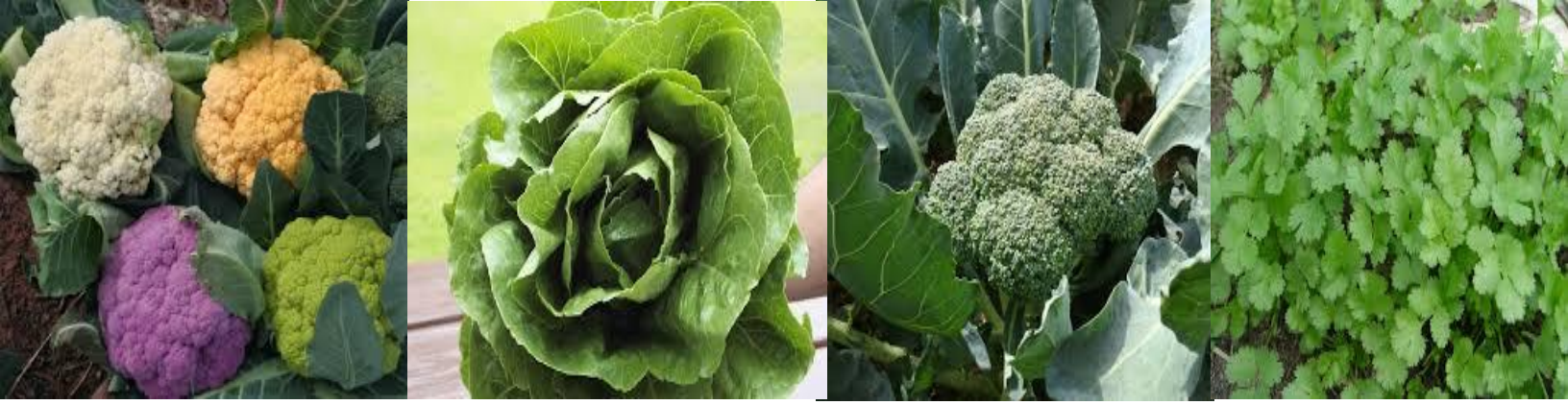

Imperial County Agricultural Briefs

University of California
Agriculture and Natural Resources

Features from your Advisors

January 2021 (Volume 24 Issue 1)

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UC CE University of California Agriculture and Natural Resources Cooperative Extension

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Holtville, CA, 92250
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Hello,

Happy New Year!

This month examines a study looking at the effect of Zinc supplementation on the performance and carcass characteristics of feedlot calf-fed Holstein steers.

If you have any comments, questions, recommendations, or know someone who would like to be included on the mailing list, please feel free to contact me.

Best wishes,

Brooke Latack
Livestock Advisor
UC Cooperative Extension – Imperial, Riverside, and San Bernardino counties
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bclatack@ucanr.edu
http://ceimperial.ucanr.edu/Livestock/

While cooperative extension is working remotely for the time being, we are still available to help answer any questions you have. Feel free to contact me on my cell phone (269-313-2579) or through email.

EFFECT OF ZINC SUPPLEMENTATION ON PERFORMANCE AND CARCASS CHARACTERISTICS OF FEEDLOT CALF-FED HOLSTEIN STEERS

Brooke Latack
Livestock Advisor

Introduction

Zinc is an important trace mineral for cattle. Zinc is involved in protein synthesis, carbohydrate metabolism, health maintenance, and other important functions. The current recommendation of Zinc inclusion in the diet is 30 mg Zn/kg DM, though studies have found no improvement in feedlot performance between 20 and 30 mg Zn/kg. Use of inorganic vs chelated supplemental Zinc can affect mineral status as they differ in bioavailability. There has been little research on the Zinc supplementation in calf-fed Holstein steers. This study aimed to evaluate the effect level of Zn supplementation and proportion of chelated Zinc inclusion on growth performance and carcass characteristics of calf-fed Holsteins.

Methods

168 Holstein steers (133 ±7 kg) were sorted into 28 pens (6 steers/pen). Steers were fed for 336 days and harvested. Diets are shown in table 1. Four treatments were fed for the first 112 days on feed:

1. 20 mg Zn/kg of $ZnSO_4$
2. 10 mg Zn/kg of $ZnSO_4$ + 10 mg Zn/kg of ZnBentaine
3. 10 mg Zn/kg of ZnBentaine
4. 40 mg Zn/kg of $ZnSO_4$

Cattle were fed twice a day and had constant access to shade and water. Steers were implanted (120 mg trenbolone acetate and 24 mg estradiol) and reinjected with 500,000 IU of vitamin A on days 112 and 224.

