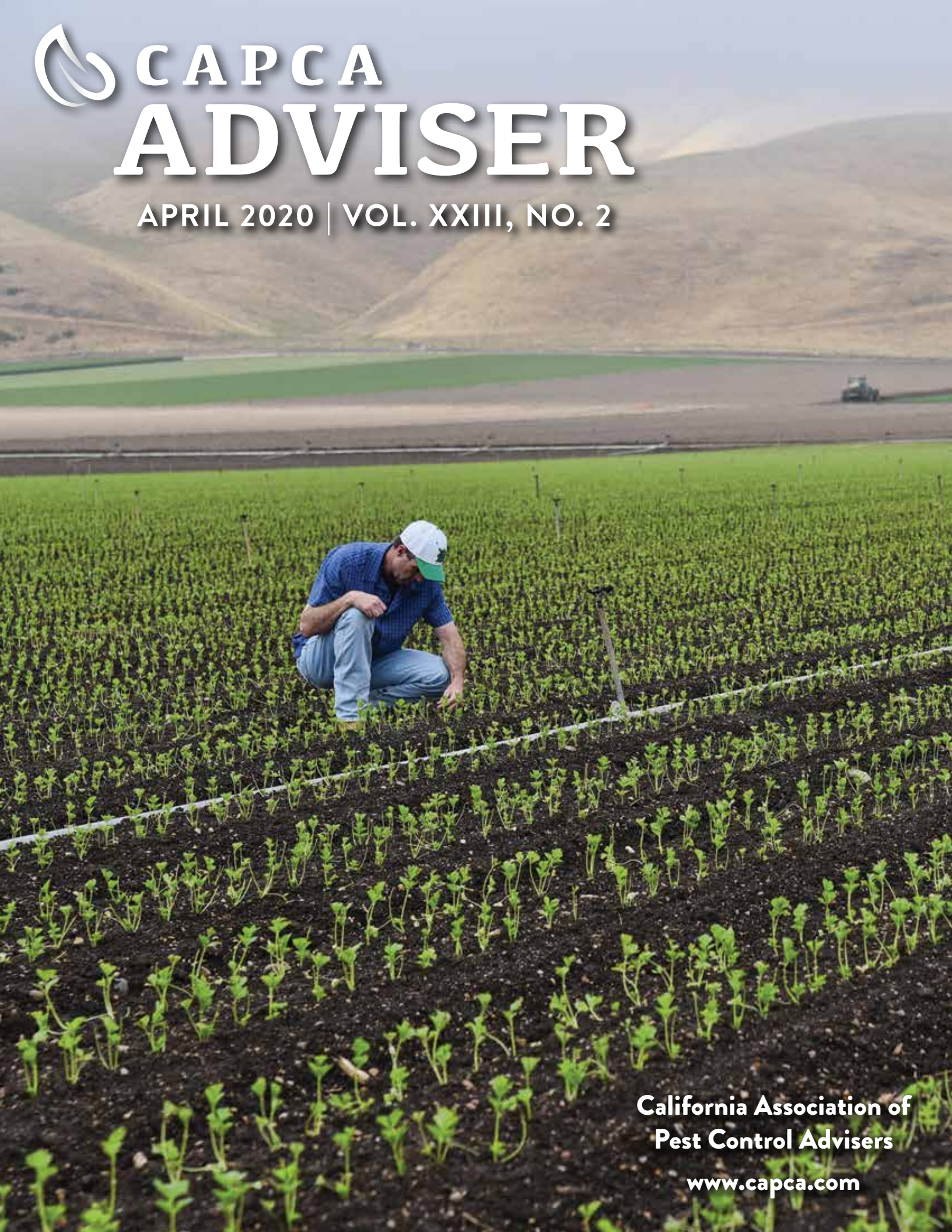




# CAPCA ADVISER

APRIL 2020 | VOL. XXIII, NO. 2



California Association of  
Pest Control Advisers

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### EDITORS NOTE:

On page 34 of the February 2020 Adviser, the bacterial blast report authored by Jim Adaskaveg, H. Forster, and Layne Wade was misidentified as a Farm Advisor contribution. The update was provided courtesy of UC AES. We apologize and regret the incorrect acknowledgment.





*More and more uniform harvest as outcome  
of better bud break  
through non-pesticide treatment*

Deciduous trees and vines must accumulate chill hours to overcome dormancy (specifically known as endodormancy by biologists), the period of winter rest or temporary suspension of visible growth during which enzymatic activity slows down to avoid buds being damaged from freezing weather. It is well known by fruit growers that bud break promoters and enhancers help them, due to early and homogeneous sprouting results in a uniform harvest, and many times greater.

During dormancy, inhibition of mitochondrial respiration is responsible for the increase in oxidative species (ROS) content in dormant buds. Some products for dormant stage break, as hydrogen cyanamide (HC), boosts hydrogen peroxide (the main ROS involved in endodormancy), that do actually intoxicate the buds to activate the sequence of reactions involved in the breaking of bud dormancy.

Lida Plant Research has developed an effective and efficient alternative to use of HC, a fertilizer product specially designed to be sprayed at swollen buds to green/pink/red tips timing on deciduous



Since 2015, Lida has results of research trials and commercial applications showing same or more homogeneity of sprouting, uniformity on fruit-bearing and ripening, yield and/or quality of the harvest with the use of **Actysave** respect to HC. And versus check controls (without any other product) **Actysave** always has a better performance in all those previous issues.

When **Actysave** is applied on deciduous fruit trees or vines at the right timing, glutathione and ascorbate detoxification pathways are optimized, as a result the use of energy and resources by the plant is more efficient, outcoming vigorous reproductive organs, more fit for fruit set and following growth. This is the reason why **Actysave** treatments result in higher yields in a concentrated harvest effectively reducing the number of picks.

Lida Plant Research LLC is a company focused on precise nutrition through innovative fertilizers specially designed to improve crop productivity since strengthen and protect plants against environmental adverse factors.

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ous fruit trees and vines, to supplement a standard fertility program that allows a quick and powerful bud break, followed by a vigorous sprouting, and uniform shoot development and blooming. **Actysave** is the name of the product, it is obtained by soy protein hydrolysis so it is a safe substitute of HC since it is a non-pesticide material that does not involve any other risk for health and environment itself; does not have any special directions for personal protective equipment use (PPE), closed systems for mixing and loading, or enclosed cab application vehicle; and neither risk of injury to early developed tissues of target crop or hazards for cover and neighbour crops.

As works on glutathione and ascorbate pathways, both crucial for the detoxification of hydrogen peroxide, **Actysave** must be applied when the endodormancy is near overcoming, that is when mitochondrial respiration reactivates, and this time can be easily identified by the appearance of the buds: swollen, showing the tips, or changing color, it depends on the crop (and sometimes variety). Both detoxification systems previously named, are associated with breaking of dormancy.







# CAPCA

AT THE CENTER OF PLANT HEALTH

## From the Editor

### Spray Safe Program: Value Continues to Grow

The Spray Safe Program undoubtedly has been an important and valuable asset in aiding grower-to-grower communication, as well as an avenue for getting PCAs and other industry stakeholders involved in the conversation. A little over 14 years ago, DPR created a zero-tolerance policy for spray drift incidents, arising out of multiple spray drifts occurring in Kern and Fresno counties. PCA leadership in the CAPCA Kern Chapter stepped up to address the issue, working with the Alliance for Food & Farming brainstormed as how to improve grower awareness. When efforts were being made to put forth new legislation addressing spray drift, Kern County CAPCA and Kern Farm Bureau leaders presented the concept for the Spray Safe program as an alternative to legislation. The legislation was withdrawn, and the Spray Safe program was born and since that time has been dedicated to minimizing spray drift incidents and protect the farm workers.

Spray Safe has a long history of bringing community together to prepare for the spray season. Communication is key! Agricultural Commissioner Ruben Arroyo explains "The mission of Spray Safe was developed to encourage the safe application of agricultural pesticides through education and communication. The importance of getting all parties involved in our agricultural community at these Spray Safe events has proven to be vital in improving communication among growers, farm employees, pesticide applicators, regulators, and emergency responders. The responsibility to Spray Safely is a daily job to protect not only the agricultural community but also our neighbors and the environment."

Spray Safe is an event that brings together CAPCA, Farm Bureau, local commodity groups, CAC and more to outreach and focus on worker safety, pollinator safety and more. This year two new Spray Safe events we added in Fresno-Madera and Tulare-Kings regions. These events brought together 15+ stakeholder groups, all working together to put on the free events for all involved in making safe applications. There were over 300 in attendance in Tulare and positive feedback came from both speakers and attendees regarding this relevant forum that fostered open communication and beneficial training.

