Imperial AGRICULTURAL BRIEFS

***September** 2004*

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

On Farm Composting

Juan N. Guerrero

Every year thousands of tons of unsold hay remain in roadside stacks. Either the grower waited too long for a price increase to cover costs, poor quality hay, or the grower just couldn't sell the stored hay. After about one year in storage, hay loses nutritional value. Feeding old hay, greater than 18 mo. old, to livestock is not a good practice.

So, what do you do with old unsalable hay? One possible way to get rid of old hay is to compost the hay. Composting is ancient agricultural art that still remains valid. Composting is easy, cheap, and compost returned to farm ground increases soil fertility.

A few composting guidelines –

1. What can you compost? Just about anything – old asparagus ferns, old hay, manure, home garbage, grass clippings, brush clippings, unsold vegetables, old animal feed, restaurant garbage, supermarket waste, etc.
2. Do you need expensive composting equipment? No. You can make compost in piles, in wire bins, with pallets, in pits, in about anywhere you want.
3. What is the proper compost recipe? There is a 30:1 carbon:nitrogen ratio that should be maintained, but eyeball monitoring is good enough. Any nitrogen source will do, manure or a few scoops of urea is good enough. Simply piling on heaps of old hay in pile is OK, if mixed with manure. If the compost ingredients are chopped, the composting will go faster, but chopping is not essential. You have to keep the compost pile wet. Pour on enough water to keep the pile at about 50% moisture.
4. Let the compost pile cook (ferment). The compost pile should heat up to about 140°.
5. Turning over the compost pile will decrease compost time because more of the pile will be exposed to air. It is not essential to turn the pile over, but very helpful.
6. When the compost pile is reduced to about 25 to 40% of its original volume, it's done. When the compost no longer heats when turned over, it's done. Well made compost is dark colored, moist, and not bad smelling.
7. During the summer, composting time will only be about two to three weeks. During the winter, composting time may take two or three months in the Desert Southwest.
8. Letting the compost pile dry out is perhaps one of the greatest mistakes that composters make.
9. Spreading compost on ground improves soil fertility.

Unless the amounts of compost made are not excessive, less than 2,500 yards^3, on-farm composting is not regulated. If you start to make great volumes of compost, you must then obtain a permit from the Regional Water Quality Control Board. Composting is a way of turning farm waste into a useful fertilizer product.

An excellent resource for composters is a website sponsored by the California State government, http://www.ciwmb.ca.gov .

Alfalfa Variety Trial Results

Herman Meister

Alfalfa Acreage Trends

Alfalfa acreage has declined over the past several years while other forage crops such as bermudagrass and kleingrass have increased. Alfalfa hay acreage in 2001 was 184,126 (Imperial County Agricultural Commissioners Report-2002). Currently, the estimated alfalfa acreage is 135,279 according to a July 8th 2004 IID monthly crop acreage report. Bermudagrass acreage was 53,773 in 2001 and 62,870 acres currently. Kleingrass was 10,262 in 2001 and 13, 321 acres currently. Shifts in acreage amount to a 26% reduction in alfalfa and a 16% increase in bermudagrass and kleingrass combined. Increased production costs, coupled with the woes of the dairy industry have resulted in reduced hay prices to farmers and led to lower alfalfa acreage.

Several farmers have noted reduced yields this summer. The sliverleaf whitefly (SLW) has been implicated as the cause of this yield reduction due its high population early in the summer this year. Perhaps this year the SLW tolerant variety Impalo will produce higher yields in the presence of increased SLW numbers.

Varieties

Spending a little extra for an improved alfalfa variety is a wise decision since it will be one you will have to live with for 3-4 years. The results of the 2001, 2002 and 2003 harvests of 17 released and 27 experimental varieties planted in October of 2000 are reprinted from the alfalfa web site (Table 11), http://alfalfa.ucdavis.edu for your convenience.

There were 14 varieties that were not statistically different (5 released and 9 experimental). UC Cibola ranked number one and is a 1984 release and selection from Salton and UC numbered variety crosses. UC Cibola produced 6.4% more yield that CUF 101 which ranked 12th.

