Sacramento Valley Almond News
Spring, 2025

University of California
Agriculture and Natural Resources | Cooperative Extension

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Franz Niederholzer
UCCE Advisor
Colusa, Sutter, Yuba Counties

Almond Orchard Management Considerations: April – June

Ben Baldi, Staff Research Associate, Yolo, Solano, Sacramento, Colusa, Sutter, & Yuba Counties

APRIL

- **Irrigation**: We have started the 2024 season with a full soil moisture profile. Consider utilizing the pressure bomb and soil moisture sensors to avoid stress from starting irrigation too early or too late. Target about 1 bar drier than baseline for initiating irrigation with the pressure chamber and then 1-2 bars drier for the rest of the early season (generally –8 to –12 bars).
- **Diseases**: Monitor for rust, scab, anthracnose, shot hole, and Alternaria, treat as necessary. The 2025 fungicide efficacy and timing tables are helpful tools for decision making. If we have a wet, warm spring consider a rust treatment before symptoms are visible in blocks with a history of rust. For more information about these diseases visit the UC IPM website.
- **Nutrients**: Key time to assess crop size and plan your nitrogen (N) and potassium (K) budget accordingly. It is a waste of money to fertilize the crop you want, rather than the crop you have.
- **Insect and Bugs:** Monitor for navel orangeworm (NOW), peach twig borer (PTB), leaffooted bugs, and spider mites. Hang NOW mating disruption dispensers. Monitor traps for NOW (eggs) and PTB (moths) to determine biofix date. Guide to distinguish gummy nut causes found here.

MAY

- **Irrigation:** Maintain trees at 1-2 bars below baseline using a pressure chamber. Both too much and too little water can reduce yield. Pressure chamber readings are the most direct way to measure water status of trees and are a powerful tool when used in combination with ET and soil moisture sensors.
- **Nitrogen and Potassium**: Almonds use 80% of their annual N budget by June; May is a time of high N use in orchards. Reassess the crop set and consider leaf sample results from last July and/or this spring to adjust N amount. See detailed information on nitrogen management in almonds from the Almond Board of California. Maintain leaf K levels in an adequate range (>1.4%) through July to reduce spur death and crop loss potential next year.
- **Sprayer Calibration** is important for cost savings and to increase chemical efficacy.
- **Diseases**: Continue monitoring for foliar diseases and treat as necessary. Consult 2025 fungicide and efficacy timing tables for decision making.
- **Insects and mites:** Continue monitoring for insect and mite pests and beneficials. For lean times see this article about May sprays.

- **Gophers/ground squirrels:** Monitor closely and apply steady control practices to active mounds/tunnels. For more information, see the article in this newsletter.
- **Weeds**: Revising your weed management strategy is a way to reduce costs by reducing strip width and treatment intensity. Survey to see which weeds were controlled by fall or winter treatment to help plan next fall/winter weed management.

JUNE

- **Irrigation:** If an orchard has been fully irrigated, a strategic irrigation deficit at hull split offers multiple benefits like *Rhizopus* hull rot management and a shorter, cleaner shake at harvest. To accomplish this, reduce irrigation set length as kernel fill completes. Deep, heavy soils with micro-sprinkler or solid set irrigation will have more soil moisture available and will respond more slowly to reduced irrigation compared to lighter soil and/or drip irrigation. For two to three weeks, beginning at the onset of hull split (late June or early July), SWP levels of 4 to 8 bars drier than the baseline (generally -14 to -18 bars) will promote hull split and uniform nut maturity leading to timely harvest. Once hull split is 90%, return the orchard to full irrigation until preharvest cutoff. Learn more from our article on Advanced SWP Interpretation in Almond.
- **Nutrient Application:** Apply potassium as needed to maintain 1.4% range through July. Assess K fertilizer needs using current crop set, current season leaf analyses, and orchard observations. Finish N applications by the end of June. Almond uses 80% N by the end of May, so applications in June should be tapering off. This matches N supply with N demands and significantly limits risk of hull rot.
- **Continue Pest Monitoring:**
  - NOW: Check for hull split in the upper southwest corner of edge trees. Early is better than later for hull split sprays.
  - Continue monitoring spider mites **and** their predators.
  - Ants: Survey for protein feeding ants and if necessary, create a treatment plan. Some application programs start 10 weeks ahead of planned harvest. Apply bait promptly after purchase to dry ground to increase efficiency: product opened for 1-2 weeks no longer works.
- **Hull Rot:** Best control combines adequate, but not excessive, N (2.4-2.6% N in summer leaf samples), moderate water stress (-14 to -18 bars on the pressure chamber) between kernel fill and end of early hull split, and 1-2 fungicides in June or early July.
  - *Monilinia:* For best control of *Monilinia* hull rot (tan lesion on the outside of the hull), spray in early June as hull split timing does not effectively control this hull rot pathogen.
  - *Rhizopus:* For orchards with a history of *Rhizopus* (black spores) hull rot, spray a fungicide at early hull split timing (tank mix with NOW insecticides).
  - *Aspergilus niger*: Fungicides are more effective once the hulls have actually split.
- **New Pathogen Alert**: Red Leaf Blotch (*Polystigman amygdalinum*) an invasive leaf disease was recorded in Fresno, Madera, Merced, San Joaquin, and Stanislaus Counties in the summer of 2024. Small pale-yellow blotches on either side of the leaf that will progress into yellow-orange with reddish-brown centered spots which can cause necrosis, leaf curl, and pre-mature drop. *If you suspect that you have this new disease in your almond orchard, please contact your local UC Cooperative Extension farm advisor.*
- **Equipment preparation:** Time and money can be saved by checking harvest equipment before hull split and harvest. Plan for a low-dust harvest.

