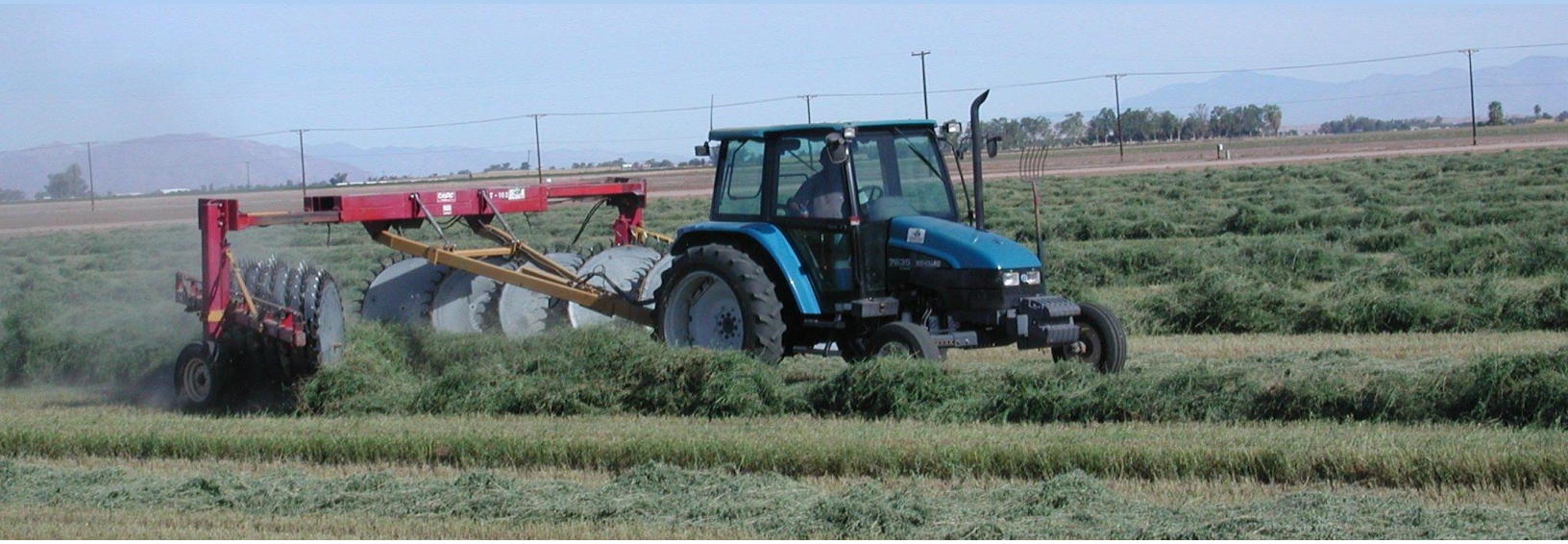
Imperial County Agricultural Briefs



Features

From your Farm Advisors

February, 2013

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2012 DEHYDRATOR ONION THRIPS CONTROL TRIAL

Eric T. Natwick and Martin Lopez

The objective of the study was to evaluate the efficacy of insecticides for control of onion thrips (OT), *Thrips tabaci* Lindeman and western Flower Thrips (WFT), *Frankliniella occidentalis* (Pergande) on dehydrator onions under desert growing conditions. Dehydrator onion (White Creole) was direct seeded into six row beds on 40 inch centers on 19 Oct 2011 at the University of California Desert Research and Extension Center, El Centro, CA. Stand establishment was achieved using overhead sprinkler irrigation; furrow irrigation was utilized thereafter. Plots were four beds 13.3 ft wide by 50 ft long and bordered by one untreated bed. The experiment included eleven insecticidal treatments and an untreated check. Four replications of each treatment were arranged in a RCB design. Insecticidal compounds, formulations and application rates, along with treatment dates, are provided in Table 1. All insecticide treatments were foliar sprays applied with a Lee Spider Spray TracTractor 4-row sprayer with three TJ-60 11003VS nozzles per row, a total of 12 nozzles that delivered 50.3 gpa at 25 psi. The adjuvant, DyneAmic (Helena Chemical Co.), was added to all insecticidal spray mixtures at 0.25% vol/vol. Thrips were sampled by extracting five random onion plants from each plot on 2, 13, 22 and 29 Feb, 7, 13, 21 and 28 Mar, and 5 Apr 2012. Plants were placed in labeled Ziploc bags and taken to the laboratory where a 0.1% silicone surfactant and water solution was added to help dislodge thrips larvae and adults using light agitation followed by washing into a U.S.A. Standard Test Sieve No. 100, 150UM mesh. The captured thrips were then placed into vials with 70% EtOH for later counting. Adult thrips were mounted onto microscope slides, examined under a binocular microscope and keyed to species. Numbers of WFT adults and OT adults from five plants per replicate were recorded on each sample date. Due to the difficulty of differentiating thrips species in the larval stage, thrips larvae were counted, and numbers were recorded for each sampling date, but not separated by species. The adult thrips counts for both OT and WFT, along with the larval thrips counts, were pooled for analysis of the insecticidal efficacy on the entire thrips population. The percentages of OT adults was also calculated and analyzed because only OT thrips is a vector of the *Iris yellow spot virus* (IYSV) and control of OT may have an effect

on the incidence and severity of Iris yellow spot (IYS) disease, a serious problem in the low desert dehydrator onion crop. On 20 Apr and 2 May 2012, the percentages of IYS symptomatic plants were measured and recorded in each plot. All onions on 1.25 inches in diameter or greater were harvested on 13.1 row ft from two rows (0.002 acre) on 8 May 2012 and weights were recorded in kg. Data were analyzed using ANOVA. Differences among means on each sampling date and in each experiment were determined using Least Significant Difference Test (P=0.05).