Alfalfa Leaf

Bermuda Grass

Table 11. IMPERIAL VALLEY ALFALFA CULTIVAR TRIAL 2001-2003 YIELDS. TRIAL PLANTED 10/11/00

	2001	2002	2003	Average		% OF CUF 101
	Yield					
	Dry tons/acre					%
Released Varieties						
UC Cibola	11.83 (3)	9.83 (2)	8.10 (2)	9.85 (1)	A	106.4
SW100 (SW101)	11.36 (8)	9.73 (1)	8.16 (1)	9.75 (2)	A B	105.4
89N49 (Y89N49)	11.93 (1)	9.05 (10)	7.72 (7)	9.57 (4)	A B C D	103.3
CUF 101	11.16 (15)	9.01 (12)	7.51 (12)	9.26 (12)	A B C D E F G H I J	100.0
Mecca III	11.26 (11)	8.90 (15)	7.54 (15)	9.24 (13)	A B C D E F G H I J	99.8
WL 711 WF	10.85 (29)	8.91 (14)	7.59 (14)	9.11 (17)	B C D E F G H I J K	98.4
Highline	10.81 (32)	8.77 (16)	7.67 (10)	9.08 (21)	D E F G H I J K L	98.1
UC Impalo WF	11.16 (14)	8.84 (21)	7.16 (29)	9.00 (22)	D E F G H I J K L M	97.2
Magna 901	10.86 (28)	8.46 (26)	7.30 (21)	8.88 (23)	E F G H I J K L M N	95.9
88N87	11.25 (12)	8.81 (22)	6.88 (38)	8.84 (26)	F G H I J K L M N O	95.5
SW9720	10.70 (36)	8.54 (23)	7.24 (25)	8.83 (28)	F G H I J K L M N O	95.4
El Tigre Verde	10.84 (31)	8.02 (34)	6.98 (31)	8.61 (34)	I J K L M N O P	93.0
Prestige	11.10 (17)	7.82 (40)	6.57 (41)	8.50 (36)	K L M N O P Q	91.8
WL625HQ	10.88 (26)	8.00 (35)	6.82 (40)	8.50 (37)	K L M N O P Q	91.8
Pershing	10.87 (38)	7.77 (41)	6.54 (42)	8.33 (41)	N O P Q	90.0
WL 525 HQ	10.15 (44)	7.57 (42)	6.65 (39)	8.13 (43)	P Q	87.8
Salado	10.48 (41)	7.34 (44)	5.79 (44)	7.87 (44)	Q	85.0
Experimental Varieties						
DS995	11.84 (2)	9.43 (3)	7.99 (5)	9.75 (3)	A B C	105.3
CW99061	11.12 (16)	9.41 (4)	8.01 (4)	9.51 (5)	A B C D E	102.7
ZS9905	11.54 (5)	9.25 (6)	7.45 (18)	9.41 (6)	A B C D E F	101.7
IVS9002	11.41 (7)	9.08 (9)	7.72 (8)	9.40 (7)	A B C D E F	101.6
SW9022	10.84 (30)	9.15 (7)	8.06 (3)	9.35 (8)	A B C D E F G	101.0
UC-412	11.10 (18)	9.12 (8)	7.80 (6)	9.34 (9)	A B C D E F G	100.9
SW1028	10.98 (24)	9.30 (5)	7.67 (11)	9.31 (10)	A B C D E F G H	100.6
CW99064	11.47 (6)	8.75 (19)	7.60 (13)	9.27 (11)	A B C D E F G H I	100.2
FGI9710	11.37 (9)	8.76 (17)	7.46 (16)	9.20 (14)	A B C D E F G H I J	99.3
DS991BR	11.67 (4)	8.38 (31)	7.33 (20)	9.12 (15)	B C D E F G H I J K	98.5
CW99088	10.98 (25)	8.71 (20)	7.68 (9)	9.12 (16)	B C D E F G H I J K	98.5
UC-409	11.04 (21)	9.01 (11)	7.28 (24)	9.11 (18)	B C D E F G H I J K L	98.4
UC-411	11.07 (19)	8.76 (18)	7.44 (19)	9.09 (19)	C D E F G H I J K L	98.2
ZS0001	10.87 (27)	8.93 (13)	7.45 (17)	9.08 (20)	D E F G H I J K L	98.1
FGI9609	11.21 (13)	8.41 (28)	6.98 (32)	8.87 (24)	E F G H I J K L M N O	95.8
FGI9709	10.98 (23)	8.46 (27)	7.10 (30)	8.84 (25)	F G H I J K L M N O	95.5
IVM2000	11.26 (10)	8.38 (30)	6.86 (34)	8.83 (27)	F G H I J K L M N O	95.4
CW79115	10.76 (35)	8.53 (24)	7.19 (27)	8.82 (29)	F G H I J K L M N O	95.3
UC-414	10.77 (34)	8.49 (25)	7.17 (28)	8.81 (30)	F G H I J K L M N O	95.2
SW9031	11.02 (22)	8.17 (33)	7.21 (26)	8.80 (31)	F G H I J K L M N O	95.1
CW7B116	11.07 (20)	8.41 (29)	6.73 (36)	8.73 (32)	G H I J K L M N O P	94.3
DS994	10.78 (33)	7.94 (36)	7.30 (22)	8.67 (33)	H I J K L M N O P	93.6
UC-410	10.37 (42)	8.17 (32)	7.26 (23)	8.61 (35)	J K L M N O P	93.0
ZS0000	10.62 (39)	7.93 (37)	6.89 (33)	8.45 (38)	L M N O P Q	91.2
CW79094	10.51 (40)	7.92 (39)	6.72 (37)	8.38 (39)	M N O P Q	90.5
UC-413	10.34 (43)	7.93 (38)	6.78 (35)	8.35 (40)	M N O P Q	90.2
ZS9992	10.69 (37)	7.56 (43)	6.38 (43)	8.21 (42)	O P Q	88.6
Mean	11.02	8.57	7.26	8.95		
CV	5.6	6.6	10.2	10.4		
LSD (.05)	0.86	1.03	1.04	0.66		

