Imperial County Agricultural Briefs

University of California
Agriculture and Natural Resources

Features from your Advisors

February 2021 (Volume 24 Issue 2)

Table of Contents

UCCE-IMPERIAL VALLEY HIRES NEW ADVISOR

The University of California Cooperative Extension office near Holtville welcomes Apurba Barman as the new low desert integrated pest advisor. Barman comes to UC Cooperative Extension from the University of Georgia, where he was in charge of a whitefly monitoring and management program targeting cropping systems in the southern region of the state.

"I am very excited for my new role as IPM advisor based in Southern California and for the opportunity to serve one of the most important vegetable production regions in the state," Barman said. The diversity and intensity of crop production in this region demand targeted research to solve pest management issues and effective extension programs to reach out to diverse clientele. I feel prepared for this job with my experience and passion to serve the community." He looks forward to meeting with local growers.

Barman earned a bachelor's degree at Assam Agricultural University in India, and a master's degree from Texas Tech University in Lubbock. He completed his doctoral degree in 2011 at Texas A & M University at College Station, where he worked as a cotton extension entomologist with Texas AgriLife Extension Service and developed a research program to understand the extent of damage and management of thrips in the Texas High Plains region.

Barman began his new onsite Feb. 1, 2021. He can be reached at (209) 285-9810 or by email at akbarman@ucanr.edu.

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Vegetable Crops and IPM Workshop (Webinar)

UCCE Imperial County – February 25th, 2021

Workshop registration link:
http://ucanr.edu/survey/survey.cfm?surveynumber=32851

9:00 a.m. - 11:30 a.m.	
9:00	**Welcome** – *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 (--hrs.), ARIZONA DEPT. Of AG (-- hrs.) & CCA (-- hrs.)
**** Test will be given intermittently for people registering for CEU's ****

Join the webinar at:

https://ucanr.zoom.us/s/944136Join28822?pwd=QW5SNi9Pekg4c1ZBN3oySU5PUXU3dz09#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

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

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)*

Workshop registration link:
http://ucanr.edu/survey/survey.cfm?surveynumber=32825

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.)

Zoom information will be sent to registrants closer to the event.

There is no fee for this workshop.

SCP Moves Beyond COVID-19 Barriers to Lead the Agricultural Industry Forward!

***Sonia Jimenez**, Deputy Administrator, Specialty Crops Programs*

USDA's AMS Specialty Crops Program (SCP) adapts its operating methods to overcome challenges COVID-19 places in the path of the agricultural industry. As we embrace the promise the year 2021 brings, SCP is stepping up in a variety of ways, including:

- The publication of the Final Rule for the Domestic Production of Hemp culminates work initiated following the Dec 2018 Farm Bill. The work covered three comment periods and a fair, consistent, science-based process for states, tribes, and individual producers.
- Our Specialty Crops Inspection Division (SCI) continues partnering with the AMS Commodity Procurement Program as the USDA launches Round 5 of the Farmers to Families Food Box Program
- 2021 has been named the International Year of Fruits & Vegetables by the United Nations Food and Agriculture Organization. AMS Market News is helping lead the charge in this noble cause.
- Specialty Crops Market News is providing the industry with a new report detailing seasonal imports from Canada & Mexico that will vary seasonally following importing cycles and crop cycles.
- SCP's Promotion & Economic Division (PED) is excited to announce the creation of the Pecan Promotion, Research and Information Order.

COVID-19 challenges all of us to develop creative ways to conduct the agricultural industry's business. Please help us help you moving forward in 2021. I encourage you to work with us in continuing to drive the agricultural industry forward. Contact any SCP employee who may assist your efforts!

BLUE ALFALFA APHIDS – WHAT DID WE LEARN IN 2020?

Michael D. Rethwisch, Crop Production & Entomology Advisor, UCCE Riverside County – Palo Verde Office

The year 2020 for spring alfalfa was a bit different than normal. The October 2019 freeze in the Palo Verde Valley allowed alfalfa weevils to come out of their summer estivation earlier than normal, and many local alfalfa growers treated for alfalfa weevils in February. Few weevils were present during the March regrowth period if alfalfa had been cut in late February. This allowed for an excellent opportunity to document the effects on the relationships of blue alfalfa aphid feeding damage, insecticide efficacy and resultant yields.