Results and Implications

- There were no overall treatment effects on ADG, gain efficiency, or estimated dietary NE.
- Steers fed 20 mg Zn/kg of $ZnSO_4$ tended to have a lower DMI (4.3%).
- The proportion of chelated zinc fed did not have an effect on ADG, gain efficiency, dietary NE, carcass weight, KPH, LM area, or marbling score.
- Dressing percentage was greater for cattle fed the 50/50 blend of $ZnSO_4$ + ZnBentaine (1.12%).
- Yield grade was improved for cattle supplemented with chelated zinc (1%).
- Performance and carcass characteristics were not affected by increasing supplementation of Zn from 20 to 40 mg Zn/kg.

Table 1.
Ingredient composition of experiment diet

Item	Treatment 1	Treatment 2	Treatment 3	Treatment 4
Steam-flaked corn	68.10	68.10	68.10	68.10
DDGs	10.00	10.00	10.00	10.00
Sudangrass hay	8.00	8.00	8.00	8.00
Alfalfa hay	4.00	4.00	4.00	4.00
Cane molasses	4.00	4.00	4.00	4.00
Tallow	2.50	2.50	2.50	2.50
Limestone	1.68	1.68	1.68	1.68
Urea	1.15	1.15	1.15	1.15
Trace mineral salt	0.30	0.30	0.30	0.30
Magnesium oxide	0.15	0.15	0.15	0.15
Dicalcium phosphate	0.10	0.10	0.10	0.10
Monensin	0.00334	0.00334	0.00334	0.00334
$ZnSO_4$	0.00550	0.00275	0	0.011
Zn-bentaine	0	0.01026	0.0205	0

References

Montano, MF, Plascencia, A, Salinas-Chavira, J, Torrentera, N, and Zinn, RA. Influence of level and form of supplemental zinc on feedlot growth performance and carcass characteristics of calf-fed Holstein steers. 2017. The Professional Animal Scientist, 33:651-658.

Submitted By: Chris McDonald
Inland & Desert Natural Resources Advisor, Imperial, Riverside & San Diego Counties
County Co-Director San Bernardino

CDFA issues stop use notice and statewide quarantine on organic fertilizer AGRO GOLD WS

- **Information provided by: Richard Smith**
- **Posted by: Gale Perez**

Published on: December 4, 2020

Agro Gold WS was found adulterated with glyphosate and diquat and CDFA has issued a stop order for use on organic farms in the state of California. The press release is shown below:

