

### **A Pre-emergence Weed Control Trial in Newly Planted One-year-old Asparagus Crowns**

A pre-emergence weed control trial in newly planted one-year-old asparagus crowns, evaluating four herbicides and/or combination treatments, was established on February 3, 2009 at Del Terra Farms (Mark and John Bacchetti and Kevin Robertson) on Fabian Tract, northwest of Tracy, California. All treatments were applied after the asparagus crowns were planted (19 December 2008) and covered with 3 to 5 inches of soil. A handheld CO<sub>2</sub> backpack sprayer was used with a spray volume of 50 gallons water per acre, 8004 nozzles and Roundup Ultra (glyphosate) at 1 lb/acre plus 0.5% v/v crop oil concentrate (COC) added to each treatment to remove any emerged weeds. Weeds present at the time of treatment included seedling to early second true leaf burning nettle, seedling to 2-inch rosette shepherd's-purse, 2- to 3-inch rosette lesser swinecress, and a small amount of seedling common lambsquarters. Soil incorporation of the surface-applied herbicides was accomplished by winter/spring rainfall. The soil type at the trial site was a Sacramento Clay loam. Plot design was a randomized complete block. The field was planted to the asparagus cultivar UC 157<sub>F1</sub>. The trial was evaluated for weed control efficacy and crop fern vigor on February 24, 2009, March 6, 2009 and March 16, 2009. Best control of the major weeds present at the time of rating (burning nettle, shepherd's-purse, and lesser swinecress) occurred with Sencor (metribuzin) alone, Chateau (flumioxazin) alone at both rates tested, the combination treatments of Prowl H<sub>2</sub>O (pendimethalin) plus Sencor, Prowl H<sub>2</sub>O plus Chateau, Prowl H<sub>2</sub>O plus Karmex (diuron) and Karmex alone. Prowl H<sub>2</sub>O alone at both rates tested gave effective weed control as well. All treatments were safe to the young asparagus except Chateau. Alone or in combination treatment, Chateau caused a significant delay in crop fern growth. By the third rating date fern growth in the Chateau treatments had improved but was still behind other herbicide treatments and the untreated control. A final fourth crop fern vigor rating was done during the summer (July 10, 2009). All treatments exhibited good crop fern vigor. Only Chateau at the higher rate tested and a combination of Chateau plus Prowl H<sub>2</sub>O lagged a little bit behind other herbicide treatment, but was visibly better than earlier in the season. Crop fern vigor in the untreated control was down considerably because of severe weed competition.

## 2009 ASPARAGUS PREEMERGENCE WEED CONTROL

(Newly planted one-year-old crowns)

Del Terra Farms (Mark and John Bacchetti, Kevin Robertson)

Fabian Tract off Finck Rd. near Tracy, CA

### Weed Control Ratings

Treatments	Rate lb a.i./acre	Burning nettle			Shepherd's-purse			Lesser swinecress*			Fern Crop Vigor			
		2/24	3/6	3/16	2/24	3/6	3/16	2/24	3/6	3/16	2/24	3/6	3/16	7/10
Prowl H <sub>2</sub> O (38.7%)	4.0	5.9	7.3	9.3	7.5	8.4	8.5	8.3	9.3	9.3	8.6	9.4	9.3	9.3
Prowl H <sub>2</sub> O	8.0	6.6	8.1	9.4	7.3	8.8	9.0	8.3	10.0	9.6	8.3	9.0	8.6	8.6
Prowl H <sub>2</sub> O+	4.0+1.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	8.4	8.9	9.1	9.3
Sencor (75DF)														
Prowl H <sub>2</sub> O +	8.0+1.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	8.4	8.6	8.6	8.6
Sencor														
Sencor	1.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	8.4	9.1	9.0	9.0
Chateau (51WDG)	0.188	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	4.3	5.5	7.1	8.9
Chateau	0.250	10.0	10.0	10.0	10.0	10.0	9.9	10.0	10.0	10.0	5.3	6.6	7.6	8.4
Chateau +	0.188+4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	4.0	5.5	6.8	8.0
Prowl H <sub>2</sub> O														
Chateau +	0.250+4.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	3.5	5.1	7.0	8.6
Prowl H <sub>2</sub> O														
Karmex (80DF)	2.0	10.0	10.0	9.9	10.0	10.0	10.0	10.0	10.0	10.0	8.5	9.5	9.1	9.0
Karmex +	2.0+2.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.0	9.5	9.3	9.3
Prowl H <sub>2</sub> O														
Untreated Control	–	0.0	0.0	0.0	0.0	0.0	0.0	4.3	1.5	0.0	8.3	9.1	8.8	5.8

\*light stand of lesser swinecress

Numbers are the average of four replications.

