Sr. gets a lot of help from two growing managers, Juan Paz and Ken Taniguchi, who serve as the primary avocado growers. "They each have been here about 40 years and really know what they are doing," he said, adding that the company also is looking to the future and has had several interns from Cal Poly Pomona over the years, two of whom have been hired as full time farm managers, Jess Williams and Max Lasiter, to help back up the long time managers.

Though the avocados are clearly different than the flower crops, Mellano said they grow right next to them and are considered just part of the farm with employees handling day to day cultural practices interchangeably.

It is the flower business that has been the hallmark of Mellano & Co. for almost a century. Giovanni Mellano immigrated to the United States from Italy in 1921 to Santa Cruz in Northern California. Ultimately, he moved down to the Los Angeles area, began growing flowers on six acres in Dairy Valley (now called Cerritos) and started a floral distribution company at the Los Angeles Flower Market, which is still in operation today.

For decades Giovanni was at the helm of the family business. In the late 1960s, two of his sons and a son-in-law –Mike Mellano Sr., Johnny Mellano and Battista Castellano – took over the operation. Soon thereafter, the growing operation moved to the San Luis Rey area of North San Diego County. Today, the farming operations the family manages, including the avocado grove, have swelled to more than 500 acres.

There are now 10 cousins of the third generation, which now own and run the operation. Michael Anthony Mellano, one of Johnny's sons is the CEO and president. Several others in that generation have executive positions or are on the board. Mellano & Co. has wholesale floral operations in Los Angeles, Carlsbad, Orange County and Las Vegas.

CEO Michael Mellano said grower, wholesaler and bouquet manufacturer are the best descriptors of the floral operation today. Over the past several decades, off-shore suppliers have taken over about 80% of the U.S. cut-flower business. Colombia and Ecuador were the original foreign suppliers, but they have since been joined by Mexico, Kenya and Ethiopia.

To survive, Mellano & Co. has gotten creative. In fact, one of their biggest customers every year are the float builders in the famous January 1 Rose Parade in Pasadena. Of course, that was a casualty of the coronavirus pandemic and did not occur this year.

Michael Mellano said federal funds through the coronavirus relief bills helped the company to stay in business and keep many of its employees on the payroll but 2020 was a tough year.

Along with the Ecke family of poinsettia fame, Mellano & Co. runs the farming operations at The Flower Fields, a 50-acre agro-tourism flower farm in Carlsbad. The 2020 season, which runs from about March 1 through Mother's Day, had to be shut down because of COVID-19. Typically, more than 250,000 visitors come to the farm during its season.

Speaking to FTG on the first day of March 2021, Michael Mellano was hopeful that the 2021 agro-tourism season would proceed without interruption. He also expressed optimism that as vaccines become more available, normal life will return along with the many events that are the lifeblood of the floral industry. "What's a party without flowers, just a gathering," he asked and answered. "After Mother's Day we are optimistic that the wedding business will return with all those delayed from last year plus the new ones this year giving a big boost to the floral industry."

Turning his attention back to avocados, Michael Mellano said the fruit "has been a good crop for us." The professional management has led to solid yields and good returns. The family and family business has a strong alliance with both the University of California at Riverside and Cal Poly Pomona, which it often uses to its advantage on both its flower and avocado crops. Mellano & Co. is a willing cooperator when researchers from those two universities are looking to test out various theories. He credits that association with helping the company greatly improve its avocado production over the years and keeping the crop as a good contributor to the Mellano & Co. portfolio.

The Mellanos are an educated group with many degrees, including advanced degrees, earned by members of the second and third generation. Mike Mellano Sr. received his graduate degree in plant pathology from University of California at Riverside in 1969 and was expecting to have an academic career, but he joined the family operation instead. CEO Michael Mellano also has a Ph.D. in plant pathology from UCR as does his wife, Valerie Mellano, who had a long career at UC Cooperative Extension and is currently chair of the Plant Sciences Department at Cal Poly Pomona.

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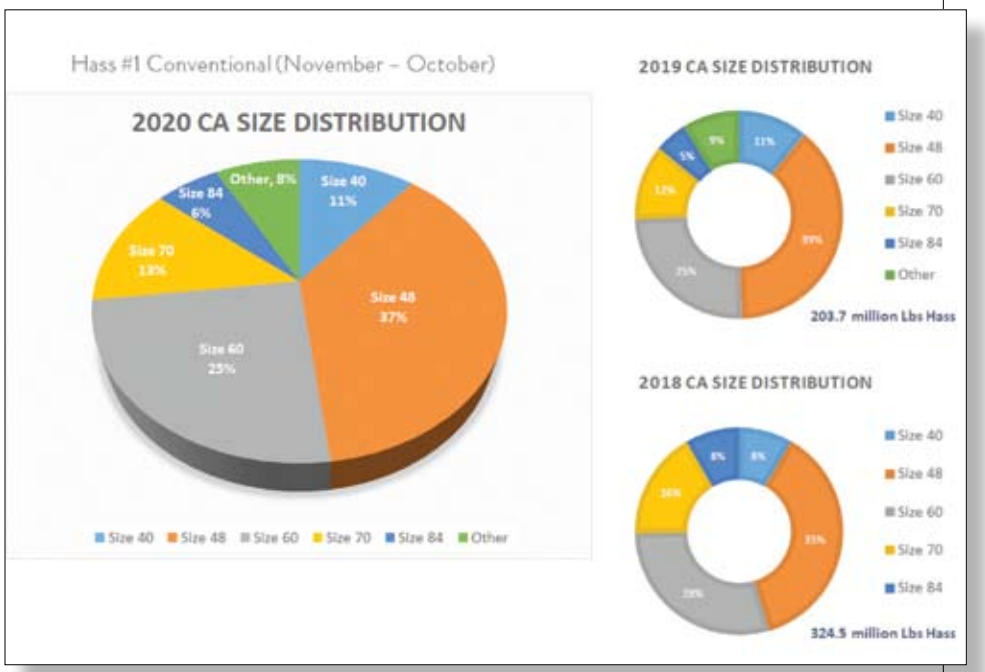
California Avocados Perform Well Despite Tumultuous Year

At first blush, the high-volume 2020 California avocado season may appear to have underperformed in comparison to other high-volume years. However, a closer look at the data presents a more accurate representation of the season. Not only did the California avocado industry successfully move an added 150 million pounds of California fruit in 2020 at prices comparable to other large-crop years, but it did so in a season when total U.S. avocado volume reached 2.8 billion pounds, a high percentage of small fruit significantly impacted price and out-of-home consumption opportunities were restrained by COVID-19 protocols.



California avocado growers recorded 376 million total pounds and reported the fourth highest crop value at $411.5 million, just $800,000 less than the third highest crop value recorded in 2015-16 — a season in which 25 million more pounds of fruit was produced. The 2020 average price per pound was reflective of similarly sized crop years: $1.10 in 2020 (376 million pounds), $1.13 in 2018 (338 million pounds) and $1.09 in 2016 (401 million pounds).

If we compare California's most recent high-volume year (2018) with 2020, the early 2020 season outpaced 2018. The first half of the 2020 season averaged $1.239/pound at 115.8 million pounds, while 2018 recorded 114.5 million pounds and an average price of $1.067 during that same time frame. The second half of 2020 showed lower per pound prices than in 2018 ($1.031 versus $1.169) but the additional volume of the latter half of the 2020 season (245.9 million pounds versus 209.7 million pounds) led to strong returns as the Commission's robust California avocado peak- and late-season promotions were able to successfully move a significantly larger crop during this time frame.

