Imperial County Agricultural Briefs

Features

From your Farm Advisors

January, 2012

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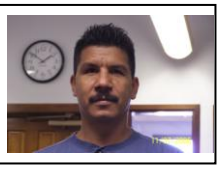
Evaluation of Selected Insecticides and a *Helicoverpa armigera* nucleopolyhedrovirus for Corn Earworm Control



Eric T. Natwick and Martin Lopez

The objective of the study was to evaluate the efficacy of new and a standard insecticide for control of corn earworm (CEW) on sweet corn under desert growing conditions during the spring season. Sweet corn was direct seeded on 25 Feb 2011 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 60 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 CO_2 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. Data sets were analyzed using 2-way ANOVA and means separated by a protected LSD ($P \leq 0.05$).

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 ten randomly selected corn ears per plot on the dates listed in Tables 2, 3 and 4. Insecticide treatments were applied as listed in Table 1. Data sets were analyzed using 2-way ANOVA and means separated by a protected LSD ($P \leq 0.05$).

The CEW pressure was normal for the spring sweet corn season. All of the insecticide treatments had fewer ($P \leq 0.05$) CEW larvae than the check for post treatment averages and on all of the sampling dates except 27 Jun when the treatments of Belt SC followed by Baythroid XL followed by Radiant 1SC and the treatment of HaNPV at 1.03 oz/acre had means for EAW larvae that were not lower than the check (Table 2).

All of the insecticide treatments had fewer ($P \leq 0.05$) CEW damaged ears than the check for the post treatment average and on all of the sampling dates except 17, 19 and 27 May (Table 3). There were no differences among the treatments for CEW damaged ears on 17 May. All insecticide treatments except HaNPV at 2.05 oz/acre had fewer CEW damaged ears than the check on 19 May. The only insecticide treatments that had fewer CEW damaged ears than the check on 27 May were Voliam Xpress 1.25 ZC, Warrior II 2.09 CS, Lannate LV in rotation with Warrior II, and Lannate LV + HaNPV in rotation with Warrior II + HaNPV.

All of the insecticide treatments had fewer ($P \leq 0.05$) cm of CEW damaged to the sweet corn ear tips compared to the check for both the post treatment average and on all of the sampling dates except 17, 19, 27, and 31 May (Table 4). There were no differences among treatments for cm of CEW damaged to the sweet corn ear tips on 17, 19, and 27 May. On 31 May all insecticide treatments had fewer cm of CEW damaged to the sweet corn ear tips compared to the check with the exception of HaNPV at 2.05 oz/acre.

Table 1.

2009 Fall Sweet Corn

Treatment List

Treatment	Oz/acre	Application Dates
1. Check	---	---
2. Voliam Xpress 1.25 ZC[2]	9.0	11, 13, 16, 18, 23 May
3. Warrior II 2.09 CS[2]	1.92	11, 13, 16, 18, 23 May
4. Warrior II 2.09 CS[2] r/w	1.92	11, 16, 20 May
Voliam Xpress 1.25 ZC[2]	6.0	13, 18, 23 May
5. Belt SC[1] f/b	3.0	11, 16, 20 May
Baythroid XL[1]	2.8	13, 18, 23 May
6. Belt SC[1] f/b	3.0	11, 18 May
Baythroid XL[1] f/b	2.8	13, 20 May
Radiant 1SC[1]	6.0	16, 23 May
7. Lannate LV[1] r/w	24.0	11, 16, 20 May
Warrior II[2]	1.92	13, 18, 23 May
8. Lannate LV + HaNPV	24.0 +1.03	11, 16, 20 May
r/w Warrior II + HaNPV	1.92 +1.03	13, 18, 23 May
9. HaNPV	1.03	11, 13, 16, 18, 23 May
10. HaNPV	2.05	11, 13, 16, 18, 23 May

[1] SURF-AC 820 NIS at 0.25% vol/vol; [2] SOLAR MSO at 0.5 % vol/vol

Table 2.