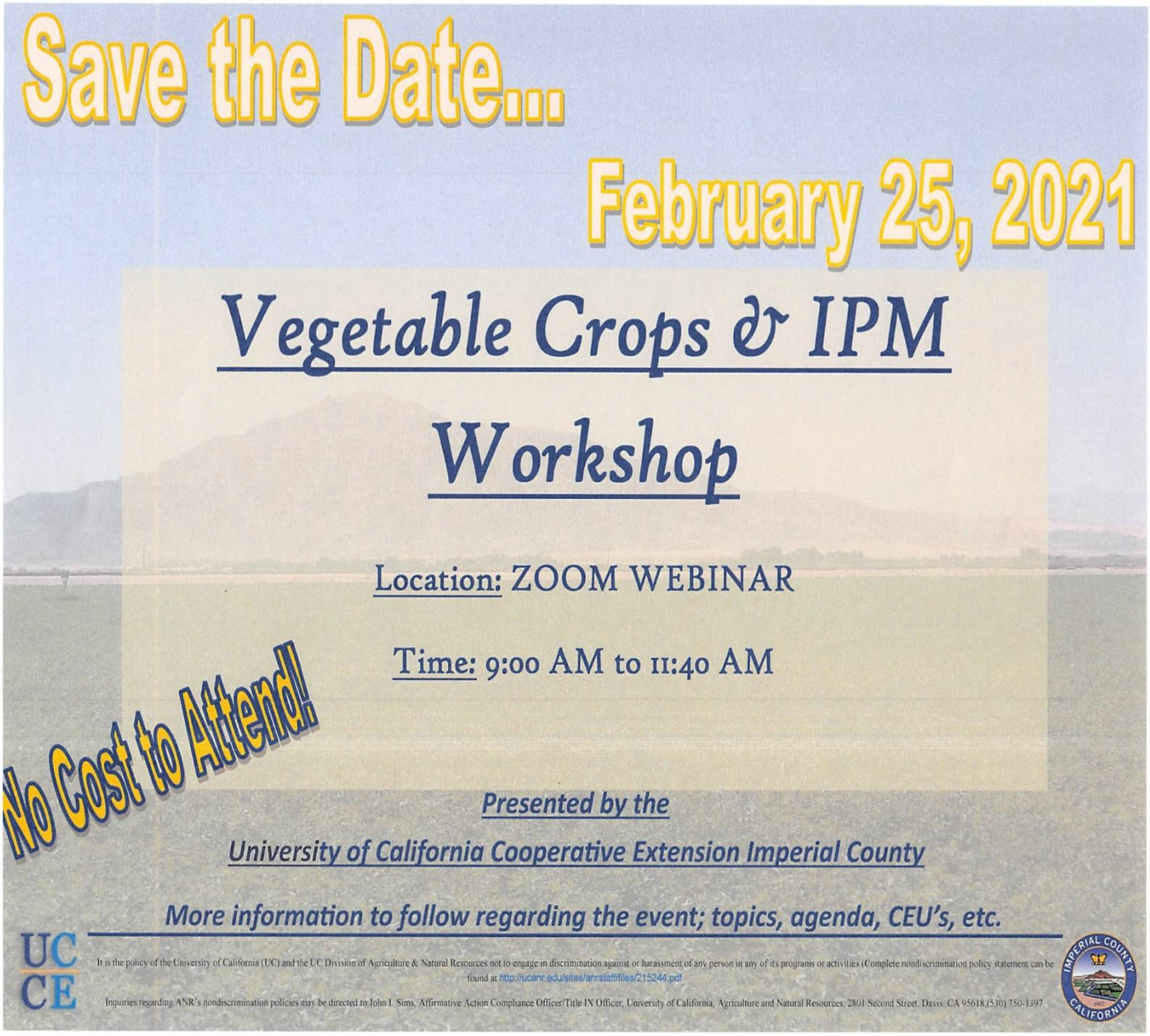
CDFA ISSUES STOP USE NOTICE AND STATEWIDE QUARANTINE ON ORGANIC FERTILIZER AGRO GOLD WS

SACRAMENTO, December 4, 2020 – The California Department of Food and Agriculture (CDFA) today announced that a Stop Use notice and statewide quarantine have been issued for the organic fertilizer product AGRO GOLD WS to all organic operations registered in California. CDFA lab analysis of the product detected the presence of Diquat and Glyphosate, which are substances prohibited by the U.S. Department of Agriculture (USDA) National Organic Program for use in organic production. Continued use of this product in organic production may jeopardize an operation's organic status.

Pursuant to authority under the California Food and Agricultural Code (FAC), Division 17, Chapter 10, CDFA's State Organic Program (SOP) in coordination with the Fertilizer Materials Inspection Program (FMIP) issued a Stop Use notice today for AGRO GOLD WS to all organic operations in California registered with the SOP. CDFA's FMIP also announced today that all California operations registered as organic in possession of AGRO GOLD WS must hold the product and contact CDFA for quarantine instructions on how to handle it.

AGRO GOLD WS is manufactured by Agro Research International, LLC. It has been distributed in a co-packaged box that also contains the product WEED SLAYER. CDFA continues to provide follow up to this investigation and is working with state and federal agencies. CDFA received a complaint about the AGRO GOLD WS product and program staff collected product samples from various locations to conduct lab analysis in CDFA's Center for Analytical Chemistry. FMIP is an industry-funded program that ensures consumers receive fertilizing materials that meet the quality and quantity guaranteed on the product label. Investigators located throughout the state conduct routine sampling and inspections, respond to consumer complaints, and enforce the laws and regulations that govern the manufacturing and distribution of fertilizing materials in California. CDFA's State Organic Program protects the organic label through enforcement, education and outreach.

If you are in possession of AGRO GOLD WS and seek additional information, please contact the Fertilizing Materials Inspection Program at FMIP@cdfa.ca.gov. Any appeal of the determination that this product violates the Food and Agricultural Code must be filed with the Fertilizing Materials Inspection Program no later than 15 days from receipt of the Stop Use notice and statewide quarantine. See Food and Agricultural Code section 14659.