In 2020, growers also benefitted from a crop with a greater percentage of large size fruit during a season in which an excess of small fruit was imported to the United States, resulting in decreased pricing across all sizes. According to Hass Avocado Board data, collected in February 2021, in both 2018 and 2020, the U.S. markets had a large share of Hass 60s and smaller fruit — about 593 million pounds in 2018 and 592 million pounds in 2020. However, in 2018 there was a significant volume of large 40s and 48s (445 million units) and extra large 36s and larger (33 million units) to offset the volume of smaller fruit. In

comparison, in 2020 there was significantly less large fruit available with just 372 million units large 40s and 48s, and 31 million units extra large fruit. While in 2018 55.3% of the volume of Hass fruit was small, in 2020 that percentage increased to 59.5%, representing an increase of 260 million pounds of small-sized fruit. This glut decreased pricing with $.82 average retail prices for 60s and smaller in 2020 as compared to $.88 in 2018. That price differential is evident in the final retail dollars — in 2018 small fruit secured about $525 million in sales while in 2020 that number was $485 million.

In light of a pandemic-induced change in shopping patterns, as well as more small fruit being available, HAB reported a marked increase in bagged fruit sales. In 2018, 663 million retail units were sold, in 2019 the figure rose to 759 million retail units and in 2020 the volume leapt to 1.1 billion. Although the average retail price for bagged fruit in 2020 was respectably higher than in 2018 ($1.07 versus $.97), it also was notably lower than in 2019 ($1.19).

There is evidence the Commission's years-long investment in promoting peak California avocado season to targeted consumers, retailers and foodservice partners continues to pay off even during years in which a high volume of fruit is available in the U.S. market and California crop volume also is high. Keeping in mind the added 200 million pounds that flooded into U.S. markets, coupled by the excess of small fruit, the 2020 and 2018 price figures are remarkably comparable. During the non-California season in 2020, the average selling price/unit was $1.06; in 2019 it was $1.09. The California season average (March – August) was the same for both years at $1.11.

And, while the Commission focuses marketing support on targeted retailers and foodservice operators in California and the west, it also supports loyal customers outside the west who meet the tiered marketing support criteria. As a result, in 2020, the Commission reported a f.o.b. price advantage of California avocados within California at an average +8% over imports from March – September 2020, with a high of +29%. Likewise, outside the state, California avocados delivered an average f.o.b. price advantage of +5% over imports, reaching as high as +19% from March – September 2020.

By April Aymami
Industry Affairs Director

CAC Releases Updated 2021 Crop Volume and Harvest Projections

In December 2020, California Avocado Commission staff conducted a survey of AMRIC Handlers requesting crop volume and harvest timing projections for the 2021 crop year. The results of those surveys yielded a total crop volume of 317 million pounds, all varieties, with projections of April through July for peak harvest volumes. Due to weather events occurring in December 2020 and January 2021, CAC conducted a second pre-season survey in mid-February to ascertain the impact to crop volume and harvest projections. The February 2021 survey resulted in a reduction of 25 million pounds to the Hass crop, bringing the pre-season estimate to 292 million pounds for all varieties. Despite this 8% reduction in crop volume, there is minimal impact expected to the peak California avocado season of April through July and even into August, due to a later start to the season than originally anticipated.

While the early-season crop harvest was minimal in January and early February, stabilizing market conditions in late February and March led to increased interest from California growers to begin harvesting. As of week ending April 4, 2021, calendar year-to-date harvest totaled 35 million pounds, with more than 63% of that volume picked during the preceding three weeks. With just over 257 million pounds left to be harvested for the season, the updated 2021 crop projections indicate peak California season has remained unchanged from the December 2020 projections, with promotable volume expected from April into August.

Included here is a summary of the February 2021 AMRIC Handler survey responses and updated harvest projections.

2021 California Crop Harvest Projection						Feb 2021 Handler Survey Hass Distribution
Month	Hass	Lamb	Gem	Other	Total	
Jan	186,100	-	-	199,600	385,700	0.1%
Feb	3,455,900	-	-	163,300	3,619,200	1.2%
Mar	22,143,800	-	-	53,500	22,197,300	7.9%
Apr	44,346,800	1,100	493,300	37,100	44,878,300	15.8%
May	53,055,200	21,500	698,100	27,700	53,802,500	18.9%
Jun	55,031,700	286,700	695,200	198,100	56,211,700	19.7%
Jul	49,402,300	4,364,100	105,500	146,100	54,018,000	17.6%
Aug	33,859,300	2,755,400	4,300	51,500	36,670,500	12.1%
Sep	15,952,200	1,343,400	3,600	69,600	17,368,800	5.7%
Oct	2,566,700	226,100	-	12,300	2,805,100	0.9%
Nov	-	1,700	-	3,900	5,600	0.0%
Dec	-	-	-	37,300	37,300	0.0%
Total	280,000,000	9,000,000	2,000,000	1,000,000	292,000,000	100%

Hass Volume Estimate Range

Low: 246 MM

High: 292.7 MM

Lamb Hass Volume Estimate Range

Low: 7 MM

High: 11.3 MM

GEM Volume Estimate Range

Low: 1.75 MM

High: 2.8 MM

2021 Updated Crop Estimate

Hass: 280 MM

Lamb: 9 MM

GEM: 2 MM

Other: 1 MM

Total: 292 MM

CAC will conduct the mid-season grower crop survey, as well as AMRIC Handler survey, in April 2021 to get an update on total crop volume and make any necessary adjustments to weekly harvest projections. The results of these surveys will be available in May 2021.

2021 California Crop Weekly Harvest Projection
Weekly Crop Movement vs. Distribution Projections
All Varieties

	4-Year Historical Forecast	AMRIC Handler Forecast	Industry Adjusted	
Week Ending (CAC Week)	Feb 2021 Crop Estimate	Feb 2021 Update	AMRIC Harvest	AMRIC Shipments
Jan 10 - (10)	59,300	18,400	8,096	38,858
Jan 17 - (11)	374,500	151,100	10,120	40,143
Jan 24 - (12)	628,400	234,300	433,768	436,739
Jan 31 - (13)	1,564,900	492,600	244,858	52,300
Feb 7 - (14)	1,991,800	998,000	245,876	182,567
Feb 14 - (15)	1,594,600	760,100	557,454	234,182
Feb 21 - (16)	1,837,000	864,400	1,513,754	482,776
Feb 28 - (17)	3,256,600	1,540,800	3,522,813	971,445
Mar 7 - (18)	4,301,000	4,864,700	3,735,220	1,930,776
Mar 14 - (19)	5,419,100	6,131,000	2,754,398	3,027,707
Mar 21 - (20)	5,998,500	6,786,500	4,935,401	4,288,334
Mar 28 - (21)	3,786,700	4,285,100	7,953,721	4,682,086
Apr 4 - (22)	6,053,600	5,543,400	9,303,883	5,835,962
Apr 11 - (23)	8,227,200	7,534,200	-	-
Apr 18 - (24)	10,400,300	9,535,400	-	-
Apr 25 - (25)	10,239,300	9,391,000	-	-
May 2 - (26)	13,899,900	12,744,300	-	-
May 9 - (27)	14,122,800	13,931,900	-	-
May 16 - (28)	13,248,600	13,069,800	-	-
May 23- (29)	13,592,700	13,412,300	-	-
May 30 - (30)	13,440,700	13,258,500	-	-
Jun 6 - (31)	13,560,100	15,606,100	-	-
Jun 13 - (32)	11,110,400	12,778,600	-	-
Jun 20 - (33)	11,569,600	13,329,400	-	-
Jun 27 - (34)	12,497,500	14,352,700	-	-
Jul 4 - (35)	12,296,000	11,588,400	-	-
Jul 11 - (36)	12,701,300	11,485,000	-	-
Jul 18 - (37)	12,037,900	10,889,300	-	-
Jul 25 - (38)	11,387,100	10,282,700	-	-
Aug 1 - (39)	8,597,400	9,642,600	-	-
Aug 8 - (40)	6,822,400	9,589,900	-	-
Aug 15 - (41)	6,045,000	9,161,700	-	-
Aug 22 - (42)	6,040,200	9,220,000	-	-
Aug 29 - (43)	5,725,100	8,568,900	-	-
Sep 5 - (44)	4,999,500	4,885,300	-	-
Sep 12 - (45)	4,032,400	3,940,300	-	-
Sep 19 - (46)	3,232,900	3,160,800	-	-
Sep 26 - (47)	2,642,700	2,579,800	-	-
Oct 3 - (48)	2,738,200	2,672,700	-	-
Oct 10 - (49)	2,209,400	1,145,200	-	-
Oct 17 - (50)	1,428,600	710,400	-	-
Oct 24 - (51)	878,900	442,100	-	-
Oct 31 - (52)	782,900	377,400	-	-
Nov 7 - (1)	974,700	1,700	-	-
Nov 14 - (2)	844,800	-	-	-
Nov 21 - (3)	722,200	3,900	-	-
Nov 28 - (4)	640,200	-	-	-
Dec 5 - (5)	616,900	-	-	-
Dec 12 - (6)	532,700	16,000	-	-
Dec 19 - (7)	75,700	-	-	-
Dec 26 - (8)	104,500	8,700	-	-
Dec 31 - (9)	115,300	12,600	-	-
Season-to-Date	36,866,000	32,670,400	35,219,361	22,203,872
% of Crop	13%	11%	12%	8%
Crop Size	292,000,000	292,000,000	Left to Harvest	Left to Ship
Crop Variance	(1,646,639)	2,548,961	256,780,639	269,796,128

