Imperial County Agricultural Briefs

University of California
Agriculture and Natural Resources

Features from your Advisors

December 2021 (Volume 24 Issue 11)

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NOVEMBER 2021 CATTLECAL NEWSLETTER UPDATE

Brooke Latack, Livestock Advisor – Imperial, Riverside, and San Bernardino Counties

The November 2021 edition of the CattleCal newsletter covered information on the recommended forage inclusion rates for feedlot diets, the career and research of CDFA veterinary epidemiologist Dr. Wendi Jackson, and a discussion of a study looking at the effect of implant strategies on feedlot calf-fed Holstein steer performance and carcass characteristics.

If you would like to subscribe to the CattleCal newsletter, please visit this site and enter your email address: http://ceimperial.ucanr.edu/news_359/CattleCal_483/

November CattleCal podcast episodes:

- **Quiz Zinn**
  In this episode, we asked Dr. Richard Zinn a question from our listeners related to the recommended forage inclusion for feedlot diets.

- **Career Call**
  In the career call of the month, Brooke Latack and Pedro Carvalho called Dr. Wendi Jackson, a veterinary epidemiologist and leader of the Surveys and Studies section of the antimicrobial use and stewardship program for the California Department of Food and Agriculture. Wendi tells us about her career and her extensive travel as a veterinarian.

- **Research Call**
  Brooke Latack and Pedro Carvalho call Dr. Wendi Jackson. Wendi takes us through her work looking at septicemia and liver abscess in calf-fed Holstein steers in the feedlot.

- **Feedlot Research Call**
  In this episode, join Pedro Carvalho and Brooke Latack as they discuss a study looking at the effect of different implant strategies on the performance and carcass characteristics of calf-fed Holstein steers.

The podcast can be found at https://open.spotify.com/show/6PR02gPnmTSHEgsv09ghjY?si=9uxSj3dYQueTEOr3ExTyjw or by searching "CattleCal podcast" in Spotify. It is free to listen!

If you have burning questions about cattle management and would like your questions featured on our Quiz Zinn episodes, please send questions to cattlecalucd@gmail.com or DM your question to our Instagram account @cattlecal.

If you have any questions or comments or would like to subscribe to the newsletter, please contact:

Brooke Latack (UCCE Livestock advisor) – bclatack@ucanr.edu
Pedro Carvalho (CE Feedlot Management Specialist) - pcarvalho@ucdavis.edu
CattleCal: cattlecalucd@gmail.com

32ND ANNUAL FALL DESERT CROPS WORKSHOP

UCCE Imperial County - December 9, 2021

Workshop Location: Farm Credit West, 485 Business Parkway, Imperial, CA 92251 ***Workshop registration link:***

https://surveys.ucanr.edu/survey.cfm?surveynumber=36073

	8:30 a.m. – 11:50 a.m.
8:30	**Welcome** and the CDFA incentive funding program - *Oli Bachie, UCCE Imperial County Director*
8:40	**The County Agricultural Benefit Program** - *Carlos Ortiz, Imperial County Ag Commissioner*
8:55	**Research advances in adopting drip irrigation for spinach production** - *Ali Montazar, Irrigation and Water Management Advisor, UCCE Imperial County*
9:10	**Advancing precision agriculture in California's desert environment** - *Amir Haghverdi, Assistant CE Professor of Irrigation and Water Management at UC Riverside*
9:25	**Updates on lettuce Fusarium wilt in California** - *Alex Putman, Assistant Cooperative Extension Specialist, UC Riverside*
9:40	**Low desert pest management program update** - *Apurba Barman, IPM Advisor, UCCE Imperial County*
9:55	**Low desert crop nematodes (carrots and other crops) and management approaches** – *Antoon Ploeg, UC Cooperative Extension Nematologist, UC Riverside*
	Break 10:10 – 10:30 a.m.
10:30	**2021 Alfalfa weevil insecticide efficacy comparisons** - *Michael Rethwisch, UCCE Riverside Crop Production and Entomology Advisor, Blythe (Palo Verde Valley Office), CA*
10:45	**Weed seedling identification and management in the desert-** *Marco Pena, Area weed management agent Arizona Cooperative Extension, Yuma, AZ*
11:00	**What have we learned from impacts of the pandemic on low desert farming** - *Oli Bachie, Agronomy Advisor, UCCE Imperial County*
11:15	**Industry updates** - *Yara North America (Victor Lopez), N-Drip (Uri Segev), Syngenta Crop Protection (Randy Landwerlen), Westbridge Agricultural Products (Macey Keith), BASF (Kevin Caffrey), Naio Technology (Ingrid Sarlandie)*

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

PENDING CEU APPROVALS: CALIFORNIA DPR (2.0 hrs.), ARIZONA DEPT. of AG (2.0 hrs.) & CCA (3.0 hrs.)

