



University of California Cooperative Extension

Fresno, Kern, Madera, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, Tulare, & Ventura Counties

News from the Subtropical Tree Crop Farm Advisors in California

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Mitigating Sunburn Damage to Tree Fruit and Canopy

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Heatwaves above 95 °F are showing up more often in citrus and avocado growing areas, pushing fruit surface temperatures to the point of damage along with damage to leaves and the canopy. Sunburn is no longer a rare problem: in avocado, for example, repeated hot, clear days can quickly lead to severe sunburn on exposed fruit and major losses at grading.

In the 1961 CA Avocado Society Yearbook, Art Schroeder described temperature damage to avocado fruit and concluded:

It is conceivable that under conditions where heat injury to fruit tissue may be a major problem that some modification of the environment could be developed to reduce this injury. Shading of exposed fruit or provision of a temporary fruit cover such as a fruit spray of such quality and color to reflect radiant heat could markedly reduce fruit tissue injury. Modification of other ecological factors such as soil reflection, fruit and tree shading, air movement and relative humidity conceivably could affect fruit temperatures in a favorable manner.

Schroeder, C.A. & Kay, E. 1961 Temperature conditions and tolerance of avocado fruit tissue *California Avocado Soc.* 45 87 92

So, shade nets; overhead and undercanopy microsprinklers; sunburn suppressants, such as kaolin sprays (AlSiO₃), talc (Mg SiO₃), calcium-based products (PurShade, Screen Duo, Reflections, Eclipse, Diffusion, etc.), biobased coatings (Raynox, Parka); cover crops; pruning regime; and even paper bag wrapped fruit, all have shown promise keeping the orchard cooler and fruit free from sunburn. The challenge is finding the right mix of treatments that protects your yield without costing too much in installation, application, labor, or water. A wonderful discussion of different methods is found at a Washington State University webpage - [severe sunburn](#) correction methods. Across a wide variety of fruit crops, [a scientific review on sunburn](#) reports in depth on methods of preventing sunburn and heat damage to fruit and orchard.

Shade nets have become a key strategy in apple and stone fruit regions that face frequent heat and sunburn. They have also been tried in CA and Israeli avocado orchards. By reducing incoming radiation, nets lower fruit and air temperature under the canopy and can also protect against hail, wind, and bird damage. For high value blocks, that combination can dramatically cut severe sunburn and stabilize pack out. However, [nets are a long-term commitment](#). They require investment in posts, cables, and fabric, and they can change how machinery moves through the block or how you spray and prune. If you later switch varieties or need to reconfigure rows, the net structure is not easy to adapt, which is why many growers only install nets on their most profitable hectares.

Spray-on mineral films based on kaolin clay or calcium-based solutions have been used for many years to reflect light and reduce fruit surface temperature. Trials in apples show that a well-managed program can lower fruit surface temperatures by several degrees and significantly reduce visible sunburn compared with untreated trees. Calcium-based products create a similar reflective film and are widely used where nets or cooling systems are not practical. These

materials are available as conventional and product registrations. They are applied as liquids at 2-4 gallons mixed with water for coverage. The kaolin is a dry material applied at 25-50 pounds per acre. The products need to be applied multiple times to maintain cover on expanding leaves and fruit.

Minerals are flexible: you can adjust dose and timing to the season and focus on the most exposed rows. The tradeoff is appearance. At higher rates or later applications, the white film can remain visible at harvest, and in some markets that raises concerns about color and wash off on the packing line. It is important to note that these minerals in powder form can be more difficult to mix, and the risk of clogging nozzles can be higher than with liquid formulations, depending on agitation/filtration/nozzle setup and water quality. Check with the packinghouse before committing to a given product.

Bio-based reflective coating, such as Parka and Raynox are newer options that aim to combine the flexibility of spraying with a clear formulation. One is a phospholipid and the other a wax. Neither impairs transpiration, and act by reflecting the sun. They are both liquids applied at lower rates than mineral-based ones but still need repeated applications to protect expanding fruits and leaf canopies. They are applied at sufficient spray volumes to get good coverage. They tend to be more expensive than mineral-based ones.