California AvoTech

By Jeff Wasielewski
Extension Agent, Commercial Tropical Fruit, University of Florida, Institute of Food and Agricultural Sciences, Homestead, FL

& Jonathan Crane
Professor and Tropical Fruit Crops Specialist, University of Florida, Institute of Food and Agricultural Sciences, Tropical Research and Education Center, Homestead, FL

The Latest on Laurel Wilt

In February of this year, scientists and Extension professionals from the University of Florida put on an international conference to discuss the latest findings on the devastating laurel wilt disease. The purpose of this conference was to offer updates of both basic and applied research on the laurel wilt pathogen and ambrosia beetle vectors to avocado producers, scientists, organizations, institutions and other interested parties; to offer Florida avocado producers and others the opportunity to attend an online meeting focused on laurel wilt and ambrosia beetle vectors affecting avocado production; to focus attention on this devastating insect-disease complex that may have profound consequences for other avocado production areas and regions; and finally, to increase U.S. and foreign research and extension collaborations.

Laurel wilt is caused by a fungus called *Raffaelea lauricola* and it is vectored by tiny ambrosia beetles. The ambrosia beetles carry and farm the fungus to feed their young. Once they find a suitable tree, they hollow out galleries to grow the fungus and raise their young. Trees in the Lauraceae, such as avocados, are hypersensitive to the presence of the fungus and try to wall off the disease, which is found in the xylem portion of the tree. Because the xylem is responsible for transporting water to the tree's leaves, if it is blocked the trees wilt and die. The presence of the disease sets off a chain reaction where the tree blocks the xylem so aggressively and effectively the tree can no longer transport water to its leaves resulting in wilt and rapid death.

Once the disease is in an orchard, it can move by beetle activity or through root grafts among adjacent trees. If trees in the orchard are old enough, their roots are most likely grafted together. Root grafting allows the disease to easily move from one tree to its neighbor and you will often see trees die one by one right down a row. There seems to be no resistance found among different cultivars or races of avocado as every cultivar of avocado that has been exposed to the disease has died.

At this point, there is no cure for the disease and there are no measures that will effectively prevent the disease from attacking individual trees or orchards. There has been some work done with injecting trees with a prophylactic fungicide before the disease arrives. This has been met with mixed results, although some growers continue to use the fungicide and have had good results. Growers are advised to frequently scout their groves and to immediately rogue trees that show symptoms of wilt and beetle activity. Trees that are removed should be immediately destroyed through chipping or burning. Some work also has been done to show that ambrosia beetles prefer shade, so well pruned orchards have less chance of being attacked by beetles.

The University of Florida scientists and Extension professionals that participated in the February laurel wilt conference updated the industry on the latest on laurel wilt. Tropical fruit Extension agent Jeff Wasielewski began the day by explaining a little about the disease and the purpose of the conference. He mentioned that the work done by the UF scientists on this disease was supported by the USDA National Institute of Food and Agriculture.

Dr. Jonathan Crane, tropical fruit specialist, spoke on how laurel wilt has affected the commercial avocado-growing region in South Florida. More than 140,000 trees have been killed either directly or indirectly by the disease. Avocado production has dropped from more than a million bushels per year in the years 2011 through 2015 to

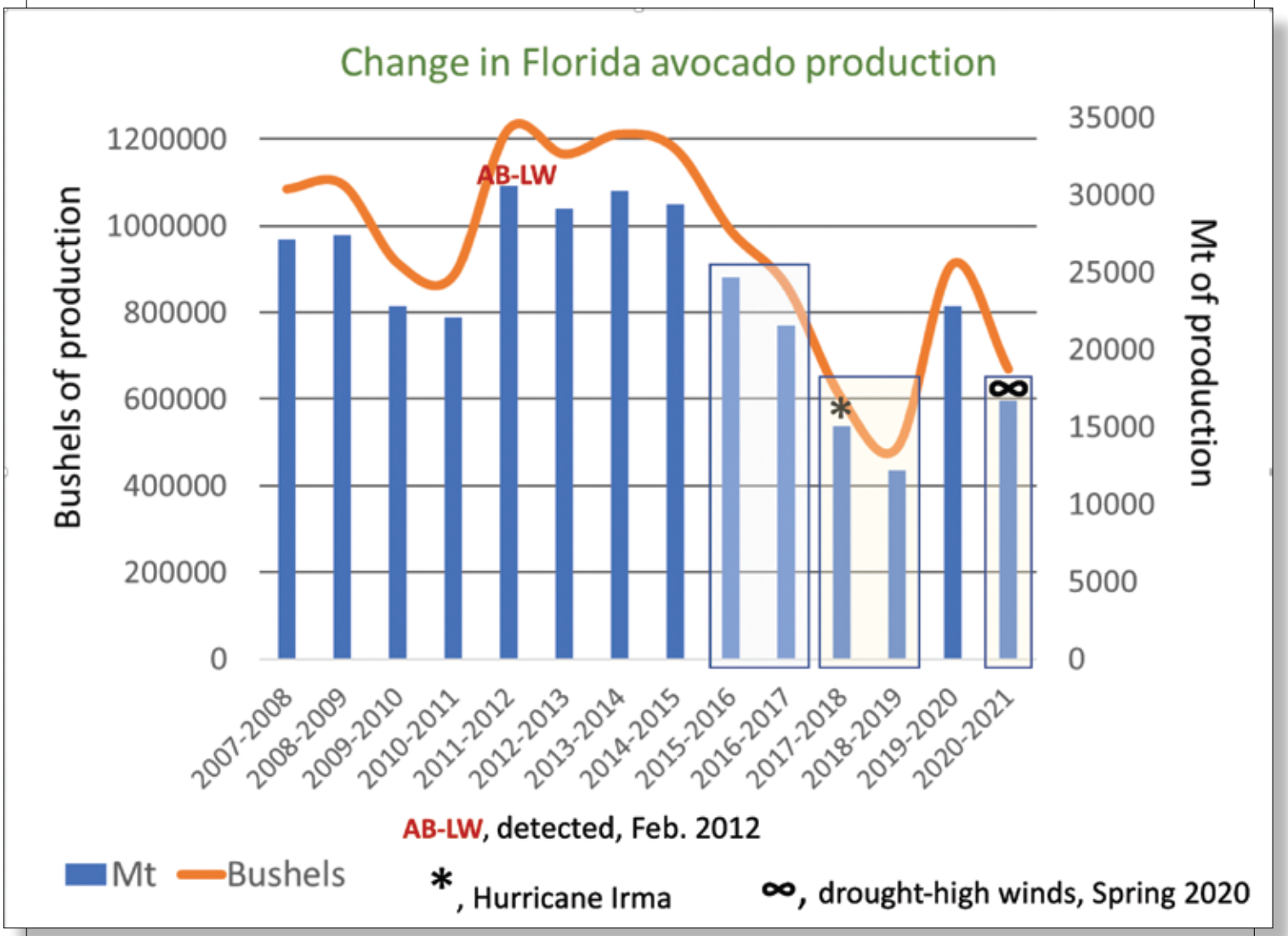


Figure 1.