CAPCA has contributed to these and other Spray Safe events with both sponsorship and volunteer support. In this way, CAPCA continues to advocate the goals of Spray Safe to improving communication and farm worker safety.

Ruthann Anderson, Editor  
ruthann@capca.com



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#### MISSION & PURPOSE

California Association of Pest Control Advisers (CAPCA) is a non-profit voluntary mutual benefit association that represents 75% of the 4,000 California EPA licensed pest control advisers. *CAPCA's purpose is to serve as the leader in the evolution of the pest management industry through the communication of reliable information.*

CAPCA is dedicated to the professional development and enhancement of our members' education and stewardship which includes legislative, regulatory, continuing education and public outreach activities.

#### PUBLISHING INFORMATION

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# The Age of Enlightenment

Rick Harrison, CAPCA Chair

Have you ever been in one of those situations, outside of work, with friends and acquaintances, or hear a stranger nearby where the subject of pesticides, organics, or other agricultural products became the topic of conversation? You probably felt as many PCA's do... you didn't want to engage for fear of having an unpleasant conversation with those who are naive or opinionated. Or, you prefer to research more on the subject before you misquote information.

Most likely the conversation started from a news story regarding our industry or someone's social media post about his or her reaction to it. A fair amount of time, the reporter who wrote the story and the person posting their reaction have little in the way of education or experience in our field of expertise. Even



worse, representatives from our industry are typically not invited to contribute to such stories or posts. As a result, facts become overlooked or omitted which contributes to misinformation and heated emotions. So, the question is, do we engage in that conversation?

If the conversation is directed at you my answer is yes. Helping others have a greater understanding of what we do will enlighten them to the fact that often there is not an easy answer. The decisions and recommendations we make are based on hard science, years of research, and experience from all aspects of our industry. There are many things to consider during conversations with friends about what we do. Keep in mind, the goal is to educate and spur their curiosity; inspire them to research

2019-2020 CAPCA Executive Board members (L-R) Rick Wescott, Ex-Officio; Paul Crout, Vice Chair; Rick Harrison, Chair; Patrick Dosier, Treasurer; Matthew Bristow, Secretary





further. Help them understand there is a big difference between science and opinion, and looking at all aspects of a discussion through hard facts and valid research will help further their understanding.

In terms of social settings and overhearing others in conversation, it's a great opportunity to enlighten others. I'm not advocating you go to the streets with placards or set up a booth at your nearest farmers market. That's not reality, and we are far too busy for that. There are always opportunities to enlighten others. Just be knowledgeable and use caution. Take advantage of information provided on our CAPCA website and other options available through our committees.

Our CAPCA State Government Relations Committee, supported by our lobbyist, will provide you with information about what we face politically and how to approach it locally and socially. Our CAPCA Adviser magazine is another important resource with plenty of up to date articles about issues we face on a daily basis. Supporting and volunteering at your local chapter is a great way to network with other PCAs and learn about current issues and concerns. And most importantly, please feel free to call our CAPCA State Office for any questions you have, they will point you in the right direction.

In my April 2019 CAPCA Advisor article (pg. 6), I mentioned that if we don't engage and enlighten the public and our representatives, we will be reactive not proactive. The outcome of an educated conversation based on fact has the potential of becoming an opportunity to enlighten and spur future curiosity about the process of growing our food and what goes on our table. In addition, it can calm misconceptions that are fed by the lack of hard science and emotional opinions. If they are truly passionate about an issue, and you enlighten them or inspire them to research beyond what they have heard in the news, they will appreciate your input and ultimately want to hear more. ■

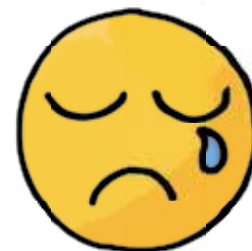
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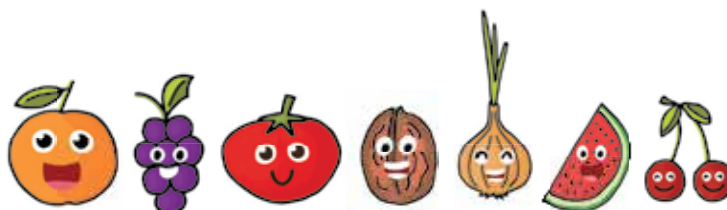
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# Meet Your Directors



