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Imperial County Agricultural Briefs

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Features from your Advisors

Table of Contents

Area-wide monitoring of key insect pests in the Imperial Valley: Updates for February 2025

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Since the first week of August 2024, the University of California Cooperative Extension (UCCE) Imperial County Entomology program has maintained a network of yellow sticky traps throughout Imperial Valley. This trap network facilitates landscape-level monitoring of the population dynamics of adult whiteflies, western flower thrips, flea beetles, and aphids throughout the year. The trap set up in various sites consisted of a 6 X 12 in (15.2 x 30.5 cm) yellow sticky trap (Olson Products, Medina, OH), shaped into a cylinder, attached to a wooden stake using a binder clip, and positioned at about 60 cm above the ground (Fig. 1A and 1B). The traps are distributed throughout major agricultural areas of the Imperial Valley (Fig. 1C). Insects that are attracted to the yellow color and land on the surface of the trap during their flight get trapped on the sticky surface. The traps are replaced weekly and examined in the laboratory under a stereo microscope to count the pest population.

Fig. 1 A & B) Yellow sticky traps in various fields, and C) Trap locations across the Imperial Valley.

Insect count data from the traps identify adult insect activities of targeted pests around the field. Several biological (crop type, crop age, presence of weed hosts, etc.), physical factors (temperature,

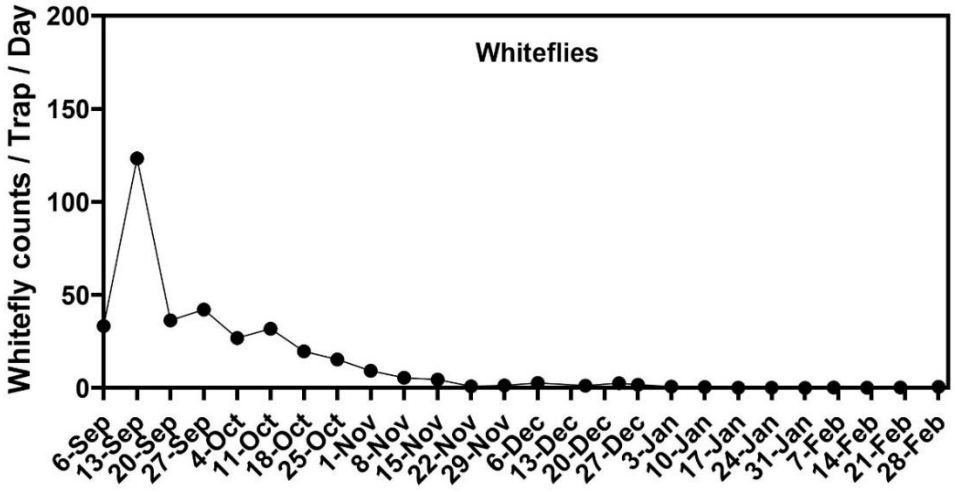
wind, precipitation, etc.), and farm operations (insecticide sprays, dust from land preparation, crop harvest, etc.) can influence insect counts in the traps. Accordingly, the counts of insects in the sticky traps do not always strongly correlate to the actual infestation levels in the grower's field. Despite this, the trap counts are a valuable indication of adult insects' movement across the landscape. Moreover, collecting trap data across multiple years will help establish a baseline of pest activity across seasons. This historical pest data can then be compared with current pest activities in the traps to identify population trends. The traps are also screened for potential invasive insect pests, including Asian citrus psyllids, spotted lanternflies, Mexican fruit flies, etc.

Insect count updates until February 28, 2025

Updated insect counts from the monitoring trap network are shown in the figures below. Each dot in these graphs represents the average insect count from 19 traps across the Valley for that sampling week, expressed as pest counts per trap per day.

