Imperial County Agricultural Briefs

Features

From your Farm Advisors

***October** 2005*

Our Website is http://ceimperial.ucdavis.edu/

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Average Crop Water Use In The Imperial Valley

Khaled M. Bali

The average applied water figures for major crops in the Imperial Valley are shown in Table 1. These values represent the average total water use (average crop water use and average cultural water needs). These figures vary from year to year due to normal changes in reference evapotranspiration figures and changes in cultural practices from field to field.

Table 1. Applied water figures for major field & vegetable crops in the Imperial Valley

Field Crops	Applied water (ac-ft/ac per year)	Vegetable Crops	Applied water (ac-ft/ac per year)
Alfalfa Hay(flat)	6.50	Artichoke	3.00
Alfalfa Hay(bed)	5.50	Asparagus	6.50
Bermudagrass seed/hay	6.25	Broccoli	3.00
Cotton	4.50	Cabbage	3.50
Kleingrass hay	6.25	Cantaloupe	4.00
Sudangrass hay	4.00	Carrot	3.00
Sugarbeet	5.50	Cauliflower	4.00
Wheat	3.00	Iceberg Lettuce	3.00
		Leaf Lettuce	3.00
		Mixed melons	4.00
		Dehydrator bulb onion	4.50
		Processor onion	4.50
		Sweet corn	5.00
		Drip irrigated seedless Watermelon	3.00

Sources: Guidelines to Production Costs and Practices 2004-05.Vegetable Crops, Circular 104-V
Guidelines to Production Costs and Practices 2004-05. Field Crops, Circular 104-F.
University of California Cooperative Extension http://ceimperial.ucdavis.edu .

Evaluation of Foliar Insecticides for Cabbage Looper Control in Cucumbers in 2004.

Eric T. Natwick

A field trial was conducted at the University of California Desert Research and Extension Center near Holtville, CA, to look at foliar insecticide applications for efficacy against cabbage looper on cucumber, variety Medalist, planted August 25, 2004. The experimental design was randomized complete block with four replicates. Plots measured 50 ft by 13.33 ft; 2 beds per plot on 80" centers. Foliar sprays were applied at 32 gpa at 40 psi using a Spider Trac Sprayer with three TJ-60 11003VS nozzles per bed. All foliar treatments included an adjuvant (Silwet L77) at 0.03 % (v / v). Insecticide treatments were applied on September14 and 28, 2004. Insecticide treatments and rates of application are listed in Table 1. Evaluations were made by counting the numbers of cabbage looper larvae per twenty plants in each plot weekly from September 13 through October 18.

There were no differences among the treatment means for cabbage looper larvae per twenty plants on September 13 prior to insecticide applications (ANOVA, $P < 0.05$) (Table 1). All insecticide treatments had significantly fewer cabbage looper larvae compared to the untreated control on sampling dates from September 17 through September 20 and again on October 4 and October 18, but not on September 27 and October 11. There were no differences among the insecticide treatment means for cabbage looper on September 17, September 20 and October 18, nor for the seasonal means. On September 27, the looper larval means for Success at 2.5 fluid ounces per acre and Proclaim 5 WG at 2.4 dry ounces per acre were not significantly different from the untreated control. The looper larval means for both rates of Avaunt 30 WG and for Success at 4.29 fluid ounces per acre were significantly lower than the mean for Success at 2.5 fluid ounces per acre. On October 4, the looper larval mean for Avaunt 30 WG at 6.3 dry ounces per acre was significantly greater than the mean for Proclaim 5 WG.

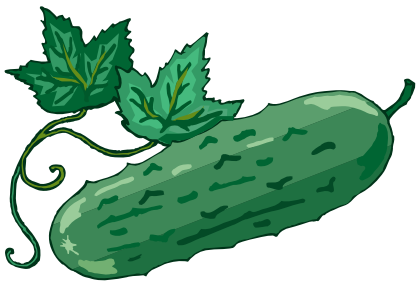
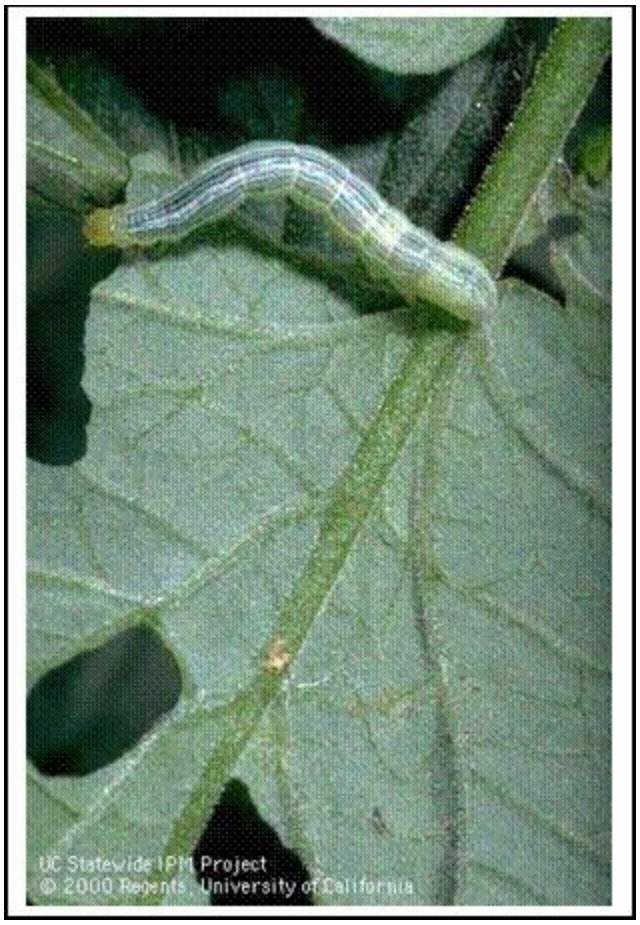