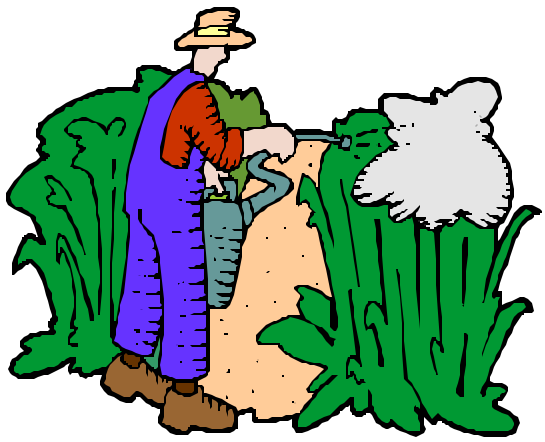
Trial planted at 25 lb/acre viable seed on Imperial clay loam soil at the UC Desert Research and Extension Center, Holtville, CA.

Entries followed by the same letter are not significantly different at the 5% probability level according to Fishers (protected) LSD.

Evaluation of Insecticides for Control of Beet Armyworm and Cabbage Looper in Lettuce

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 beet armyworm and cabbage looper on iceberg lettuce, variety Coyote, planted September 23 and sprinkled September 23 through September 29, 2003. The experimental design was a randomized complete block with four replicates. Plots measured 50 ft by 13.33 ft.; four (4) beds per plot on 40" centers. Foliar sprays were applied at 53 gpa at 35 psi using a Spider Trac Sprayer with three TJ-60 11003VS nozzles per bed. All foliar treatments included an adjuvant (Latron CS-7) at 0.125 % (v / v). Insecticide treatments were applied on October 14 and 21 and November 4, 2003. Insecticide treatments and rates of application are listed in Table 1. Evaluations were made by counting the numbers of cabbage looper larvae and beet armyworm larvae per ten plants in each plot on each sampling date.



All insecticide treatments had significantly fewer beet armyworm larvae compared to the untreated control (ANOVA, $P < 0.05$) (Table 1) . Intrepid 2 SC plus Proaxis 0.497 CS at 6.0 and 3.2 oz/acre, respectively, and Avaunt 30 WG at 5.87 oz/acre had significantly fewer beet armyworm larvae than all other insecticide treatments except Intrepid 2 SC at 4.0 and 8.0 oz/acre, Success 2 SC at 5.0 oz/acre, Avaunt at 4.75 oz/acre and V-10132 2.58 EC. Intrepid 2 SC at 8.0 oz/acre, Success 2 SC at 5.0 oz/acre, and Avaunt at 4.75 oz/acre had significantly fewer beet armyworm larvae than Proaxis 0.497 CS at 3.84 oz/acre, Warrior 1 CS at 3.84 oz/acre, Avaunt 30 WG at 3.47 oz/acre, both formulations of S-1812, Asana XL at 3.88 oz/acre, and both rates of F0570 0.8 EW. Several new insecticides, Entrust 80 W, Intrepid 2 SC, Pyridalyl, and V-10132 2.58 EC, were found to be comparable to the industry standards, Success 2 SC and Avaunt 30 WG, for beet armyworm control in lettuce.