Thrips population levels were moderate during this trial. There were no differences among the treatments for thrips larval means resulting from the pre-treatment (PT) sample on 2 Feb (Table 2). None of the insecticide treatments had fewer thrip larvae than the check on 13 Feb, 7 day after treatment (7DAT1) or on 5 Apr (22DAT4). All insecticide treatments except the two Movento treatments and the Lannate LV treatment had fewer thrips larvae than the check on 22 Feb (12DAT1). All insecticidal treatments had lower larval larval means than the check on 29 Feb (7DAT2) and 7 Mar (7DAT3). All insecticide treatments except Mustang had fewer thrips larvae than the check on 13 March (13DAT3). Only the insecticide rotation treatments and none of the non-rotating treatments (Movento, Lannate LV, Radiant SC, Torac, and Mustang) had fewer thrips larvae than the check on 21 March (7DAT4). All insecticide treatments except Movento, Radiant SC, and Mustang had fewer thrips larvae than the check on 28 March (14DAT4).

There were no differences among the treatments for WFT adult means resulting from the PT sample on 2 Feb, or on post treatment samples 22 Feb (12DAT1), 21 March (7DAT4), or 5 Apr (22DAT4), Table 3. All insecticide treatments except the Movento treatments had fewer WFT adults than the check on 13 Feb (7DAT1). All insecticide treatments except the two Movento followed by (f/b) Lannate treatments had fewer WFT adults than the check on 29 Feb (7DAT2). On 7 March (7DAT3) only the insecticide treatments Radiant, Movento f/b Radiant SC, Movento f/b Lannate LV, Mustang f/b Lannate LV f/b Radiant SC, and Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV had fewer WFT adults than the check. None of the insecticide treatment were different than the check for WFT adults on 13 Mar (13DAT3). All insecticide treatments except Torac and Movento rotation with (r/w) Lannate had fewer WFT adults than the check on 28 Mar (14DAT4). There were no differences among the

treatments for OT adults on any of the sampling dates (Table 4). There were no differences among the treatment means for all thrips on 2 Feb (PT) and 5 Apr (22DAT4), Table 5. Only Torac has a mean for all thrips that was lower than the check on 13 Feb (7DAT1). Only Lannate LV and 3 of the 4 Movento treatments did not have lower means for all thrips compared to the check on 22 Feb (12DAT1).

All insecticide treatments except Movento f/b Lannate LV had means for all thrips that were lower than the check on 29 Feb (7DAT2). All insecticide treatments except Movento and Lannate LV had means for all thrips that were lower than the check on 7 Mar (7DAT3). Only the insecticide rotation treatments and none of the non-rotating treatments (Movento, Lannate LV, Radiant SC, Torac, and Mustang) had lower means for all thrips compared to the check on 13 March (13DAT3) and on 28 March (14DAT4). Only the insecticide rotation treatments with the exception of Mustang r/w Radiant and none of the non-rotating treatments (Movento, Lannate LV, Radiant SC, Torac, and Mustang) had lower means for all thrips compared to the check on 21 March (7DAT4).

There were differences among the treatments for percentages of OT on two sampling dates, 7 Mar and 13 Mar (Table 6). The percentages of OT were low at the beginning of Feb, but gradually increased to exceed 50% in some treatments by mid-Mar. The differences in percentages of OT may show selectivity of some insecticidal compounds for control of WFT (e.g. Radiant and Movento f/b Radiant on 7 Mar) or for control of OT (e.g. Movento f/b, Lannate LV f/b, Radiant SC or Radiant f/b, Torac 15 EC, f/b Lannate LV, f/b Torac on 13 Mar). All insecticide treatments had lower percentages of IYS symptomatic plants than the check on 20 Apr and 2 May (Table 7). There were no differences among the treatments for kg of onion bulbs harvested. No phytotoxicity symptoms were observed following any of the insecticide treatments. This research was supported by California Garlic and Onion Research Advisory Board and by industry gifts.

Table 1. Thrips control insecticide treatments, application rates and 2012 application dates

Treatment	fl oz/acre	Application date
Check	--------	----------
Movento	5.0	6, 22 Feb
Lannate LV	36.0	6, 22 Feb
Radiant SC	8.0	6, 22 Feb
Torac	24.0	6, 22 Feb
Mustang	4.0	6, 22 Feb
Movento f/b	5.0	6, 22 Feb
Radiant SC	8.0	29 Feb, 8 Mar
Movento f/b Lannate LV	5.0 36.0	6, 22 Feb 29 Feb, 8 Mar
Movento f/b Lannate LV f/b Radiant SC	5.0 36.0 8.0	6, 22 Feb 29 Feb 14 Mar
Mustang f/b Lannate LV f/b Radiant SC	4.0 36.0 8.0	6, 22 Feb 29 Feb 14 Mar
Radiant f/b Torac 15 EC f/b Lannate LV f/b Torac	8.0 24.0 36.0 24.0	6 Feb 22 Feb 29 Feb 14 Mar
Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV	24.0 + 36.0 8.0 4.0 24.0 + 36.0	6 Feb 22 Feb 29 Feb 14 Mar

*Dyne-Amic @ 0.25% v/v (37.9 ml/4 gal) added to foliar spray mixture.
f/b = followed by

Table 2.

