Imperial County Agricultural Briefs

University of California
Agriculture and Natural Resources

Features from your Advisors

July 2021 (Volume 24 Issue 7)

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JUNE 2021 CATTLECAL NEWSLETTER UPDATE

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

This month the CattleCal Newsletter covered information on using feed additives in feedlot diets and included an update on our current research at the UC DREC feedlot. We also include transcripts from our podcast episodes featuring Lenya Quinn-Davidson, a fire advisor for the University of California Cooperative Extension. 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/

The CattleCal podcast released four episodes in April.

- **Week 1: Career Call**

  In the career call of the month, Brooke Latack and Pedro Carvalho call Lenya Quinn-Davidson. Lenya is an area fire advisor at Humboldt county and shared a lot of nice stories on how she ended up working with this "hot topic".

- **Week 2: Research Call**

  Brooke Latack and Pedro Carvalho call Lenya Quinn-Davidson. Lenya is an area fire advisor at Humboldt County. In this episode, she shared information about the use of prescribed fire in California and how this practice is helping to bring people together and preserve nature in our state.

- **Week 3: Feedlot Research Cal**l

  In this episode, join Pedro Carvalho and Brooke Latack as they discuss a study looking at substituting distillers grains for steam flaked corn in the diet of calf-fed Holsteins in the feedlot.

- **Week 4: Quiz Zinn**

  This week we ask Dr. Richard Zinn about the use of potassium in feedlot cattle diets.

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

EMPOASCA spp. LEAFHOPPER CONTROL/MANAGEMENT IN LOW DESERT ALFALFA

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

The past two weeks has been punctuated by calls from several pest control advisors inquiring about *Empoasca* spp. leafhopper control in alfalfa. *Empoasca* spp. leafhoppers are the group of small, almost fluorescent green, wedge shaped leafhoppers that include the potato leafhopper (*E. fabae*) as well as many other almost identical species (Fig. 1). The most common species in low desert alfalfa is the Mexican potato leafhopper (*E. mexara*).

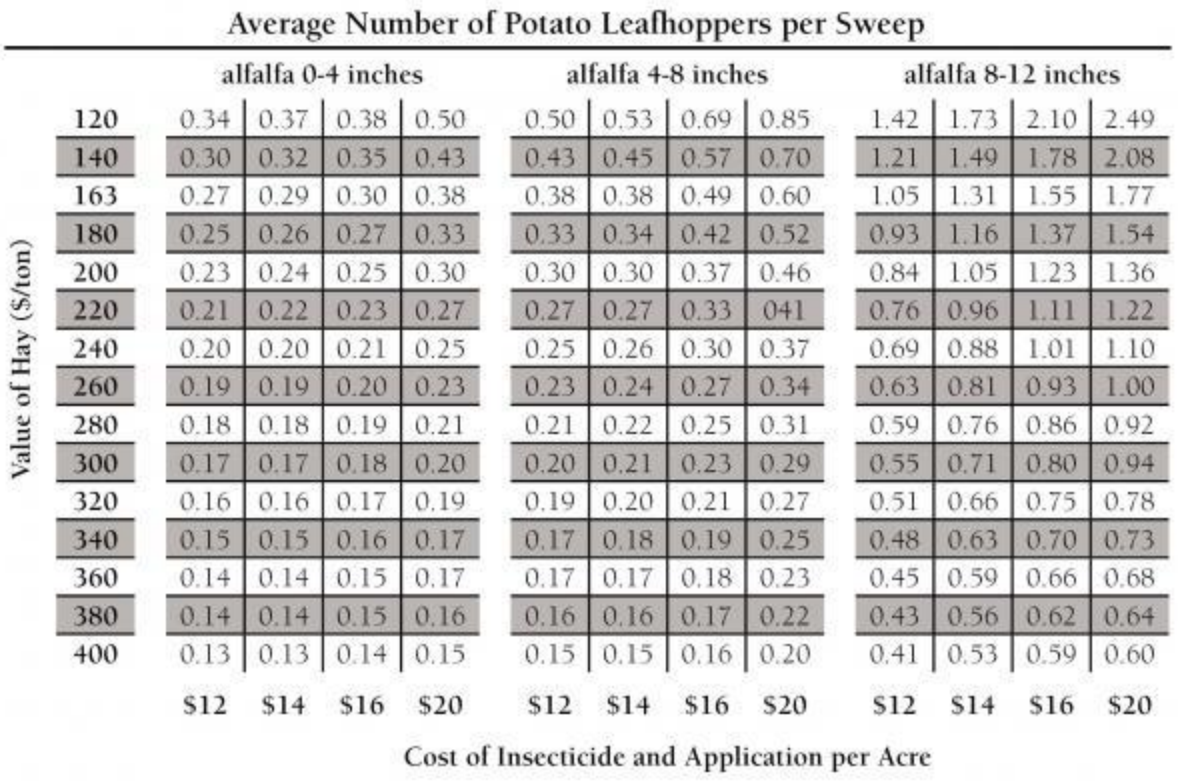
Empoasca spp. leafhoppers rapidly run sideways and in alfalfa cause damage via their feeding, which results in a yellow diamond shaped area on leaflet that is known as 'hopperburn' (Fig. 2). The feeding damage can also result in reduced yields, with yield reduction being greatest when high numbers of leafhoppers are present early in the regrowth cycle.