Weed control rating scale: 0 = no weed control 10 = complete weed control

Crop vigor rating scale: 0 = crop dead, 10 = crop growing vigorously

## A Postemergence Weed Control Trial in Newly Planted One-year-old Asparagus Crowns.

A postemergence weed management trial in newly planted one-year-old asparagus crowns, evaluating four herbicides and/or combination treatments was established February 27, 2009, at Del Terra Farms (Mark and John Bacchetti, Kevin Robertson) on Fabian Tract off Finck Road, northwest of Tracy, California. All treatments were applied over the young crop fern and emerged weeds with a handheld CO<sub>2</sub> backpack sprayer using 8004 nozzles and a spray volume of 50 gallons water per acre at 30 psi. The plot design was a randomized complete block and the field variety of asparagus was UC157F<sub>1</sub>. The crowns were planted on December 19, 2008 and then covered with three to five inches of soil shortly after planting. Weeds present at the time of herbicide treatment were 2- to 4-inch rosette lesser swinecress, one to three true leaf burning nettle, 2- to 4-inch rosette shepherd's-purse, some seedling to three true leaf lambsquarters, a few 1- to 3-inch rosette annual sowthistle and a few one to three true leaf bur clover. The young asparagus was at early spear emergence to 4- to 6-inch tall fern.

The trial was evaluated for weed control efficacy and crop fern phytotoxicity on March 10 and March 16, 2009. Best control of the major weeds present occurred with Lorox (Linuron) alone, followed by the combination treatments of Sencor (metribuzin) plus Prism (clethodim) plus crop oil concentrate (COC), Lorox plus Sandea (halosulfuron) plus COC and Sencor alone. All treatments were quite safe to the crop. During summer (July 10, 2009), a crop fern vigor rating was taken with all treatments showing good crop fern vigor, except the control. The non-weeded control treatment showed poor crop fern vigor due to the intense weed competition. Notes on the activity of the herbicide treatments on minor population weeds are given after the table that follows.

Treatments	Rate lb a.i./acre	Weed Control Ratings										Crop Fern Vigor 7/10
		Shepherd's- purse		Burning nettle		Lambs- quarters		Lesser swinecress		Crop Fern Phyto		
		3/10	3/16	3/10	3/16	3/10	3/16	3/10	3/16	3/10	3/16	
Lorox (50DF) + Prism (0.94E) + COC	1.00 + 0.188 + 0.5%	9.5	9.5	9.7	10.0	10.0	10.0	8.4	9.0	1.2	0.8	8.8
Sencor (75DF) + Prism (0.94E) + COC	1.00 + 0.188 + 0.5%	9.6	10.0	10.0	10.0	10.0	10.0	9.6	10.0	1.4	1.3	8.9
Lorox (50DF)+ Sanda (75WG) + COC	1.00 + 0.032 + 0.5%	9.5	10.0	9.8	10.0	10.0	10.0	9.4	10.0	1.2	0.6	8.8
Lorox (50DF)	1.00	9.8	10.0	9.9	10.0	10.0	10.0	9.0	9.8	1.1	0.8	8.4
Sencor (75DF)	1.00	9.6	10.0	9.4	10.0	9.8	10.0	9.5	10.0	1.4	1.3	8.8
Untreated Control	----	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	3.9

Consult your County Agricultural Commissioner for correct methods of disposing of leftover spray material and empty containers. Never burn pesticide containers.

### **PHYTOTOXICITY**

Certain chemicals may cause plant injury if used at the wrong stage of plant development or when temperatures are too high or when overcast conditions occur. Injury may also result from excessive amounts or the wrong formulation or mixing incompatible materials. Inert ingredients such as wetters, spreaders, emulsifiers, diluents, and solvents, can cause plant injury. Since formulations are often changed by manufacturers, it is possible that plant injury may occur, even though no injury was noted in previous seasons.

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