Save the Date...
February 25, 2021
Vegetable Crops & IPM
Workshop
Location: ZOOM WEBINAR
Time: 9:00 AM to 11:40 AM
No Cost to Attend!
Presented by the
University of California Cooperative Extension Imperial County
More information to follow regarding the event; topics, agenda, CEU's, etc.
UC CE
It is the policy of the University of California (UC) and the UC Division of Agriculture & Natural Resources not to engage in discrimination against or harassment of any person in any of its programs or activities (Complete nondiscrimination policy statement can be found at http://ucanr.edu/sites/anrstaff/files/215244.pdf
Inquiries regarding ANR's nondiscrimination policies may be directed to John I. Sims, Affirmative Action Compliance Officer/Title IX Officer, University of California, Agriculture and Natural Resources, 2801 Second Street, Davis, CA 95618,(530) 750-1397
IMPERIAL COUNTY CALIFORNIA

UC CE | UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources | Cooperative Extension

Vegetable Crops and IPM Workshop (Webinar)

UCCE Imperial County – February 25th, 2021

Pre-registration: Please send an email in advance to aiestrada@ucanr.edu with full name of attendee(s).

9:00 a.m. - 11:30 a.m.	
9:00	**Welcome & Introduction of new advisor** – *Oli Bachie, UCCE Imperial County Director*
9:05	**IPM opportunities for vegetable production in the low desert: a beginner's perspective** - Apurba Barman, IPM Advisor, UCCE Imperial County
9:10	**Irrigation and nitrogen best management practices in the low desert carrots** - *Ali Montazar, Irrigation and Water Management Advisor, UCCE Imperial County*
9:25	**Pre-harvest survival of E. coli during romaine lettuce production in the Desert** - *Michele Jay-Russell, Research Microbiologist & Manager, Western Center for Food Safety, UC Davis*
9:40	**Pronamide/Kerb efficacy and safety applied via drip vs sprinkler in lettuce** - *Oleg Daugovish, Strawberry and Vegetable Crop Advisor, UCCE Ventura County*
9:55	**Weather-based irrigation scheduling of red cabbage for optimizing yield** - *Michael Cahn, Irrigation and Water Resource Advisor, UCCE Monterey County*
10:10	**Evaluating alternative nematicides for the control of root-knot nematodes in melons and carrots** - *Jaspreet Sidhu, Vegetable Crops Advisor, UCCE Kern County*
10:25	**Imperial Valley Vegetable Growers Association (IVVGA) updates** – *Shelby Dill, Executive Director of IVVGA*
10:30	**California Leafy Greens Research Program (CLGRP) updates** - *Jennifer Clarke, California Leafy Greens Research Program*
10:35	**Nitrogen and irrigation studies in drip irrigated fresh market onions** - *Jairo Diaz, UC Desert Research and Extension Center*
10:50	**Weed control efficacy and crop safety of Prefar and Dacthal herbicides applied over broccoli and celery transplants** - *Oli Bachie, Agronomy Advisor, UCCE Imperial County*
11:05	**Downy Mildew of Lettuce and Spinach in the Imperial Valley** - *Alex Putman, Assistant Cooperative Extension Specialist, UC Riverside*
11:20	**Industry updates** – *Jay Sughroue (BioSafe Systems), and Abbas Alhadithi (Salt Fighter, Universal Agriculture)*

For additional information on the workshop, please contact organizers Ali Montazar, amontazar@ucanr.edu, or Oli Bachie, obachie@ucanr.edu, or call us at (442) 265-7700

PENDING CEU CREDITS: CALIFORNIA DPR (1.5 hrs.), ARIZONA DEPT. Of AG (1.5 hrs.) & CCA (2.5 hrs.)

**** Test will be given intermittently for people registering for CEU's ****

Join the webinar at:

https://ucanr.zoom.us/s/94413623822?pwd=OW5SNi9Peke4c1ZBN3ovSU5PUXU3dz09#success

Webinar ID: 944 1362 8822; Password: 662331; Telephone: US: +1 669 900 6833 or +1 253 215 8782 or +1 346 248 7799 or +1 646 558 8656 or +1 301 715 8592 or +1 312 626 6799

SOIL MOISTURE SENSING FOR SMART IRRIGATION MANAGEMENT DECISIONS

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

Understanding the effects of irrigation events on soil moisture provides critical insight for growers about the present growing environment for crops. While experienced growers have learned over seasons of observations how their soils and water interact, utilizing a soil moisture measuring device of some sort enables them to put a number on their observations and more accurately track trends over time.