Table 1. Cabbage Looper Larvae per Twenty Cucumber Plants, Holtville, CA, 2004.

Treatment	oz/acre	13 Sep	17 Sep	20 Sep	27 Sep	4 Oct[y]	11 Oct	18 Oct	PTM[z]
Untreated	---------	10.50 a	8.00 a	6.00 a	4.50 a	5.00 a	2.50 a	2.50 a	4.75 a
Avaunt 30 WG	2.40	14.25 a	1.25 b	0.50 b	0.00 c	2.00 b	1.25 a	0.75 b	0.96 b
Avaunt 30 WG	3.47	12.00 a	0.00 b	0.00 b	0.25 c	0.50 bc	1.50 a	0.50 b	0.46 b
Success 2 SC	2.50	10.75 a	3.00 b	0.50 b	3.50 ab	0.25 bc	0.75 a	0.25 b	1.38 b
Success 2 SC	4.29	13.00 a	0.00 b	0.00 b	0.25 c	0.50 bc	0.75 a	0.00 b	0.25 b
Intrepid 80 SP	2.50	13.00 a	2.00 b	0.50 b	1.25 bc	0.75 bc	0.50 a	0.25 b	0.88 b
Proclaim 5 WG	2.40	13.00 a	2.75 b	1.00 b	2.25 abc	0.00 c	1.50 a	0.75 b	1.38 b

[y] Log transformation used for data analysis, actual means reported.
[z] PTM = post-treatment mean.
Mean separations within columns by $LSD_{0.05}$.



Forage Oats

Juan N. Guerrero

Oats (*Avena sativa* L.) have been planted in the irrigated deserts for years as an alternative short-term winter forage. There is not much formal information in California regarding forage oats. At the present time hay prices are exceptionally good and oat hay has long been highly prized by the horse industry. Given the dearth of information regarding forage oats in the desert during the winter, the following recommendations will now be presented.

Land preparation

Prepare the ground as for wheat: stubble disk, 2 regular discings, float, list borders, and 125 lb N injected.

Planting

Oats may be planted from late November through the middle of January. The recommended seeding rate is 75-100 lb/acre.

Varieties

In the irrigated desert, the following varieties have been planted; Kanota, Montezuma, Cayuse, and Swan. In Central Valley variety trials, Swan has yielded the most hay.

Fertility

During the growing season about 160 lb N, water run, should be applied. Oat hay, like sudangrass hay, may have nitrate accumulation problems. To avoid nitrate problems, no fertilizer should be applied later than the boot stage of growth. The boot stage of growth is when a "bump" or large swelling may be felt at the stem base. This bump is the flower node.

Harvest

If the oats are cut at (or prior to) the boot stage, the crop may re-grow and a second harvest may be possible. Harvesting at the boot stage, however, will result in lower hay yields at a time of year, February/March, when hay drying is quite difficult. If the re-growth occurs during hot weather, which might be possible during April and May, the oats, a cool-season grass, growth might be reduced. If the oats are cut early and a second harvest expected, then additional N should be applied.

Locally, the most accepted norm for the harvesting of oat hay is the soft dough stage of growth. At the soft dough stage of growth, hay quality might be reduced but hay yields are increased. Oat hay is an excellent horse feed and is not difficult to grow.

Results of comparison of fungicides for control of downy mildew on iceberg lettuce, 2005.

Thomas Turini and Ronald Cardoza

Fungicide efficacy against downy and powdery mildew on lettuce was compared in a study conducted at the University of California Desert Research and Extension Center in Holtville, CA. On 24 Nov 2004, 'Coyote' iceberg lettuce was sown in two seed lines per 40-inch bed and sprinkler irrigated to emergence. Treatments are listed in Table 1. Each fungicide was applied over a 25 ft section of two beds. Materials were applied on 27 Jan, 8, 16, 25, Feb, 7 and 13 Mar. At the time of the first application, the plants were at the rosette stage of development, with an approximate 3 in diameter and one lesion was detected per 25 plants examined. All materials were applied in 30 gallons of water per acre with a CO_2 pressurized backpack sprayer at 30 psi. A 3-nozzle spray boom was used with Teejet 8002 flat fan nozzles spaced 6.5-in apart. The number of downy mildew lesions per plant on each of 10 plants per plot was recorded. Log-transformed data was subjected to analysis of variance. Student-Newman-Keul's Multiple Range Test on transformed data ($P \leq 0.05$) was use for mean separation. Non-transformed means are presented as number of lesions per plant.

