

Imperial County Agricultural Briefs

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Features from your Advisors

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UPDATES ON FSMA FINAL RULE ON PRE-HARVEST AGRICULTURAL WATER

*Jimmy Nguyen, UCCE Food Safety & Organic Production Area Advisor
in Imperial and Riverside Counties*

The FDA has published a final rule that revises certain pre-harvest agricultural water provisions for covered produce (other than sprouts) in the Food Safety Modernization Act (FSMA) Produce Safety Rule. This rule represents a significant change in the federal regulation of agricultural water used in produce production.

The key change is the replacement of the previous pre-harvest water microbial quality criteria and testing requirements with a new approach focused on systems-based, pre-harvest agricultural water assessments for hazard identification and risk management decision-making purposes.

Under the new rule, covered farms that use pre-harvest agricultural water for covered produce (other than sprouts) are required to conduct agricultural water assessments once annually, and whenever a significant change occurs that increases the likelihood of introducing known or reasonably foreseeable hazards into or onto produce or food contact surfaces.

These assessments involve evaluating a range of factors that could impact produce safety, including the agricultural water system(s), agricultural water practices, crop characteristics, environmental conditions, and other relevant factors. Farms must consider factors such as the water source (groundwater or surface water), the distribution system (open or closed), potential sources of contamination (e.g., animal activity, nearby land uses), application methods, time intervals between water application and harvest, produce susceptibility to surface adhesion or internalization of hazards, and climate conditions.

Based on the findings of these assessments, farms must determine if corrective or mitigation measures are reasonably necessary to reduce the potential for contamination of covered produce or food contact surfaces. Expedited mitigation measures are required for known or reasonably foreseeable hazards associated with animal activity, biological soil amendments of animal origin, or untreated or improperly treated human waste on adjacent or nearby land.

The rule also includes a requirement for supervisory review of the written pre-harvest agricultural water assessments and determinations made based on the assessment outcomes.

Certain exemptions are provided for farms that can demonstrate that their pre-harvest agricultural water meets specific requirements, such as being received from a public water system or being treated in accordance with the standards outlined in the Produce Safety Rule.

The implementation of the new pre-harvest agricultural water requirements will be phased in over time, with different compliance dates for large, small, and very small farms. The compliance dates range from April 7, 2025, for large farms to April 5, 2027, for very small farms.

This final rule represents a shift towards a more risk-based and adaptable approach to pre-harvest agricultural water regulation, reflecting recent scientific findings, outbreak investigations, and stakeholder feedback. The requirements are designed to achieve improved public health protections while being more feasible to implement across various agricultural water systems and practices, and adaptable to future advancements in agricultural water quality science.

Overall, the new pre-harvest agricultural water provisions in the FSMA Produce Safety Rule introduce a more comprehensive and tailored approach to identifying and managing potential hazards associated with agricultural water use in produce production. This change in federal regulation aims to balance public health protection with practical implementation considerations for the diverse range of agricultural operations.

VIRUSES IN SUGAR BEETS

Ana M. Pastrana – UC ANR - Plant Pathology Advisor for Imperial, San Diego, and Riverside counties. Email: ampastranaleon@ucanr.edu

Description of the problem:

Two weeks ago, a sugar beet field in the northwest region of Imperial showed symptoms resembling Beet Curly Top Virus (BCTV), although the symptoms were not entirely clear. Samples were sent to the Gilbertson Lab in the Department of Plant Pathology at UC Davis for proper identification. One of the five samples tested positive for Beet Curly Top Virus.

During the week of May 20th, personnel from the California Department of Food and Agriculture's Beet Curly Top Virus Control Program conducted beet leafhopper surveys in Imperial. I recently spoke with the person in charge, and while they do not have a final report yet, she confirmed the presence of beet leafhoppers in the region.



Diagnostic:

More effort is needed to confirm that BCTV is the only virus causing the curly leaves in sugar beets. Other typical symptoms of BCTV, such as leaf swellings or phloem discoloration, have not yet been observed in this

field. However, the presence of the vector in the region is a primary concern that growers with sugar beets (or other host plants) still in their fields should be aware of.

Comments on the disease

Beet curly top virus has a wide host range, affecting crops such as beans (particularly blackeyes), tomatoes, peppers, sugar beets, melons, and others. Yield losses due to curly top can vary significantly from year to year and are often associated with high leafhopper populations.

Symptoms

Young beets infected with the pathogen typically die rapidly. However, in cases where infection occurs later, surviving plants exhibit distinctive symptoms. These include the yellowing and eventual death of mature leaves, accompanied by the emergence of smaller, more numerous newer leaves. Notably, these leaves often display a tendency to curl inward and upward, resembling small galls with blister-like swellings forming on the veins on their undersides.

The pathogen primarily affects phloem tissues, leading to necrosis, degeneration, and eventual death of adjacent periderm and phloem cells near sieve tubes. This phloem necrosis is visibly evident as dark concentric rings or linear streaks when examining cross sections or longitudinal sections of the taproot, respectively.

Disease Cycle

The virus spreads through the beet leafhopper (*Cicurlifer tennellus*). When spring progresses and the plants around the hills start to dry out, leafhoppers move to areas with more vegetation, like agricultural fields. They poke around plants, looking for ones they can feed on. If a leafhopper is carrying the virus, it can pass it to a plant in just a few seconds. Signs of infection usually show up within 7 to 14 days after this happens.

