



UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION

HIGH DESERT CROP NOTES

LOS ANGELES AND
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Pigweed Control Options for Later Cuts of Alfalfa Fields With Heavy Manure Application

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To simplify information, trade names of products have been used. No endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned.

Pigweed (*Amaranthus* spp.) is a common summer annual broadleaf weed in the Southern California region. It has become an increasing problem in High Desert alfalfa fields and is especially a concern in alfalfa fields where dairy manure is intensively applied.



In some alfalfa fields in the Barstow, CA area, where dairy manure is widely available and commonly applied as a source of plant nutrients and for disposal, pigweed control has been an issue during the later alfalfa cuttings (after the 3rd and 4th cut).

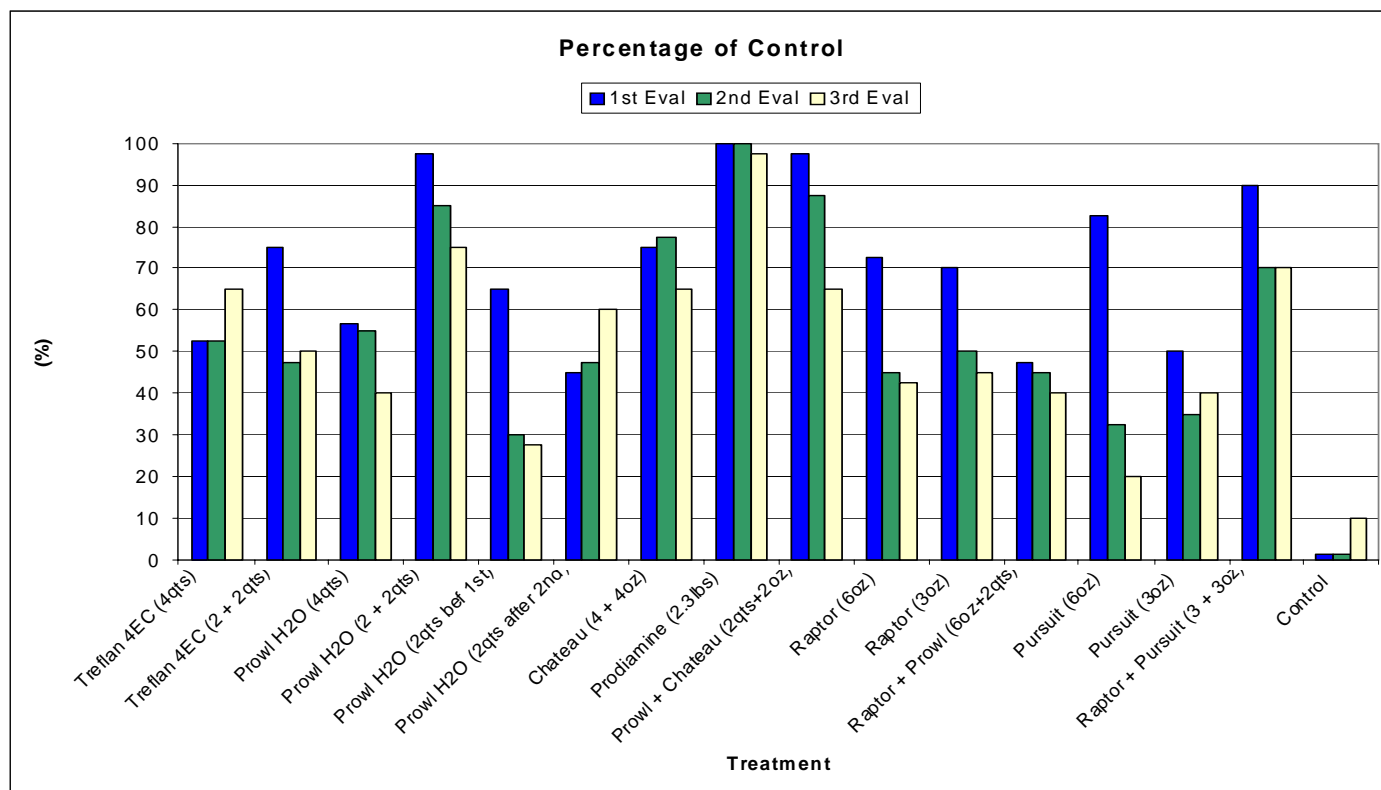
Currently, the most common program to control this weed consists of the use of the herbicides Karmex DF and Prowl H2O. However, alternative methods are needed to control the weeds that escape this treatment and appear late in the season. Nine pre-emergent treatments were applied before the first cut and after second cut, and six post-emergent treatments were applied after second cut (Figure 1) in a three year old alfalfa field located in Hinkley, CA. All treatments were evaluated at three times: after third, fourth and fifth cuts (July 16th, August 17th and September 13th).