Managing true bug (leaffooted plant bug and stink bug) pests in almond orchards

Sudan Gyawaly, UCCE IPM Advisor, Butte, Colusa, Sutter-Yuba, Glenn, and Tehama Counties
Jhalendra Rijal, UCCE IPM Advisor, Stanislaus, Merced and San Joaquin Counties

Brown spots caused by feeding damage from true bugs can be graded as a defect and so are an increasing concern for almond growers. These pests include various species of stink bugs and leaffooted bugs, which feed on many crops and commonly found in tree fruit and nut orchards, tomato fields, and other crops. So, depending on the cropping systems around almond orchards, these insects may be present in or migrate into the orchard throughout the season, and season-long -monitoring is critical. All these bugs have piercing-sucking mouthparts, and their infestations in almonds can lead to nut abortion, nut drop, gumming, and/or brown spots on the kernel. This article discusses key true bug pests that infest almonds and important considerations for their management.

Leaffooted bug. Leaffooted bugs are the commonly known true bug pests in almonds. Although they may be present in orchards in small numbers throughout the season, the most significant damage occurs during the earlier part of the season (from March to May). Their feeding early in the season results in nut abortion, significant nut drop, and defective kernels (i.e., gummy nuts). Leaffooted bug infestations on almonds after the shell hardening result in brown spots on the kernel or wrinkled and misshapen kernels.

Native stink bugs. There are at least four species of native stink bugs that can be present in almond orchards. These species include green stink bug, red shoulder stink bug, Uhler's stink bug, and consperse stink bug. However, the green stink bug is the most common, causing most brown spot damage in almonds. Native stink bugs, including green stink bug, are usually a problem in almonds later in the almond maturity, primarily due to migration from other hosts such as tomato, corn, wheat, and other crops near almond orchards. The green stink bug can produce gummy fruits even after the shell hardening. Recent observations showed that about 1/3rd of those gummy fruits result in kernel damage, mostly brown-spotted kernels, during harvest.

Invasive brown marmorated stink bug. While the brown marmorated stink bug (BMSB) is present in some urban and residential areas, it has not yet widely spread to almond orchards in the Sacramento Valley. BMSB is already established as a significant pest in many orchards in the Northern San Joaquin Valley, where it is prevalent. Early-season infestations by BMSB in almonds can cause nut abortion and drop, similar to those caused by leaffooted bugs. They can also penetrate the shell and damage kernels even after shell hardening, causing brown spots on the kernel or leading to wrinkled, misshapen kernels. The key factor driving high levels of BMSB damage is the presence of overwintering sites such as woodlots, human-made structures and other hosts in the landscape, as these bugs prefer to move from one host to another throughout the season.

Boxelder bug. In addition to the large true bugs discussed above, boxelder bug can become an economic pest if an orchard is in an area that has other host plants that are common in riverbanks or similar places. Boxelder bug damage has been observed in several almond orchards in the Northern Sacramento Valley in recent years. Boxelder bug infestations before shell hardening reportedly cause nut drops and kernel damage, so their presence in high numbers early in the season can be a concern. This insect has much shorter mouthparts than large bugs, which likely won't cause kernel damage after shell hardening.