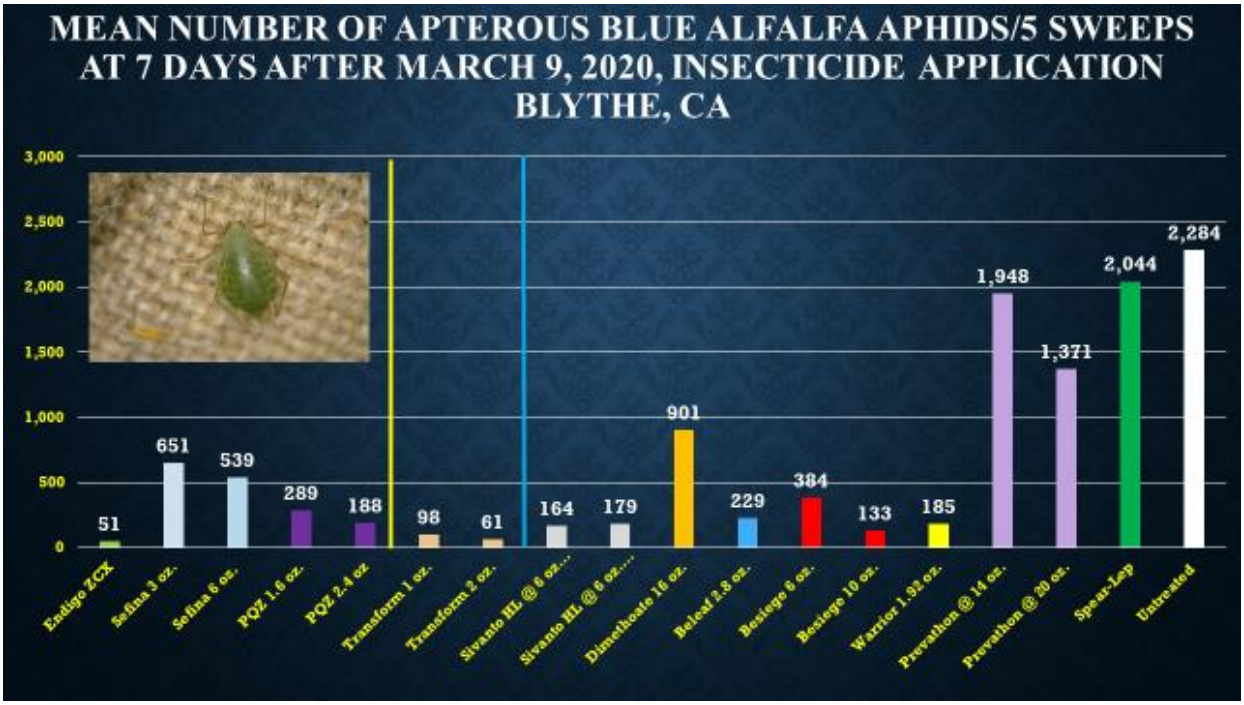
Treatments for 2020 were applied the morning and early afternoon of March 9 with a back-pack sprayer calibrated to deliver 18.6 gpa to a first year stand of 'Cibola' alfalfa which averaged 8.4 inches in height (range from 5-12 inches) after being harvested in February. All treatments had the ethylated seed oil Hasten EA added at 12.6 oz./acre (0.53 v/v) with the exception of one treatment of Sivanto HL which used Induce at the same rate. Aphids were noted as present when treatments were applied but not considered to have reached population levels that would be considered damaging.