Treatments		1st Appl (March 5th)	2nd Appl (June 2nd)
----- Pre-Emergent -----			
1	Treflan 4EC	4 qts	-
2	Treflan 4EC	2 qts	2 qts
3	Prowl H2O	4qts	-
4	Prowl H2O	2qts	2qts
5	Prowl H2O	2qts	-
6	Prowl H2O	-	2qts
7	Chateau	4oz	4oz
8	Prodiamine	2.3Lb	-
9	Prowl + Chateau	2qts	2oz
----- Post-Emergent -----			
10	Raptor	-	6oz
11	Raptor	-	3oz
12	Raptor + Prowl	-	6oz+2qts
13	Pursuit	-	6oz
14	Pursuit	-	3oz
15	Raptor + Pursuit	-	3oz+3oz
16	Control	-	-

Overall the pre-emergent treatments performed significantly better than the post-emergent. A single application of Prodiamine (not registered for alfalfa) before first cut presented the best control (99%, average of the three evaluations), followed by a split application of Prowl H2O (86% control) and a split combination of Prowl H2O and Chateau (83% control). Among the post-emergent treatments, only the tank mix combination of Raptor and Pursuit (77% control) had control over 55%. No alfalfa injury was noticed in any of the treatments.

Figure 1. Herbicide treatments evaluated on this study.

The bar graph below shows the average of % control for each treatment during evaluations: 1st Evaluation on July 16th (after 3rd cut); 2nd Evaluation on August 17th (after 4th cut); and 3rd Evaluation: on September 13th (after 5th cut).



For more information on Pigweeds access:
<http://ipm.ucdavis.edu/PMG/WEEDS/pigweeds.html>

For more information on weed control options for established alfalfa, access:
<http://www.ipm.ucdavis.edu/PMG/r1700411.html>

Evaluation of Five Insecticides for Weevil and Aphids Control in Alfalfa

Andre Biscaro, Jesse Richardson, Tim Hays and Steve Orloff

The alfalfa weevil is the most important insect pest of alfalfa in California, and its management is focused on the period before the first cutting. Control options are insecticides and early harvest. Biological control is not effective at preventing economic damage in most areas.



It's important to know about the growth stage of the larvae in order to decide whether or not to spray. The larvae complete their growth in about 3 to 4 weeks.



(This interval depends on the weather/temperature)

We assessed the effect of five herbicide treatments in weevil and aphid control in this trial:

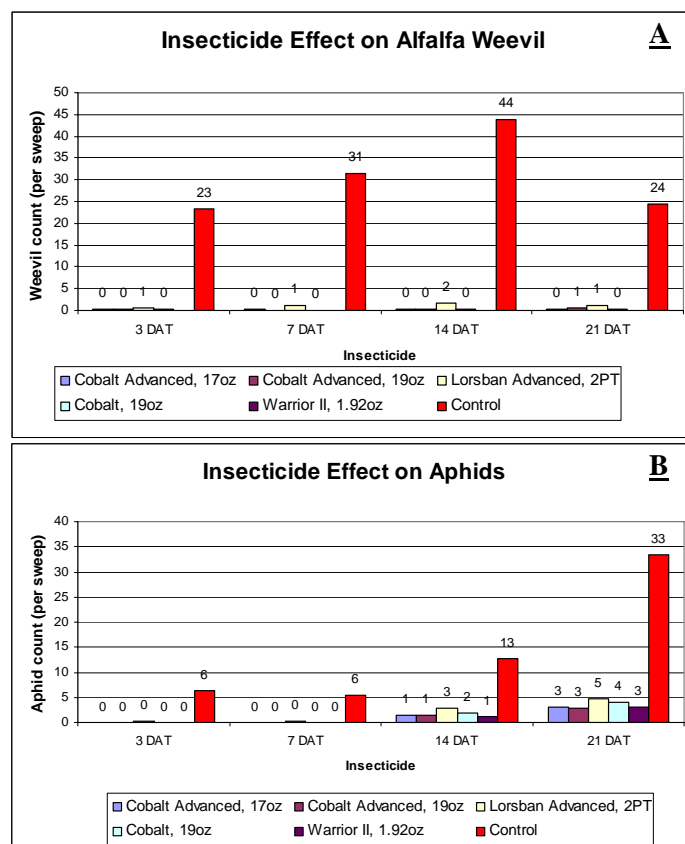
Insectide Treatments

Cobalt Advanced, 17oz
 Cobalt Advanced, 19oz
 Lorsban Advanced, 2PT
 Cobalt, 19oz
 Warrior II, 1.92oz
 Control