Sprinklers and fogging systems cool the canopy by evaporation, using water to absorb heat from the leaves and fruit surface. In regions with abundant water and good infrastructure, these systems can sharply reduce sunburn and help maintain color and firmness in heat sensitive cultivars. They are often used together with nets on very high value orchards.

For many growers, though, water volume and timing are limiting factors. Evaporative cooling can use significant water volumes which the grower can control, and the system needs close monitoring during each heat event. A blocked nozzle or pump failure on the hottest afternoon of the year can undo the benefit very quickly, so this method is best reserved for situations where you can guarantee supply and supervision.

Cover crops and mulches can effectively reduce orchard temperatures. Covers do it by increasing orchard humidity and decreasing soil heating, both of which reduce air temperatures. Mulch acts to reduce mineral soil heating but reduces air temperatures somewhat less than a cover crop. Both need to be in place long before the anticipated heating events.

Fruit bagging has been used in Asia for a long time to protect individual fruits not only from sunburn, but also insects and disease. It's a labor-intensive process and often used in conjunction with fruit thinning to increase the [size and esthetic quality of the fruit](#). It's not common practice in California.

The use of antitranspirants can effectively reduce excessive water loss through transpiration, especially under drought stress conditions. However, the fact that transpiration is reduced by an antitranspirant means evaporative cooling decreases. The temperature of leaves and fruits increases; it is therefore not surprising that in several studies, antitranspirants did not reduce the incidence of sunburn and in fact increased damage to citrus.

All the available technologies are capable of reducing sunburn and orchard damage, but none alone will completely eliminate it. The sun burn tolerance cultivars of fruit crop must certainly be combined with other means of strategies to minimize sun burn in fruit crops. GEM and Lamb Hass carry their fruit in the canopy interior while many other varieties have more exposed fruit. Growers should identify which areas are more susceptible to sunburn, what control strategies can be employed in each area, and which areas have the best chance of achieving good returns on the additional investment.



New drone application techniques may make it easier and cheaper to apply sunscreens.

Recent Pest Alerts for Tropical and Subtropical Fruit Pests

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The California Department of Food and Agriculture (CDFA) has recently issued several pest rating proposals for arthropods known to affect tropical and subtropical fruit crops, including avocado, guava, cherimoya, papaya, citrus, and date, banana and coconut palm crops. These

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ratings help determine the state's regulatory response and the level of action required to prevent the spread of injurious pests. Growers and field staff are encouraged to be aware of these pests, as sometimes the proposals are triggered by recent interceptions or because of a recent, increased risk to California's agriculture.

Proposed "A" Rating: These are high risk organisms of known economic importance that are not yet established in California. If found, they are subject to biosecurity measures to keep them out of the state. Reporting these immediately if found, as a rapid response, is critical for eradication.

Annona Mite (*Aceria annonae* [Acari: Eriophyidae]): A tiny mite, only about 0.2 mm in length that attacks papaya, custard apples and soursops. Its feeding causes deformed leaves presenting as bumps on the upper leaf surface and fuzzy growth on the undersides, which can lead to stunted plant growth. It is known to occur from Mexico to Venezuela and in the Caribbean and is occasionally intercepted on shipments of *Annona* plants these areas. It hasn't been reported to cause economic damage to its host plants, however, there is uncertainty in California where it may be separated from its natural enemies.

Avocado Destroyer (*Histura perseavora* [Lepidoptera: Tortricidae]): A small moth, about the size of a grain of rice (forewing length of up to 5.5 mm) found in Guatemala. The larvae tunnel into and feed on mature avocado fruit and pedicels, suspected to cause premature fruit drop and infestations are often detected from the fallen fruit. This is potentially a significant pest of avocados in California if it is introduced.

Coconut Rhinoceros Beetle (*Oryctes rhinoceros* [Coleoptera: Scarabaeidae]): A large, robust scarab beetle is a threat to palm crops including dates, banana and coconut. The adult beetles burrowing into palm crowns to feed on new fronds causing characteristic "V" shaped notches, causing direct chewing damage and introducing secondary bacterial and fungal pathogens that reduce productivity and can be fatal, particularly for young trees. The grubs feed on decaying organic matter such as compost or rotting palm material on the ground. It has a widespread distribution around the Pacific including Hawaii and Guam and was recently reported in Mexico.