(Fig, 1) Adult Empoasca spp. leafhopper

(Fig. 2) Hopperburn on end of leaflet

Treatment thresholds for the low desert and *E. mexara* have not been quantified, but other states have developed such for the potato leafhopper. Many midwestern states have published treatment threshold charts for potato leafhopper, which are dependent upon average stem height, alfalfa hay price and insecticide application cost. Unfortunately, these charts do not go high enough to cover the economics of several current insecticide options available in the low desert, nor are they able to address the "summer slump" effects associated with low desert summer temperatures or address differences in insecticide efficacies. It should also be noted that these charts

are also from states/locations at much more northern latitudes than the low desert, which also affects alfalfa yields per cutting due to differences in day length and the value/acre of the cutting.



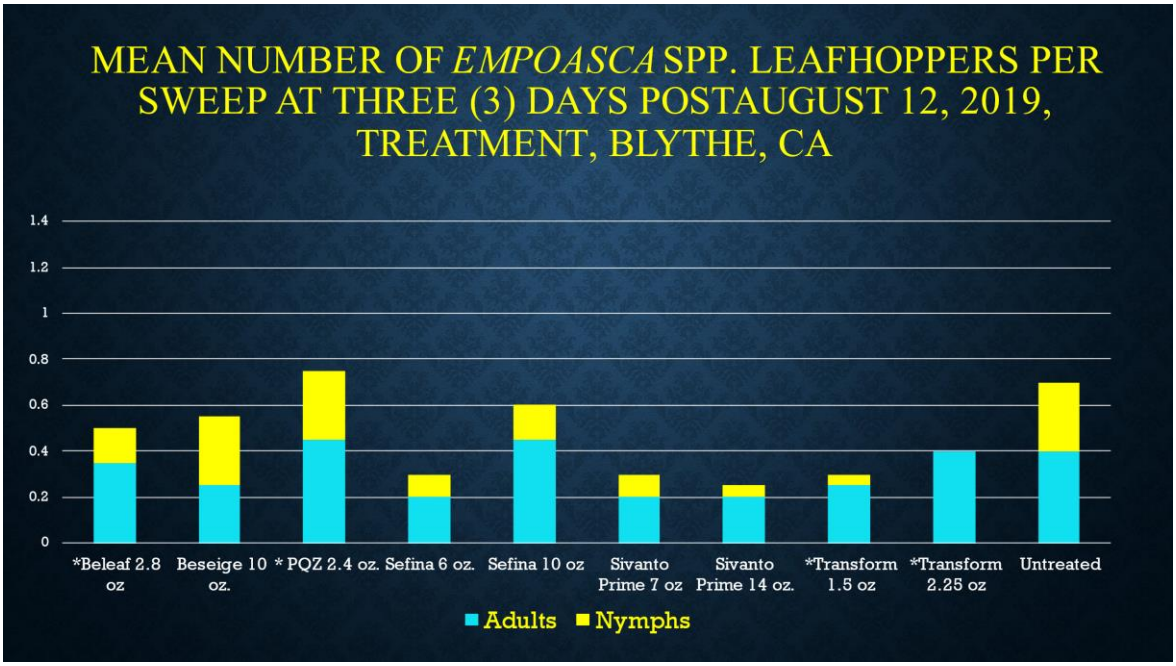
Average Number of Potato Leafhoppers per Sweep