## **NIC VANHERWEG**

**Chapter:** Central Coast

**Employer:** Arysta Lifesciences

**Education:** BS Crop Science, Cal Poly SLO

**Year of PCA License:** 2009

**Additional Licenses/Certificates:** QAL, CCA

**Specialties:** vegetables, berries



## **JENNIFER DE JONG**

**Chapter:** Central Valley

**Employer:** Miller Chemical & Fertilizer, LLC

**Education:** BS Cal Poly SLO

**Year of PCA License:** 2008



## **MICHAEL TERRY**

**Chapter:** Desert Valleys

**Employer:** M Terry Ranch

**Education:** BS Agribusiness, Oregon State

**Year of PCA License:** 2012

**Additional Licenses/Certificates:** QAL, CCA

**Specialties:** vegetable crops, farm technology



## **ADAM TAVARES**

**Chapter:** Fresno-Madera

**Employer:** ADAMA

**Education:** BS Crop Science, CSU Fresno

**Year of PCA License:** 2009

**Additional Licenses/Certificates:** QAL, Water Distribution #1

**Specialties:** permanent crops, row crops



## **MIKE ANSOLABEHERE**

**Chapter:** Kern County

**Employer:** Valent

**Education:** BS Cal Poly SLO

**Year of PCA License:** 1985

**Specialties:** permanent crops



## **SEAN MORELOS**

**Chapter:** Monterey Bay

**Employer:** Nutrien Ag Solutions

**Education:** BS Cal Poly SLO

**Year of PCA License:** 1997

**Additional Licenses/Certificates:** QAL

**Specialties:** lettuce, grapes, strawberries, cole crops, other leafy veg crops



## **PETE BARTELS**

**Chapter:** NorCal

**Employer:** Helena Agri-Enterprises, LLC

**Education:** BS Ag Business, CSU Chico

**Year of PCA License:** 1995

**Additional Licenses/Certificates:** QAL, CCA

**Specialties:** tree crops



## **BRITTANY PEDERSON**

**Chapter:** North Coast

**Employer:** Renteria Vineyard Management

**Education:** Crop Science, Wine and Viticulture, Cal Poly SLO

**Year of PCA License:** 2011

**Additional Licenses/Certificates:** QAL

**Specialties:** winegrapes



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# Meet Your Directors



## DAVID DRUCKER

**Chapter:** San Diego

**Employer:** Nutrien Ag Solutions

**Education:** Cal Poly SLO 1982, Ag Science

**Year of PCA License:** 1983

**Additional Licenses/Certificates:** CCA

**Specialties:** wine grapes, avocados, citrus, strawberries, landscape ornamentals



## JEOff DUNSTER

**Chapter:** San Francisco Bay

**Employer:** S.P. McClenahan Inc

**Education:** BS UC Davis

**Year of PCA License:** 2002

**Additional Licenses/Certificates:** QAL, Certified Arborist

**Specialties:** landscape, turf, trees



## DAN WICKHAM

**Chapter:** SoCal

**Employer:** Wilbur-Ellis

**Education:** BS Cal Poly SLO

**Year of PCA License:** 1975

**Specialties:** vegetation mgmt., turf, ornamental, landscape, aquatic, IPM



## PAUL SQUIRES

**Chapter:** Sutter Buttes

**Employer:** Squires Ag Consulting, Inc

**Education:** BS CSU Chico

**Year of PCA License:** 1994

**Specialties:** rice, tomatoes, alfalfa, corn, sunflowers, seed crops



## COREY THOMPSON

**Chapter:** Tri-County

**Employer:** Basin Fertilizer

**Education:** BS CSU Chico

**Year of PCA License:** 2009

**Additional Licenses/Certificates:** NW CCA, Oregon PCA, QAC

**Specialties:** potatoes, alfalfa, Timothy hay, small grains, forage, range & pasture



## DENNIS FULLER

**Chapter:** Tulare-Kings

**Employer:** Adama

**Education:** Cal Poly SLO

**Year of PCA License:** 2013

**Specialties:** walnuts, almonds



## PATRICIA DINGUS

**Chapter:** Ventura

**Employer:** YARA

**Education:** Cal Poly SLO

**Year of PCA License:** 2009

**Additional Licenses/Certificates:** CCA, QAL

**Specialties:** vegetables and berry production



## NICK LUPIEN

**Chapter:** Woodland

**Employer:** Syngenta

**Education:** BS UC Davis

**Year of PCA License:** 2009

**Additional Licenses/Certificates:** CCA

**Specialties:** wine grapes



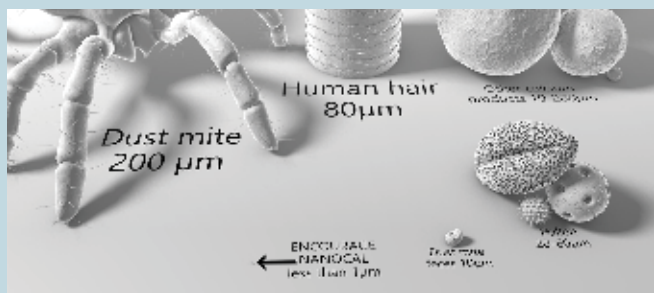
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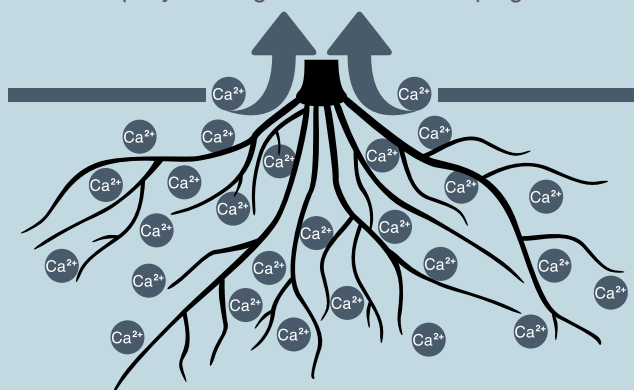
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# Kings County Ag Commissioner Jimmy Hook

CAPCA Staff

Jimmy Hook has served as the Kings County Agricultural Commissioner for a little over 2 years, and 12 years total with the department. He graduated from CSU Fresno in 2000 with a Bachelor of Science degree in Animal Science Pre-Vet, and holds a Master's degree in Public Administration, obtained in 2015.

He was involved with Ag from an early age, participating in both 4-H and FFA. He recalls one of his first jobs as a field scout for a local farming operation, and some research following graduation from Fresno State. After pursuing an opportunity in the construction industry, he came back to ag and applied for a pest detection and trapping position with Kings County. Hook credits his early role models in the department and says he immediately set out to acquire all the licensing as fast as he could. "I knew from very early in my career with the department that one of my goals would be to gain the experience and licensing needed to become an Agricultural Commissioner," he says. Hook went on to work as an Agricultural & Standards Aide Extra Help, then as Agricultural & Standards Inspector for four years, and Deputy Agricultural Commissioner for 6 years before his latest appointment.

He describes his role as Agricultural Commissioner as serving the public and promoting and protecting Agriculture and the environment by staying informed of the issues, focusing on those of local concern, to keep the County Administration, including the Board of Supervisors, informed about relevant issues. "Additionally, we strive to work with all local stakeholders to ensure that there is an awareness of upcoming issues."

One of those issues is a state-wide concern over the loss of options or 'tools' for growers. "We have a robust pesticide program; we need to do a better job of conveying this story. There is a great amount of effort to ensure that the applications that take place are the best option for the situation at hand. The better job we can do telling this story the better off agriculture will be. We need to get back to science-based decisions on these products."

Hook says one of the challenges of the job is balancing the protection and promotion of agriculture with the regulatory and enforcement responsibility. "We have to ensure that we are providing a safe and fair environment for all of our stakeholders and industry. We have to ensure the many programs which we are charged with run smoothly while also staying on top of and ensuring any issues which arise are addressed appropriately."

Kings County top five commodities are milk, pistachios, cotton, cattle/calves, and almonds. Some of the pests and diseases growers contend with are Peach Twig Boer and Oriental Fruit moth in almonds, Navel Orangeworm (NOW) in pistachios and almonds (along with other plant bugs and mites), and recently late season whitefly and aphids in cotton, which can cause sticky cotton. Hook is concerned that these may be bigger issues going forward as the industry loses chemistries which were well-suited to combat these pests at the particular time in the growing season. "One area of local concern for many crops but especially Almond and Pistachio is the increase of abandoned or poorly farmed land/orchards – this causes a disease harbor and can create issues for surrounding growers."

Asked about working together to face the challenges in Ag, Hooks says, "Communication and collaboration are key, the more we can encourage growers, PCAs, applicators and really anyone involved with an application to ensure due diligence has been done to consider all factors, the easier it will be to prevent issues. All factors need to be considered: from sensitive crops and weather conditions, to workers in the area. The more we can emphasize this and share the information the less likely we are to have adverse outcomes. This will help prevent everything from exposures and illnesses, to damage to adjacent crops."

Under Hook's leadership, his office has made a commitment to outreach and taking the initiative to communicate and collaborate: "We make it a priority to disseminate information on any





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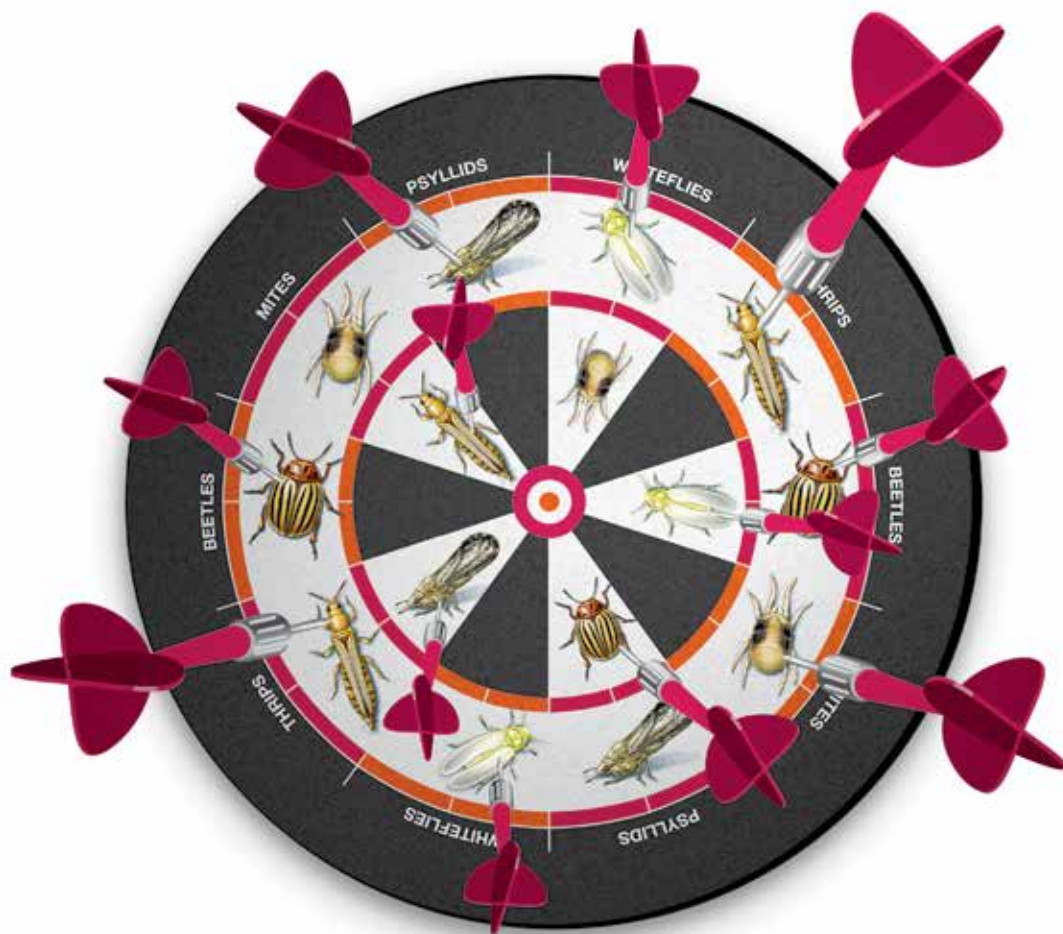
upcoming changes as far and wide as possible. Over the last year we have conducted 23 Continuing Education and Worker Safety classes, additionally with the label change to Paraquat we have conducted 13 Private Applicator exam prep classes. This outreach and training helps to ensure our pesticide handlers have the proper training and certification to safely handle materials.” He is also proud to have been involved with the start of the Tulare Kings Spray Safe Event, held this past January. “This event would not have happened without the kickstart by CAPCA and the many sponsors involved that made it happen,” he says.