Monitoring and treatment decisions for true bug pests in almonds.
While effective traps and lures are available for invasive brown marmorated stink bugs, effective traps and lures are not available for other stink bugs in almond orchards. The lack of monitoring tools, especially for green stink bugs, makes it difficult to detect and estimate the pest pressure in the orchard, making

management decisions difficult. For leaffooted bugs, a new trap and lure have recently become commercially available. This can be a good detection tool, especially in the early season, as migrating insects can be intercepted in these traps when adults are moving into almond orchards. True bugs are sporadic almond pests, and they do not have action or economic thresholds. So, the best way to minimize their damage is by conducting regular orchard scouting and taking timely action for control. Starting in mid-March, monitor the orchard weekly for signs of true bug activity, including dropped nuts, nuts with gummosis, and adult bugs, their nymphs, or egg masses. Some of these bugs are difficult to spot in the orchard, so finding the infested nuts is the best way to detect them. If gummy nuts are present but no bugs are visible, inspect the gumming fruit by cutting a cross-section of the damaged area to check for feeding puncture marks (Fig. 1). This helps distinguish pest damage from physiological causes of fruit gumming. Leaffooted bugs are strong flyers and their feeding damage can be scattered, while stink bugs are not as mobile and the damage from their feeding tends to be clustered.

Fig. 1. Signs of hemipteran pest activity to look for during orchard scouting: nut gummosis (top left), feeding puncture (top right), leaffooted plant bug eggs (middle left), nymph (middle right), and green stink bug eggs (bottom left) and nymph (bottom right).

When to monitor for the two different bug groups that cause brown spot damage.

Pest	March	April	May	June	July
Leaffooted bug	X	X	X		
Stink bug			X	X	X

Insecticide spray decisions against these pests are based on orchard damage history and current season bug activity. Since the spray target is adult control and large insect adults are hard to kill, broad-spectrum insecticides such as pyrethroids (Brigade, Warrior, Assana, etc.) provide a good, long-lasting control. These pesticides are also damaging to mite and scale predators, so the decision to spray should be weighed carefully with the possible need for a miticide or scale spray later in the season. Spray decisions are based on the pest:

Leafooted bugs: Typically, if the bug(s), their eggs, or damaged nuts are found in the orchard in March-May, a spray should be considered to reduce further damage.

Stink bugs: In orchards where pyrethroid use is common, just one application every three years is usually sufficient to prevent economic damage. Where pyrethroids are not commonly used and bug damage is found, it may be necessary to use a broad-spectrum pesticide (pyrethroid) to limit the bug damage.

Additional active ingredients are also available for rotational purposes; visit the UC IPM guideline pages on Leaffooted Bug and Stink Bugs for more information.

Almond Variety Trials: Field Meeting and Bloom Observations (2025)

Luke Milliron, UCCE Orchards Advisor, Butte, Glenn, Tehama Counties

What: Walking tour of two UC almond variety field trials planted at the Chico State Farm. Varieties under evaluation include Yorizane, Shasta, Independence, Bennett-Hickman, and Pyrenees.

When: Wednesday April 30, 9-11 AM

Why: Evaluate the performance of new varieties for yourself to help you make a more informed tree buying decision.

Where: UC Regional Almond Variety Trials (est. 2014 and 2023) at CSU, Chico University Farm: search Google Maps for "Organic Vegetable Project (OVP)" (located at 311 Nicholas C Shouten Ln, Chico, CA). **This will get you in the right direction, but you will need to continue driving past the OVP (see map at the end of the newsletter)**. These directions will have you enter the farm on Nicholas C Shouten Ln and stay straight continuing past the farm office/pavilion/dairy unit. However, continue straight past where the Google Maps directions end at the greenhouses and Organic Vegetable Project. You will continue straight towards the back of the farm (past a farm gate) until you can find parking along the almonds on your right-hand side. Correct location: maps.app.goo.gl/QsKwCn99k94E9qgo7

2025 Observations at Bloom:
My former colleague Dani Lightle wisely noted that what stands out in the early years of a variety trial is not what looks good – it's what looks bad. For the new UC almond variety trial planted spring 2023, testing nearly 30 varieties from all over the world, four varieties are already on the chopping block for early removal from the trial (Figure 1). UC Davis B3 is a small, self-sterile tree showing extensive bud failure, while self-fertile UCD B8 has very few flower buds. Both varieties also tested positive for viruses. Lassen and P10.023 both from Burchell Nursery, are a fraction of the size of Nonpareil. Both varieties are performing decently at the other two locations on Hansen 536 rootstock, therefore the problem could be a partial incompatibility with Krymsk 86 rootstock. All four varieties are being considered for removal in early spring 2025, to be replanted with other varieties for testing.

Other Observations:

Shasta on Viking: These 3rd leaf trees in the 2023 planted trial look good so far. They had good bloom density (4 out of 5 visual rating) entering their 3rd leaf at the Butte and Kern sites in a year with widespread reports statewide of very poor bloom density for the Shasta variety (Figure 2). However, they had poor bloom density (2 out of 5) at the Modesto sister site, following a heavy crop in that orchard's second leaf last year. I am investigating if a high percentage nut set leads to alternate bearing for this variety. The jury is still out on whether 14 feet down the row with Viking rootstock on excellent ground is tight enough spacing (Figure 3).