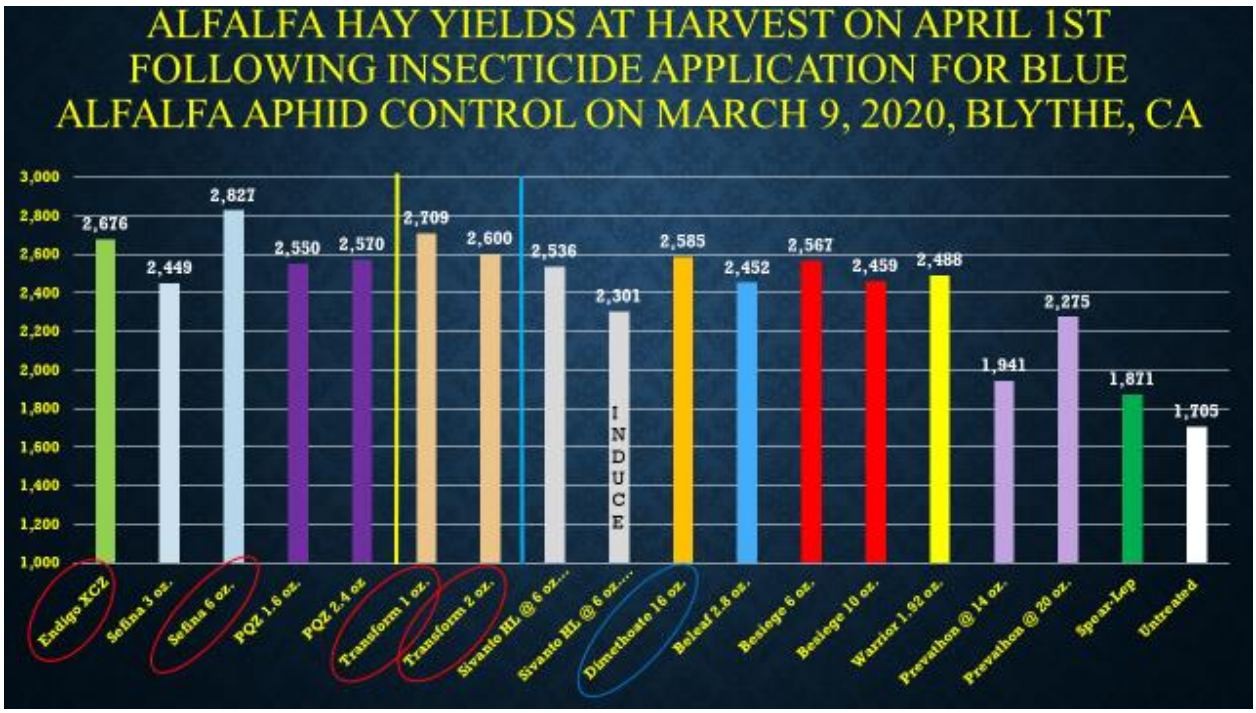
A fairly large weather system moved into the area, with rain beginning the night of March 9 and showers over the next 3 days/nights precluding sweep sampling utilizing a pendulum pattern until 7 days post treatment. Rains have been noted to reduce aphid numbers on alfalfa.

High populations of winged blue alfalfa aphids were noted migrating into the fields based on area water traps, with numbers of 275/square foot over a two day period noted. It is unknown if the migration into alfalfa fields was at, above or below this level however. Damaged alfalfa was noted by 7 days post treatment.

Fig. 1. Alfalfa plots at 7 days post treatment. Note the darker, shorter areas in plots that were damaged by blue alfalfa aphid feeding in one week. Flags are on plot corners.

Aphid control Data were collected for both winged and non-winged aphids to help provide a better understanding of the field situation, especially in light of the high numbers of migrating blue alfalfa aphids. Surprisingly, there was a marked difference in insecticide activity for several products for winged vs. non-winged blue alfalfa aphids. Fewest winged blue alfalfa aphids were noted at 7 days post treatment in plots treated with a dimethoate insecticide and with the high (6 oz./acre) rate of Sefina (Fig. 2).


MEAN NUMBER OF APTEROUS BLUE ALFALFA APHIDS/5 SWEEPS AT 7 DAYS AFTER MARCH 9, 2020, INSECTICIDE APPLICATION BLYTHE, CA
3,000
2,500
2,000
1,500
1,000
500
0
51
651
539
289
188
98
61
164
179
901
229
384
133
185
1,948
1,371
2,044
2,284
Endigo ZCX
Sefina 3 oz.
Sefina 6 oz.
PQZ 1.6 oz.
PQZ 2.4 oz
Transform 1 oz.
Transform 2 oz.
Sivanto HL @ 6 oz...
Sivanto HL @ 6 oz....
Dimethoate 16 oz.
Beleaf 2.8 oz.
Besiege 6 oz.
Besiege 10 oz.
Warrior 1.92 oz.
Prevathon @ 14 oz.
Prevathon @ 20 oz.
Spear-Lep
Untreated