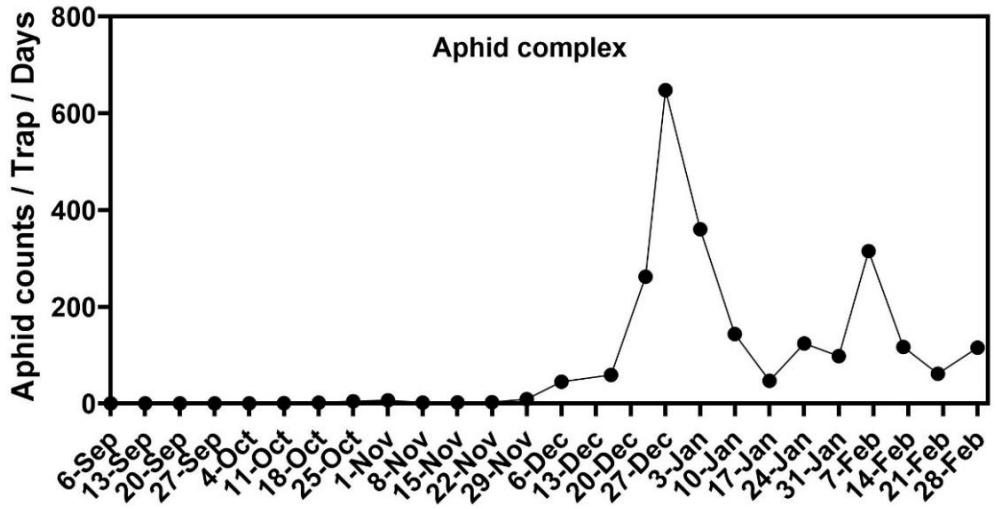
Whiteflies

The whitefly counts consisted mainly of sweetpotato whitefly (*Bemisia tabaci* MEAM1). A small fraction of the total count (< 5%) comprises bandedwinged whiteflies, *Trialeurodes abutilonia*, and other minor species. The trap captures of adult whiteflies have remained at a low level since November 2024.



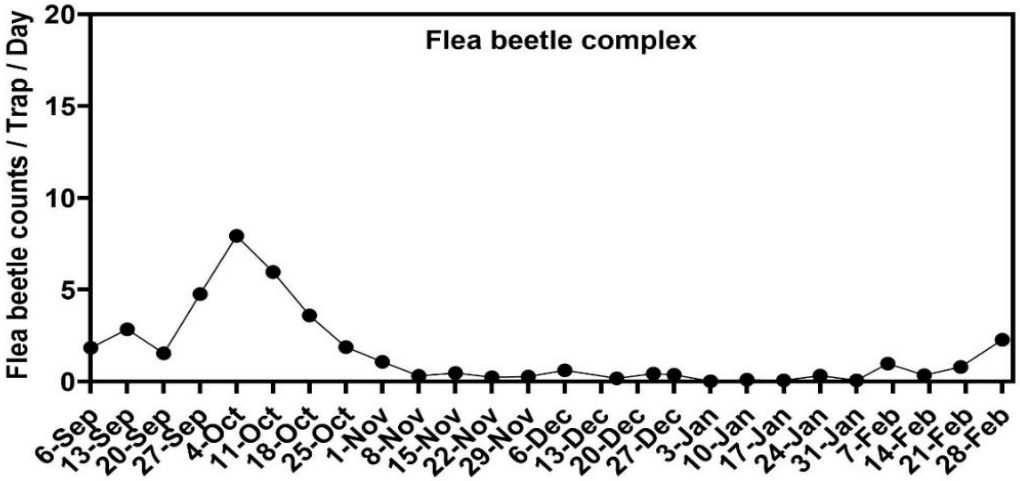
Aphids

The aphid population count from the traps does not focus on specific species but represents the aphid complex in the Valley. The trap capture data suggests that alate (winged) aphids were almost absent in the valley during summer and late summer until the first half of September 2024. Their number in the traps peaked around late December. Recent (February 2025) counts indicate moderate alate aphid activity in the Imperial Valley. The warmer weather for the last couple of weeks is favorable for aphid developments. Hence, you may have to keep an eye on aphids, especially on lettuce. We have detected a relatively high number of lettuce aphids in a couple of fields.