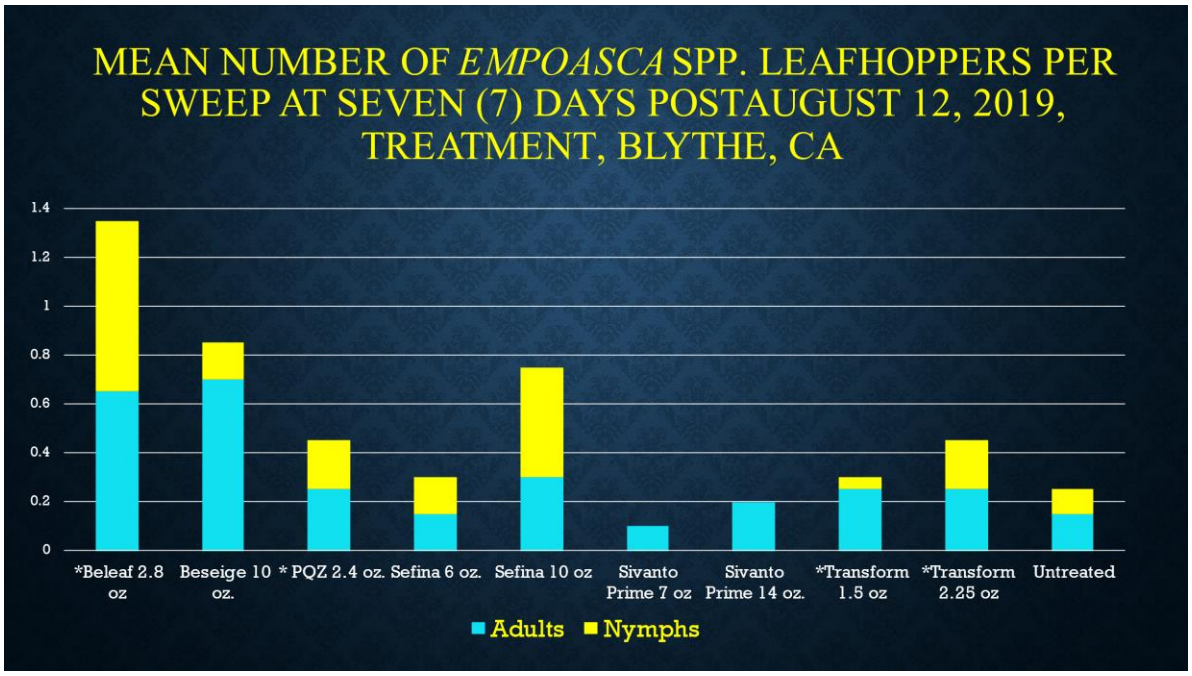
Value of Hay ($/ton)	alfalfa 0-4 inches				alfalfa 4-8 inches				alfalfa 8-12 inches			
	$12	$14	$16	$20	$12	$14	$16	$20	$12	$14	$16	$20
120	0.34	0.37	0.38	0.50	0.50	0.53	0.69	0.85	1.42	1.73	2.10	2.49
140	0.30	0.32	0.35	0.43	0.43	0.45	0.57	0.70	1.21	1.49	1.78	2.08
163	0.27	0.29	0.30	0.38	0.38	0.38	0.49	0.60	1.05	1.31	1.55	1.77
180	0.25	0.26	0.27	0.33	0.33	0.34	0.42	0.52	0.93	1.16	1.37	1.54
200	0.23	0.24	0.25	0.30	0.30	0.30	0.37	0.46	0.84	1.05	1.23	1.36
220	0.21	0.22	0.23	0.27	0.27	0.27	0.33	041	0.76	0.96	1.11	1.22
240	0.20	0.20	0.21	0.25	0.25	0.26	0.30	0.37	0.69	0.88	1.01	1.10
260	0.19	0.19	0.20	0.23	0.23	0.24	0.27	0.34	0.63	0.81	0.93	1.00
280	0.18	0.18	0.19	0.21	0.21	0.22	0.25	0.31	0.59	0.76	0.86	0.92
300	0.17	0.17	0.18	0.20	0.20	0.21	0.23	0.29	0.55	0.71	0.80	0.94
320	0.16	0.16	0.17	0.19	0.19	0.20	0.21	0.27	0.51	0.66	0.75	0.78
340	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.25	0.48	0.63	0.70	0.73
360	0.14	0.14	0.15	0.17	0.17	0.17	0.18	0.23	0.45	0.59	0.66	0.68
380	0.14	0.14	0.15	0.16	0.16	0.16	0.17	0.22	0.43	0.56	0.62	0.64
400	0.13	0.13	0.14	0.15	0.15	0.15	0.16	0.20	0.41	0.53	0.59	0.60