- Treatments were sprayed on March 30th;
- Weevil and aphid counts were performed at 3, 7, 14 and 21 DAT (days after treatment);
- 5 sweeps/plot;

Weevil counts were always above the UC treatment threshold value of 20 larvae per sweep (this value is been reviewed), and reached maximum at 14 DAT.

Weevil (A) and aphid (B) counts using the sweep method for the five treatments and control plot from April 2nd to April 20th.



As observed in the graphs above, the five treatments assessed on this trial performed well to control weevils and aphids for the 21 days evaluation period.

For a more complete list of chemical treatments recommended for weevils and aphids, please visit:
<http://www.ipm.ucdavis.edu/PMG/selectnewpest.alfalfa-hay.html> or contact Farm Advisor Andre Biscaro.

Adjusting Alfalfa Cutting Schedules for Economic Conditions

Adapted from 2010 Alfalfa Symposium Proceedings
article by Steve Orloff and Dan Putnam

The cutting schedule a grower imposes strongly impacts the overall profitability of an alfalfa operation due to its direct effect on yield and forage quality (Figure 1). The existence of a Yield/Quality Tradeoff (when yield goes up quality goes down) has been well documented over the years in field trials and through grower experience.

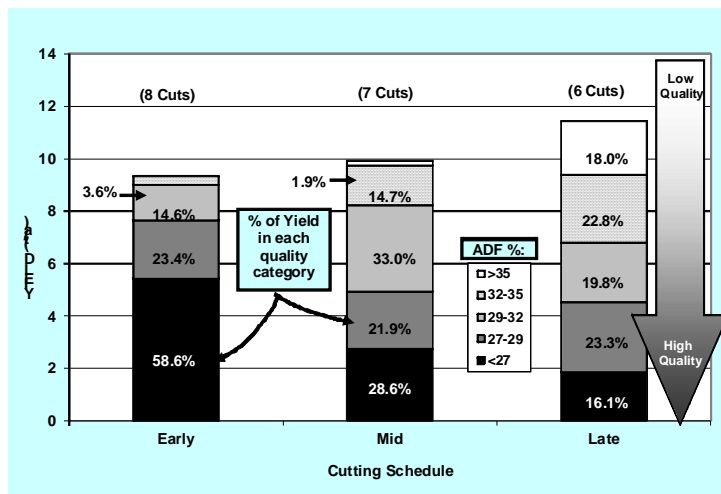


Figure 1. The effect of cutting schedule on yield and quality. Davis, CA (Average 2002–2004).

Within reason, fewer cuttings per season generally results in higher yield per season but at the expense of forage quality. However, determining the optimum cutting schedule is challenging due to ever-changing weather and price conditions.

Using UC field research conducted in the Central Valley and the Intermountain area on cutting schedules, we used hay market data over the last 10 years to assess gross profitability for different cutting schedule strategies. The most profitable strategy depends on hay prices and more importantly on the price spread between the different hay quality categories (Figure 2).

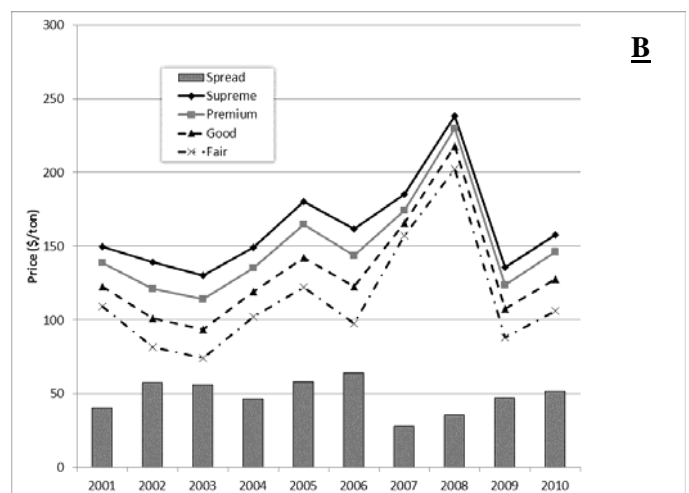
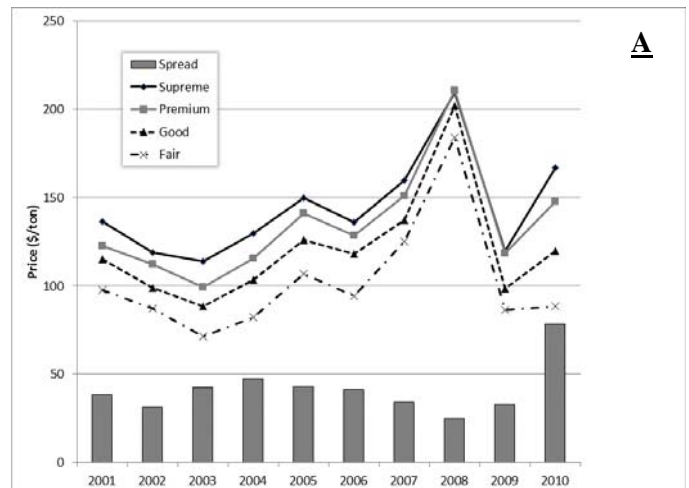