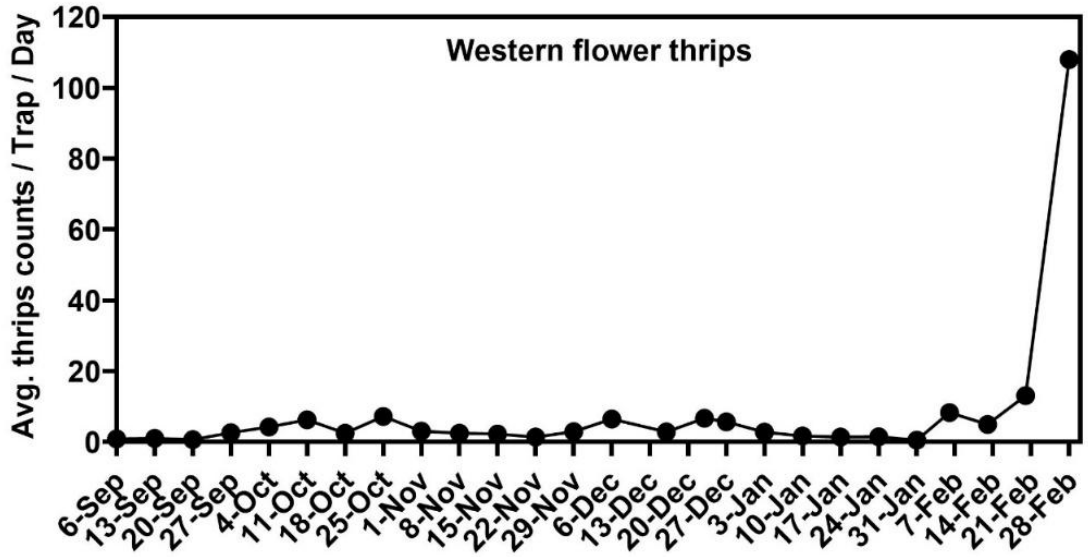
Flea beetles

The flea beetle counts in the traps comprised the pale-striped flea beetle, *Systena blanda*, desert corn flea beetle, *Chaetocnema ectypa*, and other minor species. Currently, flea beetle counts are relatively low on the traps, but their numbers have increased in recent weeks.



Western flower thrips

While the traps contained several thrip species, only the western flower thrips, *Frankliniella occidentalis*, were counted to provide more specific data. The western flower thrips is the major thrip species of concern for several crops in Imperial Valley. Currently, we are experiencing high adult thrips activity across the Valley.



Additional biweekly updates of trap-captured insect data are available from the UCCE Imperial County Entomology webpage, which can be accessed at https://ceimperial.ucanr.edu/Entomology_319/Imperial_Valley_Areawide_Pest_Monitoring_/. If you are interested in additional data or have questions or comments, contact Arun Babu at (442) 265 -7700 or arbabu@ucanr.edu.

Acknowledgment

This project is supported by the Imperial County Agricultural Benefits Program grant.

Broomrape, a potentially devastating parasitic weed of various crops[1]

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Broomrape (belonging to the general of *Phelipanche or Orobanche spp.)* are devastating parasitic weeds. Just like dodder, another parasitic weed, Broomrape is not capable of photosynthesis and obtains all nutrients and water from a host plant. Broomerapes have a very wide host crops, including clover, alfalfa, vetch, lettuce, safflower, sunflower, carrot, celery and many other crops. These weeds rely entirely on the host plant roots for nutrition, and can produce great numbers of minute, dust-like seeds that last for years in the soil. Branched Broomrape (*Orobanche ramose*), an annual and sometimes perennial parasitic plant was the focus of eradication efforts four decades ago in California. It attaches to plant roots and is visible above ground only when flowering and inhabits ornamental and vegetable crop fields. It has recently re-emerged in tomato fields in the Central Valley of CA. Branched broomrape is listed as an "A" noxious weed by CDFA, leading to quarantine and crop destruction without harvest, a significant economic loss to growers. *Orobanche minor* (small broomrape) is typically unbranched plant and is very widely distributed, throughout most of Europe, Western Asia and Northern Africa, Ethiopia and Somalia, Japan, New Zealand, Australia and several countries in North and South America. This species is a federally listed noxious weed in the United States. Yield loss due to broomrape can be up to 80%, depending upon the infestation level, host, and environmental conditions. It is said there is another species of desert broomrape, known as *Aphyllon Cooperi* or *Orobanche Cooperi* (desert broomrape), a biennial broomrape native to the desert southwest of the US and Mexico. The distribution, host range, and economic significance desert broomrape is not well known.