Proposed "B" Rating: These pests are of economic importance and locally established in some counties. They are subject to eradication or control measures on a county basis and when found in nurseries.

Guava Moth (*Holocola thalassinana* [Lepidoptera: Tortricidae]): Native to Australia and now established within coastal San Diego. It attacks guava along with other Myrtil plants, such as tea tree and paperbark. The caterpillars are leaf rollers that hide within webbed shoots and can cause significant damage by feeding on flowers, which may lead to flower abortion.

Proposed "C" Rating: organisms that may or may not be economic pests and are generally widespread and not pursued with strict regulatory actions.

A seed-feeding bark beetle, *Araptus schwarzi* (Coleoptera: Curculionidae): This bark beetle is primarily a seed-feeder of avocados and cherimoya. It appears to prefer fruit and seeds that have

already fallen to the ground. It is reported from Mexico, and Dr. Paul Rugman-Jones (UCR) recently reported it from Southern California. It is not reported to have economic or environmental impacts and has likely been established for some time. Check out the previous issue of Topics in Subtropics for more details.

Laurel Leafhopper (*Synophropsis lauri* [Hemiptera: Cicadellidae]): This polyphagous leafhopper is globally distributed and recently observed to be present in California. It likely infests plants including olive, laurels and citrus. Not much is known about its feeding habits, but it isn't thought to be a significant plant pest or vector of pathogens. It may be something growers notice without cause for alarm.

When a new pest is detected or a rating is re-evaluated, CDFA publishes a proposal for public review. Growers and interested members of the public are encouraged to submit comments about host range and economic impact during the open comment period. If you discover a suspect pest in your grove, please report it immediately to your local Cooperative Extension Office, County Agricultural Commissioner or the CDFA pest hotline: 1-800-491-1899, reportapest@cdfa.ca.gov.

The Pesky Weed Grows and Grows the More It's Disced and Pulled

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Cyperus rotundus is a perennial plant, that may reach a height of up to 140 cm (55 inches). It is a common weed in Southern California. The names "nut grass" and "nut sedge" – shared with the related species *Cyperus esculentus* – are derived from its [tubers](#), that somewhat resemble [nuts](#), although botanically they have nothing to do with nuts. But they are tasty to pigs, geese, and chickens and in horchata consumed by humans. Maybe the reason it is so widespread is because people spread it. It also has nothing to do with grass or sedges, just that they look sort of like grass or sedge.

Yellow nutsedge called Earth almond or Chufa, has tuberous roots that can be eaten raw or cooked. Their sweet, nutty flavor makes them ideal for a multitude of recipes, from soups to sweets. Yellow nutsedge was used to add sweetness to ancient Egyptian barley juice, and in Spain, the tubers are added to horchata de chufa, a beverage “prepared by mixing the ground tubers with water, cinnamon, sugar, vanilla, and ice. Purple nutsedge also has edible roots. While the raw tubers can be eaten at once, they're best after drying. Like the yellow variety, purple nutsedge can be eaten boiled or roasted.

[Yellow and purple nutsedge](#) appear similar to grasses but have leaves that are triangular in cross-section, while grass leaves are round. The flowers resemble those of grasses. Yellow nutsedge flowers are yellow in color, while purple nutsedge flowers are purple. They are easily distinguished from each other by looking at their tubers. Yellow nutsedge tubers are nearly round

and somewhat smooth. Purple nutsedge tubers are oblong and very rough and scaly. Purple nutsedge tubers are linked together by rhizomes (underground stems), while yellow nutsedge tubers are found only at the ends of rhizomes. Tubers of both species have three to seven buds that are capable of forming a new plant. Nutsedge plants develop from sprouts on a tuber; the sprout forms a bulb just under the soil surface. Leaves then grow from the basal bulb.

The tubers are tasty. Poultry and hogs consume nutsedge tubers and have shown potential for purple nutsedge control. Early experiments in Alabama with running laying hens in fields with purple nutsedge infestations of about 20 tubers per square foot showed that a stocking rate of 480 birds per acre maintained for one full growing season eradicated the weed.