just over 500,000 bushels in the 2017-2018 season and 600,000 bushels in the 2020-2021 season (Fig. 1). Laurel wilt is not the only reason for the drop in production. These numbers also have been heavily affected by a hurricane that damaged the industry in the 2017-2018 season and poor weather conditions during fruit set in the 2020-2021 season that caused the crop for that year to be less than anticipated. Dr. Crane also talked about techniques used to battle the disease including roguing, pruning, and keeping trees healthy. Dr. Crane also mentioned that as much as 78% of trees lost have been replanted. The replanting of avocado trees appears to be a good sign the industry is still relatively healthy and optimistic.

Tropical fruit entomologist Dr. Daniel Carrillo and Ph.D. candidate Octavio Menocal talked about the different ambrosia beetles that are spreading the disease, as well as how their team has shown the ambrosia beetles that were attacking the avocado trees were different from the species attacking the native Lauraceae trees.

Dr. Bruce Schaefer, plant physiologist, spoke about his studies regarding using different rootstocks and scions to try to find some resistance to the disease. Unfortunately, no pairing has been found that shows any resistance.

Dr. Romina Gazis, Dr. Jeffrey Rollins, and Dr. Pedro Pablo Parra, plant pathologists, spoke about the disease itself and new techniques they are using to learn more about the fungus. Dr. Gazis noted there have been some trees found that tested positive for the disease, declined, and then recovered to the point where they are producing fruit. These trees are being closely monitored and a seedling trial is underway to look for trees with similar attributes.

Fredy Ballen, economist, spoke about the economics of battling the disease. Different price scenarios were presented based on the input a grower is willing to put into an orchard. It was

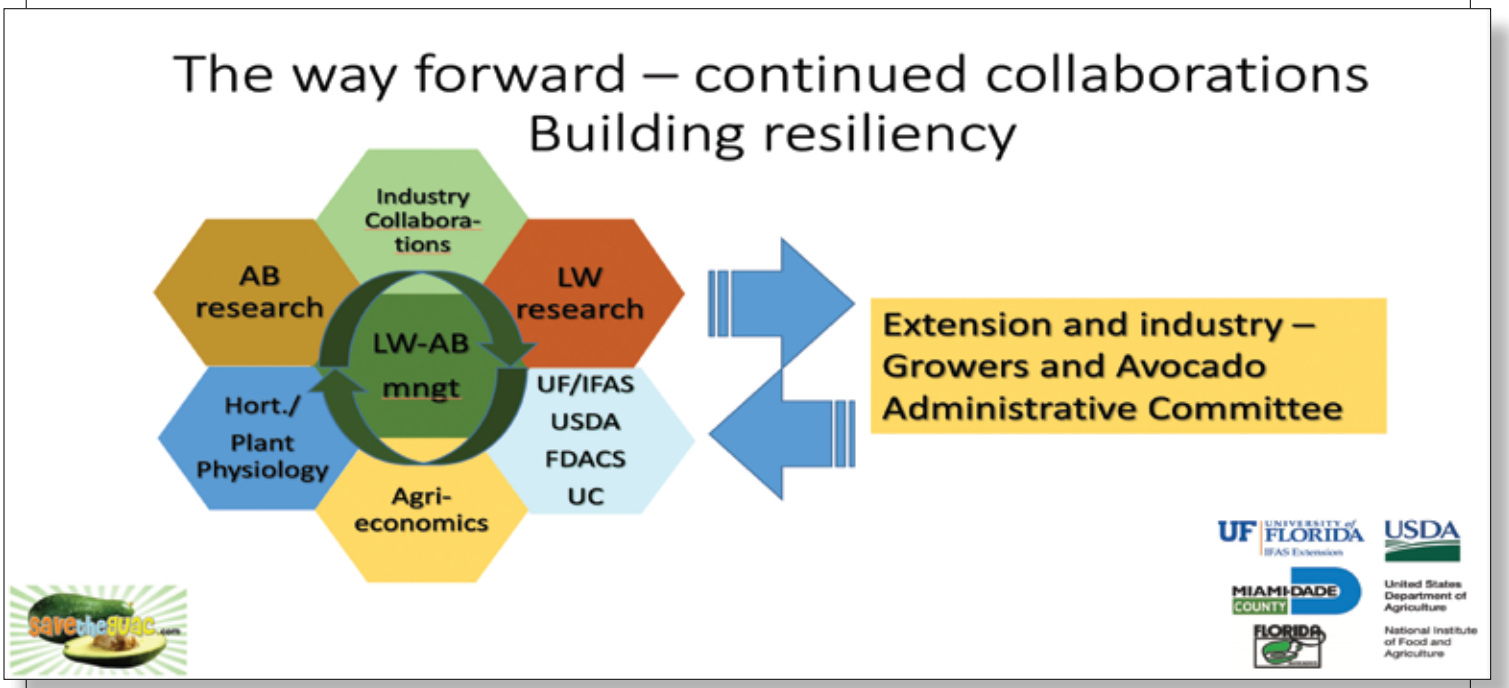


Figure 2.

determined that a higher input of resources into a grove allowed a grower to have a higher output and possibly stave off some of the financial damage caused by laurel wilt.

Entomologists Dr. Lukasz Stelinski and Dr. Kristen Stelinski spoke on the challenges and opportunities of pesticide alternatives for ambrosia beetle management, as well as ambrosia beetle microbial communities associated with the fungus.

The UF scientists and Extension professionals rounded out the day by taking questions and reaching out to growers and professionals from other states and countries to offer their knowledge on this deadly disease. Opportunities to establish working relationships between postdoctoral associates and visiting scientists are being sought to increase the research effort into the control of the laurel wilt pathogen and ambrosia beetle vectors. If your institution is interested in funding a postdoctoral associate and/or visiting scientist to join our research team please contact Dr. Jonathan Crane at jhcr@ufl.edu. It will take everyone working together to combat laurel wilt (Fig. 2).

It has been shown that California has an ambrosia beetle capable of spreading the disease, as well as a native tree, the California bay laurel, *Umbellularia californica*, that would be susceptible to the disease. These two factors will make it easier for laurel wilt to spread to avocado orchards in California.

At the present time, the disease has only spread as far west as eastern Texas. It is possible that the disease could present itself in California at any time if someone brings contaminated wood from Texas to the west, or it could show up over a longer period of time through natural beetle movement. It's thought that ambrosia beetles with the laurel wilt pathogen could move south into Mexico and then come back northwest to the avocado orchards of California.

In any case, it is imperative growers and regulatory agencies in California are ready for the disease and that they have a plan to quickly remove and destroy trees infected with laurel wilt. Having a plan in place now will greatly lessen the impact of the disease on the California commercial avocado industry.

By Tim Linden

Smaller Crop Should Produce Better Pricing

A trio of handlers agreed that the estimated 292-million-pound 2021 California avocado crop appears to be an accurate forecast and it should result in strong pricing throughout the main marketing period of the California crop.