Hook strives to ensure that he and his office have a great working relationship with all of their stakeholders, and appreciates the involvement CAPCA has had with the Ag Commissioners. “It is important to keep these channels of communication open. We are always striving to continue building these relationships. I once heard a PCA say that the last place he wants to be is in the Ag Commissioners office, this should never be the case – use your local Commissioner’s office as a resource, this will help maintain the cohesive program which will further our shared dedication to agriculture and the safe use of our existing tools.” Often one of the questions he gets from stakeholders is why his office is adding new regulations, but he is quick to say that often it isn’t from his office. “My office does not add the regulation, we are merely tasked with the enforcement. In many cases these regulations are for the protection of their industry. I remind them that we are the local enforcement branch for our statewide partners.” When this happens, he asks stakeholders if they’d rather deal with enforcement from a local agency with in-depth knowledge of local conditions, or someone from the state which may not use much, if any, discretion in the process. “More often than not we are in agreement that local enforcement is the way to go.”

As an encouragement to CAPCA’s members, he acknowledges that the industry faces many coming changes and regulatory hurdles from multiple agencies. “It has always been important to become involved and ensure your voice is heard. The commonplace connection to agriculture which we saw in the past is slowly being lost. While there are groups that do a great job advocating for agricultural, it is becoming ever more important for everyone with a stake in this industry to ensure their story is told, and at every chance possible.” ■







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We are excited to be gearing up for the 4th annual Spring Summit! Register for the April 28-29th conference, if you haven't already. This conference will include field tours, industry updates and educational break out sessions. Check out the CAPCA website to get registered!

Heather Palmer

# CAPCA Spring Summit

## 2020 Program Schedule

*Program Subject to Change*

### Tuesday, APRIL 28, 2020

---

12:30 pm - 1:00 pm	Registration
1:00 pm - 4:00 pm	General Session - Key Issues for the Southern CA Region Mr. Paul Squires - Squires Ag Consulting Mr. Ruben Arroyo - Riverside Ag Commissioner Mr. Rick Gurrola - Shasta Ag Commissioner Mr. Val Dolcini - CDPR Director Dr. James Stapleton - Kern Ag Research
4:00 pm - 5:00 pm	Label Update Presentations
5:00 pm - 6:30 pm	Welcome Reception

### Wednesday, APRIL 29, 2020

---

7:00 am - 8:00 am	Continental Breakfast
7:30 am - 8:30 am	Opening Session
8:30 am - 12:00 pm	Workshop or Agriculture Tour

#### Workshop Speakers

Marcus McClure - Treating disease pressure through IPM  
Jose Aguiar - Bell peppers  
Curtis Pate - Role of AVP in spread of HLB  
Michael Cahn - Salinity affects on pests & diseases  
Sonia Rios - Burrowing rodents  
Laura Krueger - Mosquito & vector control update Socal

12:00 pm - 1:00 pm	Luncheon
1:00 pm - 4:30 pm	Agriculture Tour or Workshop*

\* Workshop presentations are repeated for those who took the Tour in the morning.

**Accreditation:** CDPR - 10.5    CCA - 11.0    AZ PCA - 10.5    ISA - 4.5    GCSSA - 0.35

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## Your CAPCA dues are fighting for agriculture

Patrick Dosier, Treasurer and Government Relations Co-Chair

Many members rightfully ask where their dues go: “*What value does CAPCA provide me?*” The answer is not just tracking CE hours.

Your hard-earned money is being pooled into a war chest. A portion of membership dues and program income is going towards building this fund. This was initiated after 2018 and is, more diplomatically, referred to as the CAPCA Advocacy Fund.

These Board restricted funds are to be used exclusively for assertive policy action including lobbying, running pro-PCA legislation, fighting anti-Ag legislation, for bringing suit or for supporting independent expenditure committees. We plan to put these resources to work from the local Chapter level up to the State Capitol. These funds will not be used for campaign contributions because that’s what the CAPCA PAC is for.

CAPCA’s leadership has set a goal of amassing \$1.75M into the CAPCA Advocacy Fund by 2022, just in time for when Gavin Newsom begins campaigning for re-election. We are well on our way to that goal. The fund just surpassed the \$1M mark. This is a major milestone. CAPCA now has enough resources to impel political leaders to take us seriously.

The size of this fund matters. Our goal is to continue to grow it over time. As it gets larger, it becomes a greater source of influence for CAPCA, as other parties will take notice and think twice about launching a challenge. However, it isn’t enough to just declare our intentions. We plan to strategically spend this money. PCAs need a win. It is time to block legislation advanced by environmental extremists. It is time to stop the replacement of science-based

regulation by that of “regulation by popular opinion.” It is time to get pro-PCA bills passed.

The metaphorical playground bully comes to mind. We are still limited in our ability to win big fights in Sacramento. However, we are powerful enough to punch a bully in the nose and cause injury. So, while the size of the CAPCA Advocacy Fund may someday become a deterrent, a track-record of using it is even better.

At this point, you may be wondering, “*Why so many references to violence? War chest? Punching bullies?*” It is because we are in an existential fight. The government of California has been captured by extremists. These extremists are attacking agriculture. No one else will defend us. They are coming for water, they are banning pesticides and they even specifically threaten the PCA profession.

Our critical political situation in California cannot be solved just by spending. If that were the case, we would simply ask you for more money. No, CAPCA and the PCA profession needs something even more precious than your money – we need your time. We have spent the past three years organizing a grassroots political movement at the Chapter level, led by our Chapter Champions. CAPCA’s greatest source of strength are our members in every single political district within the State. We need local members to engage their lawmakers and County Supervisors as constituents. We need you to go meet these elected officials, to explain the good work PCAs do, to advocate on issues and to share with them that CAPCA has the resources to advance our interests. The future of the PCA hinges on the passionate participation of our membership, good organizational strategy and some wisely invested resources.







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Fortunately, CAPCA PCAs are not in this fight alone. Through the Ag Presidents Council, we are emerging as an agricultural policy leader. CAPCA works tirelessly to forge alliances with other agricultural organizations. We will align strategies, share best practices and we will pool resources in common defense of California agriculture.

CAPCA is far more than a CE hours-tracking service or conference organizer. CAPCA is an emerging policy organization dedicated to fighting for the PCA. We are organizing, we are growing stronger and we are well-positioned to lead the fight for our agricultural livelihoods.

Thank you for your membership and thank for your service to the PCA profession. ■







## Analyzing DPR's regulatory priorities for 2020

Brad Hooker, Agri-Pulse West Associate Editor

Val Dolcini, the director of the Department of Pesticide Regulation, recently shared with Agri-Pulse his 2020 outlook for the department. Adding to that perspective, Agri-Pulse has assembled a more detailed analysis for a few of the many regulatory activities the industry can expect to see this year when it comes to pesticides.

### 1. More discussion on what IPM means to applicators.

Department of Pesticide Regulations Director Val Dolcini told Agri-Pulse recently that “sustainable pest management practices is certainly number one on my list.” Dolcini has been touring Spray Safe events and environmental justice conferences while holding talks on IPM.

Newsom has also allocated another \$350,000 in his budget proposal for DPR to continue its Alternatives Work Group, which has focused on IPM. It will likely now expand to 1,3-D.

### 2. New regulations on 1,3-D, first locally for Shafter, then statewide.

The California Air Resources Board recently approved an ambitious emissions reduction plan for the Shafter area – the first of many more hyper-local plans to come. The plan explains that DPR is committed to regulating 1,3-D on the local level, while also exploring a pilot notification system. It does not obligate DPR to actions, but Dolcini said he has been “personally involved” in seeing it through. Dolcini released a list of practices for applicators to reduce emissions, including tarping, deeper injections and a minimum amount of soil moisture.

DPR will also release its new statewide restrictions on 1,3-D this year, based on air monitoring recordings from Shafter. With the U.S. EPA releasing its own reviews for 1,3-D recently, registrants would have a strong legal argument against new DPR mitigations.

### 3. New regulations and legal battles over bee protections

DPR is currently reviewing four neonicotinoids and will release its results by June. Dolcini said the department will likely hold a series of workshops later this spring to gather public comment.