		Onion thrips and western flower thrips larvae per plant								
Treatment	oz/acre	2 Feb	13 Feb	22 Feb	29 Feb	7 Mar	13 Mar	21 Mar	28 Mar	5 Apr
Check	--------	5.0 a	7.8 bc	33.8 a	34.3 a	36.0 a	34.3 a	30.8 a-c	124.3 ab	344.0 a
Movento	5.0	2.3 a	7.8 bc	15.8 b-e	18.3 b	18.8 b	21.5 bc	44.8 a	126.0 ab	303.0 a
Lannate LV	36.0	6.3 a	5.0 bc	19.5 a-c	13.0 bc	18.5 b	16.0 b-e	27.8 a-d	100.0 bc	311.8 a
Radiant SC	8.0	7.5 a	5.8 bc	8.3 de	6.0 c-e	8.3 d	13.5 c-f	25.0 a-d	116.3 ab	197.5 a
Torac	24.0	4.3 a	2.8 c	2.8 e	3.5 de	5.0 d	18.5 b-d	35.3 a-c	71.0 b-d	266.8 a
Mustang	4.0	4.8 a	9.0 bc	13.3 b-e	13.3 bc	18.0 bc	27.0 ab	35.8 ab	169.3 a	227.5 a
Movento f/b Radiant SC	5.0 8.0	7.0 a	9.5 bc	24.8 a-c	12.0 b-d	9.5 d	3.3 f	18.5 b-d	67.3 b-d	354.0 a
Movento f/b Lannate LV	5.0 36.0	6.0 a	18.8 a	13.8 b-e	19.5 b	10.8 cd	4.5 ef	6.0 d	49.3 cd	309.3 a
Movento f/b Lannate LV f/b Radiant SC	5.0 36.0 8.0	10.0 a	19.0 a	26.8 ab	19.8 b	9.3 d	9.8 c-f	18.3 b-d	25.0 d	312.8 a
Mustang f/b Lannate LV f/b Radiant SC	4.0 36.0 8.0	4.3 a	12.8 ab	15.5 b-e	11.5 b-d	8.3 d	12.8 c-f	17.25 b-d	14.3 d	322.8 a
Radiant f/b Torac 15 EC f/b Lannate LV f/b Torac	8.0 24.0 36.0 24.0	5.8 a	6.8 bc	10.8 c-e	2.3 e	6.0 d	10.5 c-f	6.25 d	23.0 d	302.8 a
Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV	24.0 + 36.0 8.0 4.0 24.0 + 36.0	6.0 a	5.8 bc	7.3 de	6.8 c-e	5.0 d	6.5 d-f	12.75 cd	21.0 d	297.3 a

Means within columns followed by the same letter are not significantly different LSD; P > 0.05
[x] PT = pre-treatment; [y] DAT = days after treatment; [z] PTA = post treatment average

Table 3.

		Western flower thrips adults per plant								
Treatment	oz/acre	2 Feb	13 Feb	22 Feb	29 Feb	7 Mar	13 Mar	21 Mar	28 Mar	5 Apr
Check	--------	6.00 a	9.00 a	22.75 a	29.75 a	11.00 ab	12.25 a-e	9.50 a	43.50 a	14.00 a
Movento	5.0	5.00 a	9.50 a	22.75 a	14.00 bc	14.25 a	12.00 b-e	9.00 a	15.75 c-e	26.50 a
Lannate LV	36.0	12.50 a	3.75 b	23.50 a	12.75 b-d	17.50 a	13.00 a-e	6.00 a	10.25 de	8.25 a
Radiant SC	8.0	11.00 a	2.75 b	13.50 a	8.00 de	4.50 cd	14.25 a-d	9.75 a	25.50 b-d	7.25 a
Torac	24.0	5.25 a	2.25 bc	17.75 a	9.00 c-e	6.75 b-d	18.75 ab	9.50 a	31.75 ab	22.50 a
Mustang	4.0	5.75 a	2.00 b	19.25 a	12.75 b-d	9.25 a-c	14.50 a-d	7.50 a	7.00 e	35.00 a
Movento f/b Radiant SC	5.0 8.0	8.50 a	11.00 a	15.50 a	13.50 bc	4.25 d	5.50 e	9.25 a	23.50 b-d	16.50 a
Movento f/b Lannate LV	5.0 36.0	8.75 a	11.00 a	22.75 a	21.25 ab	4.00 d	7.75 de	5.25 a	29.00 a-c	13.75 a
Movento f/b Lannate LV f/b Radiant SC	5.0 36.0 8.0	10.00 a	10.00 a	18.50 a	19.50 ab	5.25 b-d	16.75 a-c	7.50 a	11.00 de	37.50 a
Mustang f/b Lannate LV f/b Radiant SC	4.0 36.0 8.0	6.50 a	3.75 b	17.75 a	8.50 de	5.25 cd	13.00 a-e	9.00 a	22.25 b-e	21.25 a
Radiant f/b Torac 15 EC f/b Lannate LV f/b Torac	8.0 24.0 36.0 24.0	7.00 a	3.00 b	13.00 a	6.00 e	6.50 b-d	19.75 a	9.50 a	24.75 b-d	10.25 a
Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV	24.0 + 36.0 8.0 4.0 24.0 + 36.0	14.00 a	0.50 c	17.25 a	8.75 c-e	4.00 d	9.25 c-e	10.75 a	24.25 b-d	7.00 a

Means within columns followed by the same letter are not significantly different LSD; P > 0.05
[x] PT = pre-treatment; [y] DAT = days after treatment; [z] PTA = post treatment average

Table 4.

