

2015 Onion Weed Control Trials

University of California Cooperative Extension, Monterey County
Richard Smith, Vegetable Crops and Weed Science Farm Advisor

Methods: An onion weed trial was established in a commercial onion production field south of San Lucas. The onion variety 'Valero' was planted on March 18, 2015. The soil at the site was Docas silty clay loam. Each plot was half of an 80-inch bed wide by 10 feet long and replicated 4 times. Post plant preemergence treatments were applied on March 18 and the site was irrigated on March 19. 1st true leaf applications were made on April 17 and 2nd true leaf applications on May 1. All materials were applied by hand using a CO₂ pressured backpack sprayer with a one-nozzle wand with an 8008EVS tip applying the equivalent of 55 gallons of water per acre. Weed counts were made on two evaluation dates and converted to weeds/meter². Weed ratings were made according to the following scale: 0= no weed control to 10 = complete weed control. Phytotoxicity ratings were made according to the following scale: no crop damage to 10 = crop dead. Harvest evaluations were carried out on September 15 by harvesting 6 feet of the length of the bed from the middle of each plot and counting and weighing the onions. See tables for evaluation dates of weeds, phytotoxicity and yield.

Results: The first evaluation date on April 17 (30 days after planting) reflects only the effect of the preemergence treatments. On this date little phytotoxicity was evident on the onions. The preemergence application of Zidua provided excellent control of all weed species present at this site. Dacthal missed Malva and Zeus was weak on the weed spectrum present at this site. The April 23 evaluation date (37 days after planting) reflected the effect of the preemergence and 1st true leaf applications. Significant phytotoxicity was evident in the preemergence applications of Zidua and slight phytotoxicity was evident in the 1st true leaf application of Zidua and the preemergence application of 4.0 oz of Zeus. The preemergence application of Zidua provided the best weed control. The May 5 evaluation date (48 days after planting) reflected the effect of the preemergence as well as the 1st and 2nd true leaf applications. Significant phytotoxicity was evident in the preemergence application of Zidua and moderate phytotoxicity was observed on the post emergence applications of Zidua and the preemergence application of 4.0 oz of Zeus. The preemergence application of Zidua provided the best weed control. The yield evaluation on September 15 (181 days after planting) indicated that the preemergence application of Zidua significantly reduced the stand of onions. The postemergence applications of Zidua also reduced the stand of onions by 24 – 32% compared to the untreated control. The tonnage of onions in these treatments was not affected to the same extent because, given greater space, they grew larger. The 4.0 oz/A rate of Zeus also reduced the stand of onions compared to the untreated control.

Table 1. Trial No. 1. Weed count (No./m²) and phytotoxicity evaluation on April 17

Treatment	Material/A	Timing	Malva	Lambs-quarter	Black night-shade	Pig-weed	Total weeds	Phyto
Dacthal 6F Fb Goal Tender Fb Buctril 4EC	1.33 gals 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	4.0	0.0	0.0	0.0	5.4	0.0
Ziuda 85 WG Fb Goal Tender Fb Buctril 4EC	70.6 grams 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	0.0	0.0	0.0	0.0	0.0	1.5
Ziuda 85 WG Fb Goal Tender Fb Buctril 4EC	105.9 grams 6.0 fl oz 16.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	0.0	0.0	0.0	0.0	0.0	0.8
Dacthal 6F Ziuda 85 WG	1.33 gals 70.6 grams	Pre Post 1 t. leaf	5.4	0.0	0.0	0.7	6.1	0.0
Dacthal 6F Ziuda 85 WG	1.33 gals 105.9 grams	Pre Post 1 t. leaf	10.1	0.0	0.0	0.0	10.1	0.0
Dacthal 6F Ziuda 85 WG	1.33 gals 70.6 grams	Pre Post 2 t. leaf	6.7	0.0	0.7	0.0	7.4	0.0
Dacthal 6F Ziuda 85 WG	1.33 gals 105.9 grams	Pre Post 2 t. leaf	6.1	0.0	0.0	0.0	6.1	0.0
Zeus 4 Fb Goal Tender Fb Buctril 4EC	2.0 fl oz 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	4.0	12.8	4.7	20.2	41.7	0.0
Zeus 4 Fb Goal Tender Fb Buctril 4EC	4.0 fl oz 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	4.0	10.8	10.8	24.9	50.5	0.3
Untreated	---	---	9.4	14.1	5.4	22.9	52.5	0.0
Pr>F			0.0015	0.0006	0.0024	0.000	0.0000	0.0000
LSD (0.05)			0.6	1.0	0.7	1.2	1.9	0.2

Table 2. Weed rating & phytotoxicity on April 23, weed count (No./m²), weeding time & phytotoxicity on May 5 and harvest evaluation on September 15.

Treatment	Material/A	Timing	April 23		May 5			September 15	
			Weed rating	Phyto	Total weeds	Weeding time hrs/A	Phyto	Yield Tons/A	Yield Plant/A
Dacthal 6F Fb Goal Tender Fb Buctril 4EC	1.33 gals 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	7.8	0.0	2.5	4.2	0.3	35.66	61,840.2
Ziuda 85 WG Fb Goal Tender Fb Buctril 4EC	70.6 grams 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	10.0	6.8	0.0	1.1	8.8	5.53	5,920.8
Ziuda 85 WG Fb Goal Tender Fb Buctril 4EC	105.9 grams 6.0 fl oz 16.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	10.0	7.3	0.1	1.4	7.8	7.04	9,868.1
Dacthal 6F Ziuda 85 WG	1.33 gals 70.6 grams	Pre Post 1 t. leaf	8.5	1.3	2.1	3.7	2.0	31.05	48,024.9
Dacthal 6F Ziuda 85 WG	1.33 gals 105.9 grams	Pre Post 1 t. leaf	8.5	1.0	1.5	3.1	2.3	24.54	44,077.6
Dacthal 6F Ziuda 85 WG	1.33 gals 70.6 grams	Pre Post 2 t. leaf	7.8	0.0	2.4	4.1	2.0	25.85	43,419.7
Dacthal 6F Ziuda 85 WG	1.33 gals 105.9 grams	Pre Post 2 t. leaf	8.3	0.0	1.8	3.7	1.8	24.76	45,393.4
Zeus 4 Fb Goal Tender Fb Buctril 4EC	2.0 fl oz 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	5.3	0.0	18.7	20.3	0.0	33.38	61,182.4
Zeus 4 Fb Goal Tender Fb Buctril 4EC	4.0 fl oz 6.0 fl oz 8.0 fl oz	Pre Post 2 t. leaf Post 2 t. leaf	3.8	2.3	21.6	26.3	1.3	34.71	55,261.5
Untreated	---	---	0.0	0.0	28.1	37.4	0.0	38.28	63,813.9
Pr>F			0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000
LSD (0.05)			0.7	0.4	2.1	2.4	0.5	3.82	7,220.7