Samples wanted for research on

Lettuce Fusarium wilt

WHAT we are looking for	Samples of lettuce plants affected by Fusarium wilt
WHERE we are looking	Imperial County (including Bard/ Winterhaven area) and Huron, other regions of California also welcome
WHY we are doing this	To monitor for emergence of new pathogen races
HOW you can help	If you are a grower or PCA and you have Fusarium wilt in your lettuce crop, contact us and we will survey your field and collect samples

Contact: Alex Putman, UC Riverside (951-522-9556, aiputman@ucr.edu)

Collaborators:
Jim Correll, Univ. of Arkansas
Stephanie Slinski, Yuma Center for Excellence in Desert Agriculture

Funded By:
California Leafy Greens Research Program
2021-2022

DRIP IRRIGATION SHOWS PROMISE FOR SPINACH GROWERS

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

Published on: April 29, 2021

UC ANR research on drip irrigation shows potential to reduce downy mildew incidence while improving water quality and resource-use efficiency, contributing to increased water-use efficiency and improved food safety.

The Issue

Spinach is a leafy green quick-maturing, cool-season vegetable crop. Downy mildew on spinach is a widespread and very destructive disease in California. It is the most significant disease in spinach production, causing crop losses in all areas where spinach is produced. Most conventional and organic spinach fields are irrigated by solid-set or hand-move sprinklers. However, overhead irrigation may contribute to the speed and severity of downy mildew epidemics within a field when other conditions such as temperature are favorable. It is postulated that new irrigation management techniques and practices in spinach production may have a significant economic impact to the leafy greens industry through the control of downy mildew.

Commercial conventional spinach field

How UC Delivers

The main objective of this study was to explore the viability of adopting drip irrigation for organic and conventional spinach production. Field experiments were conducted at the UC Desert Research and Extension Center and three commercial fields in the low desert of California over four crop seasons (2018-2021). Several treatments and comprehensive data collection were carried out to optimize drip system design, irrigation and nitrogen management strategies, planting method, and evaluating the effects of drip on plant growth and downy mildew incidence, and seed germination by drip irrigation.

The results of this multi-year study demonstrated that drip irrigation has the potential for producing profitable spinach in the California crop production system. No significant yield difference was observed among sprinkler treatments and most drip treatments in the 2021 trial. An overall effect of the irrigation system on downy mildew was observed, in which downy mildew incidence was two-to-five times lower in plots irrigated by drip when compared to sprinklers. The likely mechanism for reducing downy mildew incidence is the reduction in leaf wetness resulting from drip irrigation. Leaf wetness is a critical factor for infection and sporulation by the downy mildew pathogen.

Organic spinach trial at UC Desert REC

The Impact

The findings of the aforementioned study show that adopting drip irrigation for high-density spinach plantings can reduce incidence of downy mildew and related food safety risks and crop loss. As a result of participating in research trials, a cooperative grower reported a considerable cost reduction of $300 per acre due to less/no water treatment applications for downy mildew control and food safety issues in conventional spinach under drip irrigation. The findings of this study show that adopting drip irrigation for high-density spinach plantings can be a solution to reduce food safety risks and losses from downy mildew, conserve water and fertilizer, and reduce greenhouse gas emissions. A lower energy cost of $200 per acre is estimated for spinach producing under drip irrigation.

Several factors influence appropriate drip irrigation management in spinach including system design, soil characteristics, and environmental conditions. Drip irrigation offers the potential for precise water management, as well as the ideal vehicle to deliver nutrients in a timely and efficient manner. However, achieving high water- and nutrient-use efficiency, while maximizing crop productivity requires intensive and proper management, particularly in organic baby spinach. The knowledge-based information and findings of this study have been shared with growers and stakeholders through several media interviews, presentations in workshops/webinars, and extension and peer-review publications, contributing to UC ANR's public values of resource conservation and safe, sufficient food for all. The following links are some of the publications associated with this study in Western Farm Press, the Desert of Review, the Holtville Tribune, California Ag Today Radio, Vegetables West, California Organic Farmer, Journal of Agriculture, Agricultural Briefs, and UC ANR Knowledge Stream:

The Holtville Tribune - May 2021

Vegetables West - April 2021

California Ag Today Radio - March 2021

Western Farm Press - February 2021

Journal of Agriculture - August 2019

California Organic Farmer - August 2019

UC ANR Knowledge Stream - August 2019

UC ANR Agricultural Briefs - June 2019

UC ANR Agricultural Briefs - February 2019

Spinach plants infested by downy mildew at the sprinkler treatment

Condition Changes:

- Increased agriculture and forestry efficiency and profitability
- Improved food safety
- Improved water-use efficiency

Strategic Initiative: Water Quality, Quantity, and Security

Public Value: UCANR: Safeguarding abundant and healthy food for all Californians

IMPERIAL VALLEY CIMIS REPORT AND UC WATER MANAGEMENT RESOURCES

Ali Montazar, Irrigation & Water Mgmt Advisor, UCCE Imperial & Riverside County

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.cim is.water.ca.gov. Estimates of the average daily ET_o for the period of November 1 to January 31 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	December		January		February	
	1-15	16-31	1-15	16-31	1-15	16-28
Calipatria	0.09	0.09	0.09	0.10	0.12	0.13
El Centro (Seeley)	0.10	0.09	0.10	0.11	0.13	0.15
Holtville (Meloland)	0.09	0.08	0.09	0.10	0.12	0.14

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/.