		Onion thrips adults per plant								
Treatment	oz/acre	2 Feb	13 Feb	22 Feb	29 Feb	7 Mar	13 Mar	21 Mar	28 Mar	5 Apr
Check	--------	0.00 a	0.25 a	1.50 a	1.25 a	5.25 a	11.75 a	9.25 a	20.25 a	65.25 a
Movento	5.0	0.00 a	0.00 a	1.75 a	3.25 a	6.00 a	11.50 a	10.50 a	26.25 a	38.25 a
Lannate LV	36.0	0.25 a	0.50 a	1.00 a	2.50 a	4.00 a	7.50 a	8.25 a	18.75 a	30.25 a
Radiant SC	8.0	0.00 a	0.00 a	1.25 a	1.50 a	5.75 a	8.00 a	11.25 a	17.50 a	27.00 a
Torac	24.0	0.00 a	0.25 a	0.25 a	2.75 a	4.75 a	7.50 a	11.75 a	25.75 a	32.25 a
Mustang	4.0	0.00 a	0.00 a	2.25 a	3.00 a	8.50 a	9.25 a	9.00 a	23.75 a	62.00 a
Movento f/b Radiant SC	5.0 8.0	0.25 a	0.50 a	1.25 a	2.00 a	6.25 a	4.25 a	14.50 a	20.75 a	36.00 a
Movento f/b Lannate LV	5.0 36.0	0.00 a	0.00 a	1.75 a	3.75 a	1.75 a	6.50 a	4.00 a	25.50 a	38.75 a
Movento f/b Lannate LV f/b Radiant SC	5.0 36.0 8.0	0.00 a	0.00 a	1.00 a	2.25 a	3.50 a	4.75 a	4.50 a	24.25 a	33.75 a
Mustang f/b Lannate LV f/b Radiant SC	4.0 36.0 8.0	0.00 a	0.00 a	1.00 a	2.75 a	2.25 a	4.00 a	3.50 a	27.25 a	41.50 a
Radiant f/b Torac 15 EC f/b Lannate LV f/b Torac	8.0 24.0 36.0 24.0	0.00 a	0.00 a	0.75 a	1.25 a	3.25 a	2.25 a	3.50 a	26.50 a	38.50 a
Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV	24.0 + 36.0 8.0 4.0 24.0 + 36.0	0.25 a	0.00 a	2.50 a	0.50 a	4.00 a	6.25 a	6.00 a	37.75 a	25.25 a

Means within columns followed by the same letter are not significantly different LSD; P > 0.05
[x] PT = pre-treatment; [y] DAT = days after treatment; [z] PTA = post treatment average

Table 5.

		All thrips per plant								
Treatment	oz/acre	2 Feb	13 Feb	22 Feb	29 Feb	7 Mar	13 Mar	21 Mar	28 Mar	5 Apr
Check	--------	10.3 a	17.0 a-c	58.0 a	65.3 a	52.3 a	58.0 a	49.5 a-c	188.0 ab	423.3 a
Movento	5.0	7.5 a	17.3 a-c	40.3 a-e	35.5 b-d	39.0 ab	45.0 ab	64.3 a	168.0 a-c	367.9 a
Lannate LV	36.0	16.5 a	9.3 c-e	44.0 a-c	28.3 cd	39.3 ab	36.5 a-c	42.0 a-d	129.0 b-d	350.5 a
Radiant SC	8.0	16.0 a	8.5 c-e	23.0 ef	15.5 e	18.5 c	35.8 a-c	46.0 a-c	160.3 a-c	231.8 a
Torac	24.0	9.0 a	5.3 e	20.8 f	15.3 ef	16.5 c	39.8 ab	56.5 ab	128.5 b-d	321.5 a
Mustang	4.0	10.0 a	11.0 b-d	34.8 b-f	29.0 b-d	35.8 b	50.8 ab	52.3 a-c	200.0 a	324.5 a
Movento f/b Radiant SC	5.0 8.0	13.8 a	21.0 ab	42.0 a-d	27.3 cd	20.0 c	13.0 e	42.3 a-d	111.5 cd	409.5 a
Movento f/b Lannate LV	5.0 36.0	14.3 a	29.8 a	38.3 b-f	44.5 ab	16.5 c	18.8 de	15.3 e	103.8 cd	361.8 a
Movento f/b Lannate LV f/b Radiant SC	5.0 36.0 8.0	20.8 a	29.0 a	46.3 ab	41.3 bc	18.0 c	31.3 b-d	30.3 b-e	60.3 d	385.0 a
Mustang f/b Lannate LV f/b Radiant SC	4.0 36.0 8.0	9.8 a	16.5 a-c	34.0 b-f	25.3 de	15.8 c	29.8 b-d	29.8 c-e	63.8 d	385.5 a
Radiant f/b Torac 15 EC f/b Lannate LV f/b Torac	8.0 24.0 36.0 24.0	12.0 a	9.8 c-e	24.5 d-f	9.5 f	15.8 c	32.5 b-d	19.3 de	74.3 d	351.5 a
Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV	24.0 + 36.0 8.0 4.0 24.0 + 36.0	18.5 a	6.3 de	26.5 c-f	16.0 e	13.0 c	22.0 cd	29.5 c-e	83.0 d	329.5 a

Means within columns followed by the same letter are not significantly different LSD; $P > 0.05$
[x] PT = pre-treatment; [y] DAT = days after treatment; [z] PTA = post treatment average

Table 6.

