

## **Broccoli Weed Control Trial 2012**

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**Objective:** To evaluate new preemergence weed control strategies for broccoli

**Methods:** Trials was conducted in a commercial broccoli field with a cooperating grower west of Soledad. The soil type was Metz complex with a loamy sand texture. The trial was located at this site due to good weed pressure including yellow nutsedge. The variety Patron was planted on May 8 and post plant preemergence materials were applied on May 9 and the first water was applied on May 10. Each plot was one 40-inch bed wide by 15 feet long. There were three replications arranged in a randomized complete block design. The materials were applied with a CO<sub>2</sub> back pack sprayer making two passes with a one nozzle wand with an 8008EVS tip at 30 psi applying the equivalent of 69 gallons of water/A. Yield was evaluated by harvesting the middle 10 feet of the plots (33.3 ft<sup>2</sup>) and separating the heads into marketable and culls. See tables for evaluations and dates. Both Zeus and Outlook were included at this site because they have activity in controlling yellow nutsedge. The standard Prefar formulation was compared with a new low VOC formulation.

**Results:** There was good pressure by the typical summer weeds at this site. In addition there was a good population of yellow nutsedge. Outlook had unacceptable phytotoxicity on June 1 (Table 1). Outlook provided the best overall weed control and excellent control of yellow nutsedge. All other materials provided similar overall levels of weed control, and both formulations of Prefar provided excellent control of purslane. Zeus was weaker on purslane and did not provide measureable control of yellow nutsedge at the rates used in this trial. Outlook had low yield (Table 2). All other materials had similar statistical yields. **Summary:** Although Outlook provided excellent weed control it was too phytotoxic at 7.0 fl oz/A. Zeus did not provide good weed control at 1.0 and 2.0 fl oz/A, and higher rates should be used in future trials. Both formulations of Prefar performed similarly.

Table 1. Weed counts (per 12 ft<sup>2</sup>) on June 1

Material	Lbs a.i./A	Material/A	Phyto-toxicity <sup>1</sup>	Purslane	Nettleleaf Goosefoot	Yellow Nutsedge	Pig Weed	Other weeds <sup>2</sup>	Total weeds
Untreated	---	---	0.0	16.0	1.3	13.7	1.3	1.3	33.7
Prefar low VOC formulation	4.0	4.0 quarts	0.0	1.7	0.0	11.7	0.0	1.0	14.3
Prefar low VOC formulation	5.0	5.0 quarts	0.3	1.7	0.0	10.3	0.0	0.3	12.3
Prefar low VOC formulation	6.0	6.0 quarts	1.0	0.3	0.3	13.3	0.0	0.3	14.3
Prefar 6.0	4.0	4.0 quarts	0.0	1.3	0.3	10.3	0.3	0.3	12.7
Prefar 6.0	5.0	5.0 quarts	0.0	0.0	0.0	16.7	0.0	0.7	17.3
Prefar 6.0	6.0	6.0 quarts	0.0	1.7	0.3	12.0	0.7	1.0	15.7
Zeus 4.0	0.031	1.0 fl oz	0.7	5.0	0.0	11.7	0.3	0.0	17.0
Zeus 4.0	0.062	2.0 fl oz	1.0	6.3	0.3	11.7	0.3	0.0	18.7
Outlook 6.0	0.33	7.0 fl oz	6.0	0.3	0.0	0.3	0.0	0.0	0.7
Dacthal 6.0	1.5	2.0 qt	0.0	1.3	0.0	8.0	0.0	0.7	10.0
		Pr>reat	0.0001	0.0001	0.0119	0.0247	0.2409	0.5351	0.0002
		LSD (0.05)	1.1	5.0	0.6	7.3	ns	ns	9.2

1 – Scale: 0=no crop damage to 10=crop dead; 2 – other weeds includes: malva, hairy nightshade, clover and summer mustard

Table 2. Harvest evaluation on August 7

Material	Lbs a.i./A	Material/A	Marketable heads lbs	Marketable heads No.	Mean head wt lbs	Cull heads lbs	Culls heads No.
Untreated	---	---	3.4	5.3	0.64	0.1	0.3
Prefar low VOC formulation	4.0	4.0 quart	3.0	5.3	0.61	0.0	0.3
Prefar low VOC formulation	5.0	5.0 quart	3.3	5.0	0.66	0.3	1.0
Prefar low VOC formulation	6.0	6.0 quart	3.6	5.7	0.63	0.3	0.7
Prefar 6.0	4.0	4.0 quart	6.9	11.3	0.61	0.0	0.0
Prefar 6.0	5.0	5.0 quart	2.9	5.0	0.56	0.1	0.3
Prefar 6.0	6.0	6.0 quart	4.2	7.7	0.55	0.2	1.3
Zeus 4.0	0.031	1.0 fl oz	2.9	4.7	0.58	0.0	0.0
Zeus 4.0	0.062	2.0 fl oz	1.4	2.3	0.62	0.5	1.0
Outlook 6.0	0.33	7.0 fl oz	0.4	0.7	0.40	0.0	0.3
Dacthal	1.5	2.0 qt	2.5	4.0	0.63	0.1	0.7
Pr>treatment			0.0017	0.0015	0.6935	0.5901	0.6379
LSD (0.05)			2.2	3.7	ns	ns	ns