Indeed, the f.o.b. price of avocados rose more than $10 during late February/early March and these handlers expect that there will be continued upward pressure on price as the California season moves forward. On March 10, Del Rey Avocado Company Vice President Patrick Lucy said 48s avocados were returning an f.o.b. price in the mid-$40s with 60s fruit in the mid to high $30s. That early March range bodes well for growers as some have already started size picking and he expects many to follow suit in the spring if the price holds or increases as he believes it will. He predicted that the f.o.b. price for the most desirable fruit will remain in the $40s or above for many months. Mexico, he said, was already showing signs of having consistently less volume in the April through June time frame. If Mexico ships an average weekly volume of 38 million pounds in those weeks (which is expected), a demand exceeds supply situation should await California shippers at least until Peru starts shipping in volume, probably in early June.

Lucy said the prospects are even better for organic California avocados. "We expect the California organic crop to be down 20% from last year and Mexico is already running out." The Del Rey executive speculated that organic 48s could be in the mid-$50s and higher through the early part of the California season. That again should last at least until Peru enters the game.

Rob Wedin, executive vice president of sales for Calavo Growers, had an equally optimistic outlook for the California avocado season. He said the smaller crop, wind damage and lack of rain causing smaller fruit led to a very slow start to the California deal with very few avocados shipped in February. He noted that during the first week of March this year, California growers shipped less than 30% of the volume shipped in 2020. This turned out to be a very good thing as the market price was low in January and most of February. He expects California growers to size pick in March and early April sending only 60s and larger fruit to market.

At the same time, he believes the market will continue to strengthen. Speaking during the second week of March, Wedin said the grove price in Mexico had significantly increased since the beginning of the month indicating that the volume left to pick was less than what might have been expected. "Right now the question is whether Mexico will rebound (with volume)? It doesn't feel that way," he said.

Until Peru puts some pressure on the market with its volume, which will most likely start to hit the U.S. market in early June, Wedin sees only upward pressure on the price. The longtime Calavo executive estimated that volume from that company will be steady from April through August, with July being the heaviest shipping month. During that time, Calavo expects to send about 83% of its fruit to market, getting good prices for all of it.

While there are some accounts across the country that want California avocados and are willing to pay the premium on both the fruit and the freight, Wedin said the "Seattle to Phoenix corridor" will produce more than enough demand for a sizable majority of the Golden State's production.

Gary Caloroso, regional business development director, concurred with the comments of the other two handlers. "We see the crop in the 280-290 million pound range," he said. "We agree with the Commission's forecast. And the smaller crop will absolutely mean better pricing."

But Caloroso does expect Giumarra to stretch its season out to have fruit in both September and October. On pricing, he also agrees with the others. "We are projecting a stronger market moving forward," he said.

He added that how retailers react to the higher f.o.b. price will determine the number and intensity of promotions that California avocados will see in 2021. He said there will be promotable volume available but there will also be very strong demand.

There does appear to be some opportunities for promotions especially with bagged fruit. Consumers showed a preference for bagged avocados, and other bagged produce, during the pandemic. And it does appear that there will be value proposition for bags being used with more number two fruit than usual because of the wind scarring.

By Ken Melban
Vice President of Industry Affairs

USDA Announces Pandemic Assistance for Producers Program

The U.S. Department of Agriculture announced on March 24 that it is establishing the USDA Pandemic Assistance for Producers program to help bring financial assistance to a broader set of producers than in previous COVID aid programs (Usda.gov/media/press-releases/2021/03/24/after-identifying-gaps-previous-aid-usda-announces-pandemic). The new program also will address the gaps and disparities in how previous COVID aid was distributed to producers.

The program consists of four parts. Part one will make at least $6 billion available to broaden assistance to more producers. This will include assistance for:

- Specialty crops, beginning farmers, local, urban and organic farms
- Costs associated with organic certification or to continue or add conservation activities
- Personal protective equipment and other protective measures for food and farm workers, producers, processors and distributors
- Improving the resilience of the food supply chain
- Developing infrastructure to support donation and distribution of perishable commodities
- Reducing food waste

Part two of the program will add $500 million to existing programs. This includes:

- $100 million for the Specialty Crop Block Grant Program
- $75 million for the Farmers Opportunities Training and Outreach program
- $100 million for the Local Agricultural Marketing Program
- $75 million for the Gus Schumacher Nutrition Incentive Program
- $20 million for the Animal and Plant Health Inspection Service
- $20 million for collaborative research between Texas A&M and the Agricultural Research Service that examines the links between agriculture, food production and human health and nutrition
- $28 million for National Institute of Food and Agriculture grants to expand or sustain existing farm stress assistance programs

Part three expedites provisions for carrying out formula payments for Coronavirus Food Assistance Program programs. This includes finalizing routine decisions and processing payments for Noninsured Crop Disaster Assistance Program and Wildfire Indemnity Program Plus payments. Existing programs, such as the CFAP will fall under this new program where statutory authority allows and will be refined to better address the needs of producers.

Part four of the program will reopen CFAP 2 sign up for at least 60 days, beginning April 5, 2021.

Overall, the new program seeks to:

- Improve outreach to small and socially disadvantaged producers
- Get financial assistance to small and medium sized producers, and producers of less traditional crops including specialty crops and organic producers
- Make eligibility more consistent with the Farm Bill

The Commission will keep the industry updated on the latest information as it becomes available.

From left to right: Tasha Boerner Horvath, assemblymember; Ken Melban, CAC; Robert Rivas, Assembly Ag Committee Chairman; Jason Mraz, avocado grower/musician.

Commission Highlights Environmental Contributions of California Avocado Groves

By Ken Melban
Vice President of Industry Affairs

Over the last few months California Avocado Commission staff has forged new opportunities to promote the environmental benefits California's avocado groves provide. These efforts began in November 2020, when the Commission hosted Assemblyman Robert Rivas at Jason Mraz's Oceanside avocado grove. Rivas had just been named chair of the Assembly Agriculture Committee in September and was conducting a statewide agriculture tour. During Chairman Rivas' visit, which lasted nearly two hours, Commission representatives highlighted the tremendous value California avocado groves provide to California by protecting the environment, enhancing the economy, and improving communities.

During the visit we also discussed the challenges California avocado growers face, from increased regulatory costs to foreign competition. Chairman Rivas prepared a thorough report entitled 2020 Agriculture Tour (CaliforniaAvocadoGrowers.com/sites/default/files/RRivas_AgricultureTour_FinalReport.pdf), and in the opening he states: "My goal was to meet with stakeholders across the state and gather perspectives on the needs of California's diverse and productive agriculture industry, which has been seriously impacted by the effects of COVID-19 and recent wildfires. Findings gathered from the tour will help to inform public policy reforms in upcoming legislative sessions to aid recovery, combat the ongoing effects of

Robert Rivas, Assembly Ag Committee Chairman and Jason Mraz, avocado grower/musician.

climate change, and maintain California's agricultural leadership."

Timing is a big part of life, and just ahead of the grove visit, the Netflix documentary, "Kiss the Ground" (KTG), was released, which includes Jason Mraz. KTG focuses on regenerative farming and looks at the negative impacts of tilling and the release of carbon back into the environment. Regenerative farming, in part, focuses on practices that maintain and create healthy soils, thereby sequestering carbon. We had encouraged Chairman Rivas to watch KTG ahead of our grove visit, which he did, and we were able to use that as a springboard to discuss the compelling uniqueness of commercial avocado groves. We highlighted areas like carbon sequestration, the industry's no-tilling of soil, natural leaf litter that creates healthy soils with significant microbial activity the helps sequester carbon, and the reduction in urban sprawl, among other benefits.