Treatment	Oz/acre	CEW per 10 Sweet Corn Ears				
		17 May	19 May	24 May	27 May	31 May
Check	---------	1.25 a	1.25 a	2.25 a	1.75 a	3.00 a
Voliam Xpress 1.25 ZC[2]	9.0	0.25 b	0.00 b	0.25 b	0.25 b	0.25 b
Warrior II 2.09 CS[2]	1.92	0.00 b	0.00 b	0.00 b	0.00 b	0.75 b
Warrior II 2.09 CS[2] r/w Voliam Xpress 1.25 ZC[2]	1.92 6.0	0.00 b	0.00 b	0.25 b	0.25 b	0.25 b
Belt SC[1] f/b Baythroid XL[1]	3.0 2.8	0.00 b	0.00 b	0.50 b	0.00 b	0.50 b
Belt SC[1] f/b Baythroid XL[1] f/b Radiant 1SC[1]	3.0 2.8 6.0	0.25 b	0.50 b	0.25 b	0.75 ab	0.50 b
Lannate LV[1] r/w Warrior II[2]	24.0 1.92	0.00 b	0.00 b	0.25 b	0.50 b	0.00 b
Lannate LV + HaNPV r/w Warrior II + HaNPV	24.0 +1.03 1.92 +1.03	0.00 b	0.00 b	0.50 b	0.25 b	0.25 b
HaNPV	1.03	0.00 b	0.50 b	0.25 b	1.00 ab	0.75 b
HaNPV	2.05	0.25 b	0.25 b	0.25 b	0.50 b	2.25 a

Means within columns followed by the same letter are not significantly different, ANOVA; LSD ($P \leq 0.05$).

Table 2 (continued).

Treatment	Oz/acre	CEW per 10 Sweet Corn Ears			
		3 June	6 June	10 June	PTA[z]
Check	---------	2.75 a	1.25 a	2.75 a	2.03 a
Voliam Xpress 1.25 ZC[2]	9.0	0.00 d	0.00 b	0.00 b	0.13 c
Warrior II 2.09 CS[2]	1.92	0.00 d	0.25 b	0.00 b	0.13 c
Warrior II 2.09 CS[2] r/w Voliam Xpress 1.25 ZC[2]	1.92 6.0	0.00 d	0.00 b	0.25 b	0.13 c
Belt SC[1] f/b Baythroid XL[1]	3.0 2.8	0.25 cd	0.00 b	0.00 b	0.16 c
Belt SC[1] f/b Baythroid XL[1] f/b Radiant 1SC[1]	3.0 2.8 6.0	0.00 d	0.25 b	0.00 b	0.31 bc
Lannate LV[1] r/w Warrior II[2]	24.0 1.92	1.00 bc	0.00 b	0.00 b	0.22 c
Lannate LV + HaNPV r/w Warrior II + HaNPV	24.0 +1.03 1.92 +1.03	0.25 cd	0.00 b	0.25 b	0.19 c
HaNPV	1.03	1.75 b	0.00 b	0.00 b	0.53 b
HaNPV	2.05	1.00 bc	0.00 b	0.00 b	0.56 b

Means within columns followed by the same letter are not significantly different, ANOVA; LSD ($P \leq 0.05$).

Table 3.

