



Features

From your Farm Advisors

March, 2013

Table of Contents

SWEET CORN INSECTICIDE EFFICACY TRIAL 2012	
..... Eric T. Natwick	- 2 -
CIMIS REPORT AND UC DROUGHT MANAGEMENT PUBLICATIONS	
..... Khaled M. Bali and Sharon Sparks	- 5 -

SWEET CORN INSECTICIDE EFFICACY TRIAL, 2012.

Eric T. Natwick



The objective of the study was to evaluate the efficacy of insecticidal materials for control of Corn earworm (CEW), *Helicoverpa zea* (Boddie) on sweet corn under desert growing conditions during the spring season. Sweet corn was direct seeded on 5 March 2012 at the University of California Desert Research and Extension Center, Holtville, CA into single row beds on 40 inch centers. Stand establishment and crop maintenance was achieved using furrow irrigation. Plots were 2-beds wide (6.67 ft) by 50 ft long. Four replications of each treatment were arranged in a RCB design. Formulations and rates for each compound are provided in Table 1 along with the adjuvants used; SURF-AC 820 (Drexel Chemical Co. MEMPHIS, TN) or SOLAR (Western Farm Service, Fresno, CA). The insecticide applications were made on dates indicated in Table 1, with a 6-nozzle, 2-bed boom, on a hand held CO₂ propelled sprayer, with 3 Conjet TXVS-4 nozzles per bed spaced 15 inches apart; outer 2 nozzles on 15 inch drops facing the plant angled 135° down from vertical delivering 11.2 gpa at 24 psi.

Evaluation of insecticide efficacy against CEW was based on the number of live larvae, numbers of CEW damage ears, and on the cm of feeding damage per ear (the length of damage from the ear tip) per twenty five randomly selected sweet corn ears per plot on 1 June 2012. Data sets were analyzed using 2-way ANOVA and means separated by a protected LSD ($P < 0.05$).

The CEW pressure was normal for the spring sweet corn season. All of the insecticide treatments had significantly fewer CEW larvae than the check and all of the insecticide treatments had fewer CEW damaged ears than the check (Table 2). All of the insecticide treatments had fewer cm of CEW damage to the sweet corn ear tips compared to the check. The percentage of sweet corn ears damaged by CEW in the check was significantly greater than the percentages of CEW damaged ears in any of the insecticide treatments. Lannate LV used in rotation with Warrior II provided the best overall performance but was not significantly different from many of the other treatments. Treatments that included HaNPV did not control CEW as well as the other treatments in this experiment.



Table 1.

		2012 Sweet Corn Treatment List
Treatment	Oz/acre	Application Dates
1. Check	-----	-----
2. Lannate LV r/w*	24.0	14 May, 18 May, 23 May, 28 May
Mustang Max	3.0	16 May, 21 May, 25 May, 30 May
3. Coragen r/w	4.0	14 May, 19 May, 23 May, 28 May
Lannate LV	24.0	16 May, 21 May, 25 May, 30 May
4. Warrior II 2.09 CS ² r/w	1.92	14 May, 19 May, 23 May, 28 May
Voliam Xpress 1.25 ZC ²	6.0	16 May, 21 May, 25 May, 30 May
5. Belt SC ¹ r/w	3.0	14 May, 19 May, 23 May, 28 May
Baythroid XL ¹	2.8	16 May, 21 May, 25 May, 30 May
6. Belt SC ¹ f/b	3.0	14 May, 21 May, 28 May
Baythroid XL ¹ f/b	2.8	16 May, 23 May, 30 May
Radiant 1SC ¹	6.0	19 May, 25 May,
7. Lannate LV ¹ r/w	24.0	14 May, 19 May, 23 May, 28 May
Warrior II ²	1.92	16 May, 21 May, 25 May, 30 May
8. Lannate LV + HaNPV ³	24.0 + 1.03	14 May, 19 May, 23 May, 28 May
r/w Warrior II + HaNPV	1.92 + 1.03	16 May, 21 May, 25 May, 30 May
9. HaNPV r/w	1.03	11 May, 16 May, 21 May, 25 May, 30 May
Warrior II	1.92	14 May, 19 May, 23 May, 28 May
10. HaNPV	2.05	11, 14, 19, 21, 24, 28 May

*r/w = is rotation with

¹ SURF-AC 820 NIS at 0.25% vol/vol;

² SOLAR MSO at 0.5 % vol/vol

³ HaNPV is a *Helicoverpa armigera* nucleopolyhedrovirus from ABA Biologicals Pty Ltd, Richmond, NSW, Australia.