We also, strategically, tied in Governor Newsom's key initiative of "Resilience to Climate Change," which was launched just ahead of our grove visit. We advocated the importance for our industry to be recognized and incentivized for the existing contributions California avocado groves provide to a healthy climate. During the visit, the idea of an avocado pilot program was birthed, and the Commission has been working with Chairman Rivas to develop a pilot program intended to preserve and expand ecosystem benefits resulting from avocado production practices including carbon sequestration, fire suppression, air quality, open space, erosion control and groundwater recharge.

Chairman Rivas is considering including the program in "The Food, Farm, and Economic Recovery Bond." These efforts also may prove useful in the future with the current administration, which is considering plans for the United States Department of Agriculture to develop farm-oriented proposals to address climate change.

Finally, because of the initial grove visit, Chairman Rivas invited the Commission to participate in an Assembly Informational Hearing on Environmental Farming in February. Jason Mraz graciously agreed to provide testimony and was an amazing ambassador for our industry. He carried our industry's message well (CaliforniaAvocadoGrowers.com/sites/default/files/Mraz-testimony-2-10-21.pdf). As Chairman Rivas indicated privately during the hearing, "He's [Jason] got members engaged…in a good way."

Chairman Rivas' use of the word "engaged" really ties it all together. The Commission is involved, often behind the scenes, to remain engaged with decision makers who impact growers' businesses. Our goal is always to affect policy, so the outcomes benefit our growers. To be candid, most often the odds are stacked against us, as these types of efforts are difficult and come with no guarantees. But rest assured, we will continue to advocate strongly for the California avocado industry, regardless of our chances for success.

Jason Mraz testifies for Assembly environmental farming hearing.

Telling the California Avocado Story Through Videos

By showcasing California avocado growers like Andy Sheaffer, the Commission builds consumer interest in supporting local growers by purchasing the fresh fruit they painstakingly cultivate.

As our nation adapts to the realities of COVID-19, the California Avocado Commission continues to create new opportunities to engage with consumers, members of the media, and foodservice and retail decision makers in innovative ways. For the 2021 season, newly crafted videos will play an important role in that process.

Sharing the History, Culture and Dedicated Care Behind California Avocados

Prior to the start of the 2021 season, the Commission provided select media contacts who participate in a California avocado-focused online cooking class with a sneak preview of the "California Avocados – History, Growers and Culture" video. The video, which can be viewed at http://bit.ly/hgc-video, showcases the impressive history of California avocados and their influence on California culture and cuisine while taking viewers on a virtual tour of picturesque groves. The video welcomes viewers into the California avocado growing process, illustrating the passion and dedicated work that goes into cultivating the fruit as well as each step in the grove-to-table process. These messages are expected to resonate with members of the media, encouraging them to share the care and dedication that goes into cultivating the locally grown fruit with their readers.

This video was publicly unveiled at the start of the 2021 season when it was posted to the Commission's YouTube channel, the CaliforniaAvocado.com website and shared with CAC's influencer partners. It also will be used throughout the season in online communications, press materials, social media posts and ongoing public relations activities such as the California Avocado Month Recipe Contest and the California Avocado Summer Drive-in Movie promotion.

Because the video provides an up-close-and-personal tour of California avocado groves and the role the fruit plays in quintessential California cuisine, it is educational, entertaining and informative. This combination makes it a powerful tool in driving sales of the fruit, growing awareness of the California avocado season, building interest in purchasing the locally grown fruit and demonstrating the Commission's role as a valued resource and authority for avocado-related information.

Showcasing Culinary Creativity and Versatility to Aid the Foodservice Sector During COVID

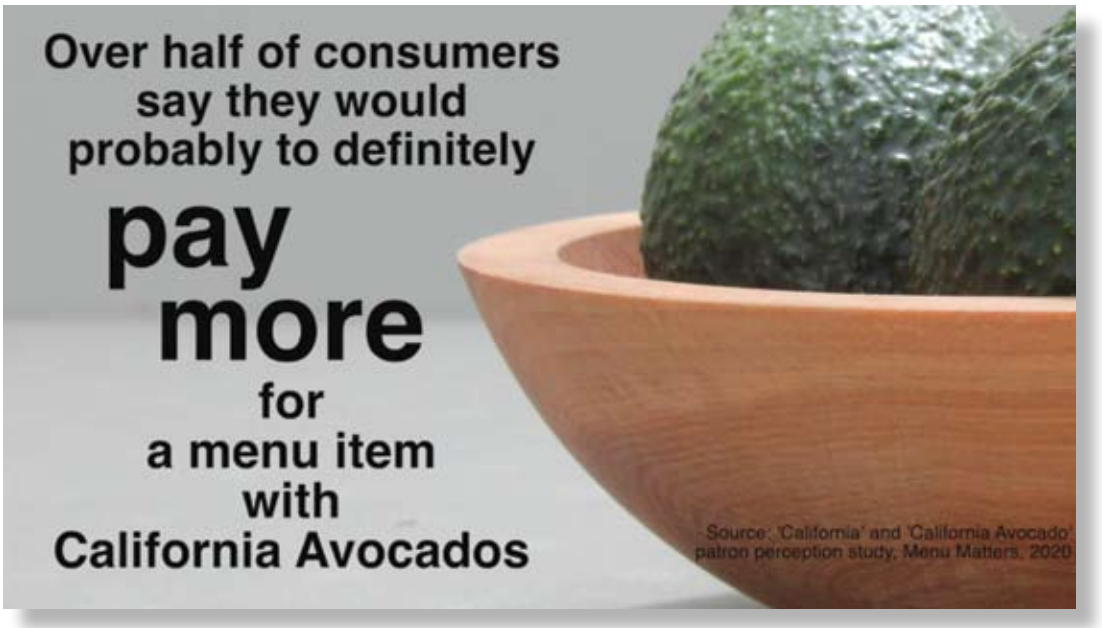
Live food demonstrations and sampling California avocado dishes have long been popular with attendees at foodservice industry events, providing the Commission foodservice team with key moments to engage one-on-one with booth visitors. Last season and again this season, with many industry conferences shifting from onsite to virtual formats, the Commission

Chef Jason Hernandez builds a California Avocado Saigon Sandwich served with a side of California Avocado Fries during the Worlds of Flavor demo session. The sandwich and the fries used similar seasoning to showcase delicious flavor and ingredient pairings with California avocados.

opted to re-imagine those opportunities by creating videos showcasing versatile, inspirational menu ideas that demonstrate how flavors can be paired effectively — and easily — with California avocados. Capitalizing on the video format, the Commission also integrated key research data messaging that supports why California avocados are a premium ingredient, preferred by consumers and how they add value to restaurant menus.

During the California Institute of America's Worlds of Flavor virtual conference, CAC's foodservice team wove together pre-recorded food demonstrations with live introductions and question-and-answer sessions. The food demonstrations, which were held twice a day during the two-day event, showcased how restaurateurs could build global flavors using a local favorite — fresh California avocados.

The Commission also created two videos for the Virtual Flavor Experience conference. Recognizing the challenges the foodservice industry continues to navigate during the



Research data supporting why California avocados are the premium choice was included in a sponsor video at virtual foodservice events.

The care and dedication of the California hand grown process is showcased in the California Avocados – History, Growers and Culture Video.

pandemic, a five-minute video housed on the Commission's sponsor page focused on solutions and services CAC provides chain restaurants and presented research data demonstrating the halo effect of California avocados on the menu.

The second video was shown during a dedicated eight-minute sponsor break and demonstrated chain-friendly innovative dishes paired with creative spices and ingredients. In addition, the video illustrated the value California avocado dishes add on the menu.

After the virtual events, Commission staff scheduled one-on-one discussions with foodservice representatives to discuss flavor and food pairings appropriate for a particular operator's menu profile. Overall, 32 contacts were made at Worlds of Flavor and 38 at the Flavor Experience.