In a field trial in Georgia, purple nutsedge grown in fertilized soil without competing vegetation flowered and began to form tubers about 7–8 weeks after emergence and developed 2.4 tons above ground and 4.2 tons below ground dry weight per acre by 12 weeks. After that point, active foliar growth diminished while tuber formation accelerated; by 20 weeks, shoot biomass was 3.3 tons per acre while below ground biomass reached 12 tons per acre. Underground dry weights of approximately 5–8 tons per acre have been observed in naturally occurring heavy infestations at other sites. For comparison, the above ground biomass of an 8-ft pearl millet or sorghum-sudangrass cover crop with a fully closed canopy is about 5–6 tons per acre.

Weed pulling usually results in breakage of roots, leaving tubers in the ground from which new plants emerge quickly. Rototilling and disking distribute the tubers in the field, worsening the infestation; even if the rototiller cuts up the tubers to pieces, new plants can still grow from them. In addition, the tubers can survive harsh conditions, further contributing to the difficulty to eradicate the plant. Deep plowing that exposes tubers to drying on the surface can reduce numbers, but plowing must be frequent which leads to added costs and soil degradation.

Most herbicides may kill the plant's leaves, but most have no effect on the root system and the tubers. [Glyphosate](#) will kill some of the tubers (along with most other plants) and repeated application can be successful. [Chlorsulfuron-methyl](#)^[18] will control nut grass after repeated applications without damaging lawns.^[19] The plant does not tolerate shading and [2,4 dichlorophenoxyacetic acid](#) (2,4-D) slows its growth in pastures and mulch crops.

Shading can have a significant impact on nutsedge populations. A tall cover crop, such as barley, oats, sorghum, buckwheat, and others will gradually deplete the tuber reserves and eventually eliminate the problem. But it takes time, several years, for this to happen. I once told a grower who was going organic but had a field huge with nutsedge to first spray it out with an herbicide before going organic. The grower demurred and said that they wanted to ridge up and plant avocado trees and they would plant cover crops in the three-year period before organic certification. Well, it worked. Nutsedge, 4 years later is only just another of the many on-farm problems, but not insurmountable. They were and are persistent in removing the stray nutsedge to keep it in check.

Other good readings: SARE: <https://www.sustainablemarketfarming.com/tag/organic-weed-management-of-nutsedge/>

Extension Foundation: <https://eorganic.org/node/5131>

Susceptibility Chart of Weeds Including Nutsedges to Herbicides:

<https://ipm.ucanr.edu/agriculture/citrus/susceptibility-of-weeds-to-herbicide-control/#gsc.tab=0>



Left: Purple nutsedge in flower. Photo credit: Oregon Dept of Agriculture.

Right: O, so tasty nutlettes (tubers). Photo credit: UC IPM.



Cyperus rotundus emerging through plastic mulching. Photo credit: Fernando Lopez Anido / CC BY-SA 4.0

(<https://creativecommons.org/licenses/by-sa/4.0/>)

After a Wildfire: Food Safety Considerations for California Specialty Crops Operations

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Takeaway message: *Do not assume that all fruit exposed to wildfire smoke is unsafe, but do not rely on appearance or washing alone. Protect workers, document conditions, assess the likely hazards, segregate suspect lots, and restore clean water and food-contact surfaces before harvest resumes.*

While the United States experiences wildfires every year, California consistently accounts for a large share of the **nation's** burned acreage, where hot, dry conditions and dense vegetation contribute to increased wildfire activity. As of mid-June 2026, California alone has experienced nearly 20% of the total burned area in the U.S, with about 79,691 acres affected [1]. This includes specialty crop orchards, such as avocado, citrus and grape vineyards. Wildfires severely threaten California's agricultural economy by causing crop loss, orchard destruction, and economic hardship for growers. For example, Ventura County's agricultural sector sustained severe impacts during the 2024 Southern California wildfire, which consumed over 12,000 acres of farmland and generated more than \$6 million in total damage. Crop losses were heavily concentrated in high-value orchards, including the destruction of more than 500 acres of avocados and 122 acres of citrus.