Broomrapes are obligate root parasitic plants that can cause devastating damage to tomatoes and many other economically important broadleaf crops. These weeds use a modified root, called a haustorium, to fuse into a host plant root and extract nutrients and water. This greatly reduces productivity and sometimes kills the host. While broomrape is not currently at levels that can impact yield, its presence in a field causes a large economic loss to growers because of the weed's status as a quarantine pest. The establishment and spread of broomrape in California tomato production regions could cause severe consequences for individual growers and the entire tomato industry.

Broomrape can infest various crops relevant to the low desert, including tomato, cabbage, potato, eggplant, carrot, pepper, beans, celery, peanut, sunflower, faba bean, parsley, squash, and hemp. A broomrape-parasitized plant suffers growth, yield reduction, and death at severe infestation. This is a highly concerning threat given the severity of broomrape species and California's tomato production systems.

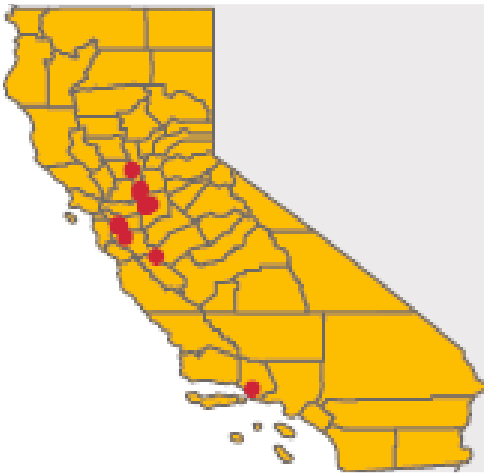

Figure 1: Distribution of branched broomrape (*Phelipanche ramosa*) *in CA (source: modified from Osiptan et al., after Calflora, 2019).*

A severe infestation of branched broomrape in the Sacramento Valley in 1959 prompted an intervention that involved soil fumigation with methyl bromide (not used any longer). Recently, a branched broomrape species of this parasitic weed has been detected in tomato fields in Colusa, Sacramento, San Benito, Santa Clara, San Joaquin, Ventura, and Yolo.

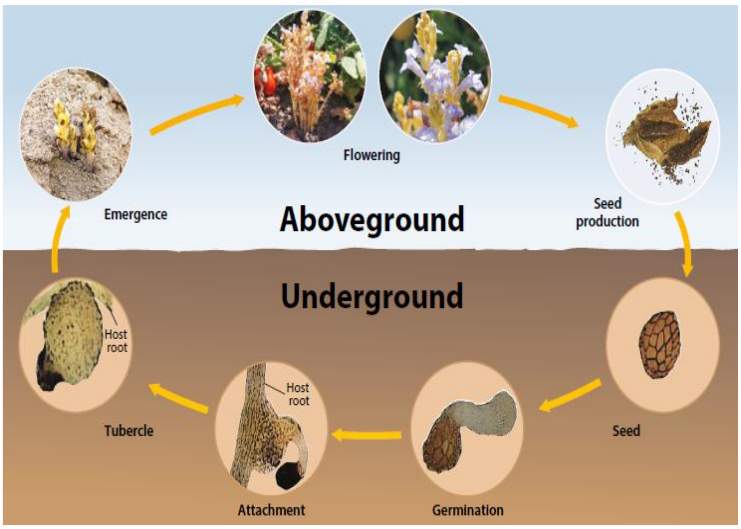

Figure 2: Life cycle of a branched broomrape (Osiptan et al., 2021, after Eizenberg and Goldwasser, 2018)

Figure 3 branched broomrape plant: flowering (left), mature capsules (center), and attached to a volunteer tomato root (right). Photo from Osipitan, et al., 2021.

