Imperial County Agricultural Briefs

Features

From your Farm Advisors

April, 2012

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SEED ALFALFA INSECTICIDE EVALUATION FOR LYGUS BUG CONTROL, 2011

Eric T. Natwick and Martin I. Lopez

The objective of the study was to evaluate the efficacy of the new and old insecticidal compounds used against adults and nymphs of Lygus bugs (LB), *Lygus* spp. and stink bugs (SB) on alfalfa grown for seed production under desert growing conditions. An insecticide efficacy trial was conducted at the UC Desert Research and Extension Center on a stand of CUF-101 alfalfa on beds of 40 inch centers; the stand was clipped-back on 5 Apr 2011 to initiate seed production. The experimental design was RCB using 4 replicates with 9 insecticide treatments and an untreated check. Plots were eight beds 50 ft wide by 75 ft long. The insecticide treatments were applied on the dates at the specified rate equivalencies listed in Tables 1-4. All insecticide treatments were applied on 19 May and 26 May except the treatment of Rimon 0.83 EC applied on 19 May followed by Beleaf 50 SG applied on 26 May. The applications were made with a Lee Spider Spray Trac Tractor equipped with a spray boom. Broadcast sprays were applied with 15 nozzles (TJ-60 11003VS) per 25 ft swath operated at 35 psi delivering 27.1 gpa. Induce, a non-ionic surfactant (Helena Chemical Company) was applied at 0.25% vol/vol in a tank mixture with all insecticide treatments. Helena Buffer PS (Helena Chemical Company) was used to buffer the Carzol 92 SP spray mixture to pH 5.0. The pretreatment insect population evaluations conducted on 11 May. Post treatment evaluations were conducted on 23 May and 31 May, 2 Jun and 9 Jun 2011. During each evaluation, ten sweeps per plot were collected with a standard 15-inch diameter sweep net. Sweep net samples were bagged, labeled, and frozen for later counting of small LB nymphs (1^{st} through 3^{rd} instars), large LB nymphs (4^{th} and 5^{th} instars) and LB adults (Tables 2 - 4). On 28 Jun 2011, mature seed pods were stripped from a few plants at random in each plot, hand-threshed to prevent loss of damaged seed, and 100 seeds from each plot were examined under a binocular microscope for LB damage, SB damage, ASC damage, chewing insect damage, water damage, green seed and good seed (Table 5). Treatment means were analyzed using 2-way ANOVA and means separated by a protected LSD (P=0.05).

Results and Discussion: Pre-treatment numbers of small LB nymphs, large LB nymphs and adult LB were similar (P=0.05) among treatments and the untreated check (Table 1-3). All of the insecticide treatments had fewer small LB than the untreated check on 23 May, 31 May, 2 Jun and for the post treatment average, with the exception of Stallion on 23 May and 31 May (Table 1). There were no differences among the treatments on 9 Jun. The only insecticide treatments that had significantly fewer large LB nymph means than check on 23 May were Assail 30SG, Stallion, Carzol 92 SP, Belay Insecticide, and Orthene 97 (Table 3). All of the insecticide treatments had fewer large LB than the untreated check on 31 May, 2 Jun and 9 Jun and for the post treatment average, with the exception of Stallion on 2 June. The only insecticide treatments that had significantly fewer LB adults means than check on 23 May were Assail 30SG, Stallion, Carzol 92 SP, Belay Insecticide, Orthene 97 and Rimon (Table 3). All of the insecticide treatments had fewer LB adults than the untreated check on 31 May, 2 Jun and 9 Jun and for the post treatment average, with the exception of Stallion on 31 May and 9 June.

All of the insecticide treatments had significantly (P=0.05) lower percentages of LB damaged seed compared to the untreated check and all of the insecticide treatments has higher percentages of good seed compared to the untreated check (Table 4). Only the insecticide treatments of Stallion, Belay, and Rimon 0.83 EC followed by Beleaf 50 SG had significantly lower percentages of seed chalcid damage than the untreated check. There were no symptoms of phytotoxicity following any of the insecticide treatments.

Table 1.

		Small LB nymphs per ten sweeps					
Treatment	oz/acre	11 May	23 May	31 May	2 June	9 June	PTA
Check	--------	14.25	77.25 a	20.75 a	14.75 a	7.00	29.94 a
Dibrom 8	20.0	15.50	34.00 bc	10.50 bc	7.50 b	5.00	14.25 bc
Beleaf 50 SG	2.8	11.00	38.25 bc	1.75 cd	0.25 d	3.50	10.94 bcde
Assail 30SG	4.0	14.00	24.75 bc	8.50 cd	3.50 bcd	0.75	9.38 cde
Stallion	11.75	21.75	50.00 ab	16.50 ab	5.50 bc	2.00	18.50 b
Carzol 92 SP	8.0	17.75	14.25 c	3.00 cd	2.00 cd	2.50	5.44 de
Steward	11.0	15.50	36.00 bc	3.00 cd	1.75 cd	2.00	10.69 cde
Belay 2.13	2.8	20.50	22.75 bc	8.00 bcd	5.75 bc	3.25	9.94 cde
Orthene 97	16.0	16.75	11.75 c	0.50 d	0.75 d	3.75	4.19 e
Rimon 0.83 EC f/b Beleaf 50 SG	12.0 2.8	17.00	43.00 b	4.50 cd	1.00 d	2.75	12.81 bcd

Means within columns followed by the same letter are not significantly different; LSD, *P*=0.05.