Cost of Insecticide and Application per Acre

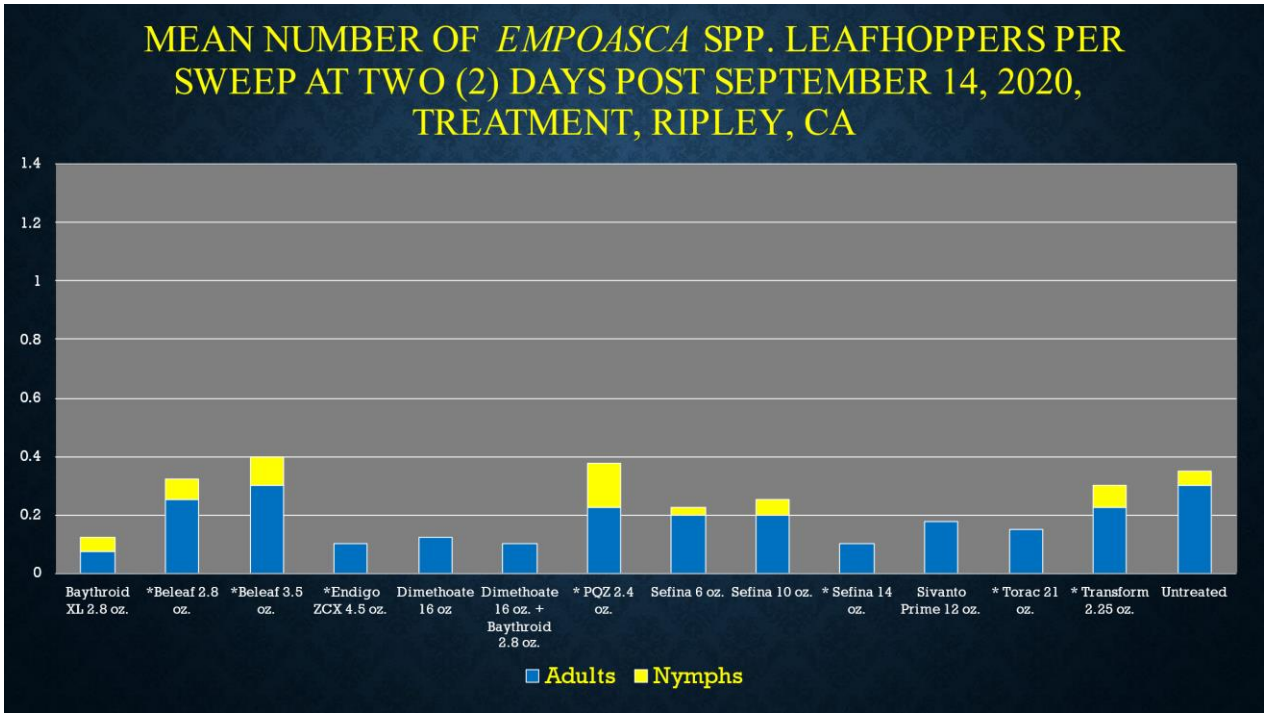
(Source: https://crops.extension.iastate.edu/encyclopedia/potato-leafhopper)