Cognizant of the demands placed on foodservice chains by COVID-19 protocols, the Commission made certain to showcase menu applications in these videos that were designed specifically to help chain restaurants keep their menu fresh, appealing and appropriate with unique to-go and delivery meal ideas. By pairing menu ideation strategies with videos illustrating the promotional programs and services available to foodservice chains, the Commission effectively engaged with targeted chains and is in the process of building partnerships that will help place California avocados on foodservice chain menus.

Hass avocado patent as seen in the California Avocados – History, Growers and Culture Video.

Avocado Establishment & Production Costs & Profitability Analysis in High Density Plantings

By Etaferahu Takele,
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Donald Stewart,
SRA, University of California Agricultural Issues Center and the Department of Agricultural and Resource Economics, Davis
Daniel A. Sumner,
Director, Agricultural Issues Center and Frank H. Buck Jr. Distinguished Professor, Department of Agricultural and Resource Economics, UC Davis

Avocado has been one of the prominent crops produced in Southern California since the early 1950s. California avocado production reached a peak in 1987/88 with about 76,307 acres. At that time, San Diego County was the leading producer accounting for about 60% of the acreage. The California avocado industry has declined from its peak acreage in 1988, but has stabilized over the last four years at 54,000 planted acres. This decrease in acreage is due in part to the expansion of urban development, which has increased the cost of producing the crop and greatly impacted the cost of water – reaching up to $2,000 per acre-foot in 2020. With this in mind, the University of California Cooperative Extension (UCCE) specialists and advisors have conducted experiments and field trials for years in order to investigate and develop strategies and methods for increasing productivity and reducing costs of production to improve grower returns.

In 2011, Dr. Gary Bender, then San Diego County Farm Advisor, initiated a field trial/experiment in Valley Center, CA, to investigate the potential of high-density planting to improve productivity, water consumption and punning strategies. The experiment was conducted at a cooperating grower's field from 2012-2017 with planting space of 10'x10'; 430 trees per acre. The experiment included Hass and Lamb Hass varieties with Zutano trees planted as pollinizers. Details about the experiment and results were published by Dr. Bender (High Density Avocado Production A Method to Improve Yield per Acre, Winter 2018 / From the Grove / page 35), https://www.californiaavocadogrowers.com/sites/default/files/documents/11-High-Density-Avocado-Production-Winter-18.pdf.

High Density Avocado Planting in San Diego (Picture by Gary Bender, Farm Advisor Emeritus, San Diego County).

In 2018, Etaferahu Takele conducted a partial budgeting economic analysis to evaluate the results of the experiment for Hass variety. The partial budgeting analysis showed that high-density planting increased returns. It also showed water consumption to be cost effective when distributed over the high-density yield. This is because the same amount of water was as sufficient for the high density as it was for the traditional planting (20'x15'=145 trees per acre.). Pruning of the high-density planting also showed relatively lower cost compared to the traditional planting when distributed over the high-density yield (Table 1).

Planting Space	Average Yield (3 years)	Costs $/lb. of Yield	
	lbs./Acre	Water	Pruning
High density (10'x10'; 387 Hass trees + 43 Zutano)/acre)	19,173	0.29	0.07
Conventional (20'x20'; 109 Hass trees best managed grove)	9,000	0.62	0.17
Conventional (20'x20'; 109 Hass trees/acre county average)	5,925	0.95	0.26

Table 1. Comparing Costs of Water and Pruning for High-Density Hass Avocado Planting and Conventional Planting.

In 2019-20, an enterprise budget analysis — including investment estimates for orchard establishment and production costs — gave a full picture of the profitability of the high density planting. The study (https://coststudyfiles.ucdavis.edu/uploads/cs_public/b4/3d/b43d58d9-1e91-4a3e-80f9-a2edb14958b0/2020avocadohighdensitysandiegocounty.pdf; Takele et. al, 2020) used the experiment outcome of yield, water consumption and pruning. Other production practices data – such as fertilization, pest and disease management and harvesting – was collected from the collaborating grower. References also were made to the 2011 Sample Establishment and Production Cost avocado study in San Diego (https://coststudyfiles.ucdavis.edu/uploads/cs_public/5a/87/5a87bb11-59b3-4056-a2d6-a6e14507dd84/avocadoconventionalsdr2011.pdf , Takele et. al).

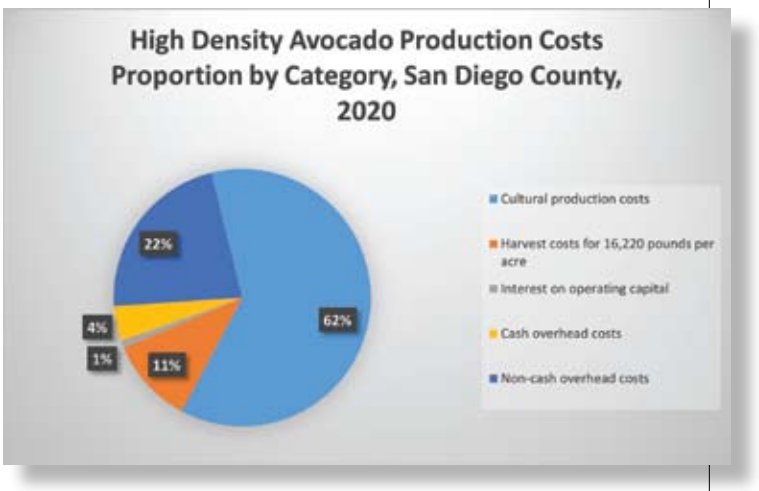
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Yield (pounds)			13,246	25,100	5,541	20,992
Establishment Costs ($)	$29,712	$9,841	$10,969	$18,633	$14,895	$16,804
Returns ($)			$17,187	$29,191	$9,810	$27,069
Establishment Cost After Returns ($)	$29,712	$9,841	$6,218	$10,558	-$5,085	$10,265
Cumulative Establishment Costs ($)	$29,712	$39,553	$33,335	$22,777	$27,862	$17,597

Table 2. High-Density Avocado Yield and Establishment Costs Per Acre.

Orchard Establishment and Production Costs and Returns Analyses

The total establishment cost estimate (the first six years' cumulative costs and returns) for high-density avocado planting in 2020 is $17,597 per acre (Table 2). Though investment in high-density planting is very high ($100,854 per acre cumulative of the six years establishment period), returns during establishment offset about 82.5% of the investment cost.

The annual production cost estimate is $16,233 per acre. The pie graph below shows the proportion of production costs by category. Though water cost accounts for a major part (44%) of the total production cost in the high-density planting, the water cost per pound of yield as mentioned above shows to be less than the conventional planting.



High-Density Avocado Production Costs Proportion by Category, San Diego County, 2020.

Profitability Analysis

Gross Margin and Net Profit: The cost analysis for the high-density planting shows a gross margin of $9,857 per acre. Growers often consider gross margin (or returns above cash operating costs) as profit if there is no debt on the farming operation. Deducting depreciation, gross margin also approximates taxable income. The net returns are often considered as returns to management (because management charges are not included in the cost estimates) are approximately $6,260 per acre.

Break-Even Prices (prices needed to cover costs): Given the average yield of high-density planting, break-even prices needed to cover the costs of production included a gross margin break-even price of $0.78 per lb. and that of total production costs (except management) of $1.00 per lb. In other words, given the average price of $1.39 (the average for San Diego County Hass prices; Agricultural Commissioner report for 2014-17), the enterprise showed a $0.61 per lb. gross margin and $0.39 per lb. net returns.

Range Analyses: To account for variability of prices and yield that may exist among farms, the range analyses in Tables 3 and 4 provide gross margin and net returns. Growers can identify their gross margin and net returns on their yield and prices received. Given the average yield of the experiment (16,220 lb. /acre), gross margin will be positive even if prices fall to $0.89/lb. and net returns will be positive even if prices fall to $1.14/lb.; or given a price of $1.39/lb., gross margin and net returns will be positive even at a yield level of 11,720 lbs./ acre.

