



Imperial County

Agricultural Briefs



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Features from your Advisors

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VEGETABLE DISEASE UPDATE: WINTER STARTS WET THEN TURNS DRY

Alex Putman, Assistant Cooperative Extension Specialist, UC Riverside

- Unusually early and frequent rains have contributed to elevated disease activity in the early part of the winter production season
- Downy mildew of spinach is recently active in Coachella
- Weather forecast is generally dry starting February 3 with possible moisture the week of February 10
- Please send us disease reports or samples, particularly of downy mildew, Fusarium wilt, or bacterial disease of onion.

Active Winter Season so Far: the following problems have been observed or reported so far this winter.

Cold injury (suspected): multiple instances of suspected cold injury of broccoli were observed in the middle of January in both Blythe and the Coachella Valley. The symptoms appeared similar to head rot disease. There are two pathogens that can cause similar head rot symptoms: either several bacteria or several *Alternaria* species. Because some small tufts of dark, fuzzy fungal growth could be found on affected areas, *Alternaria* head rot was suspected. However, no *Alternaria* was found, but instead secondary rotting (saprophytic) fungus that was only growing superficially on affected buds. Given that the primary damage was likely done by the cold earlier, a treatment would only affect the superficial fungal growth, but no information is available for this.

Lettuce – Fusarium wilt: was identified in a head lettuce field in the Imperial Valley in early December. Although Fusarium wilt is a perennial occurrence in the low desert areas of Yuma and Imperial, this detection is notable because those involved had not seen the disease before, and it appeared simultaneously in two fields separated by several miles. Fusarium wilt is a soilborne disease, and thus is moved around by soil within regional areas. The most effective measure to manage Fusarium wilt is prevention—to aggressively remove soil from any equipment or footwear that has been in an infested field, before it enters a clean field.

Spinach – downy mildew: reported at a low level in a commercial field in the Coachella Valley at the end of December. In addition, the disease was first observed in a spinach research trial in Coachella on January 24 affecting cultivar Viroflay, which is not resistant to any race of the downy mildew pathogen.

Celery – Late blight: observed in a conventional field in Coachella at low levels, but was reported to be very severe in organic fields. The pathogen survives on and moves around on seed, which serves as the primary source for disease epidemics. The small, dark spots found in lesions are the pathogen structures bearing spores, which are produced in abundance and are readily disseminated through a field by equipment or foot traffic. The

numerous rain events in November and December and optimal daytime high temperatures likely contributed to this outbreak.

Spinach – leaf spot: has been observed in the past week in Coachella in a commercial field and in a research trial. Leaf spot can be caused by several different species of true fungi. Because downy mildew is caused by a water mold, a very different group of organisms, a fungicide program for spinach targeting downy mildew will likely provide no protection for leaf spot pathogens, unless a FRAC Group 11 fungicide has recently been applied as part of the program. In these two observations the disease was at extremely low levels.

Lettuce – downy mildew: widespread and early in the Yuma area.

Broccoli – Alternaria leaf spot: was identified at low levels in Coachella.

Weather Discussion:

The rainy season in the low desert started out unusually wet and early, with two rain events in September and four from mid-November through the end of December. January was dry in terms of rain fall but conditions have frequently been good for leaf wetness formation.

The forecast indicates a significant shift to lower temperatures and strong winds beginning Monday February 3rd for a couple days. The air is also forecast to be dry for most of the week until Friday. Although the winds and low relative humidity should reduce ambient moisture in fields, full crop canopies combined with irrigation events could still produce optimal conditions for disease development. By Friday, relative humidity is predicted to increase and continue for several days, with the possibility of a rain event early next week.

We Are Looking for Disease Reports and Samples

We would appreciate hearing from you which vegetable diseases you are seeing to guide our extension efforts. For some diseases, we would like to obtain samples to support our or others’ research. Thank you for your help!

	Disease			
Lettuce	Downy mildew*	Sclerotinia drop	Fusarium wilt	Viral diseases
Onion	Downy mildew*	Stemphylium leaf blight	Bacterial diseases	-

* Or downy mildew of any other crop

Contact Alex Putman (951-827-4212; aiputman@ucr.edu)

HEALTHY SOILS GRANT OPPORTUNITY WORKSHOPS

**Cosponsored by
UCCE-Imperial County, UCANR, and
Imperial County Farm Bureau**

The Healthy Soils Grant Funding Program provides financial assistance for the implementation of conservation management practices that improve soil health, sequester carbon and reduce greenhouse gas (GHG) emissions. Applications will be open for four months on a rolling bases online at <https://www.cdfa.ca.gov/oefi/healthsoils/> and applicants are eligible to receive up to \$100,000 in grant funding.

Imperial County Farm Bureau, UCCE-Imperial County, and UCANR will be hosting a series of workshops to provide information and assistance to growers who are interested in applying. Potential applicants are encouraged to attend at least one workshop.

Tuesday, February 25, 2020, 12:00 pm – 2:00 pm
UC Cooperative Extension

1050 East Holton Road, Holtville, CA 92250

(This workshop will include a brief field tour of UCCE's farm that is focusing on the best fertilization/irrigation practices.)

Wednesday, March 11, 2020, 12:00 pm – 2:00 pm

Imperial Valley Conservation Research Center

4151 US Hwy 86, Brawley, CA 92227

Wednesday, April 22, 2020, 12:00 pm – 2:00 pm

Imperial County Farm Bureau

1000 Broadway, El Centro, CA 92243

To register, send name, telephone and email address to rachel@icfb.net

For questions about the program please contact:
Brea Mohamed, 760-352-3831, email: brea@icfb.net or
Oli Bachie, 442-265-7700, email: obachie@ucanr.edu

Please feel free to contact us if you need special accommodations.



IMPERIAL VALLEY CIMIS REPORT AND UC WATER MANAGEMENT RESOURCES

Ali Montazar, Irrigation and Water Management Advisor, UCCE Imperial and Riverside 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 February 1st to April 30th 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	February		March		April	
	1-15	16-28	1-15	16-31	1-15	16-30
Calipatria	0.12	0.13	0.16	0.19	0.22	0.25
El Centro (Seeley)	0.13	0.15	0.19	0.22	0.24	0.28
Holtville (Meloland)	0.12	0.14	0.17	0.21	0.23	0.27

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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(Complete nondiscrimination policy statement can be found at <http://ucanr.org/sites/anrstaff/files/107734.doc>)*

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University of California, Davis, Agriculture and Natural Resources, One Shields Avenue, Davis, CA 95616, (530) 752-1397.*