Yorizane on Krymsk 86: As the Yorizane on Krymsk enter their 12th leaf in the older variety trial, it appears that either the 18 feet down the row spacing would have to be tightened or the tree would need to placed on

a higher vigor rootstock to better compete with Nonpareil yields (Figure 2). However, at 3rd leaf in the newer trial at 14 feet down the row, Krymsk 86 rooted Yorizane so far looks like a good spacing at this site (Figure 3). Despite 11 years of data on this variety at the three 2014 planted variety trial sites, we will learn much more about this variety, including its flaws as it gets planted out by growers.

Independence on Viking: These trees had good bloom density in 2025 as they entered their 3rd leaf. Unfortunately, 14 ft down the row Independence on Viking rootstock in excellent soil – does not appear to be tight enough/high enough vigor rootstock to achieve full yield potential (Figure 3).

Making tree buying decisions? Feel free to call for my 2 cents: Luke Milliron (530) 828-9666.

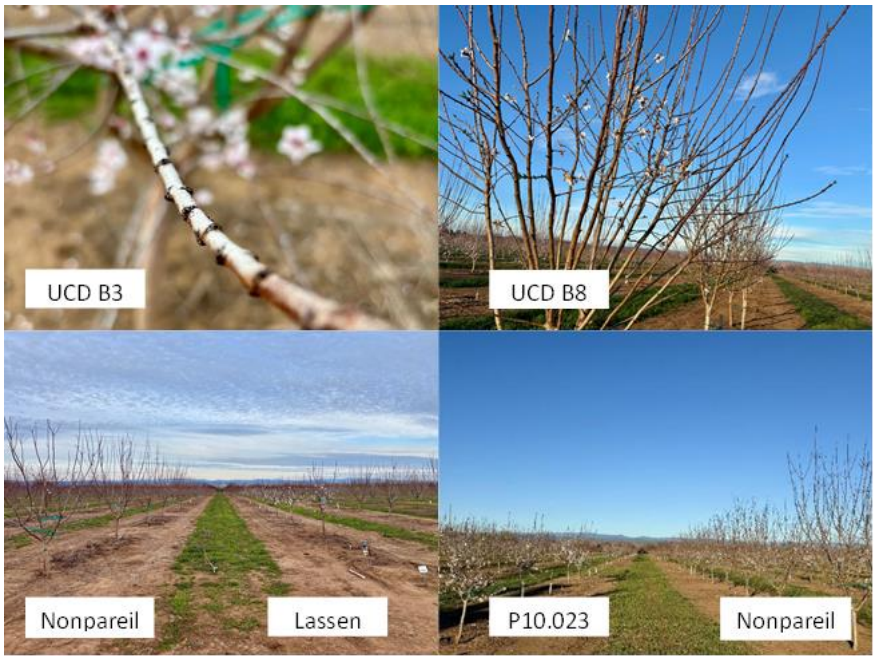


Figure 1. Varieties being considered for early removal: UCD B3 (upper left), UCD B8 (upper right), Lassen (lower left), and P10.023 (lower right). Photos show these trees as they enter their third leaf in February and March of 2025 at the CSU, Chico Farm. Photos by Luke Milliron.

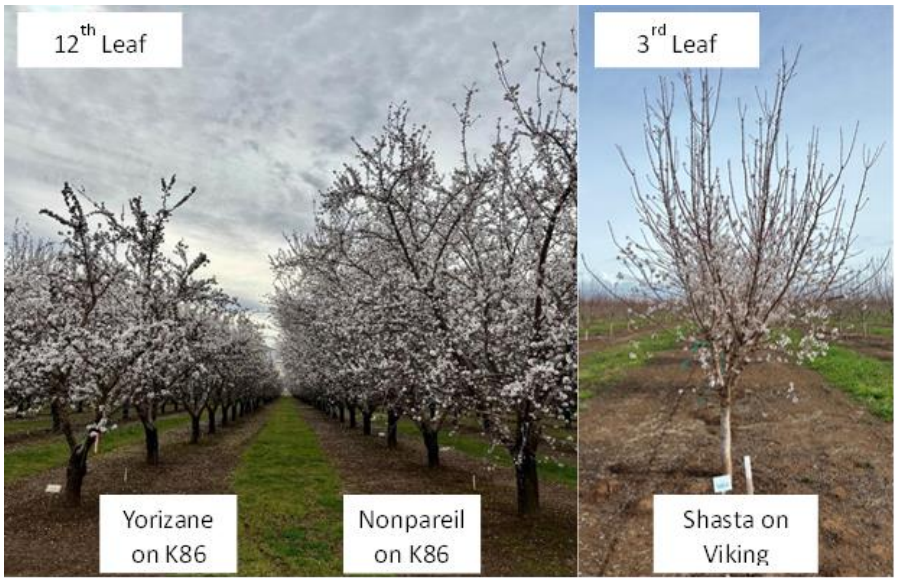


Figure 2. Yorizane and Nonpareil both Krymsk 86 rootstock entering their 12th leaf (left). Shasta on Viking (3rd leaf, right) with good bloom density in 2025. Photos by Luke Milliron on February 17, 2025.