		OT percentage								
Treatment	oz/acre	2 Feb	13 Feb	22 Feb	29 Feb	7 Mar	13 Mar	21 Mar	28 Mar	5 Apr
Check	--------	0.0 a	2.1 a	6.2 a	3.6 a	28.8 b-d	44.0 ab	53.1 a	35.4 a	80.3 a
Movento	5.0	0.0 a	0.0 a	6.9 a	16.2 a	27.4 b-d	50.7 a	59.7 a	60.9 a	62.7 a
Lannate LV	36.0	2.5 a	12.4 a	3.6 a	14.5 a	15.5 d	33.8 a-c	48.5 a	66.3 a	77.4 a
Radiant SC	8.0	0.0 a	0.0 a	7.9 a	19.6 a	56.1 a	40.9 a-c	54.8 a	48.1 a	80.0 a
Torac	24.0	0.0 a	12.5 a	1.6 a	15.4 a	49.3 ab	29.1 a-d	51.9 a	46.6 a	67.5 a
Mustang	4.0	0.0 a	0.0 a	12.8 a	19.5 a	44.5 a-c	37.6 a-c	47.0 a	75.4 a	65.8 a
Movento f/b Radiant SC	5.0 8.0	2.1 a	5.3 a	7.0 a	11.9 a	58.7 a	37.5 a-c	60.1 a	46.7 a	76.0 a
Movento f/b Lannate LV	5.0 36.0	0.0 a	0.0 a	6.8 a	16.6 a	31.0 b-d	46.7 a	34.1 a	52.0 a	71.8 a
Movento f/b Lannate LV f/b Radiant SC	5.0 36.0 8.0	0.0 a	0.0 a	5.5 a	11.3 a	38.5 a-d	22.0 cd	34.4 a	68.9 a	65.3 a
Mustang f/b Lannate LV f/b Radiant SC	4.0 36.0 8.0	0.0 a	0.0 a	6.3 a	25.3 a	26.5 b-d	24.6 b-d	29.0 a	54.8 a	70.0 a
Radiant f/b Torac 15 EC f/b Lannate LV f/b Torac	8.0 24.0 36.0 24.0	0.0 a	0.0 a	5.8 a	18.2 a	21.1 cd	10.4 d	17.9 a	50.4 a	78.3 a
Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV	24.0 + 36.0 8.0 4.0 24.0 + 36.0	2.8 a	0.0 a	8.0 a	8.0 a	37.8 a-d	35.2 a-c	33.3 a	61.9 a	76.0 a

Means within columns followed by the same letter are not significantly different LSD; P > 0.05
[x] PT = pre-treatment; [y] DAT = days after treatment; [z] PTA = post treatment average

Table 7. Percentage IYSV symptomatic plant, bulb yield as kg per 0.002 acre and tons per acre

Treatment	oz/acre	Percentage IYSV		Kg/0.002 acre	Tons per acre
		20 Apr	2 May	8 May	8 May
Check	--------	18.0 a	14.0 a	9.43 a	5.20 a
Movento	5.0	4.0 b	6.0 b	9.15 a	5.04 a
Lannate LV	36.0	3.0 b	4.0 b	10.63 a	5.86 a
Radiant SC	8.0	3.0 b	4.0 b	9.55 a	5.26 a
Torac	24.0	2.0 b	6.0 b	9.88 a	5.44 a
Mustang	4.0	3.0 b	3.0 b	10.00 a	5.51 a
Movento f/b Radiant SC	5.0 8.0	5.0 b	3.0 b	9.00 a	4.96 a
Movento f/b Lannate LV	5.0 36.0	8.0 b	4.0 b	8.88 a	4.89 a
Movento f/b Lannate LV f/b Radiant SC	5.0 36.0 8.0	6.0 b	3.0 b	9.58 a	5.28 a
Mustang f/b Lannate LV f/b Radiant SC	4.0 36.0 8.0	2.0 b	4.0 b	10.23 a	5.69 a
Radiant f/b Torac 15 EC f/b Lannate LV f/b Torac	8.0 24.0 36.0 24.0	5.0 b	4.0 b	9.73 a	5.36 a
Torac 15 EC + Lannate LV f/b Radiant f/b Mustang f/b Torac 15 EC + Lannate LV	24.0 + 36.0 8.0 4.0 24.0 + 36.0	6.0 b	6.0 b	10.98 a	6.05 a