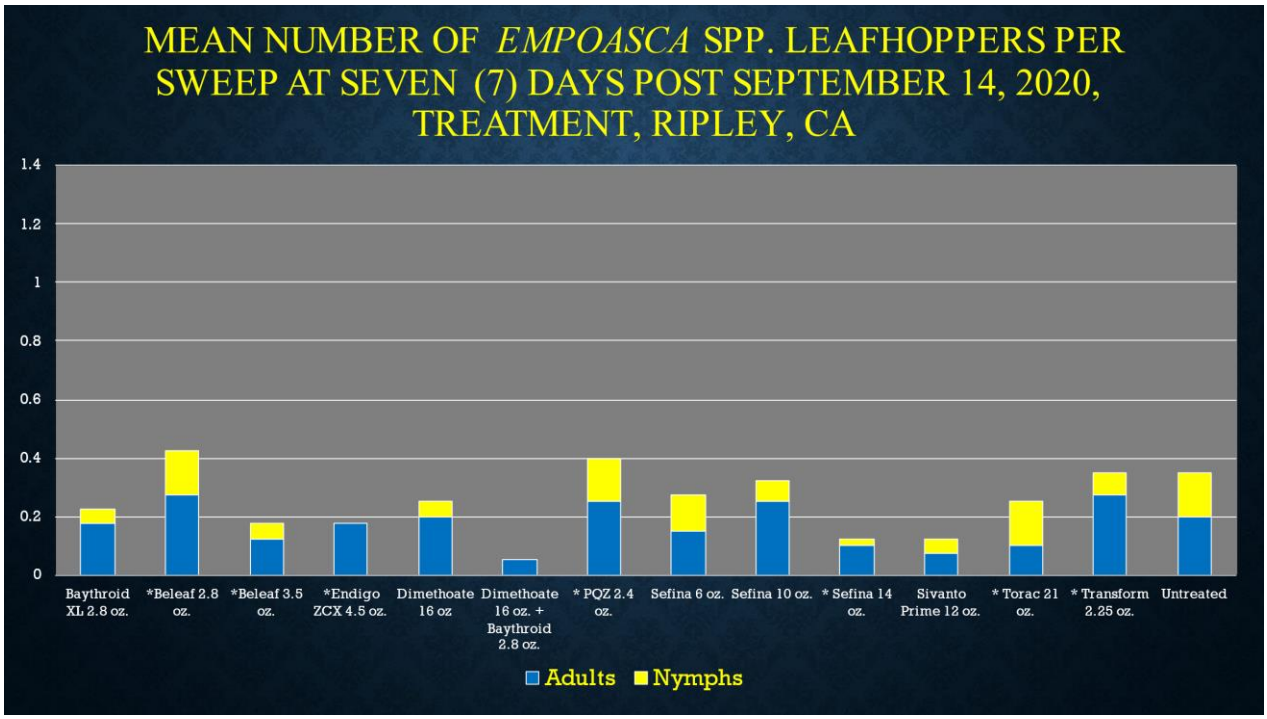
EFFICACY COMPARISONS: Several insecticide efficacy trials have been conducted in the Palo Verde Valley focusing on other pests but also collected data for *Empoasca* leafhopper control. Populations of *Empoasca* leafhoppers were not very high in these trials, which lowers confidence that comparative results will be the same when these insecticides are used during the summer heat when leafhopper populations are much higher and damaging. The graphs do provide a stating point for PCAs and growers for discussions and potential decisions, especially in light of new insecticide registrations for California alfalfa (Sefina® Inscalis®) and when other pests are not present and affecting alfalfa forage and potentially *Empoasca* populations.





