Imperial County Agricultural Briefs

Features

From your Farm Advisors

May, 2008

Grain Sorghum (Milo)
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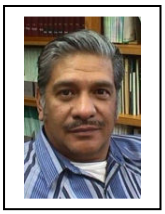
Livestock Advisor



As part of a bio-fuels research project at UCDREC, a grain sorghum (milo) trial was planted on 3/21/07. Nine varieties were compared under two irrigation regimes and at two N rates. WaterMark® soil moisture meters were placed in the soil to determine soil water. One irrigation treatment consisted of a full irrigation; when the soil moisture meter read "60 centibars" plots were irrigated, and the other irrigation treatment consisted of ¾ less water, when the soil moisture meter read "75 centibars". One fertility treatment consisted of 150 lb N/ac and the other treatment consisted of 120 lb N/ac. Two rows of seed were planted on 40" beds and fertilizer was side-dressed in two applications. Plots were harvested in October 2007 and again in late December.

Nine grain sorghum varieties were compared:

Pioneer® 84G62

Pioneer® 85G85

Pioneer® 83G15

Pioneer® 82G10

Pioneer® 85G40

MMR® Genetics 310x45

MMR® Genetics 304x5

MMR® Genetics 310x8

MMR® Genetics 310x76

Only the variety data will now be presented (Table 1). Grain sorghum grows well in the irrigated desert and indeed has a long history of cultivation. There was some bird damage in our research, about 10% decreased yields. The US ethanol industry has greatly increased the demand for cereal grains for ethanol production. Grain sorghum produces an equal amount of ethanol as does corn. Summer desert heat does not inhibit local grain sorghum production. Grain sorghum for ethanol production after the wheat harvest might be a viable economic option for local growers.

Table 1. UCDREC grain sorghum yields, least square means, 2007.

10 October yields lb/ac		10 October + 21 December yields lb/ac	
Pioneer 84G62	6006.4[a]	Pioneer 84G62	8358.2[a]
Pioneer 85G85	5860.4[a]	Pioneer 85G85	8224.6[a]
Pioneer 83G15	5807.3[a]	Pioneer 85G40	8132.6[a]
Pioneer 82G10	5586.0[ab]	MMR 310x45	7763.3[a]
Pioneer 85G40	5473.6[ab]	Pioneer 83G15	7402.8[a]
MMR 310x45	4754.4[abc]	MMR 304x5	7367.0[a]
MMR 304x5	4291.3[abc]	Pioneer 82G10	7283.4[a]
MMR 310x8	3271.1[bc]	MMR 310x8	5356.8[ab]
MMR 310x76	2760.6[c]	MMR 310x76	4014.8[b]

[a]Means in columns with different superscripts are different, LSD (P<0.10).

Evaluation of Insecticides for Control of Worm Pests in Alfalfa

Eric T. Natwick
County Director and Entomology Advisor

Several species of worm pests are common are California alfalfa such as beet armyworm, alfalfa caterpillar and alfalfa webworm. An insecticide efficacy trial for evaluation of worm pest control was conducted at the UC Desert Research and Extension Center on a stand of CUF-101 alfalfa. The experimental design was Randomized Complete Block using 4 replicates with 8 treatments and plots measured 50 ft x 13.3 ft. Test materials were applied on September 11, 2007 at the specified rate equivalencies listed in Table 1. Pretreatment evaluations of insect populations in each plot were collected on September 7, 2007. Post treatment evaluations were collected on September 12, 14, 18, 25 and 5 October, 2007 or 1, 3, 7, 14, and 24 days after treatment (DAT). During each evaluation, ten sweeps per plot were collected with a standard 15-inch diameter sweep net. Sweep samples were bagged, labeled, and frozen for later counting of worm pest larvae by species (Tables 1 - 3). Data were analyzed using ANOVA and means separated using Least Significant Difference Test (P=0.05).

Pre-treatment numbers of all worm pests were similar (P=0.05) among treatments (Table 1-3). All insecticide treatments had means for beet armyworm that were significantly (P=0.05) lower than the means for the untreated control 1 and 14 DAT (Table 1) but there were no differences among the means and the untreated control 24 DAT. All but Lorsban 4E @ 32 fl oz/acre had means for beet armyworm that were significantly lower than the means for the untreated control 3 DAT and all but Lorsban 4E @ 32 fl/acre and GF 2153 @ 64 fl oz/acre had means for beet armyworm that were significantly lower than the untreated control 7 DAT . The numbers of alfalfa caterpillar and webworms were low on all sampling dates and there were no differences among the insecticide treatments and the untreated control (Tables 2 and 3); however, the post treatment averages for alfalfa caterpillar were lower than the untreated control for all insecticide treatments except Lorsban 4e @ 32 fl oz/acre. In conclusion, all insecticide treatments provided some level of control for beet armyworm and alfalfa caterpillar, but Lorsban at the low rate was appeared to be the least efficacious.

Table 1. Numbers of Beet Armyworms per Ten Sweeps in Alfalfa, Holtville, CA, 2007.