Food Safety and Wildfire Contamination in California Orchards

Food safety following California wildfires is a critical operational concern for the state's agricultural sector, particularly for high-value tree crops like avocados and citrus. Wildfires generate ash, smoke, soot, and airborne toxic chemicals that can travel long distances, settling on groves well beyond the immediate burn area [2-4]. For California growers, managing these post-fire risks requires specific safety protocols due to the unique nature of these crops:

1. *Surface Contamination & Chemical Risks:* Heavy smoke and ash can deposit heavy metals and particulate matter onto the skins of avocados, lemons, oranges, and grapes. While citrus and avocados have thick, protective rinds, airborne contaminants present a serious risk of cross-contamination during harvesting, packing, and processing.
2. *Microbial Susceptibility from Heat Stress:* The extreme heat and environmental stress caused by nearby wildfires can weaken orchard trees, damaging the structural integrity of the fruit. This heightened stress increases the crop's susceptibility to microbial contamination, a leading cause of foodborne illness in the United States.

3. *The Absence of a "Kill Step"*: Because avocados and many fruit varieties are frequently sold for fresh consumption and eaten raw without a "kill step" (such as cooking or pasteurization), any pathogens or chemical residues remaining on the fruit at the time of harvest can pose direct health hazards to consumers.

Best Practices for California Growers Post-Wildfire Events

1. Assess fruit before harvest

- Evaluate wildfire and smoke risks using field inspection protocols.
- Identify ash deposition, physical burn damage, or heavy smoke haze on crops and surrounding fields, through visual and sensory inspections.
- Check for visible fire-retardant residue on fruit or uncertainty about whether retardant was applied directly over the production area.
- Identify potential wildfire runoff, chemical fire-retardant drift, or ash accumulation in irrigation sources, through soil and water checks.
- Do not rely solely on fruit appearance, odor, or a routine rinse to determine whether a lot is acceptable. When contamination is uncertain, targeted testing may support the assessment, but the analysis and sampling plan should match the suspected hazard.

Food Safety Benefit: Prevents particulate matter, toxic combustion residue, or fire-retardant contaminants from entering the processing chain, ensuring only clean, uncompromised produce moves forward to harvest [5-8].

2. Agricultural Water and Irrigation Systems Inspection

- Inspect wellheads, pumps, reservoirs, tanks, pipelines, filters, backflow devices, valves, and postharvest water systems for heat damage, leaks, debris entry, loss of pressure, or cross-connections.
- If ash, runoff, debris, or firefighting water may have entered a water source or distribution system, suspend the affected use until the system has been evaluated and appropriate corrective measures have been completed.
- Repair damaged components, protect source-water areas, clean or replace filters, and document flushing, repairs, and testing. Current FDA agricultural-water requirements emphasize assessing possible sources and routes by which hazards may enter preharvest water.

Food Safety Benefit: Helps prevent contaminated water from contacting produce or food-contact surfaces and supports documented, risk-based decisions before affected systems return to use [9].

3. Handle Fruit & Equipment

- Avoid leaf blowers or tools that aerosolize ash; use low-dust methods to remove ash and debris.
- Keep contaminated bins, tools, vehicles, and protective equipment out of clean packing and storage areas until cleaned.
- Clean food-contact surfaces with suitable detergent and safe water, rinse as needed and apply an approved sanitizer according to the label.

- Inspect hard-to-clean areas and replace porous or damaged materials that cannot be adequately cleaned.
- Require handwashing and clean clothing before workers return to harvesting, packing, or other food-handling tasks.

Food Safety Benefit: Maintains clean harvest surfaces, reduces airborne particulates, and prevents ash contamination of fruit entering the supply chain [10].