The sensors allow growers to better understand the frequency and duration of irrigation events needed, to maintain adequate moisture based on the crops being grown. There are instances where irrigation cycles are occurring too often and for far longer periods than needed to achieve field capacity of the soil. There are also instances where the use of sensors revealed malfunctioning irrigation system components by reporting unusually dry soil in areas that should have received ample irrigation.

Soil moisture sensors should use as a useful tool to answer following critical questions:

- How is the water status of the soil early in the season?
- When is the right time for the first and subsequent irrigation events?
- Is the soil profile full after each irrigation event?
- What is the length of irrigation time?
- Should irrigation practice be changed?

In recent years, there has been a proliferation of commercially available soil moisture monitoring systems for agriculture (Fig. 1). Many sensors interface with dataloggers and wireless communication systems to provide near real-time status of soil moisture from several depths and locations within a field. Data are automatically uploaded by radio or cell phone communications to cloud-based computer servers and are accessible through apps on smartphones and tablets. These communication advancements greatly improve the convenience of accessing data and can be configured to provide timely alerts when crops require irrigation. While considering the sensor/s that might work best for our own field depending on irrigation system, soil parameters, and crop type; it is also critical to learn where and how to install and maintain the sensors, and how to read, interpret, and use the data of soil moisture sensors for irrigation management.

For all types of sensors, the installation process is absolutely critical in the ability to obtain accurate and usable soil moisture data. Poorly installed sensors may give erroneous data, leading to mistakes with irrigation amounts and frequency. Using a moisture sensor attached to a data logger (or telemetry to computer/tablet) is the most useful in limited water situations. Continuous measurements can identify soil moisture behavior that

might not be evident with point measurements. How you install the sensors is likely more important than the type of sensor chosen.

Three common methods used to measure soil moisture include matric potential, time domain reflectometry/time domain transmissometry, and capacitance measurements.