Meanwhile, the California Department of Fish and Wildlife is currently reviewing a petition by environmental groups to list four bumblebees as threatened under the California Endangered Species Act. The department is expected to release its findings soon to the California Fish and Game Commission, which will hold a hearing perhaps in March to debate its next actions. A coalition of ag groups filed a lawsuit last fall over that petition and that will likely play out in court over the coming months.

### 4. No surprises with alternatives to chlorpyrifos

DPR's Chlorpyrifos Alternatives Work Group is set to release its recommendations in April. According to a draft outline in January, the list will summarize existing work from the UC IPM Program, suggest a new biopesticide product or two and recommend more research for certain crops, while encouraging the administration to add more funding to the program.

Sales have already ended for products, though farmers can still use chlorpyrifos until the end of 2020. Yet reports for 2019 showed use of chlorpyrifos has nearly disappeared already.

### 5. Glyphosate use will continue drop locally throughout California.

Last year continued a trend across the state of cities and counties – as well as the University of California – to ban most uses for the herbicide. It follows a barrage of well-publicized lawsuits, many of which cited the state's decision to list glyphosate as a Prop 65 carcinogen.

While DPR is not formally reviewing glyphosate, Dolcini noted that it does fit within the administration's focus on alternatives to chemical pesticides and Gavin Newsom's business investments in organic winemaking before taking office as governor.

The Legislature also may reintroduce measures to ban glyphosate use in some ways on school grounds or state properties.

### 6. Staff reorganizations

In his budget proposal, Newsom is pitching major reorganizations for a number of agencies. The details are still being worked out and much of the process is happening behind closed doors as part of complex budget negotiations with the Legislature. The administration has shown a commitment for more environmental justice liaisons within the resource agencies and for more input from social justice and labor advocates as well.

DPR is also in the midst of adjusting its registration review process following a lawsuit by the Pesticide Action Network. The industry has complained this has significantly slowed down the process for registering new products, including biopesticides.

Dolcini maintains lawsuits like this are “just something we deal with on various issues here” and this one has not slowed down the process for anything. With efforts to find alternatives to chlorpyrifos – with DPR as well as CDFA – Dolcini said the department is currently trying to streamline the process for approving new active ingredients. ■



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# SCHOLARSHIP OPPORTUNITY

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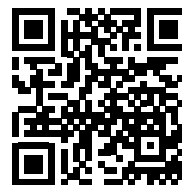
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Nominees should submit a completed application form and copies of their transcripts. **Applications must be postmarked no later than May 1, 2020** and submitted with required letters of recommendation so that the committee can make final selections. The student selected will be notified in the second week of July.

For application information please contact CAPCA at (916) 928-1625 or email [rachel@capca.com](mailto:rachel@capca.com)

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## Hemp: A growing market with many questions and how biopesticides can help meet crop protection challenges

Jeremy Adamson, Product Manager, Certis USA

### The Emerging Market

A new Federal Farm Bill legislation comes along every five to six years, most of which are met with a mild response as it relates to production agriculture and crop acreage. There are a few exceptions throughout recent history, but most notable is the recent 2018 Farm Bill, which delivered a new growth opportunity in farming for the future.

The \$867 billion Bill passed with bi-partisan support and included language that opened a major pathway for commercial agriculture – the legalization of hemp and its derivatives as a crop commodity.

### The Market

Hemp is far from a new crop. In fact, it was grown in the U.S. for generations before the passage of the 1937 Marihuana Tax Act classified all *Cannabis sativa* materials as marijuana and subjected them to tax and drug enforcement laws. As a result, by the late 1950's, hemp production in the United States was nonexistent.

Long dubbed the “crop with a thousand uses,” hemp truly does seem to have near limitless capability for market opportunities. Textiles and fiber are heritage uses of the crop's stalk and plant materials. Wood-like products for interior design are also currently being made from the crop.

Perhaps the market with the most growth, and the most controversy, is the production of cultivars for cannabidiol (CBD) and their potential pharmaceutical benefits. Users of CBD hail the supplement's benefits for neuroprotective, antiepileptic, antipsychotic and anti-inflammatory purposes. It is sold in oil form, in creams and lotions, in gummy chewables, and in bath bombs and salts.

*Markets & Markets* projects that the hemp market will grow from \$4.6 billion in 2019 to \$26.6 billion by 2025.

### Growers Meeting Demand

The emerging hemp market is being met by an energized agricultural industry that is eager to seize the market opportunity and meet consumer demand. This is reflected by the thousands of growers across 36 states who immediately leapt into hemp production – most of which with limited knowledge or experience with commercial-sized hemp production. These findings are quantified by the last two years of hemp production data from *Vote Hemp*, an advocacy group that annually tracks hemp production statistics from state agriculture department records:

*In 2019, U.S. farmers were licensed to grow 511,442 acres of hemp, a 455 percent increase over production numbers in 2018, which reported only 78,176 acres grown.*

This production increase was met with growers having a limited set of solutions that were permissible to be used in hemp production. Coupled with most growers having limited experience in growing the crop, the ability to meet commercial demands and the production of a bountiful crop would prove to be challenging.

### The Challenges

With nearly half a million acres licensed for production in 2019, hemp was grown across 36 states under outdoor and indoor growing conditions – both of which gave way to an abundance of pest, disease and weed pressure.

It has been reported that growers of hemp found corn earworm to be one of the most significant issues that they are combatting. Other reported issues included sucking pests, such as hemp russet mite, cannabis aphid and Eurasian hemp borer. Many species of caterpillars, grasshoppers and beetles were also present and caused damage to foliage. Stink bugs and Lygus bugs have also been an issue as they feed on the seeds of plants.

The challenges on the disease spectrum were also widespread, with many proving to be particularly challenging for growers to combat including powdery mildew, botrytis and phytophthora.

It remains unclear what level of economic damage these pests caused in 2019, but it was enough to demonstrate the need for solutions.

### The Biological Approach to Hemp Production

Since many of the growing markets for the crop include human consumption, there are major concerns and unknowns as it relates to what residues are safe on hemp products. With this significant unknown, growers were initially limited to a small list of minimum-risk pesticides, such as hydrogen peroxide, that the EPA previously

deemed exempt from registration and are also residue exempt, meaning they can be used in or on food products without the need for an established maximum residue level.

This is where biologicals are an ideal solution as most are exempt from residue tolerances. Biologicals also hold several other attractive traits that makes them a great fit for use in hemp, including:

- Broad spectrum activity against numerous pests and diseases
- Safety for non-target organisms,
- Proven, effective control across similar cropping systems
- Low REIs and PHIs, resulting in worker safety and flexibility
- Approved for most uses in sensitive areas where the use of conventional chemistries are restricted and/or prohibited.
- For this market, the approval for use in organic production characteristic of many biopesticides is also considered beneficial.

These benefits were paramount in the EPA's decision to register an initial list of 10 products for hemp in December 2019 - nine of the 10 were biologicals (6 biochemical and 3 microbial pesticides). Since then, several additional biologicals have been registered on hemp and more likely will follow in the days and months ahead for use in the upcoming growing season.

While the 2020 hemp growing season will offer some uncertainty as federal regulations for CBD products remain in limbo, growers can be certain that biopesticides will play a pivotal part in providing approved, trusted solutions to combat the challenges that they encounter. ■





## Managing red imported fire ant in California

Siavash Taravati, Area IPM Advisor, Southern California, University of California Statewide IPM Program

Red imported fire ant (RIFA; *Solenopsis invicta*; Fig. 1, right) is an invasive species that arrived in California in 1989. Since its introduction, it has spread to many areas in the Central Valley and Southern California where it infests turf areas in school landscapes, parks, and sports fields. It is currently widespread in Orange, Riverside, and San Bernardino counties, and in perimeter areas of the Los Angeles County where it constantly causes problems for ground crews and facility managers. RIFA colonies build dome-shaped mounds (Fig. 2) made from loose soil. RIFA bites and stings people and the venom may cause a serious medical complication known as “anaphylactic reaction” in sensitive people.

One of the problems when dealing with RIFA is proper identification of the ant species. A closely related species, southern fire ant (*Solenopsis xyloni*), lives in many RIFA infested areas in California and can be easily mistaken for it. Southern fire ants look very similar to RIFA and have a similar size and shape. The only difference between the two that is noticeable in the field is a slightly lighter head and thorax color of the southern fire ant (Fig. 1, left) which is usually light reddish brown compared to dark reddish-brown color of RIFA. If in doubt, one can collect some worker ants and look at them under the microscope. When looked from above (dorsal view) under a stereomicroscope, larger RIFA

workers possess three clypeal projections (teeth) on the head while southern fire ants have only two. The middle tooth is more visible in larger RIFA workers.