ALFALFA HAY YIELDS AT HARVEST ON APRIL 1ST FOLLOWING INSECTICIDE APPLICATION FOR BLUE ALFALFA APHID CONTROL ON MARCH 9, 2020, BLYTHE, CA
3,000
2,800
2,600
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
2,676
2,449
2,827
2,550
2,570
2,709
2,600
2,536
2,301
2,585
2,452
2,567
2,459
2,488
1,941
2,275
1,871
1,705
INDUCE
Endigo XCZ
Sefina 3 oz.
Sefina 6 oz.
PQZ 1.6 oz.
PQZ 2.4 oz
Transform 1 oz.
Transform 2 oz.
Sivanto HL @ 6 oz...
Sivanto HL @ 6 oz....
Dimethoate 16 oz.
Beleaf 2.8 oz.
Besiege 6 oz.
Besiege 10 oz.
Warrior 1.92 oz.
Prevathon @ 14 oz.
Prevathon @ 20 oz.
Spear-Lep
Untreated

However, these treatments were not as effective in comparison to other insecticides with known aphid activity (Fig. 3).

Yields Yields were obtained on April 1, utilizing small square harvests (square was slightly over 2 x 2 ft.), and then drying weighting the cut alfalfa. All treatments resulted in slight to large (1,000 lbs.+) increases in hay yields when compared with untreated alfalfa.

The yields reflected the aphid numbers at 7 days post treatment, as treatments with highest yields were those that had fewest aphids, although this was also somewhat affected by long control after this sample date.

It should be noted that the four treatments resulting in the highest yields (6 oz., of Sefina, both rates of Transform and Endigo ZCX) are not currently registered for usage in California low desert alfalfa.

These data indicate that the winged aphids may be doing more damage than the non-winged aphids. While the damage attributed to the various aphid life stages have not been examined in alfalfa, it is logical that the larger winged aphids would remove more liquids through their feeding than smaller aphids, and may also be injecting more toxin into plants as well.

Insecticide efficacy grades for the entirety of the 2020 experiment are shown in the following grade charts. Please note that the grading scale is different for winged vs. non-winged aphids.

Apterous Blue Alfalfa Aphid Insecticide Control Grades from 2020 trial

Michael D. Rethwisch, Farm Advisor, UCCE-Riverside County

January 2021

		# data points	Days post treatment 7	11	15	19
PRODUCTS/ACTIVE INGREDIENTS REGISTERED FOR USAGE ON ALFALFA HAY IN CALIFORNIA						
Insecticide and Rate/acre						
Beleaf *(SLN label)*	2.8 oz.	1	**A-**	**B-**	**F**	**<F**
Besiege	6 oz.	1	**B-**	**C+**	**F-**	**<F**
	10 oz.	**1**	**A**	**B+**	**D+**	**<F**
Dimethoate	16 oz.	1	**D-**	**D-**	**<F**	**<F**
L-cyhalothrin (Warrior II)	1.92 oz.	1	**A-**	**A-**	**D+**	**<F**
Prevathon	14 oz.	1	**<F**	**<F**	**<F**	**<F**
	20 oz.	1	**<F**	**<F**	**<F**	**<F**
Sivanto HL	6 oz.	2	**A-**	**B**	**C**	**<F**
NOT CURRENTLY REGISTERED FOR USE ON CALIFORNIA LOW DESERT ALFALFA HAY						
Endigo ZCX	4.5 oz.	1	**A+**	**A-**	**B**	**<F**
PQZ	1.6 oz.	1	**B+**	**C+**	**<F**	**<F**
	2.4 oz.	1	**A-**	**B-**	**D-**	**<F**
Sefina	3 oz.	1	**C-**	**D+**	**<F**	**<F**
	6 oz.	1	**C**	**C**	**<F**	**<F**
Transform WG	1 oz.	1	**A**	**B+**	**F-**	**<F**
	2 oz.	1	**A+**	**A-**	**D+**	**<F**

Grade relationship to percent control		
A+ = 97-100	**A** = 94-97	**A-** = 90-94
B+ = 87-89.9	**B** = 84-87	**B-** = 80-84
C+ = 77-79.9	**C** = 74-77	**C-** = 70-74
D+ = 67-69.9	**D** = 64-67	**D-** = 60-64
F+ = 57-59.9	**F** = 54-57	**F-** = 50-54
<F = less than 50% reduction compared to untreated check		