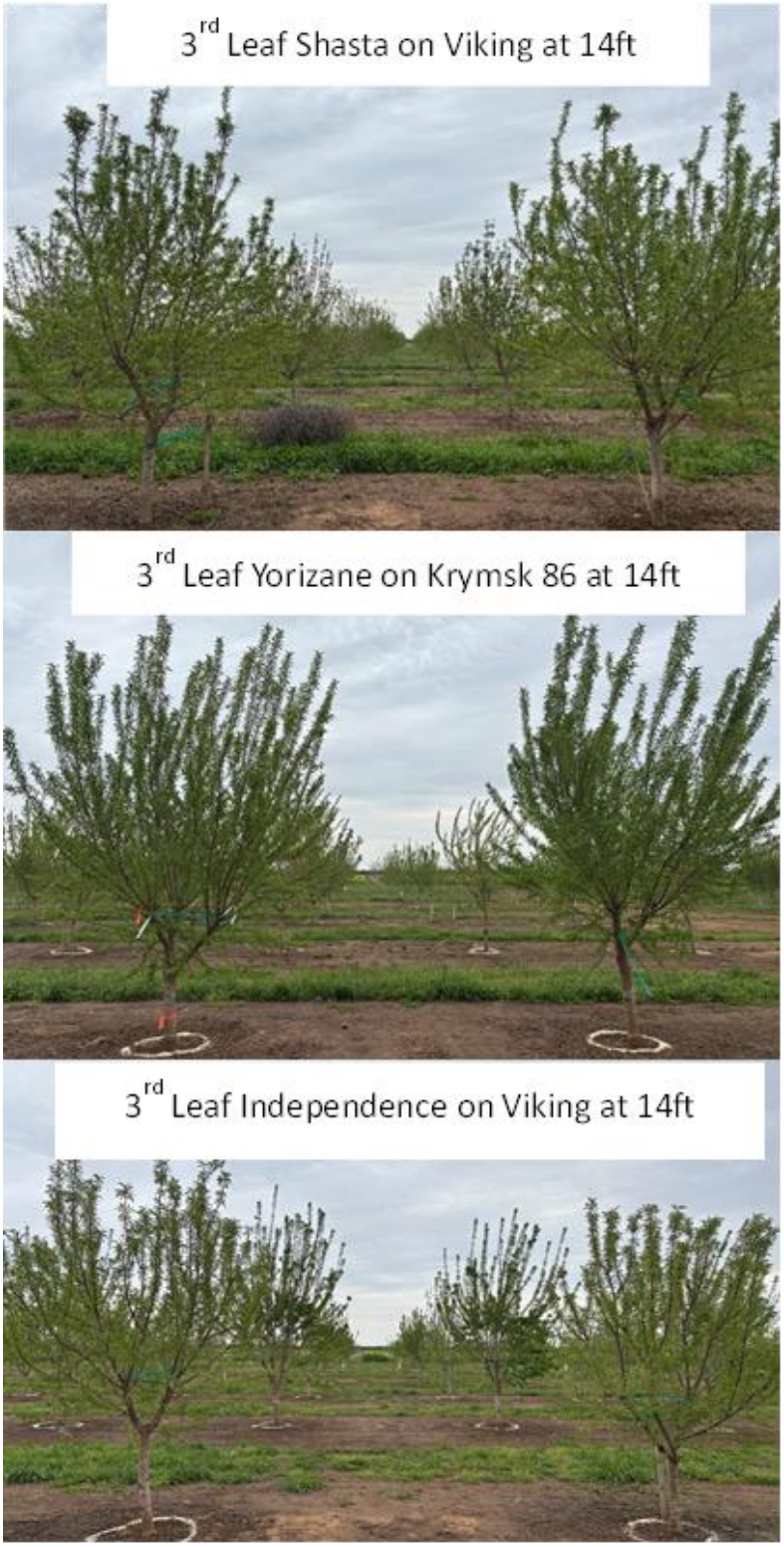


Figure 3. Comparison of tree canopy filling a 14-foot middle for Shasta on Viking (top), Yorizane on Krymsk 86 (middle), and Independence on Viking (bottom) at the start of the 3rd leaf (3/19/2025). Photos by Luke Milliron.