Effective control of broomrapes is difficult, largely due to its unique biology and complex life cycle. As shown in Figure 2, most of the broomrape life cycle occurs below the soil surface, which makes it difficult to detect and control before it causes damage to the host plant. The short period between emergence and seed dispersal also makes detection and control difficult, while the absence of chlorophyll and photosynthesis limits potential herbicide target sites and complicates chemical management. The tiny, hard-to-detect, and

abundant seeds and the ability of the seeds to remain viable for decades promote the widespread and persistence of broomrape in crop production systems. Thus, effective management of broomrape will require a long-term, integrated approach that involves a sound understanding of the biology of the parasitic weed and disseminating information about management practices to all stakeholders.

Among the reviewed strategies to suppress the prevalence of these parasitic weeds are management practices that are aimed at (1) reducing broomrape seed bank viability, such as fumigation, solarization and use of broomrape specific pathogens; (2) strategies to reduce the broomrape ability to timely detect the host such as, promotion of suicidal germination (trap crops), introduction of allelochemical interference, or down-regulating host exudation of germination-inducing factors; (3) use of resistant or tolerant crops. The use of any of these listed management practices depends on the availability of these resources.

Preventing the spread of broomrape is the most important component of the integrated approach to managing the weed. A current containment approach used in California is based on a quarantine regulation. Other soil fumigants, such as chloropicrin, dazomet, metamsodium, metam-potassium and 1,3-dichloroproprene, may also provide different control levels of broomrape seeds (Osipitan et al., 2021, after Eizenberg and Goldwasser 2018. Herbicidal broomrape control can be undertaken using pre- and post-plant herbicide applications and/or chemigation. Cultural practices, such as rotating tomato plants with false hosts (trap crops) or non-host crops, could help with seed bank depletion, provided branched broomrape seed is not re-introduced to the field from outside.

Although broomrape has not yet been detected or reported in the Imperial Valley, please note that it is a potentially devastating parasitic weed that can be difficult to eradicate. The best approach is to curtail potential spread as soon as it is detected. If you or anyone spots these or similar parasitic weeds that may be hooked to roots or ground part of any crop, please report to UCCE Imperial County or the County Ag Commissioner's office.

[1] Summarized from Osipitan, et al., 2021 (https://doi.org/10.3733/ca.2021a0012) and other references

Understanding Sooty Mold: What Farmers and PCAs Need to Know

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Introduction. Recently, we've received inquiries from the Imperial County stakeholders about a black growth covering the surface of sugarbeet leaves, accompanied by the presence of dead insects (Figure 1). This black fungal growth, known as sooty mold, results from the interactions between sap-feeding insects and non-parasitic fungi.

Figure 1. Sugarbeet leaves exhibiting patches of sooty mold growth. February 27, 2025.

What is Sooty Mold? Sooty mold is a black fungal mycelial coating that forms on leaves, branches, and fruit. It is important to note that sooty mold is not a disease; it does not infect plant tissue. Instead, the fungi are saprophytic, and they thrive on sugary secretions called honeydew produced by insects like aphids, scales, and whiteflies.

Certain insects, including aphids, soft scales, and whiteflies, feed by sucking the sap from plants. While plant phloem sap is high in sugar, it is low in some other essential nutrients that

these insects need for their development. As a result, these insects consume more sap than they require and must eliminate the excess. This excess sugar and liquid are excreted as honeydew, which then falls onto the host plant or onto other plants and surfaces below.
The mold appears as a dark, powdery, or velvety layer. If honeydew deposits are light, the mold may develop only in small patches. Typically, it can be easily wiped off plant surfaces, and over time, it dries out, becomes flaky, and falls away. If insect activity decreases, sooty mold will also diminish, and rain or sprinkled water will wash away most of it.