All insecticide treatments had significantly fewer cabbage looper larvae compared to the untreated control (ANOVA, $P < 0.05$) (Table 1). Intrepid 2 SC plus Proaxis 0.497 CS at 6.0 and 3.2 oz/acre, respectively, had significantly fewer cabbage looper larvae than the insecticide treatments S-1812 4 EC and F0570 0.8 EW at 2.88 oz/acre. Asana XL had significantly more cabbage looper larvae than all other insecticide treatments (LSD, $P<0.05$). Research results showed that all insecticide treatments, except S-1812 4 EC, were effective against cabbage loopers.

Table 1. Post Treatment Seasonal Mean for Beet Armyworm and Cabbage Looper Larvae per Ten Lettuce Plants Following Various Insecticide Treatments, Holtville, CA 2003.

Treatment	Ounces/Acre	Beet Armyworm	Cabbage Looper
Untreated	--------	4.42 a	1.96 a
Intrepid 2 SC	4.0 fl	0.67 def	0.23 cd
Intrepid 2 SC	8.0 fl	0.25 ef	0.12 cd
Intrepid 2 SC + Proaxis 0.497 CS	6.0 fl + 3.2 fl	0.13 f	0.00 d
Proaxis 0.497 CS	3.84 fl	2.08 b	0.22 cd
Success 2 SC	5.0 fl	0.29 ef	0.16 cd
Entrust 80 W	1.56 dry	0.96 cde	0.04 cd
Warrior 1 CS	3.84 fl	2.00 b	0.20 cd
Avaunt 30 WG	3.47 dry	1.13 cd	0.15 cd
Avaunt 30 WG	4.75 dry	0.38 ef	0.08 cd
Avaunt 30 WG	5.87 dry	0.17 f	0.12 cd
S-1812 35 WP [x]	0.43 dry	2.00 b	0.16 cd
S-1812 4 EC [x]	0.3 fl	1.63 b	1.22 b
Asana XL .66 EC	3.88 fl	2.00 b	0.18 cd
V-10132 2.58 EC [y]	6.0 fl	0.42 def	0.08 cd
F0570 0.8 EW [z]	2.88 fl	1.54 bc	0.28 c
F0570 0.8 EW	4.0 fl	1.42 bc	0.21 cd

[x] S-1812 35 WP and S-1812 4 EC are Pyridalyl.
[y] V-10132 2.58 EC is an in the can mixture of Pyridalyl and Esfenvalerate.
[z] F0570 0.8 EW is resolved zeta-cypermethrin, Mustang Max.
Mean separations within columns by LSD (*P#* 0.05).

EFFICIENCY OF SPRINKLER IRRIGATION SYSTEMS

Khaled M. Bali

If you are planning to use sprinkler irrigation to germinate vegetable seeds, you may need to check your sprinkler system and have it ready for fall planting. Sprinkle irrigation is the application of pressurized water in the form of a spray. It is mainly used for seed germination in the Imperial Valley. Hand-move systems are commonly used in the Imperial Valley and throughout California. Sprinkle irrigation in the Imperial Valley is mostly limited to seed germination and development. However, in the last few years, more growers have been using sprinkler irrigation to germinate and grow vegetable crops in the Valley. Sprinkle irrigation is suitable for most crops and has been used locally to meet crop water needs over the entire season in some crops.

One of the advantages of sprinkle over surface irrigation is the ability to apply water uniformly at low rates. Application rates for commercial crops vary from 0.10 to 0.30 in/hr. The application rate depends on nozzle size, sprinkler spacing, and operating pressure. Frequent irrigations of low application rates are needed on light or sandy soils. The application rate should not exceed the basic intake or infiltration rate on heavy soils to prevent surface runoff. Table 1 can be used for maximum application rate values for hand-move systems. The application rate of the system needs not to exceed the values presented in Table 1 to prevent runoff. In general, soil infiltration rates decreases after the initial irrigation. If water is filling up your runoff ditch and you have runoff in your drop box, it's time to turn the system off.