Downy mildew disease pressure was high and few materials held the disease below a level of the untreated control. At the last evaluation, disease severity was lower in Fosphite and Fosphite tank mixed with Acrobat 50WP and Penetrator Plus treatments as compared to the untreated control. No evidence of phytotoxicity was observed.

Table 1. Fungicide Treatments

Treatment rate/A[z]	Downy mildew (lesions/plant)[y]			
	15 Feb	25 Feb	4 Mar	16 Mar
Untreated	12.0 a[x]	15.6 a	11.4 a	8.8 ab
Fosphite 3 qts	0.9 c	4.0 a	1.4 de	0.0 c
Fosphite 3 qts + Acrobat 50 WP 6.4 oz+ Penetrator Plus 0.19% v/v[w]	0.8 c	0.8 b	0.5 e	0.1 c
Acrobat 50WP 6.4 oz + Penetrator Plus 0.19%	3.8 b	4.1 a	3.7 bc	2.8 b
Reason 8.2 oz + Maneb 75DF 2.0 lbs + Induce 0.25% v/v	7.8 a	4.7 a	0.6 de	3.4 ab
Forum 6.1 fl oz + Penetrator Plus 0.19%	10.4 a	6.4 a	4.2 bc	4.0 ab
Tanos 8 oz + Maneb 75 DF 2.0 lb alternated w/ Curzate 3.2 oz + Maneb 75 DF 2.0 lb	8.3 a	5.2 a	2.1 cd	4.1 ab
Curzate 3.2 oz+ Maneb 75 DF 2.0 lb	9.9 a	4.1 a	1.9 cd	5.2 ab
Reason 8.2 oz/ac + Induce 0.25%	8.6 a	5.7 a	2.3 cd	5.5 ab
Curzate 5 oz	11.6 a	12.4 a	7.3 abc	5.5 ab
Maneb 75 DF 2.0 lb/ac	9.9 a	4.6 a	2.3 cd	6.5 ab
Curzate 5 oz+ Maneb 75 DF 2.0 lb	10.0 a	5.1 a	2.3 cd	7.4 ab
Tanos 8 oz	12.4 a	11.4 a	8.3 ab	10.1 a

[z] On 27 Jan, 8, 16, 25 Feb, 7 and 13 Mar, materials were applied in 30 gallons of water per acre with a CO_2 pressurized backpack sprayer at 30 psi.

[y] The number of downy mildew lesions per plant on each of 10 plants per plot were recorded.

[x] Means followed by the same letter do not differ significantly as determined by Student-Newman-Keul's Multiple Range Test ($P \leq 0.05$) on Log-transformed data. Non-transformed means are presented

[w] Materials separated by a "+" were tank mixed.

Announcements and Reminders

Biotech Alfalfa Meeting
October 4, 2005

How to manage the stewardship of biotech and non-biotech traits in alfalfa seed and hay?

WHY: In June, 2005, the first genetically-engineered (biotech) alfalfa, Roundup-Ready Alfalfa, was deregulated by USDA and approved for sale in the USA. Hay and seed crops with this trait will be grown in coming years. Some hay and seed markets are sensitive to biotech traits. It is important to understand the potential for gene flow and techniques for ensuring that seed and hay markets are not adversely affected. Presentations by knowledgeable experts will be followed by a 'round table discussion' to address concerns and issues.

WHERE: Farm Bureau 1000 Broadway in El Centro, CA

WHEN: October 4, 2005 from 9:00 AM to 2:00 PM; lunch will be provided.

SPEAKERS & TOPICS:
Mark McCaslin, Forage Genetics International
– **Release of Roundup Ready Alfalfa**
Allen Van Deynze, UC Davis Seed Biotech Center
– **Consensus Document on Stewardship**
Bob Stewart, California Crop Improvement Association
– **Certification Requirements**
Larry Teuber, UC Davis
– **Pollination Studies with Alfalfa**
Shannon Mueller, UCCE, Fresno Co.
– **Seed Production Issues with GE Crops**
Paul Frey, Cal West Seeds
– **Seed Exporter Perspective**
Dan Putnam, UC Davis
– **Stewardship of Alfalfa Hay Production For GE and non-GE Markets**
Jeff Plourd, El Toro Exports
– **Hay Exporter Perspective on GE Alfalfa**
Round Table Discussion
Lunch (Sponsored by Imperial Valley Milling)

RSVP: Please let us know if you are planning to attend this meeting so that we can plan to have enough food available to feed everybody. Include your name and number in party.

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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 September 1 to November 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	October		November		December	
	1-15	16-31	1-15	15-30	1-15	16-31
Calipatria	0.23	0.19	0.14	0.10	0.07	0.07
El Centro (Seeley)	0.23	0.17	0.13	0.09	0.06	0.06
Holtville (Meloland)	0.22	0.18	0.13	0.10	0.06	0.06

* Irrigation Management Unit, Imperial Irrigation District.