Identifying Sooty Mold. If you can easily rub the black material off with your fingers, it is likely sooty mold. If you cannot remove it to reveal healthy green tissue, it may not be sooty mold. In most cases, sooty mold does not pose a significant threat to plant health, but management may be needed if it impacts the quality of the produce.

Plant Hosts. Any plant that hosts phloem-feeding insects or accumulates honeydew is susceptible to sooty mold. The fungi involved are not selective and thrive as long as honeydew is present.

Can Sooty Mold Cause Damage? While sooty mold does not directly infect plants, it can harm them indirectly. When leaves are coated with excessive sooty mold growth, sunlight cannot penetrate, which reduces photosynthesis and could potentially stunt growth. Additionally, covered leaves may age prematurely and drop off early.

Management Strategies. To effectively control sooty mold, it is crucial to manage the insects that produce honeydew. Several insecticides or combinations of insecticides are available for targeting these sap-feeding insects. The choice of insecticide will depend on the specific insect, the host plant, and any safety considerations.

References

1. Mississippi State University – Extension. Publication Number: P4035
2. Texas Plant Disease Handbook.
3. UC IPM Pest Notes, Publication 74108.
4. University of Hawaii at Manoa, Cooperative Extension Service. Plant Disease, October 2008. PD-52.

Agricultural Water Safety Update - FDA and EPA Announce First Registered Pre-Harvest Agricultural Water Treatment

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In a significant breakthrough for food safety, the FDA and EPA have jointly approved the first antimicrobial treatment specifically designed for pre-harvest agricultural water. This development comes as compliance deadlines approach for the FDA's final rule on agricultural water requirements in the Produce Safety Rule, which was published in mid-2024.

SaniDate 12.0, developed by BioSafe Systems, has been registered to treat irrigation water for leafy greens and other produce, effectively combating harmful pathogens like E. coli (STEC) and Salmonella that have been responsible for numerous food safety recalls in recent years. The registration was announced by the FDA on November 4, 2024, following extensive testing and evaluation conducted over several years in collaboration with Dr. Channah Rock, water quality extension specialist and professor at the University of Arizona.

"Contaminated irrigation water can compromise an operation and incite potential recalls. The most common culprits threatening consumers' food safety are the foodborne bacterial pathogens Salmonella enterica, and Escherichia coli (E. coli), specifically the Shiga toxin-producing E. coli (STEC)," explains Dr. Jay Sughroue, Area Manager for BioSafe Systems' Agriculture Division.

Background on Recurring Contamination Issues

For nearly two decades, recurring E. coli contaminations have affected leafy greens, particularly from California and the Desert Southwest growing regions. These outbreaks have often been linked to farms located near concentrated animal feeding operations (CAFOs), where irrigation water can become contaminated. As former FDA Deputy Commissioner Michael Taylor described at the 2019 Food Safety Summit, this colocation of produce farms and animal operations may have been the cause of recurring STEC outbreaks in leafy greens.

In response to these issues, the FDA developed the "2020 Leafy Greens STEC Action Plan," which outlined steps for improving agricultural water safety, enhancing inspections and audits, conducting microbiological surveys, and improving supply chain communications. The plan acknowledged that "E. coli O157:H7 doesn't magically appear on produce; it comes from animal sources, primarily cattle — but goats, sheep, and pigs can carry it as well."

The new treatment options represent a collaborative effort between government, academia, and industry to address this persistent food safety challenge. According to Dr. Sughroue, "Public health could not wait for the FDA/EPA to establish the guidelines," which led many leafy green growers to begin treating irrigation water with known chemistries such as PAA and chlorine even before official approval.

Why This Matters for Growers

The FDA's final rule requires covered farms to conduct annual pre-harvest agricultural water assessments starting as early as April 7, 2025, for larger operations. These assessments must evaluate various factors including water source, distribution system, and application methods. Farms must also identify known or reasonably foreseeable hazards and implement management practices whenever significant changes occur that could impact produce safety.