Table 2.

Treatment	Oz/acre	Means of CEW Damage and Larvae per 25 Corn Ears				
		CEW damaged ears	Live CEW Larvae	CEW damage in cm	% CEW damaged ears	Arcsine % CEW damaged ears
Check	-----	17.25 a	9.25 a	62.00 a	69.00 a	56.34 a
Lannate LV r/w Mustang Max	24.0 3.0	1.25 d	1.25 bc	6.25 cde	5.00 d	12.76 de
Coragen r/w Lannate LV	4.0 24.0	1.75 cd	0.25 c	5.25 de	7.00 cd	10.96 e
Warrior II r/w Voliam Xpress 1.25 ZC	1.92 6.0	2.00 cd	1.00 bc	6.75 bcde	8.00 cd	15.77 cde
Belt SC r/w Baythroid XL	3.0 2.8	2.00 cd	0.25 c	3.25 de	8.00 cd	14.25 de
Belt SC f/b Baythroid XL f/b Radiant 1SC	3.0 2.8 6.0	1.25 d	0.75 c	5.25 de	5.00 d	12.76 de
Lannate LV r/w Warrior II	24.0 1.92	1.00 d	0.50 c	1.50 e	4.00 d	8.22 e
Lannate LV + HaNPV r/w Warrior II + HaNPV	24.0 + 1.03 1.92 + 1.03	3.75 bc	1.50 bc	12.25 bcd	15.00 bc	21.54 bcd
HaNPV r/w Warrior II	1.03 1.92	4.50 b	1.50 bc	15.75 b	18.00 b	23.90 bc
HaNPV	2.05	4.75 b	2.75 b	15.25 bc	19.00 b	25.63 b

Means within columns followed by the same letter are not significantly different, $P > 0.05$, LSD.

CIMIS REPORT AND UC DROUGHT MANAGEMENT PUBLICATIONS



Khaled Bali and Sharon Sparks*

California Irrigation Management Information System (CIMIS) is a statewide network operated by California Department of Water Resources. Estimates of the daily reference evapotranspiration (ET_o) for the period of March 1 to May 31 for three locations in the Imperial County are presented in Table 1. ET of a particular crop can be estimated by multiplying ET_o by crop coefficients. For more information about ET and crop coefficients, contact the UC Imperial County Cooperative Extension Office (352-9474) or the IID, Ag Water Science Unit (339-9082). Please feel free to call us if you need additional weather information, or check the latest weather data on the worldwide web (visit <http://tmdl.ucdavis.edu> and click on the CIMIS link).

Table 1. Estimates of daily Evapotranspiration (ET_o) in inches per day

Station	March		April		May	
	1-15	15-31	1-15	16-30	1-15	16-31
Calipatria	0.18	0.22	0.26	0.29	0.32	0.36
El Centro (Seeley)	0.16	0.20	0.24	0.28	0.31	0.34
Holtville (Meloland)	0.17	0.21	0.25	0.28	0.32	0.35

* Ag Water Science Unit, Imperial Irrigation District.

Link to UC Drought Management Publications

<http://ucmanagedrought.ucdavis.edu/>

The University of California prohibits discrimination or harassment of any person in any of its programs or activities. (Complete nondiscrimination policy statement can be found at <http://ucanr.org/sites/anrstaff/files/107734.doc>)

Inquiries regarding the University's equal employment opportunity policies may be directed to Linda Marie Manton, Affirmative Action Contact, University of California, Davis, Agriculture and Natural Resources, One Shields Avenue, Davis, CA 95616, (530) 752-0495.