The amount of water applied with a sprinkler system depends on the application rate and on the length of irrigation. The application rate needs to be determined first before any irrigation-scheduling question can be answered. Application rate can be simply determined using the catch can method or a simple procedure in which you run your system for a specific period of time (15 to 30 minutes), determined the amount of water that has been used and then calculate the application rate. The application rate (AR) can be calculated from

$$AR = 720\ V/(T\ A)$$

Where AR is the application rate (inches per hour), V is the volume of water applied (acre-feet), T is the time of application (minutes), and A is the area of application (acres).

Example: What is the application rate of a sprinkler system where 0.5 ac-ft of water was applied over 40 acres in 60 minutes.

V= 5 ac-ft
T= 60 min.
A= 40 ac.

AR= 720 x 0.5/(60 x 40)
AR= 0.15 in/hr

If you need to apply 1.5 inches of water, then you need to run your system for 10 hours (1.5 inches/ 0.15 inches per hour). Irrigation time should be

adjusted to account for irrigation efficiency and/or uniformity. Note that if you change the spacing between sprinklers and/or laterals, the application rate needs to be adjusted to account for the new configuration.

Table 1. Maximum application rates for sprinklers (Slope less than 5%)

Soil Texture	Maximum Application Rate (in/hr)
Sandy soils	1.50
Sandy loam soils	0.75
Silty loam soils	0.50
Clay and clay loam soils	0.15

Concrete Lined Canal

Sugar Beet Culture and Varieties

Herman Meister

Land Preparation
Pre-irrigation of ground before planting sugar beets is necessary to form a good seedbed as well as to leach salts, germinate weeds, and decay crop debris in the soil. A common practice in the Valley is to follow alfalfa with sugar beets. It is imperative to rid the soil of rotting debris before germinating sugar beet seeds. Rotting debris attracts various soil insects and enhances the soil environment for *Rhizoctonia* fungi. Flat flood irrigation followed by discing, triplaning, and listing beds for a second pre-irrigation of the beds is ideal. Every attempt must be made to achieve a good stand of sugar beets for high tonnage and sugar yields.

Insect Control
The most critical phase of growing sugar beets is "stand establishment". Once a stand of sugar beets is achieved, the remaining procedures are important, but not to the degree as the "germination stage". Various insects like darkling ground beetles, wire worms, and earwigs can injure the seed as it is germinating. Studies show that stand emergence was greatly improved where insecticides were used in comparison to no insecticides at planting. Lorsban at planting and/or Guacho as seed treatment protectants are especially necessary early in the season, when planting to a stand is considered in order to reduce seed and thinning cost.

Weed Control
UpBeet in combination with Betamix, Progress, or Stinger are the most widely used herbicides for weed control on sugar beets in the Valley. Timing of the second irrigation is critical in relation to weed size and field entry. If the field remains wet and entry is delayed, then certain weeds like malva will not be adequately controlled. Precision listing is a benefit when spraying with ground rigs larger than the planter pattern. If the spray rig is wider than the lister pattern, and the guess-row is a few inches wide or narrow, then the band spray can be affected resulting in partial coverage of the top of the bed and poor weed control.

Fertilizer Application
Fertilizers high in ammonia concentrations are discouraged due to the high probability of injury to seedling beets. If they must be used, inject the fertilizer far enough away from the seed line to avoid injury to plants or inject in the beds prior to the pre-irrigation of beds.

Seed Selection
Choosing a large size seed to plant does not always indicate a stronger and larger endosperm. The large size could be due to a thicker seed coat, which could take more time to germinate. A longer germination time requires more water and increases exposure to pests.

Varieties
Betaseed has announced the introduction of a new variety Beta 8520N, which has shown tolerance to the sugar beets cyst nematode in field trials n the Imperial Valley. Details of its release and availability for the 2004-2005 growing year are underway as of this writing. For information on availability, contact Jim Loe, Betaseed Agronomist.