Treatment	Oz/acre	CEW Damaged per Ten Sweet Corn Ears				
		17 May	19 May	24 May	27 May	31 May
Check	---------	1.50	1.25 a	2.00 a	1.75 a	3.75 a
Voliam Xpress 1.25 ZC[2]	9.0	0.75	0.50 bc	0.25 b	0.25 c	0.25 d
Warrior II 2.09 CS[2]	1.92	0.25	0.25 bc	0.25 b	0.00 c	0.75 d
Warrior II 2.09 CS[2] r/w Voliam Xpress 1.25 ZC[2]	1.92 6.0	0.50	0.00 c	0.25 b	0.75 abc	0.50 d
Belt SC[1] f/b Baythroid XL[1]	3.0 2.8	0.25	0.25 bc	0.75 b	0.75 abc	1.00 cd
Belt SC[1] f/b Baythroid XL[1] f/b Radiant 1SC[1]	3.0 2.8 6.0	0.50	0.50 bc	0.50 b	1.50 ab	0.50 d
Lannate LV[1] r/w Warrior II[2]	24.0 1.92	0.50	0.00 c	0.25 b	0.50 bc	0.00 d
Lannate LV + HaNPV r/w Warrior II + HaNPV	24.0 +1.03 1.92 +1.03	0.50	0.00 c	0.50 b	0.25 c	0.25 d
HaNPV	1.03	0.25	0.25 bc	0.75 b	1.50 ab	2.00 bc
HaNPV	2.05	0.25	0.75 ab	0.50 b	0.75 abc	2.25 b

Means within columns followed by the same letter are not significantly different, ANOVA; LSD ($P \leq 0.05$).

Table 3 (continued).

Treatment	Oz/acre	CEW Damaged per Ten Sweet Corn Ears			
		3 June	6 June	10 June	PTA[z]
Check	---------	5.75 a	2.50 a	3.75 a	2.78 a
Voliam Xpress 1.25 ZC[2]	9.0	0.25 c	0.00 c	0.00 c	0.28 c
Warrior II 2.09 CS[2]	1.92	0.00 c	0.25 c	0.00 c	0.22 c
Warrior II 2.09 CS[2] r/w Voliam Xpress 1.25 ZC[2]	1.92 6.0	0.25 c	0.25 c	0.25 bc	0.34 c
Belt SC[1] f/b Baythroid XL[1]	3.0 2.8	1.25 bc	0.00 c	0.00 c	0.53 c
Belt SC[1] f/b Baythroid XL[1] f/b Radiant 1SC[1]	3.0 2.8 6.0	0.25 c	0.25 c	0.25 bc	0.53 c
Lannate LV[1] r/w Warrior II[2]	24.0 1.92	2.00 b	0.25 c	0.00 c	0.44 c
Lannate LV + HaNPV r/w Warrior II + HaNPV	24.0 +1.03 1.92 +1.03	0.75 bc	0.25 c	0.50 bc	0.38 c
HaNPV	1.03	2.00 b	0.50 bc	0.75 b	1.00 b
HaNPV	2.05	1.00 bc	1.25 b	0. 50 bc	0.91 b

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

[z] PTA = post treatment average

Table 4.

Treatment	Oz/acre	Average CEW Damage per Sweet Corn Ear Tip in cm				
		17 May	19 May	24 May	27 May	31 May
Check	---------	3.75	4.00	7.00 a	8.00	6.50 a
Voliam Xpress 1.25 ZC[2]	9.0	0.50	1.00	2.00 b	0.25	0.25 d
Warrior II 2.09 CS[2]	1.92	0.00	2.25	0.75 b	0.00	1.00 cd
Warrior II 2.09 CS[2] r/w Voliam Xpress 1.25 ZC[2]	1.92 6.0	1.50	0.00	0.75 b	3.00	0.75 cd
Belt SC[1] f/b Baythroid XL[1]	3.0 2.8	2.50	2.00	2.25 b	3.50	1.00 cd
Belt SC[1] f/b Baythroid XL[1] f/b Radiant 1SC[1]	3.0 2.8 6.0	5.00	0.75	1.00 b	1.75	0.75 d
Lannate LV[1] r/w Warrior II[2]	24.0 1.92	2.00	0.00	1.25 b	5.00	0.00 d
Lannate LV + HaNPV r/w Warrior II + HaNPV	24.0 +1.03 1.92 +1.03	0.75	0.00	2.75 b	0.75	0.25 d
HaNPV	1.03	1.50	0.25	2.25 b	1.75	2.25 bc
HaNPV	2.05	0.25	2.50	1.00 b	1.75	3.25 ab

Means within columns followed by the same letter are not significantly different, ANOVA; LSD ($P \leq 0.05$).