Map to UC Regional Almond Variety Trials Meeting from Hegan Lane, south of Chico.

Gophers, Ground Squirrels, and Voles… Oh My!

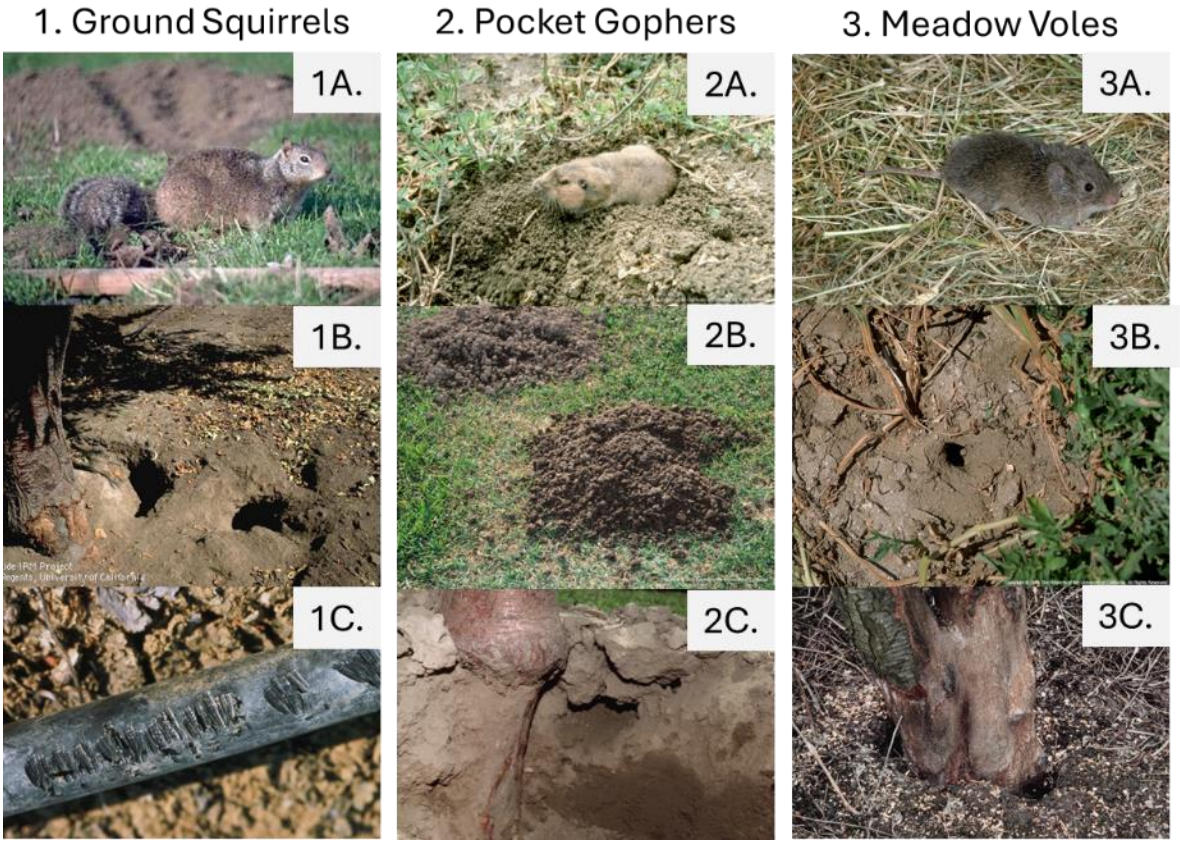
Becky Wheeler-Dykes, Orchard Systems & Weed Ecology Farm Advisor,
UCCE Glenn, Tehama, & Colusa Counties
Luke Milliron, Orchards Advisor, UCCE Butte, Glenn, & Tehama Counties

In February 2025, Dr. Roger Baldwin gave an excellent presentation on vertebrate pest management at the North Sac Valley Prune Day. Dr. Baldwin discussed aspects of the basic biology, life cycles, and best management tactics for moles, voles, and ground squirrels. This article is a recap of his presentation.

Highlights:

- It's critical to correctly identify the vertebrate species present to effectively manage populations
- Barn owls can help maintain low populations of gophers
- Burrow destruction, weed management, and tree protectors can dissuade vertebrates from making your orchard their home
- Baits can be highly effective when used properly and reapplied when necessary
- Trapping provides excellent control of gophers, and can be a good strategy for ground squirrels
- Fumigation is effective in wet soils when animals are becoming active
- LABEL IS LAW – always consult with your PCA and/or ag commissioner when considering fumigating or applying any rodenticide

Figure 1A-3C. Identification of vertebrate pests (top), their mound type (middle), and examples of damage (bottom). Photos by Jack Kelly Clark (UC IPM).