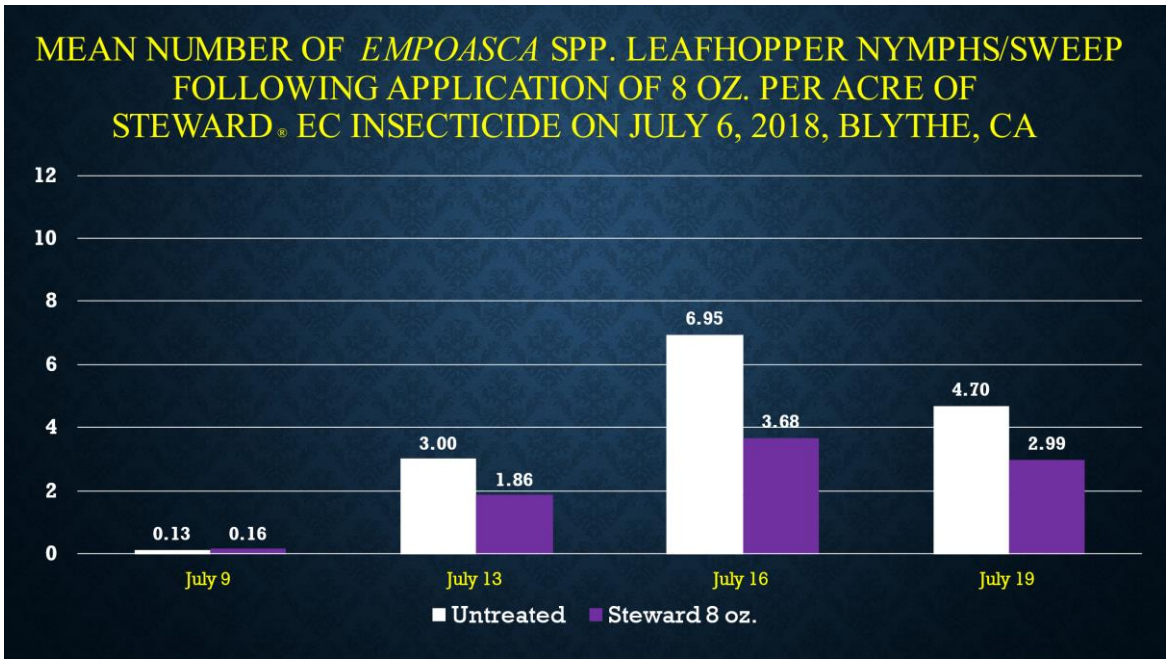
The next two graphs show the mean number of *Empoasca* spp. leafhoppers/sweep following insecticide application on September 14, 2020, Ripley, California. Alfalfa averaged just over 11 inches in height when treated and was heavily infested with whiteflies.

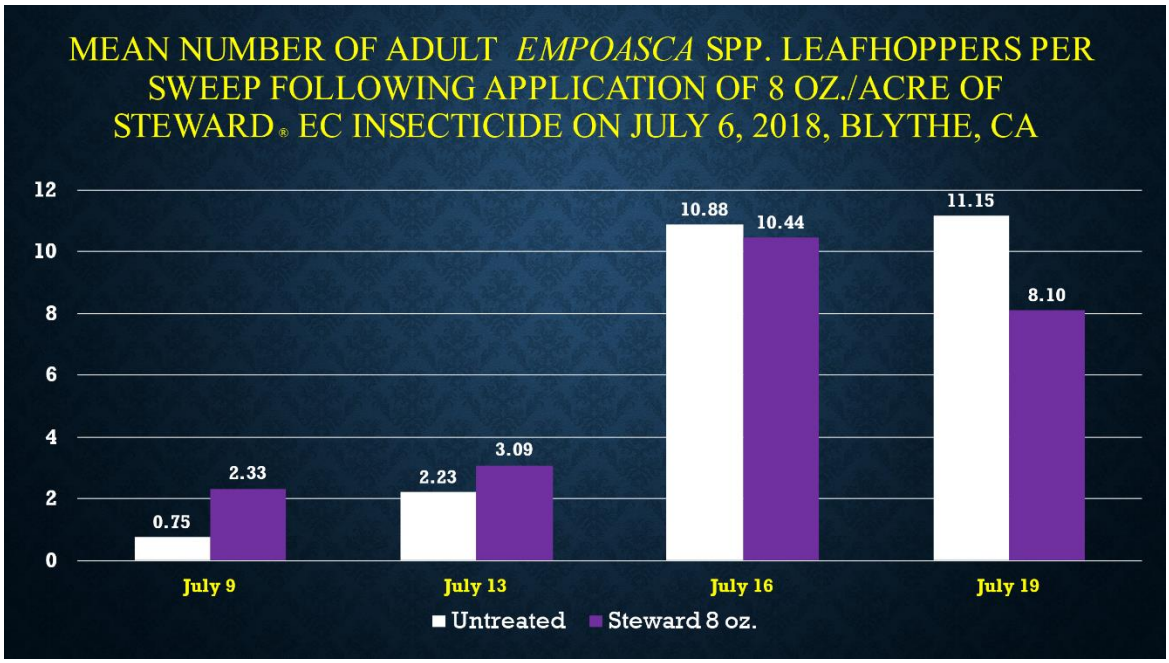




NOTE: Treatments with asterisks (*) in all the above graphs are not for usage at this time in California for summer low desert alfalfa hay, with some being due to exceptionally long pre-harvest intervals, lack of registration, and/or rate listed is above the current labeled usage rate.