Table 2.

		Large LB nymphs per ten sweeps					
Treatment	oz/acre	11 May	23 May	31 May	2 June	9 June	PTA
Check	--------	5.00	57.75 a	80.50 a	55.00 a	14.00 a	51.81 a
Dibrom 8	20.0	3.00	49.50 ab	21.50 cd	20.75 bc	6.75b	24.63 bc
Beleaf 50 SG	2.8	4.50	31.25 abc	3.25 d	3.50 c	2.25 b	10.06 de
Assail 30SG	4.0	2.25	23.75 bc	32.75 bc	19.25 c	4.75 b	20.13 bcd
Stallion	11.75	5.25	22.50 bc	46.25 b	39.00 ab	5.50 b	28.31 b
Carzol 92 SP	8.0	1.50	8.25 c	7.50 d	5.50 c	2.00 b	5.81 e
Steward	11.0	3.00	30.50 abc	10.75 d	11.75 c	3.50 b	14.13 cde
Belay 2.13	2.8	6.00	12.25 c	5.50 d	5.25c	5.00 b	7.00 e
Orthene 97	16.0	2.00	7.50 c	2.00 d	2.00 c	1.50 b	3.25 e
Rimon 0.83 EC f/b Beleaf 50 SG	12.0 2.8	3.25	33.50 abc	9.50 d	2.50 c	0.50 b	11.50 de

Means within columns followed by the same letter are not significantly different; LSD, *P*=0.05.

Table 3.

		LB Adults per ten sweeps					
Treatment	oz/acre	11 May	23 May	31 May	2 June	9 June	PTA
Check	--------	20.00	27.25 a	87.50 a	61.25 a	58.00 a	58.50 a
Dibrom 8	20.0	12.75	27.50 a	55.25 b	31.00b	26.75 b	35.13 bc
Beleaf 50 SG	2.8	13.00	16.00 abc	8.00 d	6.75 c	19.75 b	12.63 e
Assail 30SG	4.0	18.50	14.50 ab	44.25 bc	22.00 bc	33.75 b	28.63 cd
Stallion	11.75	17.00	26.75 ab	59.00 ab	35.50 b	52.25 a	43.38 b
Carzol 92 SP	8.0	16.75	9.25 c	15.75 cd	15.25 c	21.50 b	15.44 e
Steward	11.0	19.50	13.25 abc	16.25 cd	8.75 c	21.25 b	14.88 e
Belay 2.13	2.8	22.75	11.75 bc	4.75 d	9.00 c	28.00 b	13.38 e
Orthene 97	16.0	22.00	7.75 c	10.25 d	7.00 c	19.50 b	11.13 e
Rimon 0.83 EC f/b Beleaf 50SG	12.0 2.8	15.50	10.75 c	42.00 bc	10.00 c	24.00 b	21.69 de

Means within columns followed by the same letter are not significantly different; LSD, *P*=0.05.

Table 4.

		Percentage of seed damaged from LB, SB, ASC and water and percentages of green seed and healthy seed						
Treatment	oz/acre	LB	SB	SC	Chewing Damage	Water Damage	Green Seed	Good Seed
Check	--------	40.50 a	2.00	2.50 a	1.25	0.00	1.75	52.00 c
Dibrom 8	20.0	27.50 bc	2.00	2.50 a	0.75	0.00	0.25	67.25 ab
Beleaf 50 SG	2.8	23.25 bc	3.25	1.50 abc	0.50	0.00	1.00	70.50 ab
Assail 30SG	4.0	29.25 ab	2.25	1.75 abc	0.50	0.25	1.25	64.75 b
Stallion	11.75	28.75 b	3.00	0.25 c	0.50	0.00	1.50	66.00 ab
Carzol 92 SP	8.0	26.50 bc	1.75	2.00 ab	0.50	0.00	0.25	69.00 ab
Steward	11.0	21.25 bc	1.75	2.00 ab	1.00	0.25	0.75	73.00 ab
Belay 2.13	2.8	27.50 bc	2.00	0.25 c	0.25	0.00	0.75	69.00 ab
Orthene 97	16.0	17.00 c	2.50	1.50 abc	0.50	0.50	1.25	76.75 a
Rimon 0.83 EC f/b Beleaf 50SG	12.0 2.8	20.25 bc	1.75	0.50 bc	0.25	0.00	0.50	76.75 a

Means within columns followed by the same letter are not significantly different; $LSD_{0.05}$.

[z] Log^{10} (X+1) transformed data used for analysis.

ANNOUNCEMENT!