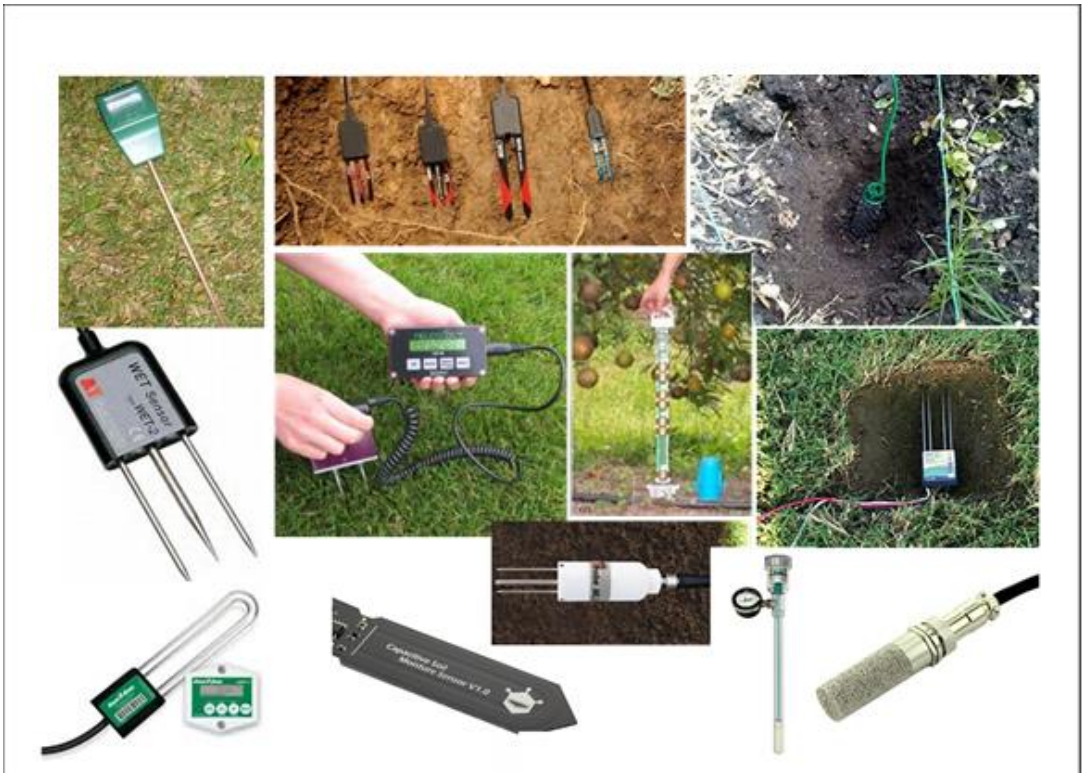


Fig 1. An overview of different soil moisture sensors

Matric potential is a measure of how tightly water is held to the soil, which corresponds to water available to roots. Matric potential is also referred to as soil water potential, water tension, or soil water suction. These qualitative measures of soil moisture are useful to indicate when to apply water but are limited in their ability to indicate how much water to apply. Matric potential sensors are commonly installed into the soil at multiple depths.

Time Domain Reflectometry (TDR) and Transmissometry (TDT) sensors measure volumetric water content (if calibrated) or relative water content (if not calibrated) using high-frequency electromagnetic waves. Individual TDR/TDT sensors are larger than other types but measure water content of a larger volume of soil. Volumetric water content can be used to help decide when to irrigate and how much water to apply. These sensors are commonly installed into the soil profile at multiple depths.

Capacitance sensors measure volumetric or relative water content using dielectric permittivity of soil. This type of sensor measures a relatively small volume of soil, therefore installation is particularly important. Capacitance sensors can be purchased as individual sensors or built into a probe or profiler to measure soil moisture at multiple depths.

Note: If you have any question about soil moisture sensing or need help on sensor-based irrigation management of your fields, feel free to contact me at (442) 265-7707 or amontazar@ucanr.edu.

UC CE UNIVERSITY OF CALIFORNIA Agriculture and Natural Resources Cooperative Extension

WEBINAR: Irrigation Management Tools and Technologies
UCCE Imperial County – March 3rd, 2021

Pre-registration: Please send an email in advance to aiestrada@ucanr.edu with full name of attendee(s).

9:00 – 11:00 a.m.	
9:00	**Introduction / Tools and technologies assist low desert growers to improve irrigation efficiency and conserve water** - *Ali Montazar, Irrigation and Water Management Advisor, UCCE Imperial and Riverside Counties*
9:25	**Fundamentals of site-specific variable rate irrigation management** - *Amir Haghverdi, Assistant CE Professor of Irrigation and Water Management at UC Riverside*
9:50	**Challenges and opportunities to use drones for irrigation management** - *Anish Sapkota, PhD Candidate at UC Riverside*
10:15	**VRI-EVAL: A web-based tool for variable rate irrigation pre-adoption assessment** - *Akanksha Garg, postdoctoral research scholar at UC Riverside*
10:40	**Grower experience on the adoption of irrigation advanced technologies in the Imperial Valley** - *Ronald Leimgruber, Leimgruber Farms*
10:45	**Industry update** - *Merritt McDougall (Valley Irrigation); Darren Fillmore (SWIIM System)*

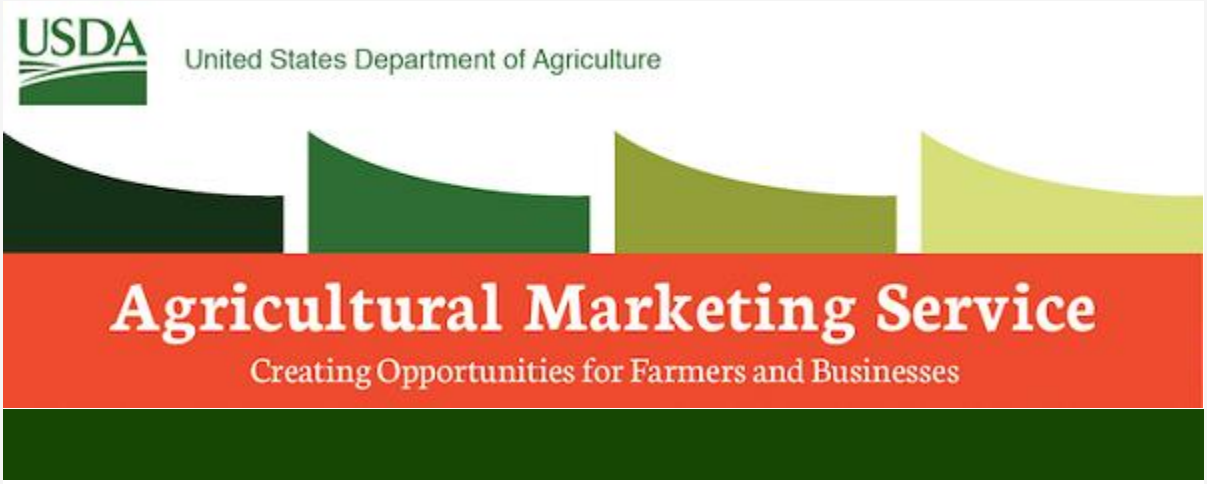
For additional information on the workshop (webinar), please contact Ali Montazar, amontazar@ucanr.edu, or call us at (442) 265-7700.