Treatment	oz/acre	4 DPT[x]	1 DAT[y]	3 DAT	7 DAT	14 DAT	24 DAT	PTA[z]
Check	---------	7.00	7.00 a	2.25 a	3.00 a	5.00 a	0.75	3.60 a
Steward	6.7	7.00	2.25 b	0.50 b	0.75 bc	1.25 b	0.25	1.00 b
Lorsban 4E	32.0	6.25	1.75 b	1.00 ab	1.50 abc	0.50 b	0.25	1.00 b
Lorsban 4E	64.0	5.25	1.50 b	0.50 b	1.00 bc	0.75 b	0.00	0.75 bc
GF-2153	34.0	5.75	0.75 b	0.25 b	0.00 c	1.50 b	1.00	0.70 bcd
GF-2153	68.0	6.00	0.50 b	0.00 b	1.75 ab	2.00 b	0.25	0.90 bc
NNI-0001 480 SC	2.0	8.75	0.75 b	0.00 b	0.00 c	0.50 b	0.25	0.30 d
NNI-0001 480 SC	3.0	9.75	1.00 b	0.25 b	0.00 c	1.00 b	0.25	0.50 cd
$LSD_{0.05}$[w]		*NS*	*2.49*	*1.38*	*1.73*	*1.85*	*NS*	*0.42*

[w] Mean separations within columns by $LSD_{0.05}$.
[x] Days Pre-treatment
[y] Days after treatment.
[z] Post treatment average.

Table 2. Mean Numbers of Alfalfa Caterpillar per Ten Sweeps in Alfalfa, Holtville, CA, 2007.

Treatment	oz/acre	4 DPT[x]	1 DAT[y]	3 DAT	7 DAT	14 DAT	24 DAT	PTA[z]
Check	---------	2.50	1.00	0.50	0.25	0.50	0.50	0.55 a
Steward	6.7	2.00	0.75	0.00	0.00	0.00	0.00	0.15 c
Lorsban 4E	32.0	3.00	1.25	0.25	0.00	0.00	0.75	0.45 ab
Lorsban 4E	64.0	1.00	0.00	0.00	0.25	0.00	0.00	0.05 c
GF-2153	34.0	1.50	0.00	0.00	0.25	0.00	0.00	0.05 c
GF-2153	68.0	1.50	0.00	0.00	0.00	0.00	0.25	0.05 c
NNI-0001 480 SC	2.0	2.75	0.75	0.00	0.00	0.00	0.00	0.15 c
NNI-0001 480 SC	3.0	1.50	0.75	0.00	0.00	0.00	0.25	0.20 bc
$LSD_{0.05}$[w]		*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*0.30*

[w] Mean separations within columns by $LSD_{0.05}$.
[x] Days Pre-treatment
[y] Days after treatment.
[z] Post treatment average.

Table 3. Mean Numbers of Alfalfa Webworms per Ten Sweeps in Alfalfa, Holtville, CA, 2007.

Treatment	oz/acre	4 DPT[x]	1 DAT[y]	3 DAT	7 DAT	14 DAT	24 DAT	PTA[z]
Check	---------	1.25	0.75	0.25	0.50	0.00	0.00	0.30
Steward	6.7	0.50	1.25	0.00	0.50	0.00	0.00	0.35
Lorsban 4E	32.0	1.00	0.25	0.00	0.00	0.00	0.00	0.05
Lorsban 4E	64.0	0.50	0.50	0.00	0.25	0.00	0.00	0.15
GF-2153	34.0	0.50	0.75	0.00	0.25	0.00	0.00	0.20
GF-2153	68.0	0.25	0.00	0.00	0.00	0.25	0.00	0.05
NNI-0001 480 SC	2.0	1.25	0.25	0.00	0.00	0.00	0.00	0.05
NNI-0001 480 SC	3.0	1.75	0.75	0.00	0.00	0.00	0.00	0.15
$LSD_{0.05}$[w]		*NS*	*NS*	*NS*	*NS*	*NS*	*NS*	*NS*

[w] Mean separations within columns by $LSD_{0.05}$.
[x] Days Pre-treatment
[y] Days after treatment.
[z] Post treatment average.

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Irrigation Cutoff Calculator Workshop

Designed for irrigators and farm managers

Location: University of California Cooperative Extension
1050 E. Holton Rd.
Holtville, CA 92250

Date: April 30, 2008 andMay 15, 2008
Session I: 9:30 AM – 11:00 AM **(Workshop in English)**
Session II: 11:00 AM – 12:30 PM **(Workshop in Spanish)**

Instructors: Khaled Bali, UCCE-Imperial County
Mark Niblack, USBR- Yuma Office

Topics to be covered

Irrigation Requirements
Basics of Reference Evapotranspiration (ETo) and Crop ET
Reference Evapotranspiration (ETo)
Irrigation Cutoff Calculator
Irrigation Slide Chart

Registration Fee: Free

Space is limited to 10 participants per workshop. Advance registration is required.
Please email or fax your name and contact information to Khaled Bali (email:kmbali@ucdavis.edu or Fax 760-352-0846). You may register by phone, please call 760-352-9474 Extension 28 and leave your name and contact information. Please specify which session you want to attend.

If you need special accommodations, please contact us at 760-352-9474

CIMIS REPORT

Khaled Bali and Steve Burch*

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 May 1 to July 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, 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	May		June		July	
	1-15	16-31	1-15	16-30	1-15	16-31
Calipatria	0.32	0.36	0.39	0.40	0.39	0.38
El Centro (Seeley)	0.31	0.34	0.36	0.38	0.38	0.37
Holtville (Meloland)	0.32	0.35	0.38	0.39	0.39	0.38

* Irrigation Management Unit, Imperial Irrigation District.