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

The 2012 Wheat Performance Tests Released

Oli Bachie

The UC Agricultural Experiment Station Cooperative Extension has released crop trial results for 2012. Cereal evaluation tests were conducted in various regions of the state. I particularly extracted wheat performance results for Imperial Valley and included in here (shown below in two pages) for quick reference. For further and detailed information, readers are encouraged to refer to the main source of the data in the Agronomy Progress Report # 314 published by the Agronomy Research and Information center available at:

http://smallgrains.ucdavis.edu/2012/pdf/2012%20APR314.pdf

2012 Imperial Common Wheat Trial

Entry	Name	Yield (lb/acre)		Test Wt (lb/bu)	1000 Kernel Wt (g)	Plant Ht (in)	Days To Heading (From 1/1)	Days To Maturity (From 1/1)	Protein %
CULTIVARS									
20	ANZA	7650	(11)	62.3	32.6	35	86	134	11.36
788	EXPRESS	7290	(16)	62.5	37.4	38	86	131	13.77
1340	MIKA	6680	(32)	62.0	31.7	40	89	134	13.66
1424	JOAQUIN	8030	(3)	63.0	42.9	35	81	129	13.17
1478	CAL ROJO	6790	(26)	59.5	34.8	33	85	128	13.22
1521	REDWING	6850	(25)	59.8	36.1	30	87	130	12.86
1522	BLANCA ROYALE	6780	(27)	62.0	36.1	34	84	128	13.29
1523	BLANCA FUERTE	7890	(5)	63.3	38.7	31	86	133	11.00
1548	WB-CRISTALLO	7260	(17)	62.0	34.5	34	88	131	13.09
1650	WB-ROCKLAND	7250	(18)	63.0	38.8	33	87	133	14.86
1657	BLANCA GRANDE 515	7670	(9)	64.5	41.6	39	84	128	13.72
1667	NEW DIRKWIN	6160	(37)	57.8	32.4	39	94	137	11.71
1680	PATWIN 515	7250	(19)	60.0	29.4	32	90	133	12.98
1729	WB-PERLA	7540	(14)	62.8	42.0	35	79	128	13.66
1731	WB-PATRON	7560	(13)	62.0	40.4	38	85	134	13.03
ADVANCED LINES									
1624	WB DA905-10	7560	(12)	62.3	37.6	36	85	129	12.92
1679	CLEAR WHITE 515	6700	(31)	61.0	39.2	39	84	128	14.09
1684	WWW CABR3509W	7670	(10)	62.8	38.5	33	86	132	11.43
1686	08SB100	6640	(33)	62.0	35.1	35	85	132	12.79
1688	08SB0658-B	7900	(4)	62.0	37.2	37	86	133	13.09
1710	UC 1710	7210	(20)	62.0	35.7	35	89	134	13.84
1711	UC 1711	4250	(38)	56.8	27.7	30	107	140	13.41
1712	UC 1712	6290	(36)	59.8	33.4	29	88	134	12.98
1713	UC 1713	7040	(24)	62.5	39.7	34	86	131	12.71
1714	UC 1714	7140	(23)	62.0	37.8	35	86	131	12.81
1715	UC 1715	6730	(29)	60.0	35.6	35	88	131	14.00
1716	WINCAL 09196	6400	(35)	61.0	27.8	31	90	134	11.91
1723	ATOMO	8300	(2)	62.5	34.9	35	85	131	12.30
1724	08SB0073	6760	(28)	61.5	38.7	33	86	129	12.65
1725	ATREVIDO	6720	(30)	61.5	40.4	36	87	131	12.44
1726	08SB0738	6520	(34)	60.5	30.5	33	87	133	13.45
1727	08SB0008-B	7690	(8)	61.0	41.0	32	86	135	12.56
1728	WB-JOAQUIN ORO	7840	(7)	63.0	43.2	34	78	128	13.66
1730	WB SJ907-229	7510	(15)	63.0	36.6	35	86	130	14.54
1732	WWW BR2308W	7850	(6)	62.0	36.7	35	86	134	10.90
1734	APB W9-3AL	7180	(21)	61.0	37.6	33	87	132	14.27
1737	APB NM-1	8410	(1)	61.3	37.8	37	87	132	11.21
1738	APB MC-1	7160	(22)	60.3	39.7	34	87	131	13.20
	MEAN	7160		61.5	36.6	35	87	132	12.96
	CV	4.1		0.7		1.6	0.9	0.9	
	LSD (.05)	410		0.6		2	1	2	

Numbers in parentheses indicate relative rank in column. Protein is expressed at 12% moisture