Pest biology and identification

Ground squirrels can be identified by their mottled gray-brown fur and bushy tails (Fig. 1A) and mostly move on the ground instead of in trees. Social in nature, ground squirrels are diurnal and live in burrow systems that have many large, visible holes on the orchard floor (Fig. 1B). Ground squirrels cause damage by girdling of trees (Fig. 1B), causing tree blow over by damaging root systems, chewing irrigation lines (Fig. 1C), eating fruit, and creating safety hazards for workers. Ground squirrels typically hibernate during the winter and emerge in the spring when they begin eating vegetation. Later in the summer their food preference transitions to seeds until they enter hibernation again.

Pocket gophers are about 6-8 inches long, gray-brown (Fig. 2A) and typically spend most of their time below ground. Their tell-tale plugged C-shaped mounds can help distinguish them from other burrowing pests (Fig. 2B). Gophers feed directly on roots and plants and may also girdle trees below ground (Fig. 2C). Additionally, gophers create excellent weed seed bed habitat, as well as tripping hazards and soil erosion.

Meadow voles are the smallest of the common vertebrate pests discussed, typically 4-6 inches long with dark grayish fur (Fig. 3A). Unlike ground squirrels and pocket gophers whose populations increase steadily over time, meadow voles may have small populations for several years and then have a sudden population boom, becoming unmanageable seemingly overnight. Mole mounds are conical with no plug (Fig 3B), and there are often well-worn trails between their shallow burrows. Primary damage from voles is the girdling of trees typically 6-8 inches above ground level (Fig 3C). Voles sometimes chew on wires and other plant material as well.

Multiple species of vertebrate pests may be present in an orchard, and control tactics differ for each. Correct identification of the pest(s) causing damage in an orchard is critical for effective management. Integrating multiple methods of population management is typically most successful in maintaining low numbers and avoiding severe damage.

Biocontrol

Attracting birds of prey is a helpful tool in managing gopher populations. Barn owls are good candidates as they are not territorial, so multiple owls may be attracted to a field using owl boxes. Barn owls are best used to keep low populations from growing to be unmanageable but are unlikely to provide complete control or be very effective with large populations. Ground squirrels are diurnal and therefore will not be controlled well by barn owls. Voles reproduce so quickly that barn owls are not typically able to keep up and provide adequate population management. Owl boxes should be placed about 8-10 feet above ground and cleaned every 2-3 years to maintain viability as a good shelter option.

Habitat modification

Habitat modification reduces the desirability of a field or orchard for establishment of vertebrate pests. Destroying burrows and even ripping fields in extreme cases can be effective at reducing vertebrate populations. While there will likely be a reinvasion after burrow destruction, it is typically slow. Flood irrigation forces vertebrate pests to leave their burrows, where predators like coyotes, herons, and raptors can feast and do some of the hard work for you, although dogs and a sharp shovel maybe the best follow-up to flooding. The most effective habitat modification for vole control is to minimize weed cover, keeping cover crops mowed to 2 inches and maintaining a vegetation-free zone of 2-3 feet on either side of trees. Without adequate weed cover for voles to move between holes, they will often move on to ‘greener pastures’.

Baiting

Baits fall into one of three categories: anticoagulants, zinc phosphide, or strychnine. All three types are considered restricted use materials.

Anticoagulants require the animal to feed multiple times on the bait to be effective, and the material can be used as spot treatments, broadcast applications, or in bait stations. Do not leave piles of the bait as this can easily deliver a lethal dose to non-target vertebrates like pets and children. Anticoagulant bait should be reapplied 4 days after initial spot or broadcast application, and bait stations should be checked regularly to make sure there is still enough bait.

Zinc phosphide is an acute toxin, typically effective with a single dose. This product is used in spot and broadcast treatments and should not be used near buildings or in bait stations. The strong odor and taste of zinc phosphide can cause bait shyness; pre-baiting with a non-toxic bait can improve efficacy of the product.

Strychnine is the most effective rodenticide against gophers and is good for initial knockdown of populations before trapping. Of these three common vertebrate pests, strychnine is only registered for use against gophers. For small populations, using a funnel and spoon to apply the strychnine-laced bait to burrows can be effective. Larger populations may necessitate using a probe dispenser or even a burrow dispenser on a tractor. Dispensing through a shanked tunnel dug by a tractor is very hit and miss because you have to connect with the gopher's tunnel network. Gophers can develop resistance to strychnine making it critical that you integrate it with other approaches.