The most common approach for controlling RIFA is using insecticidal bait made of corn grits (as the matrix) that are coated with soybean oil containing the pesticide active ingredient. Bait granules (Fig. 3) can be dispersed by hand, or by using a handheld or motor-mounted granule spreader. RIFA foragers pick up the granules, carry them to their nest, and feed their colony members. This way, the active ingredient will be passed not just to the foragers, but to immatures and the queen(s).

Despite all the progress on RIFA control, eradication of RIFA colonies is not easily achieved and requires experience and patience. Even when RIFA foragers disappear from the soil surface after an eradication effort, some worker ants, larvae, and their queen(s) may still be alive deep down in the nest. In 2017, Dr. Siavash Taravati was contacted by Ashley Freeman, an environmental scientist at the California Department of Pesticide Regulation, regarding a severe RIFA infestation at the California School for the Deaf, Riverside. The school’s grounds crew were desperately trying to control RIFA on their 70-acre landscape but had little success. They had

**FIG. 1.** Southern fire ant (*Solenopsis xyloni*) on left and red imported fire ant (*Solenopsis invicta*) on right. These two species look very similar and the only difference between the two that is noticeable in the field is a slightly lighter head and thorax color of the southern fire ant (on left). Photo: Siavash Taravati, UC IPM.



Southern Fire Ant

Red Imported Fire Ant

treated ant mounds by drenching them with liquid insecticides and yet they could not provide sufficient ant control. Taravati visited the grounds crew, inspected infested areas and RIFA mounds, collected ant samples for identification, and took pictures for analysis. In some areas, over 50 RIFA mounds per acre were visible, which is considered a very high number considering the fact that California RIFA colonies generally don't make as many mounds as their counterparts in the southern U.S. This site seemed to be a perfect place to run a research project and evaluate different RIFA control products. As a result, Taravati planned a research as well as a demonstration experiment to evaluate different methods of RIFA control in California. This project was funded by the California Department of Pesticide Regulation.

For this project, different active ingredients were used: indoxacarb, hydramethylnon, and s-methoprene. Granules were dispersed using a hand-held spreader or by hand. Areas with RIFA activity were marked using construction flags and marking spray paint. RIFA activity was measured prior to and after treatment.

Soon after the onset of our RIFA control efforts, RIFA population dropped significantly. After a few months, the number of RIFA mounds were reduced by 96% in the softball field, which used to be one of the most-heavily infested locations. In other places, similar results were achieved with an 80% or more reduction in the number of mounds. Even when new mounds occasionally appeared on the lawn, they were always small in size. When these mounds were poked with a rod, only a small number of ants emerged from

them. The grounds supervisor was extremely happy with the results. After finding the best practices for controlling RIFA, instructions were provided to the school's staff on how to continue these practices after the end of our study. In our research, indoxacarb and hydramethylnon worked were the fastest acting and s-methoprene was the slowest acting active ingredient. Nevertheless, s-methoprene was able to provide a good RIFA control in the long run.

RIFA granular pesticide labels usually allow up to four applications per year so they need to be applied prudently. Most products allow mound treatments as well as broadcasting of baits, but only one of these two methods should be used at a time. Research has shown that broadcasting baits over a large area is more effective than individual mound treatment in controlling RIFA. This is due to the fact that some RIFA mounds have interconnected tunnels in the ground and members of the same colony or adjacent colonies can simply move in and replace the old colony shortly after the treatment. This is especially true in multiple-queen (polygyne) colonies that can coexist with adjacent colonies without aggression. These colonies exist at higher densities compared to single-queen colonies (monogyne), which occur at lower densities and show aggression toward one another. In the field, RIFA colonies constantly expand into new areas and replace older colonies after they are eradicated. As a result, it is important to broadcast granular baits as much as possible to make sure that not only the problematic colony is treated, but all the adjacent colonies are also being treated.



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**FIG. 2.** A small and fresh red imported fire ant mound on a lawn.  
Photo: Siavash Taravati, UC IPM.

In order for a RIFA granular bait to work, several criteria must be met. One, the bait should not get wet. Wet bait is not as attractive to RIFA, so foragers will not collect them. Second, baits should be applied when temperatures are between 60 to 90°F. RIFA workers won't forage as much on the soil/turf surface when it is too cold or too hot. Third, only fresh bait should be used. The oil that contains the active ingredient on old bait may already be rancid and will not be attractive to RIFA. If possible, buy smaller quantities of bait and try to use all the bait in the bag/container within a few months. After each use, seal the bait bag/container completely to minimize further air exposure.

When using baits against RIFA, one should know what to expect. Products that contain indoxacarb act very fast but are more expensive. Hydramethylnon-containing products act a little bit slower than indoxacarb but are cheaper. The slowest-acting and cheapest products on the market are the ones that contain insect growth regulators (IGRs) such as s-methoprene. Furthermore, each product has certain limitations about where you can apply them. For example, most products prohibit application to croplands

or require the use of bait stations. Others offer more liberty to the applicator and allow application to croplands. Please read the pesticide label thoroughly before using the product.

Based on the price, speed of action, and allowed application sites, one can better decide what active ingredient is more appropriate for the job. For example, if you are trying to treat RIFA in an orchard, then you can only use IGR-containing products. If a pest control technician is trying to treat RIFA in response to an emergency situation such as when someone gets stung, then indoxacarb would be a better choice since it is the fastest active ingredient for RIFA on the market. On the other hand, if you have an annual contract for RIFA control and there is no immediate danger to people or pets, then you can use an IGR-containing product (e.g., s-methoprene) to reduce your pesticide cost and provide safer and better long-term RIFA management. In the end, remember that total RIFA eradication from large areas is almost impossible, so expect to see some ants after a few weeks/months. This is true even when you have a successful treatment. ■

**FIG. 3.** Different fire ant granular baits. Photo: Siavash Taravati, UC IPM.





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Must provide proof of full-time student status. May not hold a DPR license.

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# NEW TECHNOLOGY GETS LEGS IN NAVEL ORANGEWORM MANAGEMENT



Navel Orangeworm,  
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NOW PPO-HR L<sup>2</sup>+ NOW L<sup>2</sup>-L = Multi-gender, greater attraction in mating disrupted almonds, pistachios, and walnuts

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PHEROCON IV NOW  
Egg Trap



Brad Higbee, Director of Field Research for Trécé and Dirk Ulrich, almond grower/consultant

**“Very impressive performance to say the least, even though, I had put it on later than I would normally, due to the late registration!”**

— Dirk Ulrich, almond grower/consultant

**“We tried mating disruption on a limited basis in almonds last season. Once we deployed the CIDETRAK NOW, we did not catch another male moth in our traps for the rest of the season. This field had the lowest NOW damage of any field run samples we took, and we plan on increasing the acreage under mating disruption this year. It will become a key component of our NOW management moving forward.”**

— Steve Gruenwald, Grower's Choice Crop Consulting

**“Once we had CIDETRAK NOW up in our block, I could sleep a little easier, I knew it was out there working 24/7. In addition, the processor also proved that point reporting that we had lower damage than the previous year, even after removing one insecticide application.”**

— Eric Borrer, Tehama Angus Ranch

**“Monitoring continuously with pheromone/kairomone based traps, establishing and tracking degree days, checking canopies for damage and calculating the level of infestation is necessary season long for best results.”**

— Douglas Light, Ph.D., United States Department of Agriculture (USDA)/  
Agricultural Research Service (ARS), Retired



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# The Importance of Micronutrients

Marcus McClure, AgroLiquid Regional Agronomy Manager

We know plants use micronutrients in very small amounts, but they are just as essential for plant growth as primary (N, P, and K) and secondary (S, Ca, and Mg) nutrients. Any one of them can limit growth and yield potential – and even cause plant death when deficient.

Why are micronutrient deficiencies increasingly being seen in the soil? There are several possible causes:

- Increased yields due to various technology improvements have led to increased yields, meaning higher demand by the crop and more removal of micronutrients from the soil
- Any type of land preparation which results in the removal of several inches of topsoil results in a deficiency of certain micronutrients on the cut areas
- High phosphorus levels can cause micronutrient tie-up, leading to deficiencies

Let's take a look at some of the micronutrients, and why they are important to the plant:

## BORON (B)

Boron is necessary for cell division and differentiation. It helps maintain a balance between sugar and starch and aids in the movement of calcium. Boron is also essential for the germination of the pollen grains and pollen tubes in plants and has a direct effect on yield. No pollination, no crop.