Experimentation conducted during July 2018 (which was focused on controlling various caterpillar pests of alfalfa) did have high numbers of *Empoasca* spp. leafhoppers, thought to have migrated into the field as area alfalfa was cut. While most of the products in this experiment had no activity against these leafhoppers, Steward® EC was noted to have reduced numbers of *Empoasca* leafhopper nymphs. This was not noted for adult leafhoppers until late in the experiment, thought due to fewer nymphs prior to these sample dates.





Link for registration: https://desertagsolutions.org/events/492-desert-insv-workshop

Samples wanted for research on

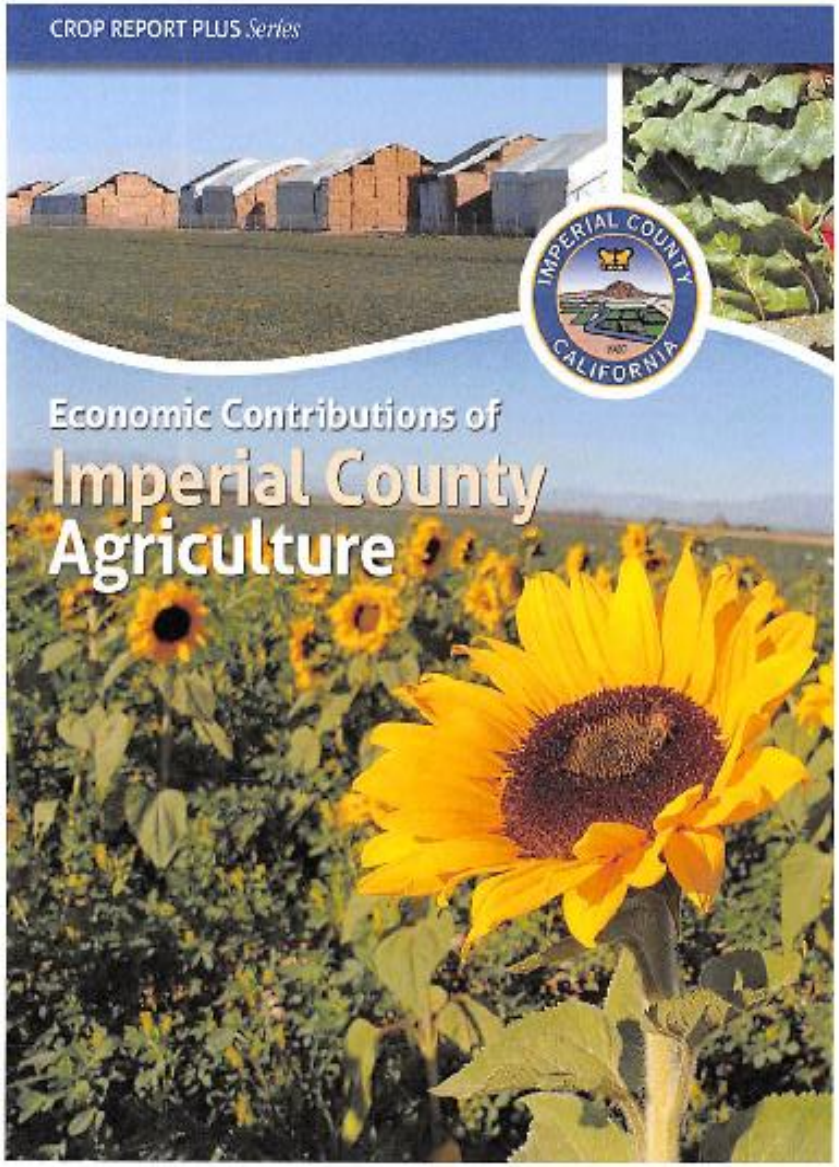
Lettuce Fusarium wilt

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



08.03.2021

SAVE THE DATE

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CURRENT INSECT PEST SITUATIONS IN IMPERIAL COUNTY CROPS

Apurba Barman, Area IPM Advisor, UC Cooperative Extension-Imperial County

In this article, I would like to share a few observations from my recent Imperial County field visits. A majority of the alfalfa seed fields in the county are approaching the seed maturity stage and bees (hives) have been pulled out. Almost all the summer melon fields are being harvested and several of those are ready for the next crops. Sudangrass fields are well established and many of those have already been cut a few times.

