

## New Opportunities Offer Control of Problem Weeds and Grasses in Alfalfa

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### Abstract

Alfalfa is the largest crop produced in California exceeding one million acres. It is estimated that 75% of acreage is treated for weeds on an annual basis. The hay market financially rewards weed free high quality forage with high prices. In 2008, the price for number 1 weed free hay exceeded \$220 per ton to the grower, as compared to weedy hay which sold for < \$110 per ton. Managing weeds in a timely manner is necessary to provide maximum production of high quality alfalfa hay. Poor weed management can lead to premature stand loss, poor quality hay, unacceptable weed control, alfalfa injury and a loss of income. Therefore, maintaining an appropriate amount of weed control options, primarily safe and effective herbicides is critical to sustain an economic viable alfalfa industry.

Keywords: alfalfa, Prowl H20, pendimethalin, Chateau, flumioxazin,

Chateau *flumioxazin* was registered for use in alfalfa in 2008 for preemergent weed control in semi dormant alfalfa. It has some postemergence activity on small germinating annual weeds. The postemergence action may not be sufficient in most field situations containing emerged weeds much beyond the cotyledon stage. Larger weeds will require the addition of a postemergence herbicide. Tank mixing with paraquat, glyphosate, imazamox and hexazinone have demonstrated excellent results. Chateau by itself at the rate of 4 oz of product or 0.094 lb ai/A gives very good preemergence control of common chickweed and common groundsel with 80% control of annual bluegrass and annual sowthistle.

Chateau would be an excellent addition for alfalfa weed control especially in a preemergence winter application providing several months of soil residual activity. See Figure 1.

Prowl H20 *pendimethalin* was registered in 2007 for use in established alfalfa. Prowl having similar chemistry to Treflan is in the dinitroaniline herbicide family and especially effective in controlling grasses, many broadleaf weeds and dodder when applied pre-emergent to weed germination. Prowl H20 is formulated to be stable on the soil surface for several weeks with little volatility or loss before it is rain incorporated or irrigated. Another advantage is the liquid formulation can be tank mixed with other pre or post emergent herbicides (paraquat, Velpar, Chateau, 2,4DB, Prism, Post and Raptor) to compliment a broader spectrum and long term residual control. The rates of Prowl can be adjusted from 2 to 4 quarts per acre depending on weed species and expected population and weed pressure. The higher rates applied during January/February timeframe have provided excellent long season grass control into late summer cuttings (August). Prowl H20 has not shown any crop injury issues to date. Figure 2.

### Summary

Both Chateau and Prowl H20 have shown excellent weed control in alfalfa. Generally, they will be most effective in tandem with other contact herbicides but add a safe effective method of long term weed control. The importance of developing and registering new herbicides for alfalfa continues to be a high priority to industry for weed control, crop rotation, managing for

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weed/herbicide resistance. The development of new herbicides is extremely important as new water and air regulations restrict the use of older chemistries.

Figure 1. Winter Dormant Applications

	Chick Weed	Annual Bluegrass	Sow-thistle	Groundsel	Henbit	Prickly Lettuce	Shepherd's Purse	Fiddle-neck	Burning Nettle	London Rocket
Chateau 3 oz	94	79	68	71	98	100	100	100	100	100
Chateau 4 oz	97	85	74	95	100	98	98	100	100	100
Chateau 6 oz	95	89	62	88	100	98	-	-	-	-
Chat+Vel 4 oz + .5 lb	100	100	100	100	100	100	-	-	-	-
Chat+Rp 4oz + 3oz	100	92	98	100	100	98	-	-	-	-
Chat+Gr 3oz + .5lb	99	100	-	87	100	-	89	-	-	-
Chat+Gr 4oz + .5lb	97	99	100	94	100	100	91	-	-	-
Gramoxo 0.5 lb	80	84	95	89	78	100	88	47	60	84
Velpar 0.5 lb	78	52	60	93	100	100	93	94	90	98
Raptor 6 oz	66	32	48	29	74	33	-	40	85	85
Chat 4oz Vel .5 lb Gram .5lb	100	100	100	100	100	100	100	-	100	100

Figure 2. Season Long Control of Yellow Foxtail in Alfalfa

Treatment/Timing <sup>1</sup>	Rate (lb ai/acre)	June 15 <sup>2</sup>	August 16	September 13
Treflan 5G/Early	3.0	92	77	75
Treflan 5G/Early	4.0	96	82	79
Prowl 4EC/Early	3.0	97	90	90
Prowl 4EC/Early	4.0	97	90	89
Velpar 90WP/Early	1.0	75	46	26
Karmex 80WP/Early	1.0	63	39	20
Control		55	21	11
Treflan 5G/Late	1.0	63	57	53
Treflan 5G/Late	2.0	82	72	82
Prowl 4EC/Late	1.0	85	61	58
Prowl 4EC/Late	2.0	87	69	77

<sup>1</sup> Treatment/Timing = Early application 1/12/84; Late application 2/22/84

<sup>2</sup> Date = % Control for 4 rep averages; 0 = no weed control; 100 = complete weed control