## COBALT (Co)

Cobalt plays a critical role in the overall growth of plants. Cobalt is necessary for the processes of stem growth, elongating the coleoptiles, and expanding leaf discs. A cobalt deficiency will reduce or stunt plant growth and reduce seed germination.

## COPPER (Cu)

Copper aids in root metabolism and the utilization of proteins. Copper is essential for better stalks or stems and standability. It is also key to seed coat resiliency, disease control, test weight, and seed size.

## IRON (Fe)

Iron is required for the formation of chlorophyll in plant cells. It activates respiration, photosynthesis, and symbiotic nitrogen fixation. Low iron levels in the plant result in poor energy transfer

from leaves to growing points or fruiting structures thus slowing growth and lowering yields.

## MANGANESE (Mn)

Manganese plays a major role in the production of chlorophyll. It directly affects the health of the crop and whether a plant reaches maturity or not. Manganese deficiency is a widespread problem, but is most often found in sandy soils or in soils with a pH above 6.0.

## MOLYBDENUM (Mo)

Molybdenum acts as a catalyst in nitrate reduction, and in nitrogen transport and utilization within the plant. Molybdenum is also associated with disease resistance in plants.

## NICKEL (Ni)

Nickel is important in nitrogen metabolism because it is a component of the urease enzyme. Without the presence of nickel, urea conversion is impossible. It is required in very small amounts, with the critical level appearing to be about 0.1 ppm.

## ZINC (Zn)

Zinc is necessary for chlorophyll and carbohydrate production. High yields are impossible without zinc due to its importance in growth, metabolism, and photosynthesis. High soil phosphorus, soil organic matter, biological activity, and irrigation play a role in zinc availability.

Most growers and agronomists focus on macronutrients to improve yields and crop quality. However, micronutrients obviously play a pivotal role in crop development. If micronutrient deficiencies persist year after year, they will continue to damage crops regardless of the nitrogen, phosphorus and potassium applied. Before adding micronutrients to the soil, it is important to know what the soil already has available. A soil test analysis that includes micronutrients will give a snapshot of what is available to the plant. The soil test is especially important because many micronutrient deficiencies cause similar symptoms in the plant and can be difficult to identify. Deficiencies can also be caused by many factors, such as soil pH, moisture, temperature, and the presence of other compounds or nutrient tie up. If a crop is not reaching its full potential, or the same problems keep appearing, contact your crop nutrition expert to help investigate potential micronutrient deficiencies. ■



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<sup>1</sup>Source: BRANDT Field Trials 2016-2018



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\* October issue fills quickly, first come, first served

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ADDRESS Disneyland Resort - Anaheim, California DATE October 11-13, 2020

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#### Buttonwillow Warehouse Company

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**Duties, Qualifications & Requirements:** 3-5 years of experience in agriculture industry preferred; Copy write experience preferred; Certified Crop Adviser License (CCA), Pest Control Adviser License (PCA); Fluency in Spanish preferred

**Apply:** Send resume to [tchavez@techag.com](mailto:tchavez@techag.com).

### Regional Sales Manager (Crop Protection) – Remote; Central/North CA Region

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**Description:** Expand sales of existing products for NovaSource in the region consisting primarily in Northern California including the Klamath Valley and Nevada. Interact with growers, distributors and retailers for the region and be responsible for maintaining and expanding profitable sales and technical support. You will report to the Director of Sales and Mkt for North America.

**Duties, Qualifications & Requirements:** Primary responsibilities are execution of the annual budget, forecasting sales, long term contribution to customer & account development. Identify, recruit and manage part time personnel to capitalize on business opportunities in the region and play a role in the acquisition process as necessary (both due diligence & integration). Hold a Bachelor's degree in horticulture, agronomy, plant nutrition or other life sciences as well as a CCA or PCA; Ten years or more experience in the agricultural crop protection industry & a track record of success in field sales.

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Mike Terry from the Desert Valleys Chapter met with Melissa Melendez, candidate for Senate. The Chapter matched CAPCA funds with a \$2,000 contribution to the PAC to support Melissa's campaign!



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## CHROME



# SAVE THE DATE

## CAPCA Ventura Chapter 38th Annual Golf Classic & Bar-B-Q

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Wednesday, May 13, 2020

Texas Scramble with Shotgun Start



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## Monterey Bay CAPCA

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### 7th ANNUAL SALINAS VALLEY AG TECHNOLOGY SUMMIT

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## In Memoriam

# BILL CHARLSON

## 1938-2020

Bill Charlson passed away on January 1, 2020. He fought health issues for many years after beating cancer in 2003. He is remembered fondly by many for his eternal optimism and generosity.

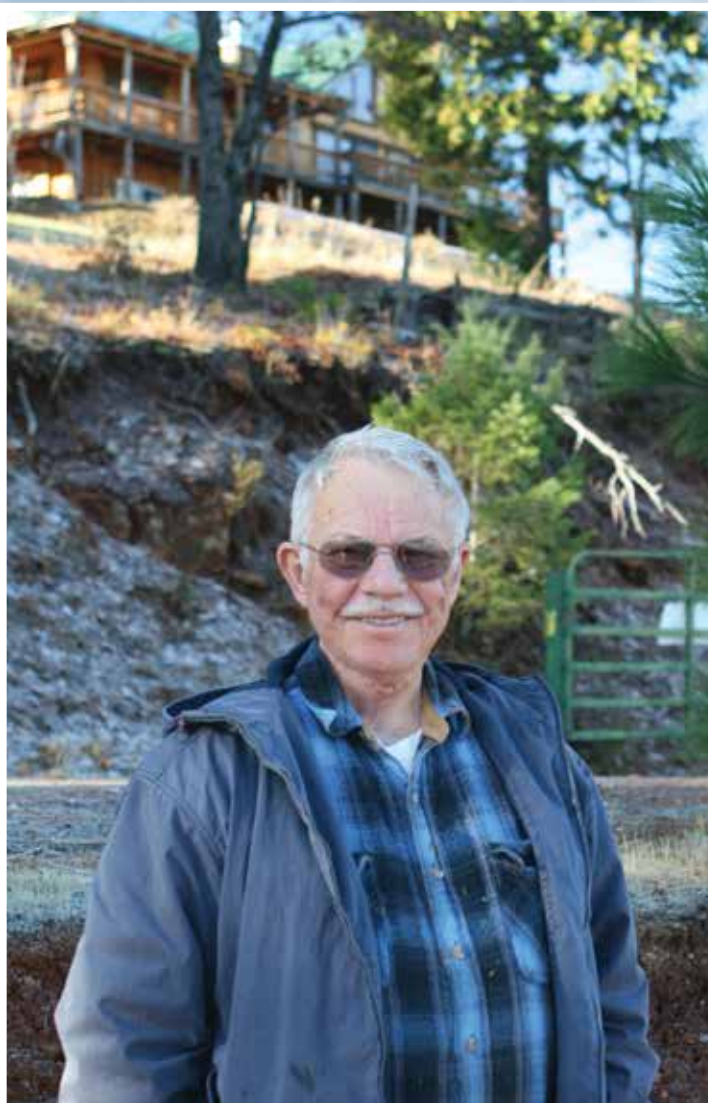
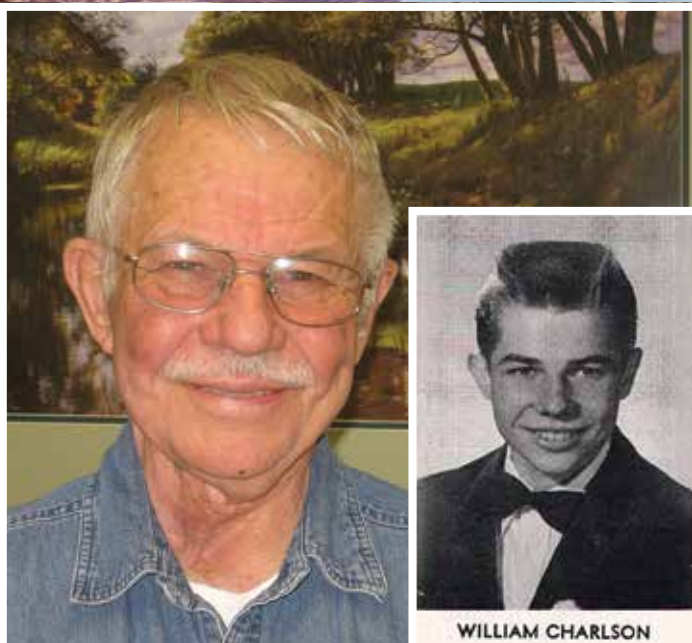
Bill was born in San Jose and was a graduate of Willow Glen High School and UC Davis, where he was a member of Theta Xi. He was also a veteran of the US Coast Guard. Bill spent his career as a park ranger and superintendent for the Santa Clara County Parks Department. Following his retirement, he created Lillaskog Lodge on his property near Yosemite National Park.