Best Practices for Worker Safety in Wildfire-Affected Agriculture

1. *Check Air Quality Before Entering Groves:* Workers should avoid fieldwork during heavy smoke and prioritize worker health over harvest timing.
2. *Wear Respiratory Protection During Fieldwork:* Under Cal/OSHA's wildfire-smoke standard, when the current Air Quality Index is 151 to 500, employers must reduce exposure when feasible. Train workers on proper fit and seal checks and usage of N95 respirators that reduce inhalation of fine ash and wildfire particulates [11].
3. *Prevent Ash Transfer to Homes & Packing Areas:* Ash clings to clothing, shoes, and skin, and can contaminate fruit. Therefore, workers should be trained to remove their shoes and change clothing before entering indoor spaces as well as proper hygiene inside and outside the packing houses and homes.
4. *Follow Post-Fire Storage & Packing Protocols:* Smoke infiltration can compromise stored fruit and packing areas. Therefore, workers must be trained to identify compromised produce and discard fruit with off-odors, visible damage, or smoke exposure.
5. *Minimize Soil Disturbance in Ash-Affected Orchards:* Ash-contaminated soil can become airborne or splash onto fruit. Therefore, avoid high-pressure water that creates splash events, limit raking, digging, or mechanical disturbance, and monitor soil surfaces for ash accumulation after wind events.

Conclusion

Wildfire disasters create unique food safety challenges for California's agricultural commodities. By following best practices for assessment, cleaning, and handling, growers can mitigate risks and ensure that fruits and vegetables remain safe to eat. For farms subject to the FDA Produce Safety Rule, covered produce that is reasonably likely to be contaminated with a known or reasonably foreseeable hazard must not be harvested. This article provides general educational information and does not replace site-specific regulatory, occupational-safety, laboratory, insurance, or legal advice. Stay informed by consulting local and national guidance to address contamination risks effectively.

Need Food Safety Support?

If you have questions about wildfire-related food-safety concerns or need assistance assessing risks to your operation, please contact us. We are available to support California growers with food-safety information and technical assistance.

2-SAFE Program- UC Riverside

Email: aelmogha@ucr.edu

Phone: 951-827-0257

Resources and References

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Asian Citrus Psyllid Detections in the Valley: Vigilance and Regulatory Compliance Are Essential to Protect San Joaquin Valley Citrus

By Sandipa Gautam, Area Citrus IPM Advisor, UC Cooperative Extension

Although the San Joaquin Valley (SJV) remains free of established populations of Asian citrus psyllid (ACP) and Huanglongbing (HLB) has not been detected in commercial citrus, recent ACP detections remind us that the pest continues to pose a significant threat. Thanks to the coordinated efforts of growers, Pest Control Advisers (PCAs), Grower Liaisons, the California Department of Food and Agriculture (CDFA), County Agricultural Commissioners, and regulatory agencies, every ACP detection in the San Joaquin Valley continues to be treated as an eradication event rather than establishment. Rapid detection, regulatory response, and grower-cooperation have prevented localized introductions from becoming permanent populations.

Historical trend and response of ACP Detections in the Southern San Joaquin Valley

In the San Joaquin Valley (SJV), the CDFA operates under a strict local eradication protocol. Unlike Southern California, where the ACP is widely established, the psyllid is established in the valley. Detections here are treated aggressively to suppress populations and protect the heart of the state's commercial citrus belt. CDFA regulatory trap find impacts growers and homeowners across the San Joaquin Valley. Any find triggers boundaries for eradication and treatment as the goal in the SJV is to maintain an "ACP-free" status as close to zero as possible, a single psyllid capture on a yellow sticky trap triggers mandatory chemical treatments within a specified radius. In the commercial groves, a trap find mandates coordinated insecticide treatments for all commercial citrus orchards within an 800-meter radius of the find. In residential properties: CDFA survey crews will treat backyard host plants (such as lemons, oranges, and curry trees) free of charge within a 400-meter radius of the positive trap. Homeowners are given 48-hour notice prior to chemical applications.

The table below summarizes CDFA trap finds in five counties since trapping began in 2012.

- ACP continues to be detected every year in the southern San Joaquin Valley.
- **Tulare County reported 13 detections in 2026 (YTD)**, the highest among SJV counties this year.
- Kern County has historically experienced the greatest number of detections due to its proximity to established ACP populations in Southern and Coastal regions. This has led to fall co-ordinated treatments near historical hot spots to mitigate any surviving ACP.
- Recent detections demonstrate that ACP introductions continue to occur, emphasizing the importance of early detection and rapid response.

Table. Total detections of Asian citrus psyllid (ACP) in southern San Joaquin Valley counties (2012–2026 YTD).