Comparison of fungicides for control of powdery mildew on muskmelon, 2004

Thomas A. Turini

The study was conducted at the University of California Desert Research and Extension Center. On 12 April, 'Golden Beauty' casaba melons seed were sown on a Meloland clay loam and drip irrigated to harvest. Treatments are listed in the table. Each plot consisted of one 80-inch bed 25 feet long. Treated beds were separated by one untreated planted row and by 5 feet between plots within a row. The experimental design was a randomized complete block with five replications. On 28 May, 7, 14 and 25 June, materials were applied in 30 gallons of water per acre with a CO_2 pressurized backpack sprayer at 30 psi. A spray boom with four Teejet 8002 flat fan nozzles spaced 17.5-inches apart was used for all applications. On 28 June, powdery mildew severity was rated on upper and lower leaf surfaces on a scale of 0 to 5 based on percentage of leaf surface covered with the fungus. Arcsine transformed data was subjected to analysis of variance. Student-Newman-Keul's Multiple Range Test on transformed data (P 0.05) was use for mean separation. Non-transformed means are presented as a percentage of the leaf surface covered by the pathogen.

On June 28th, plants treated with Procure 480SC, at both rates, had extremely low disease severity ratings on the lower leaf surface. Quintec at both rates tested, Procure 50WS at both rates tested, Pristine with Latron B1956, dusting sulfur, Rally 40W with Latron B1956, a dusting sulfur/Procure 50WS/Topsin M70W rotation, Endura with Latron B1956, MicroCide, V-10188 at both rates tested, a dusting sulfur/Rally 40W with Latron B1956/Flint rotation, a Procure 50W/Flint rotation, a Flint/Bravo Weather Stick, and Flint were not different from the Procure 480SC treatments.

At the second evaluation, the treatments that statistically were among those with the lowest disease severity on the lower leaf surface were also among the best performing materials on the upper leaf surface. In addition, on the upper leaf surface, Bravo Weather Stick/Flint rotation was similar to the best performing materials.

Trade name[z]	Date of Evaluation			
	28 June			
	Upper leaf surface		Lower leaf surface	
Procure 480SC 8 fl oz……..	0.0	f	1.6	h
Procure 480SC 6 fl oz……..	1.2	ef	2.0	h
Quintec 12.0 fl oz……..	1.6	def	4.0	gh
Procure 50WS 8 oz……..	1.6	cdef	4.0	fgh
Procure 50WS 6 oz……..	4.8	cdef	6.0	efgh
Pristine 18.5 oz + Latron B1956 0.06 %.....	4.8	cdef	6.0	defgh
Dusting Sulfur 30 lbs……	2.0	cdef	6.8	cdefgh
Quintec 6.0 fl oz……	3.2	cdef	6.8	efgh
Rally 40W 4.0 oz + Latron B1956 0.06 %[x].....	2.0	cdef	8.0	cdefgh
Dusting S 30lbs (1) /Procure 50WS 8oz (2,4) /Topsin M 70W 8oz (3)[w]...	4.0	cdef	8.4	bcdefgh
Endura 6.5 oz + Latron B1956 0.06%.....	4.0	cdef	9.6	bcdefgh
MicroCide as formulated……..	6.8	cdef	12.0	bcdefgh
V-10118 3.1 fl oz……..	5.6	cdef	12.0	bcdefgh
Dusting S 30 lbs (1)/Rally 40W 4.0 oz + Latron B1956 0.06 % (2,4)/ Flint 50WDG 2.08oz (3) ……..	6.8	cdef	12.4	bcdefgh
V-10118 6.2 fl oz……..	7.6	cdef	13.2	bcdefgh
Procure 50WS 8.0oz (1,3) / Flint 50WDG 2.08oz (2,4)…….	14.4	bcdef	14.0	bcdefgh
Flint 50WDG 2.08oz (1,3) /Bravo Weather Stick 3pts (2,4)…….	2.8	cdef	14.8	bcdefgh
Flint 50WDG 2.0 oz……..	10.0	cdef	14.8	bcdefgh
Bravo Weather Stick 3pts (1,3)/Flint 50WDG 2.08oz (2,4)…….	2.0	cdef	20.8	bcdefg
Quadris 2.08F 15.4 fl oz + Latron B1956 0.06 %.....	15.2	bcde	22.0	bcdef
Cabrio 1.0 lb + Latron B1956 0.06 %.....	20.4	bc	26.4	bcde
Topsin M 4.5FL 10.0 fl oz……	18.8	bcd	28.0	bcd
Microthiol Special 80W 6 lbs……..	14.0	bcde	30.0	bc
Topsin M 70W 0.5 lbs……..	28.4	b	32.8	b
CONTROL……	48.0	a	52.0	a

[z] All materials were applied in the equivalent of 30 gallons of water per acre with a CO_2-pressurized backpack sprayer at 30 psi. Materials were applied on 28 May, 7, 14, and 25 June.