An active and devoted CAPCA leader, Bill was awarded CAPCA's Legacy Membership in 2019 for his many years of dedicated service. Very honored by this recognition, Bill reflected: "A legacy is something you leave behind for future generations of your family and others, something you did or created." Bill was successful in achieving that legacy. ■



*"Bill was such a dedicated volunteer and a determined man. He fought his battles with cancer and subsequent surgeries with tremendous grace and perseverance. He never complained but would answer questions and talk about his health objectively. We will miss his spirit, passion and dedication."*

*- John McClenahan, SF Bay Chapter*





# CAPCA

## *Dedicated to Supporting PCAs*

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### MISSION & PURPOSE

*CAPCA's mission is to facilitate the success of the PCA and to represent our 3,000 members who provide pest management consultation for the production of food, fiber and ornamental industries of California.*

*CAPCA's purpose is to serve as the leader in the evolution of the pest management industry through the communication of reliable information.*

*CAPCA is dedicated to the professional development and enhancement of our members' education and stewardship which includes legislative, regulatory, continuing education and public outreach.*



# Desert Valleys CAPCA Label Update & G. Randy Heath Memorial Golf Tournament

April 16, 2020 | Brawley, CA  
Starts at 8:00 a.m.

*For more information visit  
<https://capca.com/events/>*



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Please visit [www.capca.com/events](http://www.capca.com/events) for registration and event details.

DATE	LOCATION	EVENT	SPONSOR
3/31/2020	Atascadero	Central Coast CAPCA CE Meeting	Central Coast CAPCA
4/16/2020	Brawley	Desert Valleys CAPCA CE Meeting/Golf Tournament	Desert Valleys CAPCA
5/7/2020	Pomona	SoCal CAPCA CE Meeting	SoCal CAPCA
5/14/2020	Imperial	Desert Valleys CAPCA CE Meeting	Desert Valleys CAPCA
5/21/2020	San Jose	CAPCA Ed CE Meeting	CAPCA State Office
6/10/2020	Santa Paula	Ventura CAPCA CE Meeting	Ventura CAPCA
6/10/2020	Blythe	Desert Valleys CAPCA CE Meeting	Desert Valleys CAPCA
6/11/2020	Palm Desert	CAPCA Ed/UCANR CE Meeting	CAPCA State Office/UCANR
8/6/2020	La Quinta	Desert Valleys CAPCA CE Meeting	Desert Valleys CAPCA
8/13/2020	Simi Valley	CAPCA Ed CE Meeting	CAPCA State Office
8/20/2020	Atascadero	Central Coast CAPCA CE Meeting	Central Coast CAPCA
9/3/2020	Sacramento	CAPCA Ed CE Meeting	CAPCA State Office
9/9/2020	Santa Paula	Ventura CAPCA CE Meeting	Ventura CAPCA
9/10/2020	Fresno	Fresno Madera CAPCA CE Meeting	Fresno Madera CAPCA
9/15/2020	Bakersfield	Kern CAPCA CE Meeting	Kern CAPCA
9/17/2020	Modesto	CAPCA ED CE Meeting	CAPCA State Office
10/7/2020	Arcadia	CAPCA ED/UCANR CE Meeting	CAPCA State Office/UCANR
11/5/2020	Imperial	Desert Valleys CAPCA CE Meeting	Desert Valleys CAPCA



# CONTINUING EDUCATION

## 2020 DPR Accredited Course Report

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Date	Title	Location	Sponsor	Contact	Phone	Hrs
3/31/20	Ctrl Coast CAPCA Spring Mtg	Atascadero	CAPCA	Rhoades, Chris	(805)441-8394	4.5
4/7/20	E Siskiyou Pesticide Use Monthly Update	Merrill, OR	Siskiyou Co Ag Dept	Orr, Tony	(530)667-5314	2
4/8/20	W Siskiyou Pesticide Use Monthly Update	Fort Jones	Siskiyou Co Ag Dept	Smith, James	(530)841-4402	2
4/9/20	PAPA Fresno	Fresno	PAPA	Guevara, Michelle	(831)442-3536	7.5
4/15/20	PAPA Salinas	Salinas	PAPA	Anselmi, Maryana	(831)442-3536	7.5
4/21/20	Bionatural Healing-BNHC	Pomona	BNHC	Sidiqi, Nadir	(909)568-4150	7
4/22/20	Tree & Landscape IPM III	Fairfield	Solano Co Ag	Simon, James	(707)784-1385	7.5
4/28/20	Degesch America Recertification Program	Staunton	Degesch America	Kirby, Lisa	(540)234-9281	7.5
4/30/20	PAPA QAL/QAC Test Prep	Escondido	PAPA	Guevara, Michelle	(831)442-3536	7
4/30/20	PAPA Escondido	Escondido	PAPA	Anselmi, Maryana	(831)442-3536	7.5
5/5/20	E Siskiyou Pesticide Use Monthly Update	Merrill, OR	Siskiyou Co Ag Dept	Orr, Tony	(530)667-5314	2
5/6/20	PAPA QAL/QAC Test Prep	Stockton	PAPA	Guevara, Michelle	(831)442-3536	7
5/6/20	PAPA Indio	Indio	PAPA	Guevara, Michelle	(831)442-3536	7.5
5/13/20	PAPA Modesto	Modesto	PAPA	Guevara, Michelle	(831)442-3536	7
5/21/20	PAPA Sonoma	Sonoma	PAPA	Anselmi, Maryana	(831)442-3536	7.5
5/27/20	Bionatural Healing-BNHC	Pomona	BNHC	Sidiqi, Nadir	(909)568-4150	7

## 2020 Chapter Board Meetings

(Contact chapter for more information)

### Central Coast:

2nd Tuesday of the month (some exceptions) - 7:00 a.m. to 8:00 a.m.  
at F. McLintocks in Arroyo Grande  
Contact Danilu Ramirez: (805) 345-5418

### Central Valley:

2nd Friday of every month - 7 a.m. at My Garden Café in Ripon.  
Contact Larry Fisk: (209) 814-4406

### Desert Valleys:

Meetings held monthly, times and locations vary  
Contact Preston Hutchinson: (760) 623-2079

### Fresno-Madera:

3rd Tues. of the month - 6:30 a.m. at Fresno Breakfast House, Fresno  
Contact Patrick Murphy (559) 696-2298 to confirm location

### Kern County:

2nd Tuesday of each month / 7:00 a.m. winter & 6:30 a.m. daylight savings,  
at Milt's Coffee Shop, Bakersfield  
Contact Daniel Palla: (661) 345-6613

### Monterey Bay:

3rd Thursday of each month  
Contact Drew Butler to confirm location: (831) 682-5722

### NorCal:

Last Wednesday of the month - 7:00 a.m. at Cozy Diner, Chico  
Contact Kristina Short: (530) 520-8377

### North Coast:

Meetings held quarterly, times and locations vary  
Contact Mike Boer: (707) 489-0656 for info

### San Diego:

1st Monday of every other month unless adjusted for a holiday  
January 6, March 2, May 4, July 6, September 7, and November 2  
at Mi Guadalajara restaurant, Escondido  
Contact Jan Hall: (760) 579-3097

### San Francisco:

Meets quarterly  
Contact Jeoff Dunster for information and location: (650) 814-2436

### SoCal:

1st or 3rd Friday of every two or three months  
at Mimi's Cafe, Anaheim  
Contact Heather Palmer: (949) 429-9944

### Sutter Buttes:

TBA. Contact Toby Leonard: (530) 701-7100

### Tri-County:

1st Tuesday of each month (except April, May & June) - 12:00 p.m.  
at Pappy Ganders, Merrill, OR  
Contact Corey Thompson: (541) 205-1262

### Tulare-Kings:

2nd Thursday of every month  
Contact Nathan Stewart for information and location: (559) 553-5808

### Ventura:

Cafe 126 in Ventura  
Contact Ted Swartzbaugh: (805) 914-4185

### Woodland:

Meet Quarterly. Contact Mark Allen for information: (530) 304-9091



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