Price $/lb.	Yield (lbs./A) of High Density Planting						
	11,720	13,220	14,720	16,220	17,720	19,220	20,720
	$ Per Acre						
0.64	-4,698	-3,901	-3,105	-2,308	-1,511	-715	82
0.89	-1,768	-596	575	1,747	2,919	4,090	5,262
1.14	1,162	2,709	4,255	5,802	7,349	8,895	10,442
1.39	4,092	6,014	7,935	9,857	11,778	13,700	15,622
1.64	7,022	9,318	11,615	13,912	16,208	18,505	20,802
1.89	9,952	12,623	15,295	17,967	20,638	23,310	25,982
2.14	12,882	15,928	18,975	22,022	25,068	28,115	31,162

Table 3. Returns per Acre above Cash Costs at Various Price and Yield Levels.

Price $/lb.	Yield (lbs./A) of High Density Planting						
	11,720	13,220	14,720	16,220	17,720	19,220	20,720
	$ Per Acre						
0.64	-8,294	-7,498	-6,701	-5,904	-5,108	-4,311	-3,514
0.89	-5,364	-4,193	-3,021	-1,849	-678	494	1,665
1.14	-2,434	-888	659	2,205	3,752	5,299	6,845
1.39	495	2,417	4,339	6,260	8,182	10,104	12,025
1.64	3,425	5,722	8,019	10,315	12,612	14,909	17,205
1.89	6,355	9,027	11,699	14,370	17,042	19,714	22,385
2.14	9,285	12,332	15,379	18,425	21,472	24,519	27,565

Table 4. Returns per Acre above Total Costs at Various Price and Yield Levels.

Summary: We developed this study to provide growers and investors information about costs and returns of high-density avocado planting in Southern California. This study answers the question concerning what the investment requirement for high-density planting is, as well as the profitability potential of the investment. This study did not include assessment of land slope requirements for high-density planting.

SoCal natives are bound to love the fresh moves in this California artwork created by a Cal State LA student, paying homage to the legacies that make California so special.

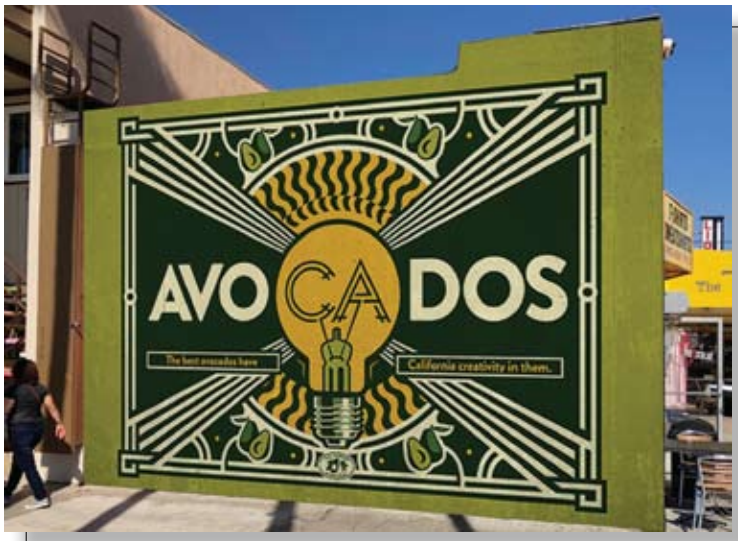
Reaching Targeted Consumers Through Creative Media and Social

The California Avocado Commission's targeted consumers — Premium Californians and Super Users — eagerly await the start of the California avocado season when they can enjoy their favorite fruit at its peak. To generate excitement around the season and build a sense of community among these brand loyalists, the Commission places its creative advertising and shares a wide range of content — videos, recipes, articles — on digital, streaming and social media channels that resonate with these audiences, engaging with on-trend topics, lifestyles and interests.

The consumer media program will reach targeted consumers in Arizona, California, Colorado, Nevada, Oregon, Utah and Washington. Pre-season media launched on February 8 with a series of video ads released on the Commission's YouTube channel. As consumers view foodie and trending content on this platform, Commission videos featuring "The best avocados have California in them" creative were promoted on their screens. The Commission expects strong and positive results from its YouTube content based on the success the channel had in 2020 when the Commission secured nearly 22 million views and recorded the highest view rates with YouTube videos served on television.

In-season media launched on March 8, with custom California avocado content featured on Food 52, a premium food partner, and PureWow, a women's lifestyle digital platform. Content will be available in several formats including videos, recipes, editorial articles, social media posts on Pinterest and podcast sponsorships. As the season progresses, custom content also will be shared via GumGum, an aggregator of premium websites.

Based on the exceptional power of streaming video in reaching California avocado target consumers, the Commission will again partner with top streaming partners Hulu, POPSUGAR and Viant to deliver campaign video ads. In 2020, Hulu delivered 43 million impressions, 17% higher than expected.



By partnering with Los Angeles-based design group, Studio Number One, CAC will bring one of their California artworks to life as a painted mural, as shown here, in the heart of Venice, CA, where consumers will see 'The best avocados have California creativity in them'.

Via POPSUGAR, pre-roll video on YouTube last season delivered a strong 73% video completion rate, well beyond the 20% benchmark. Viant garnered 26 million impressions and a strong video completion rate of 60% in 2020.

To reach premium culinary audiences, the Commission has established new partnerships this year with the Food Network and Tremor Video. California avocado commercials will play exclusively within Food Network programming as pre-roll and mid-roll videos. On Tremor, targeted video ads will run through Connected TV and second-screen devices and will include "Where To Buy" banner overlays that drive consumers to the closest retail location carrying fresh California avocados.

The Commission also will engage with Premium Californians as they listen to their favorite music on Pandora and Spotify, including placing new ads on Pandora's in-car platform to reach consumers while they are in their vehicles. The consumer media campaign will be rounded out in June by out-of-home placements in four major California markets — Los Angeles, Orange County, San Diego and San Francisco — which are expected to garner 14.9 million impressions.

CAC also will host robust pre-season and in-season social media campaigns on Instagram, Facebook, Twitter, YouTube and Pinterest, as well as in the Commission's email newsletter and on the Shop.CaliforniaAvocado.com online merchandise shop.

Pre-season social content will feature enticing recipes, how-to information and playful messaging to spark excitement about the upcoming season. This includes new video assets featuring unique artistic expressions of "The best avocados have California in them" campaign, as well as new artistic takes on this campaign created by California State University students. These creative videos, released during the pre-season, will be shared on a rolling basis during the California avocado season.

Throughout the season, the Commission will utilize its social media channels to engage fans with compelling recipes, how-to and culinary social posts that celebrate California Avocado Month, provide consumers with unique California avocado entertainment ideas for the summer holidays and keep the local premium fruit top-of-mind. To help consumers easily locate California avocados, relevant store locator information, including links to the Commission's online store locator tool, will be paired with the social posts. Instagram Story quizzes and GIPHY stickers will engage consumers playfully during the height of the season, while posts featuring California avocado-branded gear will encourage consumers to purchase their own so they can share their love of the fruit whether they are on the beach, at home or on the trails.

To ensure the Commission produces relevant and engaging content, the marketing team will utilize Sprout Social to monitor social media conversations and trends and streamline the team's ability to communicate with fans on its various social media platforms. With an emphasis on the quality of content, not quantity, the Commission will measure engagement rate metrics, click-thru rates, views and overall content performance throughout the season — adjusting social media posts as needed to ensure they build brand affinity by remaining relevant, informative and entertaining for California avocado targeted consumers.

CAC plans to showcase a variety of artwork from "The best avocados have California in them" campaign through outdoor media placements in areas with high vehicle and foot traffic, as shown in this example.

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