[y] Arcsine transformed data was subjected to analysis of variance. Means followed by the same letter do not differ significantly as determined by Student-Newman-Keul's Multiple Range Test on transformed data (P 0.05). Non-transformed means are presented.

[x] Materials separated with a "+" were tank mixed.

[w] Materials separated "/" were used in rotation. Numbers in () refer to application dates. 1=28 May, 2=7 June, 3=14 June and 4=25 June.

CIMIS REPORT

Khaled Bali and Steve Burch*

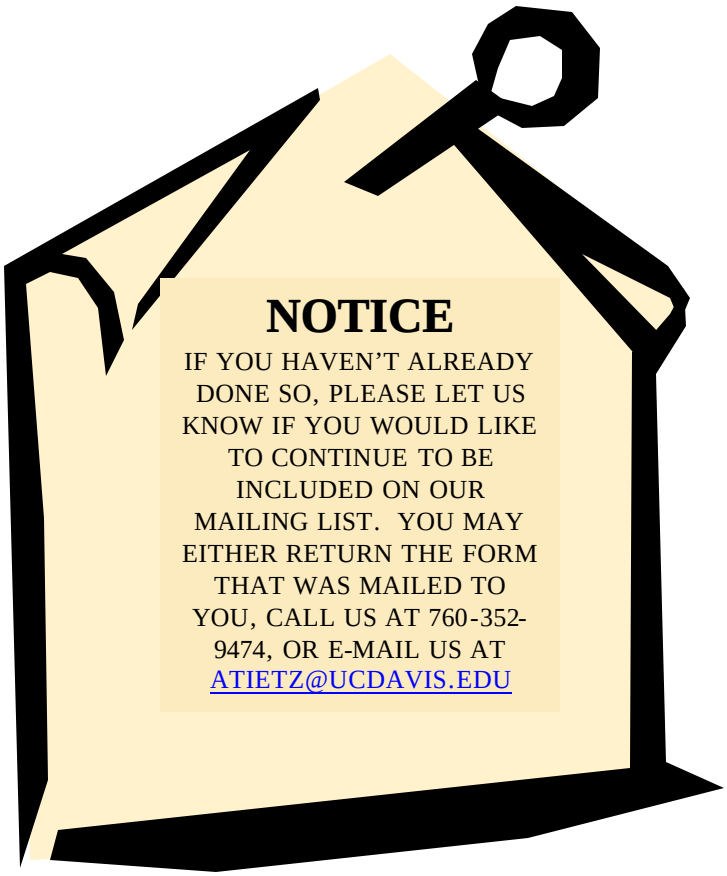
California Irrigation Management Information System (CIMIS) is a statewide network operated by California Department of Water Resources. Estimates of the daily reference evapotranspiration (ET_o) for the period of September 1 to November 30 for three locations in the Imperial County are presented in 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).

The Irrigation Management Unit (IID) provides farmers with a weekly CIMIS update. Farmers interested in receiving the updated CIMIS report on a weekly basis can call the IID at the above number. Please feel free to call us if you need additional weather information, or check the latest weather data on the worldwide web at http://tmdl.ucdavis.edu and click on the CIMIS link.

Table 1.Estimates of daily Evapotranspiration (ET_o) in inches per day

Station	September		October		November	
	1-15	16-30	1-15	15-31	1-15	16-30
Calipatria	0.30	0.27	0.23	0.19	0.14	0.10
El Centro (Seeley)	0.29	0.26	0.23	0.17	0.13	0.09
Holtville (Meloland)	0.30	0.27	0.22	0.18	0.13	0.10

*Irrigation Management Unit, Imperial Irrigation District



REMINDER

2004 Western States Conservation Tillage Conference
September 8 and 9, 2004
8:00 A.M. – 3:00 P.M.
University of California
West Side Research and Extension Center
Five Points, CA

To simplify our information it is sometimes necessary to use trade names of products or equipment. No endorsement of named products is intended nor is criticism implied of similar products, which are not named

Eric T. Natwick, County Director