Figure 2. Average annual alfalfa hay price in the Intermountain area (A) and the Central Valley (B) over the last 10 years (2001-2010). The price spread between *Supreme* and *Fair* quality alfalfa hay is shown in the bars. 2010 data is through September (Hay Market News data).

In general, it appears that over the past 10 years, the market largely did not adequately compensate alfalfa producers for the yield penalty they suffered to produce top quality hay. Gross returns were greater for strategies that produced higher yield (the 6-cut schedule in the Central Valley, Figure 3, and the 3-cut schedule with a delayed second cutting in the Intermountain area).

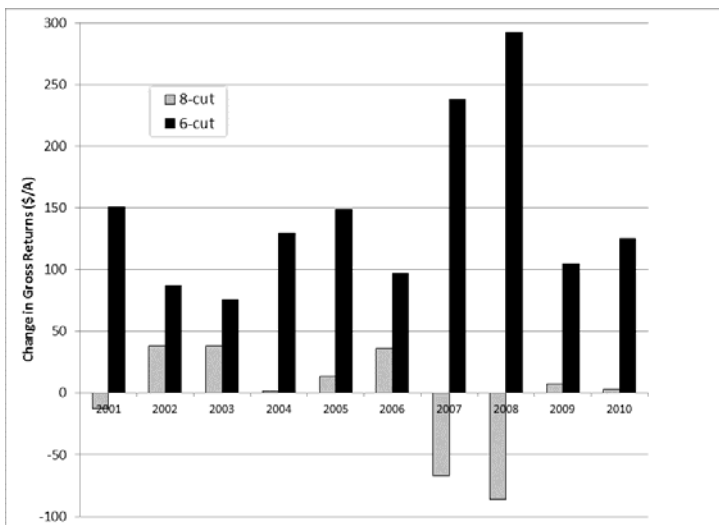


Figure 3. The differences in gross returns over the past 10 years for 6-cut and 8-cut schedules compared with a 7-cut schedule (the most popular schedule in the Central Valley) at Davis, CA. The baseline, or a zero value, is a 7-cut (28 day) schedule.

“It is clear that high yield is more profitable in high price years and high quality is more important in low price years. We recommend a flexible and diverse approach which produces a combination of high yield (medium quality) and high quality hay, so that a grower can respond to market conditions in real time”, Steve Orloff

Although the marketability of high-yield but low-quality hay may be challenging, growers should consider a more sophisticated approach taking into consideration a wide array of factors including current and future market conditions, alternative marketing strategies, the physiology of the alfalfa plant as affected by cutting frequency, season of the year, and of course weather conditions.

This research suggests that the strategy used by many high desert alfalfa producers is the most profitable. Produce high quality dairy hay in the spring and fall (1st and last cutting) when it is easier to do so and produce more mature bloomy hay in the summer (for the horse market) to give the alfalfa plant a chance to replenish root reserves for improved vigor and stand persistence.

Please contact Farm Advisor Andre Biscaro if you would like to receive the full article.

If you think your soil is deficient in P or K please read on!!!

If you believe that your alfalfa field is phosphorus or potassium deficient, please call Farm Advisor Andre Biscaro (661-974-8825) for possible soil testing. We hope that you are on the top of your fertilization practices, but if you have missed the last few applications due to the harsh economic times, we might want to use your field to conduct plant nutrition studies. Thanks in advance for your cooperation and I look forward to hearing from you!