2012 Imperial Durum Wheat trial

Entry	Name	Yield (lb/acre)		Test Wt (lb/bu)	1000 Kernel Wt (g)	Plant Ht (in)	Days To Heading (From 1/1)	Days To Maturity (From 1/1)	Lodging Harvest	Protein %
CULTIVARS										
878	DURAKING	7850	(3)	60.5	34.7	32	82	129	1.0	14.09
1166	CROWN	6800	(29)	58.3	38.3	34	86	132	1.3	14.76
1210	PLATINUM	6680	(30)	60.0	38.5	29	82	127	2.0	14.13
1211	TOPPER	7760	(4)	62.0	36.6	33	86	131	1.0	13.44
1215	ORITA	7570	(10)	60.0	44.1	32	84	130	1.0	14.67
1375	DESERT KING*	7630	(8)	60.7	-	33	86	133	1.0	-
1440	HELIOS	7490	(13)	62.0	43.7	34	78	128	1.5	14.04
1473	Q-MAX	7640	(7)	59.0	34.0	35	85	132	1.0	13.80
1479	HAVASU	7190	(20)	63.0	44.6	33	79	127	1.8	14.19
1582	MAESTRALE	6860	(28)	61.5	35.2	36	85	128	1.8	13.79
1583	SARAGOLLA	7140	(23)	62.8	38.2	34	85	131	2.0	12.87
1607	WB-MEAD	7490	(13)	61.0	37.2	33	84	132	1.0	14.38
1585	TIPAI*	7660	(6)	62.7	-	37	85	132	1.7	-
ADVANCED LINES										
1640	APB D1-2	7320	(18)	60.0	47.9	32	83	130	1.0	14.36
1654	WB YU806-93	7180	(21)	62.0	44.2	35	82	128	1.8	14.23
1677	RS001	7130	(24)	61.8	42.8	35	85	128	1.3	14.69
1678	RS002	7420	(16)	61.8	45.2	34	85	129	1.8	14.71
1690	UC 1690	7600	(9)	62.0	43.8	33	86	131	1.0	14.14
1691	UC 1691	7010	(26)	62.0	45.1	34	85	127	2.5	13.94
1695	WWW NDPRD3D13	7180	(21)	61.3	40.7	32	85	131	1.0	14.69
1696	WWW UT07412	6670	(31)	61.3	50.9	32	80	129	1.5	13.77
1697	KIKO NICK	8310	(1)	61.8	47.3	35	83	130	2.0	13.19
1698	05E2844	7750	(5)	62.3	43.8	34	85	129	1.0	12.88
1709	RS003	7450	(15)	58.3	34.2	33	86	132	1.0	14.64
1717	UC 1717	7550	(11)	61.3	37.4	34	86	130	1.0	14.01
1718	UC 1718	7310	(19)	60.8	38.3	32	86	132	1.0	14.40
1719	UC 1719	7080	(25)	62.3	43.8	34	86	131	1.8	14.10
1720	IMHOTEP	6870	(27)	63.3	44.2	36	81	127	3.0	12.93
1721	ALIROR	8200	(2)	63.8	51.3	35	85	131	1.8	13.15
1722	06D2410	6250	(33)	57.0	35.7	33	100	140	3.3	16.19
1733	WWW D2517	6480	(32)	61.0	36.6	32	81	128	1.5	13.70
1735	APB CP-1	7390	(17)	61.0	48.4	37	87	131	1.3	13.49
1736	APB IM-1	7550	(11)	62.0	37.9	33	86	131	1.0	13.55
	MEAN	7300		61.2	41.4	33	84	130	1.5	14.03
	CV	5.5		0.9		1.5	1.1	0.8	40.5	
	LSD (.05)	560		0.8		1.6	1	1	0.9	

1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-69%, 6 = 70-84%, 7 = 85-95%, 8 = 96-100%.

Numbers in parentheses indicate relative rank in column.

Protein is expressed at 12% moisture.

*Data is from an adjacent trial under the exact same conditions

ALFALFA WEEVIL INSECTICIDE EFFICACY TRIAL, 2012

Eric T. Natwick and Martin I. Lopez

The objective of this study was to evaluate the efficacy of the new and old insecticidal compounds used against Egyptian alfalfa weevil (EAW), *Hypera brunnipennis* (Boheman) larvae on alfalfa grown for hay production under desert growing conditions. A field study was conducted during the spring of 2012 at the UC Desert Research and Extension Center. A stand of alfalfa, VAR. CUF 101, was used for the experiment. There were seven insecticidal treatments and an untreated check. The experimental design was RCB with four replicates per treatment. Each treatment plot was 20 ft by 50 ft. The insecticide treatments were applied on March 13, 2012, using a broadcast application with a Lee Spider Spray Trac, tractor mounted spray boom, operated at 25 psi, delivering 36.1 gpa through 13 nozzles (TJ-60 11003VS) in a 20 ft wide spray swath. The larval EAW population was counted in each plot with a standard 15-inch diameter insect net consisting of ten 180^{o} sweeps. Larval population sampling was conducted on 12 March for the Pre-treatment (PT) and on March 16 (3DAT), 20 (7DAT) and 27 (14DAT) for the post-treatment sampling. Sweep samples were bagged, labeled, and frozen for later counting of EAW larvae in the laboratory. Data sets were analyzed using a 2-way ANOVA and means separated by protected LSD ($P \leq 0.05$).

There were no significant difference in EAW larval population for the Pre-treatment (1DPT) sampling (Table 1), The 2012 Egyptian alfalfa weevil larvae levels were typical of what is found in Imperial Valley alfalfa during March. EAW larvae for all insecticide treatments were significantly lower than the untreated check on all post-treatment sampling dates except for Centric on the14DAT sample (Table 1). None of the insecticide treatments showed injury to alfalfa plants.

Table 1.

		EAW larvae per 10 Sweeps[1]				
Treatment	Rate/acre	1DPT[w]	3 DAT[xz]	7 DAT[z]	14 DAT[z]	PTA[yz]
Check	--------	19.75a	27.25 a	22.00 a	9.00 a	19.42 a
*Endigo 2.06 ZC	4.0 fl oz	27.25a	1.00 cd	0.25 c	0.00 d	0.42 cd
*Endigo Zcx 2.71 ZC	4.0 fl oz	27.00a	4.00 bc	1.00 c	0.25 d	1.75 bc
*Centric 40 WG	3.5 oz	26.00a	5.00 bc	6.75 b	5.50 ab	5.75 b
*Voliam Xpress 1.25 ZC	9.0 fl oz	26.25a	3.00 cd	0.50 c	1.75 bcd	1.75 bcd
Cobalt 2.54 EC	24 fl oz	24.50a	0.50 d	0.25 c	0.00 d	0.25 d
Warrior Zeon 2.08 CS	1.92 fl oz	18.75a	1.00 cd	0.50 c	0.50 cd	0.67 cd
Lorsban Advanced	32.0 fl oz	30.00a	8.75 b	3.00 bc	3.00 bc	4.92 b

*Not registered for use on alfalfa.