THE IMPERIAL COUNTY

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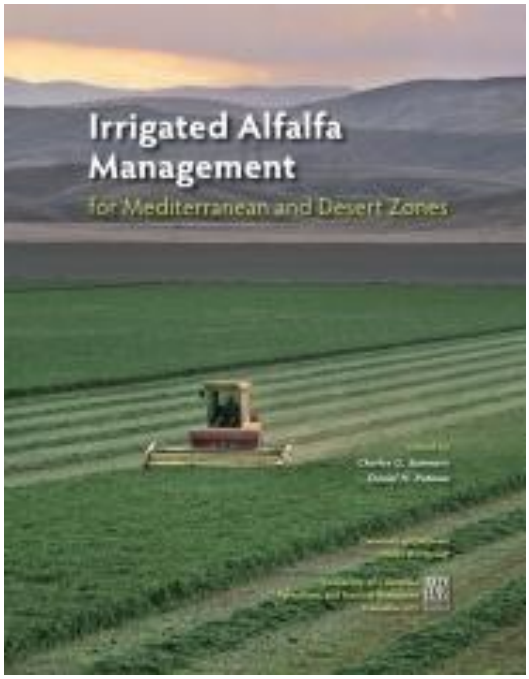
Good Reading!

Irrigated Alfalfa Management for Mediterranean and Desert Zones (UC ANR publication 3512)

This 372 page book on alfalfa production in California was written by University of California Extension specialists, farm advisors, and faculty. The publication is intended for growers, pest control advisors, and allied industry. This book is available from our office and the cost is $65 plus tax. The book contains color photographs of disease symptoms and insect pests, including a diagnostic key. The 24 chapters cover alfalfa production from start to finish, from selecting varieties through harvest to marketing and economics. There are chapters on organic alfalfa, grazing, irrigation, manure application, and many other topics. Electronic version of the book is available at the UC alfalfa website: alfalfa.ucdavis.edu/IrrigatedAlfalfa/.



2012 GUIDELINES TO PRODUCTION COSTS AND PRACTICES-IMPERIAL COUNTY - FIELD CROPS

Khaled M. Bali

The new 2012 Guidelines to Production Costs and Practices in Imperial County- Field Crops are now available from the Cooperative Extension office. The information presented in the field crops guidelines allows one to get a "ballpark" idea of field crop production costs and practices in the Imperial County. Most of the information was collected through verbal communications via office visits and personal phone calls. The information does not reflect the exact values or practices of any one grower, but are rather an average of countywide prevailing costs and practices. Exact costs incurred by individual growers depend upon many variables such as weather, land rent, seed, choice of agrichemicals, location, time of planting, etc. No exact comparison with individual grower practices is possible or intended. The budgets do reflect, however, the prevailing industry trends within the region.

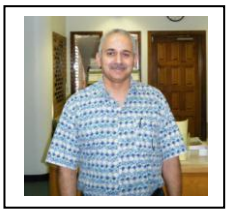
Since all of the inputs used to figure production costs are impossible to document in a single page, we have included extra expense in man-hours or overhead to account for such items as pipe setting, motor grader, water truck, shovel work, bird and rodent control, etc. Whenever possible we have given the costs of these operations per hour listed on the cultural operations page. Some custom operators have indicated that they are instituting a “fuel surcharge” to reflect “spikes” in fuel cost.

Not included in these production costs are expenses resulting from management fees, loans, providing supervision, or return on investments. The crop budgets also do not contain expenses encumbered for road and ditch maintenance, and perimeter weed control. Presented within are examples of crop budget for major field crops in the Valley. Crop budgets can be determine by substituting costs relevant to each individual farm enterprise using the prevailing rates tables. Sample Excel sheets for all major field crops are included in the document. The user needs to input production data appropriate to their individual operations to estimate production costs.

This circular (104-F) is available on compact disc or USB thumb drive. The text files are in Microsoft Word format. The spreadsheet files (i.e., production costs tables) are in Excel format. One advantage of having electronic versions of the crop production files is that they may be loaded into a spreadsheet program and the values altered to fit your needs. You can build a spreadsheet for your individual crop inputs while retaining the formulas for instantaneous recalculation of the whole page. For example, how would overall costs be affected if land rent were $50 per acre less, or if you chose a less expensive variety? The answer is right at your fingertips! You can see your cost projection instantly at any given price and yield level, plus a break-even price.

The cost of the CD, USB thumb drive, or electronic version of Guidelines to production costs and practices for Imperial County Field Crops circular (104-F) is $25. This includes the hard copy of the Guidelines, one of the above electronic choices, and shipping costs.

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 April 1 to June 30 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	April		May		June	
	1-15	15-30	1-15	16-31	1-15	16-30
Calipatria	0.26	0.29	0.32	0.36	0.39	0.40
El Centro (Seeley)	0.24	0.28	0.31	0.34	0.36	0.38
Holtville (Meloland)	0.25	0.28	0.32	0.35	0.38	0.39

* Ag Water Science Unit, Imperial Irrigation District.

Link to UC Drought Management Publications

http://ucmanagedrought.ucdavis.edu/

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