As the alfalfa seeds are maturing, risks of injury from the primary key pest, lygus bug is declining. However, I have observed increasing pressure of stink bugs in several seed alfalfa fields (Figure 1). Stink bugs could be a concern for the maturing alfalfa seeds as these insects are larger than the lygus bugs and could cause considerable damage. The most common stink bug species seen in alfalfa is the Say's stink bug (*Chlorochroa sayi*). A treatment threshold for stink bugs in the seed alfalfa crop has not been established, but a population density of 10 or more per 10 sweeps should warrant insecticide applications. Usually, pyrethroids registered for alfalfa seed production would be a good choice provided that the bees have already been pulled out from the field.

Figure 1. Stink bugs collected from seed alfalfa field during 3rd week of June.

It is important for us to keep an eye on hay alfalfa for worm pests and spider mites. I have seen a few fields where cutworms have resulted in noticeable damage. There are two species of cutworms common to low desert alfalfa, granulated cutworm (*Feltia subterranea*) and variegated cutworm (*Peridroma saucia*). Adults of these two moth species are active during night and lay eggs on leaves or near the base of the plant. The larvae are the only damaging stage of the insect and feed on leaves, and the growing points of the plants. The damage from the cutworms can be significant and often does not get noticed until the fields are being watered after a cutting. There is limited growth in the field and infested areas struggle for regrowth as the growing tips are being damaged from feeding by the larvae (Figure 2). Such fields often have uneven regrowth and can be recognized from brown, dead patches mixed with other areas displaying green regrowth (Figure 3). To make sure if the damage is from cutworm, scratch the soil around the base of the plants for about 1-inch deep to expose the cutworm larvae. The larvae once disturbed, roll into a C-shape and fully mature larvae could be up to 2-inches long (Figure 2). The application threshold of cutworms in hay alfalfa is 1-2 worms per row foot or whenever severe damage is noticed. Steward® EC is a registered product for cutworms on hay alfalfa in California.

Figure 2. Damaged growing points of alfalfa crown from feeding by cutworm larvae.

Figure 3. Cutworm feeding affected this field (brown areas) and resulted in poor regrowth.

Sudangrass is a popular crop in Imperial County and there are many fields managed for hay production, while some are under seed production. Although sudangrass is a relatively low maintenance crop in terms of pests and diseases, it is a good idea to keep an eye on the crop for insect pests such as grasshoppers and armyworms. Last month, I visited a sudangrass field with one of the local PCAs where he detected considerable damage by armyworms. The most prevalent armyworm species in sudangrass of Low Desert is *Mythimna unipuncta*, which is also called true armyworm. As the name suggests, the larvae march through the vegetation in large numbers and feed on leaves during the night. Again, their presence may not be noticed during the daytime and regular scouting, but feeding damage is quite apparent where larvae feed on the leaf blade leaving behind the midrib (Figure 4). *Bacillus thuringiensis* products are good options for controlling this pest along with sufficient irrigation.

Figure 4. Feeding by armyworms on sudangrass resulted leaves with only midribs remaining (shown by red arrows on the left picture). The droppings of armyworms are also visible (yellow rectangle on lower right picture) and dead larvae following pesticide application (red circle on lower right picture). Larvae of armyworm, often turn into a C-shape when disturbed (picture on upper right corner).

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 May 1st to July 31th 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	July		August		September	
	1-15	16-31	1-15	16-31	1-15	16-30
Calipatria	0.32	0.31	0.30	0.28	0.26	0.23
El Centro (Seeley)	0.33	0.31	0.30	0.28	0.26	0.25
Holtville (Meloland)	0.32	0.31	0.30	0.28	0.26	0.24

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/.