Alate *(winged)* Blue Alfalfa Aphid Insecticide Control Grades from 2020 trial

Michael D. Rethwisch, Farm Advisor, UCCE-Riverside County

January 2021

		# data points	Days post treatment 7	11	15	19
PRODUCTS/ACTIVE INGREDIENTS REGISTERED FOR USAGE ON ALFALFA HAY IN CALIFORNIA						
Insecticide and Rate/acre						
Beleaf *(SLN label)*	2.8 oz.	1	**C+**	**C**	**C+**	**C-**
Besiege	6 oz.	1	**D+**	**C+**	**D-**	**C-**
	10 oz.	**1**	**C-**	**C+**	**C**	**C-**
Dimethoate	16 oz.	1	**B-**	**C**	**D-**	**F**
L-cyhalothrin(Warrior II)	1.92 oz.	1	**C-**	**C-**	**C**	**C-**
Prevathon	14 oz.	1	**F**	**F**	**F**	**D-**
	20 oz.	1	**F**	**F**	**D-**	**D+**
Sivanto HL	6 oz.	2	**C+**	**D+**	**B-**	**C+**
NOT CURRENTLY REGISTERED FOR USE ON CALIFORNIA LOW DESERT ALFALFA HAY						
Endigo ZCX	4.5 oz.	1	**C-**	**D+**	**C-**	**C+**
PQZ	1.6 oz.	1	**C+**	**C-**	**C**	**C**
	2.4 oz.	1	**C**	**C-**	**B**	**C**
Sefina	3 oz.	1	**C+**	**D+**	**C+**	**D**
	6 oz	1	**B-**	**C**	**B-**	**C-**
Transform WG	1 oz.	1	**D+**	**B-**	**C+**	**C+**
	2 oz.	1	**D-**	**C+**	**C+**	**C+**

Grade relationship to percent control		
A+ = 93-100	**A** = 87-93	**A-** = 80-87
B+ = 73-80	**B** = 67-73	**B-** = 60-67
C+ = 53-60	**C** = 47-53	**C-** = 40-47
D+ = 33-40	**D** = 27-33	**D-** = 20-27
<F = less than 20% reduction compared to untreated check		

Blue Alfalfa Aphid Insecticide Control Grades from 2020 trial, all forms

Michael D. Rethwisch, Farm Advisor, UCCE-Riverside County

Janaury 2021

		# data points	Days post treatment 7	11	15	19
PRODUCTS/ACTIVE INGREDIENTS REGISTERED FOR USAGE ON ALFALFA HAY IN CALIFORNIA						
Insecticide and Rate/acre						
Beleaf *(SLN label)*	2.8 oz.	1	**B**	**C+**	**F**	**<F**
Besiege	6 oz.	1	**C**	**C-**	**<F**	**<F**
	10 oz.	**1**	**B**	**B-**	**D**	**<F**
Dimethoate	16 oz.	1	**D-**	**F+**	**<F**	**<F**
L-cyhalothrin(Warrior II)	1.92 oz.	1	**B**	**B-**	**D**	**<F**
Prevathon	14 oz.	1	**<F**	**<F**	**<F**	**<F**
	20 oz.	1	**<F**	**<F**	**<F**	**<F**
Sivanto HL	6 oz.	2	**B-**	**C-**	**C**	**<F**
NOT CURRENTLY REGISTERED FOR USE ON CALIFORNIA LOW DESERT ALFALFA HAY						
Endigo ZCX	4.5 oz.	1	**B+**	**B-**	**C**	**F-**
PQZ	1.6 oz.	1	**B-**	**C-**	**<F**	**<F**
	2.4 oz.	1	**B**	**C-**	**D**	**<F**
Sefina	3 oz.	1	**D-**	**D-**	**<F**	**<F**
	6 oz	1	**C+**	**C-**	**<F**	**<F**
Transform WG	1 oz.	1	**B**	**B**	**F-**	**<F**
	2 oz.	1	**B**	**B**	**D**	**<F**

Grade relationship to percent control		
A+ = 97-100	**A** = 94-97	**A-** = 90-94
B+ = 87-89.9	**B** = 84-87	**B-** = 80-84
C+ = 77-79.9	**C** = 74-77	**C-** = 70-74
D+ = 67-69.9	**D** = 64-67	**D-** = 60-64
F+ = 57-59.9	**F** = 54-57	**F-** = 50-54
<F = less than 50% reduction compared to untreated check		

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/.