The approval of SaniDate 12.0 provides growers with a tool to meet these requirements and reduce foodborne illness risks. According to BioSafe Systems, the product exceeds FDA efficacy requirements by several logs in pathogen reduction. The treatment is based on peroxyacetic acid (PAA) chemistry and is specifically designed for conventional production.

A companion product, SaniDate WTO—described as "the younger brother to SaniDate 12.0"—has also been approved for organic production. This gives organic growers an alternative to chlorine-based treatments that won't contribute additional sodium and chloride to their soils, an important consideration for sustainable farming practices.

Compliance Deadlines

Farms should be aware of the following compliance dates for pre-harvest agricultural water requirements:

- April 7, 2025: Farms with annual produce sales over $500,000
- April 6, 2026: Small businesses (annual produce sales $250,000-$500,000)
- April 5, 2027: Very small businesses (annual produce sales $25,000-$250,000)

Source: "FDA and EPA Announce First Registered Pre-Harvest Agricultural Water Treatment," by Wayne Labs, Senior Contributing Technical Editor, Food Engineering, February 11, 2025.

Date production workshop set for April 23 in Palm Desert

Pamela S Kan-Rice, Assistant Director, UC ARN News and Information Outreach

The 2025 California Date Palm Workshop will be held on April 23 in Palm Desert at the UC Riverside Palm Desert Center. Anyone who is interested in growing dates is welcome to attend.

Figure 1. An orchard of date palms under a blue sky is reflected in the water between the rows of trees. Photo by Ali Montazar

"This workshop brings together researchers, growers and stakeholders to discuss recent research data on the ‘state of the date' crop in California,” said workshop organizer Ali Montazar, UC Cooperative Extension irrigation and water management advisor for Imperial, Riverside and San Diego counties.

The international date research workshop runs from 8 a.m. to 2 p.m. Scientists will share the latest research and information on various aspects of date production, including irrigation and nutrient management, disease and pest management, and laws and regulations.

Abdelouahhab Zaid, secretary general of the Khalifa International Award for Date Palm and Agricultural Innovation in Abu Dhabi, United Arab Emirates, will speak about the development of date palm cultivation regionally and internationally.

Ricardo Salomon-Torres, research professor at Universidad Estatal de Sonora San Luis Río Colorado, will discuss the status of the date palm industry in Mexico.

Montazar will discuss irrigation management. Mark Hoddle, UC Cooperative Extension biological control specialist based at UC Riverside, will give a presentation on South American palm weevil in California. Spider mites, date nutrition and the aspergillus species causing black mold of dates are among other topics that will be discussed.

“We also will have a grower panel discussion on the concerns and the needs of the California date industry,” Montazar said. “This event is such a great opportunity to showcase how impactful date palm production and agriculture is in the low-desert region.”

Participation is free, but registration is requested at https://ucanr.edu/datepalm2025. Onsite registration begins at 7:30 a.m. at the UCR Palm Desert Center at 75080 Frank Sinatra Drive, Palm Desert, CA 92211.

For more information, contact Ali Montazar at amontazar@ucanr.edu or Kristy Kneiding at kkneiding@datesaregreat.com.

UC CE UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources Cooperative Extension

2025 California Date Palm Workshop

April 23rd, 2025

Location: UC Riverside Palm Desert Center
75080 Frank Sinatra Dr, Palm Desert, CA 92211