Table 4 (continued).

Treatment	Oz/acre	Average CEW Damage per Sweet Corn Ear Tip in cm			
		3 June	6 June	10 June	PTA[z]
Check	---------	14.50 a	2.50 a	12.00 a	7.28 a
Voliam Xpress 1.25 ZC[2]	9.0	0.50 bcd	0.00 b	0.00 b	0.56 b
Warrior II 2.09 CS[2]	1.92	0.00 d	0.50 b	0.00 b	0.56 b
Warrior II 2.09 CS[2] r/w Voliam Xpress 1.25 ZC[2]	1.92 6.0	0.25 cd	0.25 b	1.00 b	0.94 b
Belt SC[1] f/b Baythroid XL[1]	3.0 2.8	1.25 bc	0.00 b	0.00 b	1.56 b
Belt SC[1] f/b Baythroid XL[1] f/b Radiant 1SC[1]	3.0 2.8 6.0	0.25 cd	0.25 b	0.50 b	1.28 b
Lannate LV[1] r/w Warrior II[2]	24.0 1.92	1.75 bc	0.50 b	0.00 b	1.31 b
Lannate LV + HaNPV r/w Warrior II + HaNPV	24.0 +1.03 1.92 +1.03	1.50 bc	0.25 b	1.00 b	0.91 b
HaNPV	1.03	1.50 bc	1.25 ab	1.75 b	1.56 b
HaNPV	2.05	1.75 b	1.25 ab	1.00 b	1.59 b

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

[z] PTA = post treatment average

Sexual Harassment Avoidance Seminar for Farm Foremen (Spanish)

Farm enterprises can benefit by having well-crafted anti sexual harassment policies and by training supervisory personnel in sexual harassment avoidance. Preventing sexual harassment charges requires more than checking all the seemingly required boxes. It is important that employees know that management is serious about not tolerating sexual and other types of harassment or illegal discrimination.

Farm operations need to also have designated employees that can listen and react to sexual harassment complaints and not make matters worse. These employees may be supervisory personnel, part of HR, or other individuals who you feel have the interpersonal skills to hear complaints, are respected by colleagues, and are comfortable with public speaking. It is suggested that both men and women are represented in this important role.

All employees need to be aware of the company's anti-harassment policies and who to contact if they have been victims of harassment. It is important for employees to receive regular training and reminders and know that there are contacts who are there to listen, help, and respond.

UCCE is offering a one-day seminar this February 2, 2011, on sexual harassment prevention at the farm. The training will be directed to those who you have selected to receive complaints. Attendance is limited to 4 persons per farm operation. The training will meet and exceed the two hour training requirement imposed by California AB 1825 regulations. Participants will receive an AB 1825 training attendance certificate on sexual harassment avoidance. While seminar participants will not be qualified by law to train other supervisors, they will learn how to give brief presentations to farm workers and other non-supervisory farm personnel on related matters.

Participants will learn:

- What is sexual harassment and steps that can be taken to avoid it
- How to prevent illegal discrimination and other types of harassment
- About the role that power and authority can play in sexual harassment cases
- The importance of empathic listening
- Effective employee discipline techniques related to sexual harassment and other infractions
- How to respond to charges of harassment and how to work with management
- How to provide brief training to workers on sexual harassment avoidance

Instructors:

- Gregorio Billikopf, farm advisor
- Ryan Boothe, labor management consultant
- Horacio Bertinetti, communications consultant

Registration:

Attendance cost is $40 per person. For those who pre-register by January 20, 2012, registration is only $28 per person. Lunch and materials are included. You may pay through a secure credit card transaction (http://ucce.ucdavis.edu/survey/survey.cfm?surveynumber=1763) or by check. If sending a check, the envelope must be postmarked by January 31, 2012, in order to get the discount. Checks should be made out to UC Regents and sent to: Sexual Harassment Avoidance Seminar/ c/o G. Billikopf/ University of California / 3800 Cornucopia Way, Suite A / Modesto, CA 95358. Please let us know if participants require special accommodations (including meals).