Trapping

Trapping can be effective for ground squirrels. Kill traps are excellent options where there is no concern of non-target captures. Live traps are a good alternative, but keep in mind that squirrels caught in live traps must be euthanized with a CO2 chamber or by shooting the animal. Drowning is not a legal method of euthanasia in California.

Trapping is an excellent control tactic for managing gopher populations. Popular traps like the McAbee and the Gophinator can be set either at the entrance of tunnels or can be covered with soil after baiting and setting; little difference in efficacy has been reported, but covering is a safer option in areas where non-target animals may access the traps. Good control is often achieved with two successive rounds of trapping. Studies have shown no difference in trap success with different attractants, and human scent does not affect efficacy. While trapping is very labor intensive, it is so efficacious against gophers that most growers find it worth the effort.

Fumigation

Burrow fumigation uses poison gases injected into burrow systems to kill vertebrate pest populations. Fumigation works best when soil moisture is high, trapping the gas in the burrow. Ground squirrel fumigation is best timed after squirrels emerge from hibernation and is ineffective during hibernation. Late winter to early spring is the best time to fumigate for gophers, before they begin to reproduce for the year. Gas cartridges, essentially a smoke bomb, have a 62-86% efficacy against ground squirrels, but are not effective against gophers. These are easily available with no restrictions against purchase, but care must be taken to avoid starting fires. Aluminum phosphide is highly effective against both ground squirrels and gophers but is highly restricted. With large populations it may be worth it to use aluminum phosphide products, but it's critical that you understand the restrictions and required documentation; consult with your ag commissioner's office when planning an application. Pressurized exhaust machines essentially force exhaust from a small engine into the burrow system. These devices (not classified as a pesticide) work well against ground squirrels and are

moderately effective against gophers. Carbon dioxide canisters are similar in efficacy to exhaust machines but are considered a pesticide.

Overall, the best set of management strategies employed in any given orchard will depend on many factors, including species, population levels, primary damage and logistical constraints. Integrate multiple approaches for the best control. It's important to consult with your PCA and/or ag commissioner to ensure proper application and always adhere to pesticide labels – LABEL IS LAW!

NICKELS SOIL LAB ANNUAL FIELD DAY
Wednesday, May 14, 2025
Marine Ave, Arbuckle, CA

PCA CE credit hours and CCA CE hours requested.

8:30 am — Registration
Coffee and Donuts provided by **Farm Credit Services of Colusa-Glenn, ACA**

Cycle I: 9:20-10:45 am

1) **Spider mite predator monitoring**
Sudan Gyawaly, UC IPM Advisor, Sacramento Valley

2) **Sacramento Valley almond variety trial update**
Luke Milliron, UC ANR Orchard Systems Advisor, Butte, Glenn, and Tehama Counites

3) **Water infiltration effect of Whole Orchard Recycling**
Cameron Zuber, UC ANR Orchard Systems Advisor; Merced and Madera Counites

4) **Almond rootstock review: Nickels experience**
Franz Niederholzer, UCCE Orchards Advisor, Colusa and Sutter/Yuba Counites

Cycle II: 10:45 am -12:10 pm

5) **Groundwater recharge**
Curt Pierce, UC ANR Water Resource Advisor, Glenn, Tehama, Shasta, and Colusa Counties

6) **Managing nutrients for best growth, Whole Orchard Recycling**
Brent Holtz, UC ANR Orchard Systems Advisor, San Joaquin County

7) **Fall phosphorus fertilization in almond: Does it improve nut set?**
Or Sperling, Visting Scholar, UC Davis Plant Science Department

8) **Barn owls for rodent management in orchards**
Breanna Martinico, UC ANR Human-Wildlife Interaction Advisor; Napa, Lake, and Solano Counties

12:15 pm – **BBQ Tri-Tip Lunch** (Pierce H.S. FFA fundraiser) by reservation.

---------- *Luncheon Talk* ----------

Sustainable Groundwater Management Act (SGMA) Update

Darrin Williams, Director, Colusa Groundwater Authority

Nickels Field Day Luncheon Reservation Form

All proceeds benefit Pierce High School FFA Program

Cost: $20.00 per person

Make checks payable to: Pierce High School

Mail to: Cooperative Extension
P.O. Box 180
Colusa, CA 95932
Or
Pay at the door (cash or check only)
Reserve your lunch spot today by calling, 530-458-0570. Thanks!

Name:		
Address:		
City:	**State:**	**Zip:**
Email:	**Phone:**	

Name(s) of Attendees(s):

Total Amount Enclosed:	**$**

Please call our office

(530-458-0570) to reserve your lunch spot by May 9th