Registration link: Link

	8:00 a.m. – 2:00 p.m.
7:30	Registration
8:00	**Overview and Introduction** – *Ali Montazar, UCCE Irrigation and Water Management Advisor & Gordon Chuchian, Chairman of CA Date Commission*
8:10	**Opening Remarks** – *Brent Hales, Associate Vice President, Research and Cooperative Extension, University of California Agriculture and Natural Resources*
8:20	**KIADPAI's Achievements and Active Role in the Development of the Date Palm Cultivation Sector Regionally, and Internationally** – *Abdelouahhab Zaid, Secretary General, Khalifa International Award for Date Palm and Agricultural Innovation (KIADPAI), Abu Dhabi, United Arab Emirates*
8:50	**Can Attract and Kill Suppress South American Palm Weevil in California?** – *Mark Hoddle, Professor of Extension in Biological Control, UC Riverside*
9:15	**Epidemiology and Management of Aspergillus Species Causing Black Mold of Dates** – *Philippe Rolshausen, Associate Professor/Extension Specialist, Botany and Plant Sciences Dept, UC Riverside*
9:40	**Spider Mite Control by Drone Application of Beneficial Predators** – *Bodil Cass, Assistant Professor/Extension Specialist - Subtropical Fruit IPM Lab, UC Riverside*
10:05	**Break**
10:25	**Laws and Regulations: 2025 Updates** – *Chris Blake, Riverside County Agricultural Commissioner's office*
10:50	**Irrigation Management Strategies in Date Palms** – *Ali Montazar, UCCE Irrigation and Water Management Advisor in Imperial, Riverside and San Diego Counties*
11:10	**Current Research on Date Nutrition** – *Robert Krueger, Horticulturist & Research Leader, USDA-ARS National Clonal Germplasm Repository for Citrus & Dates*
11:30	**University of Arizona Date Palm Research Update** – *Glenn Wright, Professor and Extension Tree Fruit Specialist, University of Arizona*
11:50	**Status and Perspectives of the Date Palm Industry in Mexico** – *Ricardo Salomón Torres, Research Professor at Universidad Estatal de Sonora San Luis Río Colorado, Mexico*
12:10	**Lunch (Courtesy of the CA Date Commission)**
12:50	**Date Palm Growers Panel Discussion: Insights, Concerns, and Needs of California Date Industry** - *Albert Keck, Hadley Date Gardens; Frank Becerra, Anthony Vineyards; Linden Anderson, HMS Agricultural Corporation*
13:50	**California Date Commission Update** – *Gordon Chuchian, Chairman of CA Date Commission*
14:00	**Adjourn**

For additional information on the workshop, please contact Ali Montazar, amontazar@ucanr.edu or Kristy Kneiding, kkneiding@datesaregreat.com
PENDING CEU CREDITS: CALIFORNIA DPR (), ARIZONA DEPT. Of AG (), CCA ()

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IMPERIAL VALLEY CIMIS REPORT AND UC WATER MANAGEMENT RESOURCES

Ali Montazar, Irrigation and Water Management Advisor, UCCE Imperial, Riverside, and San Diego Counties. Email: amontazar@ucanr.edu

The reference evapotranspiration (ET_o) is derived from a well-watered grass field and may be obtained from the nearest CIMIS (California Irrigation Management Information System) station. CIMIS is a program unit in the Water Use and Efficiency Branch, California Department of Water Resources that manages a network of over 145 automated weather stations in California. The network was designed to assist irrigators in managing their water resources more efficiently. CIMIS ET data are a good guideline for planning irrigations as bottom line, while crop ET may be estimated by multiplying ET_o by a crop coefficient (K_c) which is specific for each crop.

There are three CIMIS stations in Imperial County include Calipatria (CIMIS #41), Seeley (CIMIS #68), and Meloland (CIMIS #87). Data from the CIMIS network are available at: http://www.cimis.water.ca.gov/. Estimates of the average daily ET_o for the period of March 1st to May 31st for the Imperial Valley stations are presented in Table 1. These values were calculated using the long-term data of each station.

Table 1. Estimates of average daily potential evapotranspiration (ET_o) in inch per day

Station	March		April		May	
	1-15	16-31	1-15	16-30	1-15	16-31
Calipatria	0.16	0.19	0.22	0.25	0.27	0.29
El Centro (Seeley)	0.19	0.22	0.24	0.28	0.29	0.31
Holtville (Meloland)	0.17	0.21	0.23	0.27	0.29	0.31

For more information about ET and crop coefficients, feel free to contact the UC Imperial County Cooperative Extension office (442-265-7700). You can also find the latest research-based advice and California water & drought management information/resources through the link http://ciwr.ucanr.edu/.