Total Detections of Asian Citrus Psyllid in South San Joaquin Valley																
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026 YTD	AVG
Madera	0	0	1	2	2	0	0	0	1	0	2	0	0	3	0	1.0
Fresno	0	0	0	2	28	11	3	1	0	1	8	2	1	8	1	5.9
Tulare	3	12	12	13	74	34	10	2	3	2	27	2	5	2	13	18.3
Kings	0	0	0	0	28	2	0	0	1	0	0	0	0	0	0	2.8
Kern	0	1	4	113	247	78	18	1	113	18	94	5	10	11	1	64.8
TOTAL	3	13	17	130	379	125	31	4	118	21	131	9	16	24	15	81.6

Data is courtesy of Judy Zaninovich, PCA and Grower Liaison

While annual detections fluctuate, regulatory treatments following detections have successfully prevented widespread establishment within commercial citrus production areas of the San Joaquin Valley.

Fall is a critical time for ACP population growth, therefore for monitoring.

As summer transitions into fall, citrus trees produce new vegetative flush following irrigation and cooler temperatures. This flush is highly attractive to ACP because:

- Females lay eggs only on tender new shoots
- Newly emerged leaves provide ideal feeding sites for nymphs
- Populations can increase rapidly within a few weeks if left undetected

Adult psyllids are highly mobile and can move from residential citrus into commercial orchards. Early infestations often begin on only a few trees and can easily be overlooked without careful scouting.

What can growers in the SJV region do?

- Stay informed about the historical hot spots and increase monitoring near previous detection sites
- Promptly report suspicious ACP finds to county or UC Cooperative Extension or Alliance of Pest Control District
- Maintain communication with Grower Liaisons, local Agricultural Commissioners and CDFA.
- Allow regulatory access when detections occur, and comply with quarantine and treatment requirements

Rapid reporting allows regulatory agencies to respond before populations become established. Continue supporting the eradication program as the San Joaquin valley's eradication strategy

depends on cooperation among everyone involved in citrus production, including growers, residents, packinghouses, and landscape citrus. Some areas such as areas located near previous detection sites, those adjacent to residential citrus, groves near packinghouses and juice plants, and newer orchards with abundant new flush.

Monitoring Asian Citrus Psyllid

Effective monitoring combines several complementary methods.

1. Flush inspection is most efficient and key as young flush is the preferred site for ACP reproduction. Inspect newly emerged shoots for: yellow-orange eggs on feather flush, flattened yellow-orange nymphs, white waxy tubules produced by feeding nymphs, honeydew deposits, adults resting at approximately a 45° angle. For sampling, walk a representative pattern through the orchard, start with the border rows and move in. Inspect 25–50 trees per block. Examine several flush shoots per tree. Pay particular attention to orchard borders. Fresh flush less than one inch long is most attractive for egg laying.

2. Tap Sampling tap sampling is a quick and effective method for detecting adults, especially in hot spot areas. You will need a white clipboard, tray, or laminated sheet and short stick or PVC pipe. For sampling, hold the white surface beneath a branch, and strike the branch firmly three times and count adults that fall onto the surface. Repeat across multiple trees. Adults are easier to see against a white background and typically jump or fly shortly after landing. Tap sampling works particularly well during cooler morning hours.

3. Yellow Sticky Traps are valuable for detecting low-density adult populations. Place traps around orchard borders, install traps before major flushing periods, inspect weekly or biweekly. Sticky traps are excellent for early detection but should always be supplemented with visual inspections to determine live populations prior to making treatments.

Key Take-Home Messages

- ACP remains an ongoing threat to San Joaquin Valley citrus.
- Fall flush provides ideal conditions for rapid population growth.
- Monitor orchards carefully, especially around previous detection areas.
- Inspect new flush, use tap sampling, and maintain sticky traps.
- If making insecticide applications for other pests, select materials that also provide ACP control whenever appropriate.
- Regulatory compliance and rapid reporting remain our strongest tools for keeping ACP from becoming established in the San Joaquin Valley.

For more information, visit Pest Management Guidelines for [Asian Citrus Psyllid](#).

Upcoming Workshops

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Event Website:

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Event Location:

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