PENDING CEU CREDITS: CCA (2 hrs.)

You will receive the link for joining the webinar after pre-registration.
There is no fee for this webinar.

USDA Establishes Weekly Report to Highlight Seasonable and Perishable Product Trends

USDA Agricultural Marketing Service sent this bulletin at 01/08/2021 04:35 PM EST



USDA Establishes Weekly Report to Highlight Seasonable and Perishable Product Trends

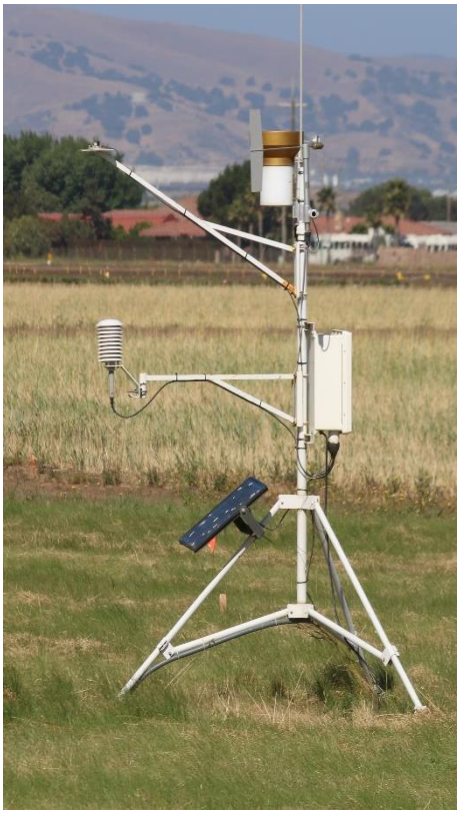
WASHINGTON, Jan. 8, 2021 - The U.S. Department of Agriculture today announced a new data report, the U.S. Mexico Canada Agreement Seasonal Perishable Products Weekly Update, prepared in close partnership with the Office of the U.S. Trade Representative (USTR) and the U.S. Department of Commerce (Commerce). The weekly report is based on data provided by USDA's Agricultural Marketing Service (AMS) and its Specialty Crops Market News Division.

"With the impact of COVID-19 on the produce industry, it is critical that we keep an eye on marketplace trends for seasonal and perishable products," said USDA Undersecretary for Marketing and Regulatory Programs Greg Ibach. "This report will help the federal agencies involved in overseeing the supply chain understand import trends as we work to address industry concerns."

This new report was first issued in December 2020 and combines information published by AMS Market News into an easy to read description of the current market trends on key imported specialty crops. The commodities highlighted each week will vary seasonally and will change to follow importing seasons and crop cycles. On September 1, 2020, USTR, Commerce and USDA issued a joint report on Seasonal and Perishable Products in U.S. Commerce which highlighted the need for a near-real time market report to provide USTR, Commerce and the public with the volume and prices for selected seasonal and perishable commodities.

IMPERIAL VALLEY CIMIS REPORT AND UC WATER MANAGEMENT RESOURCES

Ali Montazar, Irrigation & Water Mgmt Advisor, UCCE Imperial & 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 January 1st to March 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	January		February		March	
	1-15	16-31	1-15	16-28	1-15	16-31
Calipatria	0.09	0.10	0.12	0.13	0.16	0.19
El Centro (Seeley)	0.10	0.11	0.13	0.15	0.19	0.22
Holtville (Meloland)	0.09	0.10	0.12	0.14	0.17	0.21

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/