Management Strategies

Cultural methods:

- ✓ Choose varieties that can handle the virus and also work well in your area.
- ✓ Planting early can help the plants grow past the most vulnerable stages before the leafhoppers arrive.
- ✓ Keep weeds under control to reduce places where the virus and leafhopper can live.
- ✓ Using the right amount of water and fertilizer can help reduce losses if your plants get infected with BCTV.

Chemical methods:

- ✓ Consider insecticide seed treatment (Table 1) in high-risk areas (see <https://pnwhandbooks.org/sites/pnwhandbooks/files/insect/chapterpdf/agronomic.pdf>).
- ✓ Post-emergence treatments (Tables 2-3) may be used instead of or to supplement at plant treatments, but application timing would have to coincide with the movement of beet leafhoppers into fields. Extensive research in Idaho has demonstrated the highest efficacy with group 4A and 3A products (see <https://pnwhandbooks.org/sites/pnwhandbooks/files/insect/chapterpdf/agronomic.pdf>).

References:

- Harveson, R. M. 2015. Beet curly top: America's first serious disease of sugar beets. APS Features. doi:10.1094/APSFeature-2015-02
- Pacific Northwest Pest Management Handbook
- UC IPM Guide – Curly Top
- Utah Vegetable Production and Pest Management Guide

2024 California Date Palm Workshop

Ali Montazar, Irrigation & Water Management Advisor, University of California Cooperative Extension Imperial, Riverside, and San Diego Counties

University of California Cooperative Extension - Imperial County in partnership with the California Date Commission held the 2024 California Date Palm Workshop at the Coachella Valley History Museum in Indio. The workshop was held as an in-person event on May 22nd. At this event, ten speakers from UC Riverside, USDA-ARS National Clonal Germplasm Repository for Citrus, & Dates, UCCE Imperial and Riverside Counties, University of Arizona, University of Sonora San Luis Río Colorado, USDA-Risk Management Agency, and Riverside County Agricultural Commissioner Office came together to bring innovative ideas and solutions; and disseminate the outcomes of their recent studies and experiences in date palm. The California Date Commission reported recent efforts. The event was organized by UCCE Imperial County advisor, Ali Montazar in close collaboration with the California Date Commission. We thank all presenters, growers, industries, and other participants for making this event successful.



Dr. Thomas Perring, Emeritus Professor, Department of Entomology, UC Riverside delivers a talk on “IPM in Dates: Past, Present, and Future”.

Agronomic Crops and Irrigation Water Management Workshop

Ali Montazar, Irrigation & Water Management Advisor, UCCE Imperial, Riverside, and San Diego Counties

Oli Bachie, Agronomy Advisor, UCCE Imperial, Riverside, and San Diego Counties

University of California Cooperative Extension - Imperial County held its “Agronomic Crops and Irrigation Water Management Workshop” in Barbara Worth Country Club, Holtville. The workshop was held as an in-person event on May 15th. At this event, nine speakers from UC Davis, UC Merced, UCCE Imperial and Riverside Counties, Imperial County Agricultural Commissioner Office, Imperial Irrigation District, and private sectors came together to bring innovative ideas and solutions; and disseminate the outcomes of their recent studies and experiences in the desert region. Supervisor Ryan Kelley, Imperial County Supervisor, District 4, delivered the opening remarks. Ronnie Leimgruber from Leimgruber Farms, Alex Jack from Jack Brothers Farms, and Larry Cox from Lawrence Cox Ranches shared successful stories, concerns, and solutions on irrigation technologies and water conservation issues. The event was co-organized by UCCE Imperial County advisors; Ali Montazar and Oli Bachie. We thank all presenters, growers, industries, and other participants for making this event successful.



Supervisor Ryan Kelley delivers the opening remarks.



Ronnie Leimgruber, Alex Jack, and Larry Cox in the grower panel session.



Dr. Tapan Pathak delivers a talk on “Challenges Due to Climate Change and Tools and Resources to Manage Risks in Agriculture”.

Got Livestock Pests?

National website offers resources on common livestock and companion animal pests

Livestock Pests in California

Disease outbreaks in livestock are not a new issue for livestock owners in Southern California. Making changes in management can be an effective way to avoid or reduce incidence of disease in livestock. This is particularly true when dealing with livestock pests such as ticks, flies, mites, misquitoes, etc. A national website was developed to help educate and provide resources for livestock owners throughout the United States.



What information does the website provide?

- Pictures, descriptions, and additional information on pests of cattle, poultry, sheep, horses, swine, cats, and dogs.
- Updated pesticide database showing pesticides specific to state regulations, animal the pesticide will be applied on, pest being controlled, and preferred application method.
- Veterinary entomologists near you.

How do I access the website?

Scan the QR code below or type **www.veterinaryentomology.org** into your browser to access the Veterinary Entomology website.



Who can I contact about livestock pest issues?

- Brooke Latack – Livestock Advisor
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- Dr. Alec Gerry - Prof. of Entomology and Extension Specialist
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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

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 May 1st to July 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	June		July		August	
	1-15	16-30	1-15	16-31	1-15	16-31
Calipatria	0.31	0.32	0.32	0.31	0.30	0.28
El Centro (Seeley)	0.34	0.36	0.33	0.31	0.30	0.28
Holtville (Meloland)	0.33	0.34	0.32	0.31	0.30	0.28

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 link below:
<http://ciwr.ucanr.edu>.

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