When:
February 2, 2012, from 8:30 am to 4:30 pm.
Location:
Modesto, California, at the Harvest Hall Agricultural Center. Map and directions: http://www.cnr.berkeley.edu/ucce50/ag-labor/7map.htm . We will meet in Rooms H & I of the Stanislaus Building.

For additional questions you may write gebillikopf@ucdavis.edu or Marie Harter, 209-525-6800, mlharter@ucdavis.edu

4-day Farm Supervisor Seminar (in Spanish)

Modesto, California, March 13-16, 2012. Topics that will be covered include employee discipline (including how to deal with the most difficult subordinate behaviors), interpersonal negotiation skills, and the importance of praise in day-to-day communications.
Those who attend will participate in numerous role-plays, and receive individualized attention and evaluation. A copy of the individualized participants' scorecard will be sent to each farm enterprise. Registration limited to two individuals per farm operation.

Any questions, contact Gregorio Billikopf at gebillikopf@ucdavis.edu or 209-525-6800, or Marie Harter at the same phone.

Seminar contents:

- Effective praise
- Interpersonal negotiation skills
- Employee discipline – 7 steps
- Employee discipline – dealing with difficult behavior
- Understanding piece-rate pay design
- Preventing sexual harassment – power and abuse of authority
- Conflict management
- Listening skills

Participants will have the opportunity to role-play many of the skills discussed.

Seminar cost:
Cost is $128 and includes materials and lunches over the four days. **Early registration discount**: Those who register early, by January 31, 2012, can do so for $97. If sending a check, the envelope must be postmarked by January 31, 2012.

Payment: You may pay through check or credit card. **If paying through check:** Make checks out to UC Regents and mail to Workplace Mediation / c.o. G. Billikopf / 3800 Cornucopia Way Suite A, Modesto, CA 95358. If paying by credit card, go to http://ucce.ucdavis.edu/survey/survey.cfm?surveynumber=1763.

Map to the location:
We will meet in Rooms H & I of the **Stanislaus Building**. http://www.cnr.berkeley.edu/ucce50/ag-labor/7map.htm

Instructors and coaches:

Gregorio Billikopf, Ryan Boothe and Horacio Bertinetti. Invited by not confirmed yet, are: Rodrigo López, Jorge Wicha,

Juan Horacio Grant and Oscar Quezada (coming from Chile).

University of California
Agriculture and Natural Resources

Community Field Day

Saturday - January 21, 2012
10:00 a.m. – 2:00 p.m.
1004 E. Holton Road
El Centro, California

Presented by the
University of California Desert Research and Extension Center
and University of California Cooperative Extension-Imperial County





Farm Tours **Research Presentations** **Hayrides**

Exhibits and Displays **Nutrition Activities**

Children's Activities **Refreshments**

4-H Horticulture Show **4-H Showmanship Contests**

And more!

Join the celebration as the Desert Research and Extension Center commemorates ***100 years*** of Agriculture Research in the Imperial Valley!


1912-2012

Questions? Call 1-760-356-3060 for more information!
Directions: From Hwy 111 travel east on Evan Hewes Rd. to Meloland Rd. Turn north. Immediately turn right onto Holton Rd.

University of California
Agriculture and Natural Resources

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 January 1 to March 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 (760-352-9474) or the IID, Ag Water Science Unit (760-339-9082). 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	January		February		March	
	1-15	16-31	1-15	15-29	1-15	16-31
Calipatria	0.08	0.09	0.12	0.14	0.18	0.22
El Centro (Seeley)	0.08	0.09	0.12	0.14	0.16	0.20
Holtville (Meloland)	0.08	0.09	0.12	0.14	0.17	0.21

* Ag Water Science Unit, Imperial Irrigation District.

Link to UC Drought Management Publications

http://ucmanagedrought.ucdavis.edu/