[1]Means within each column followed by the same letter are not significantly different from each other, $P>0.05$, LSD.

[w] Days pre-treatment

[x] Days after treatment.

[y] Post treatment average.

[z] Log_{10} (X+1) transformed data were used for analysis, but actual means are reported.

Register Now for the

2013 Alfalfa IPM Workshop

sponsored by UC Agriculture and Natural Resources, UC Statewide IPM Program, California Alfalfa Workgroup and USDA-NIFA through an Extension IPM grant

Join Us February 22!

Integrated Pest Management (IPM) plays a pivotal role by evaluating the need to manage pests and diseases through sampling and assessment of pest population densities and for reviewing alternative management approaches that reduce the risk from pest and pest management activities.

This day-long workshop will focus on a wide diversity of pest organisms presented by experts from California and Arizona. We will provide ample time for interaction between participants and the presenters and offer a well-rounded experience with lecture and hands-on activities.

Continuing Education credits have been applied for and will be posted on the workshop website when approved.

Goals for the workshop:

Early Registration Fee

$65.00

Register Now

When

Friday, February 22, 2013
7:30 a.m. to 4:15 p.m.

Where

UC Riverside Palm Desert

- To provide a venue for training and an opportunity for interchange on current Integrated Pest Management knowledge, practices and approaches in alfalfa forage.
- To bring alfalfa producers and pest managers together with experts in entomology, plant pathology, nematology and production;
- To review current IPM knowledge and practices in these disciplines
- To provide the opportunity for interaction among participants in order to share best management approaches and identify key IPM issues
- To explore emerging and current regulatory and environmental issues as they relate to IPM in alfalfa

The full workshop agenda is available on the workshop website. For questions about registration, please contact the UC ANR Program Support Unit.

Sincerely,

Vonny Barlow and Pete Goodell
UCCE Cooperative Extension

Center
75080 Frank Sinatra Drive
Palm Desert, CA 92211

Who Should Attend

Pest Control Advisors, IPM Professionals, Alfalfa Producers and Managers, and Extension Professionals

Quick Links

Registration
Sponsoring and Exhibiting
Location
Lodging
More Information

The University of California and the USDA present:

CARROT

Field Day

Tuesday, February 26, 2013
10:00 a.m.

DREC

1004 E. Holton Road
Holtville, CA 92250

For information, please contact:
Dr. Joe Nunez at jnunez@ucdavis.edu

Dr. Phil Simon at psimon@wisc.edu

or
Fernando Miramontes 760-356-3064

EVENT ANNOUNCEMENT
UC Soil Fertility Short Course Feb. 2013
Mark your calendar!

If you missed… the February 2012 AND November 2012 courses, be sure to sign up for this one. The **UC Soil Fertility Short Course** will be repeated on **Tuesday, February 19, 2013** at the Buehler Alumni & Visitor Center, UC Davis. Register early before the course sells out—enrollment is limited to 70 participants.

~ ~

Event: **UC Soil Fertility Short Course 2013**
Date: Tuesday, February 19, 2013
Location: Buehler Alumni & Visitor Center, UC Davis

~ ~

The UC Vegetable Research & Information Center (VRIC) will sponsor the **UC Soil Fertility Short Course** on **Tuesday, February 19, 2013** at the Buehler Alumni & Visitor Center, UC Davis. The short course will focus on the practical aspects of soil fertility management in an era of escalating fertilizer costs and increasing government regulation of nutrient inputs for environmental water quality protection. The topics covered will include getting the maximum value from soil testing, interpretation of laboratory soil test results, comparing fertilizer sources, developing crop nutrient management plans, and fertilizer management and environmental protection. Although the focus will be on nutrient management in annual cropping systems, much of the material presented will be relevant to perennial crops as well. The course will not directly address organic fertility management issues, but organic growers may still benefit from attending; the majority of day will be spent covering basic soil fertility concepts, which are equally applicable to organic and conventional production. The content will be geared toward commercial scale production, and will assume a general knowledge of soil science; this course is not appropriate for home gardeners.

The program is intended for growers, certified crop advisers (CCA), pest control advisers, government agency personnel, and others involved in fertility management planning. Take advantage of the early-bird registration fee ($150.) The fee goes up on Jan. 31 to $175. The registration fee includes lunch, refreshments and study materials. UC Farm Advisors can attend at the special rate of $90.

Cooperative Extension specialists **Tim Hartz** (vegetable crops) and **Stu Pettygrove** (soils) are the instructors.

The course is approved for California CCA continuing education credits.

More information, visit the VRIC website (http://vric.ucdavis.edu).

UC ***Vegetable*** Research & Information Center (VRIC)
▪ Phone: (530) 752-1748 ▪ Fax: (530) 752-4604 ▪ http://vric.ucdavis.edu

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 February 1 to April 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, Irrigation Management 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	February		March		April	
	1-15	16-29	1-15	15-31	1-15	16-30
Calipatria	0.12	0.14	0.18	0.22	0.26	0.29
El Centro (Seeley)	0.12	0.14	0.16	0.20	0.24	0.28
Holtville (Meloland)	0.12	0.14	0.17	0.21	0.25	0.28

* Ag Water Science Unit, Imperial Irrigation District.

Link to UC Drought Management Publications

http://ucmanagedrought.ucdavis.edu/