

GETTING CONTROL OF TOUGH WEEDS IN ALFALFA

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ABSTRACT







Most weeds are not a factor in alfalfa production, since it is a perennial crop with a rapid growth recovery following harvest. The weeds that are a problem have adapted to the frequent harvest schedule of every 30 days and are often perennial or biennial type weeds. Three weeds that are becoming more of a problem in the San Joaquin Valley are: Curly dock (*Rumex Crispus*), Cheeseweed (*Malva Parviflora*) and yellow nutsedge (*Cyperus*

These weeds have adapted very well to alfalfa culture, and are not controlled by standard herbicide programs used only in the dormant season. The following research has focused on developing an effective control program of best treatments and application timings of post and pre-emergence herbicides.

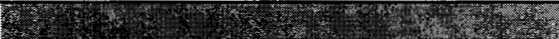
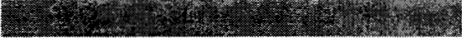


Key Words: curly dock, cheeseweed, yellow nutsedge, butyrac, pursuit, poast, prism, EVO, NIS, UN 32

Curly dock: is a perennial distributed throughout the valley and foothill areas of California. It is a troublesome weed in alfalfa fields, pastures and sugar beets. Also referred to as sour dock, it can become a problem early in young alfalfa, especially in low areas of the field or at the ends where water collects. It reproduces by seed that matures in the winter and germinates in the spring. The mature plant is 2' to 5' tall with a large fleshy taproot. Once it has gained a foothold, it becomes immune to soil active herbicides used and continues to spread as alfalfa populations decrease. Its impact is from competition of a large foliage canopy and deep root system capable of pulling moisture and nutrients from alfalfa. Curly dock has been reported to accumulate oxalates and is suspected to have produced losses of livestock to poisoning.

BEST TREATMENTS AND APPLICATION TIMING FOR CONTROL OF CURLY DOCK

Treatment	Rate lb/A	Fall Application	% Control
Butyrac+Pursuit+EVO	.5+.094		97%
Butyrac+EVO	1.5		95%
Butyrac+Pursuit+EVO	1.0+.063		95%
Pursuit+EVO+UN 32	.094		75%
Pursuit+EVO	.094		40%
Pursuit+NIS	.094		33%

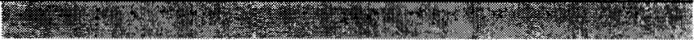





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Treatment	Rate lb/A	Spring Application	% Control
Butyrac+NIS	1.0		77%
Butyrac+Pursuit+NIS	.5+.063		63%
Butyrac+Pursuit+NIS	.5+.047		53%
Pursuit+EVO	.063		20%

Fall application treatment = December 16, 1996. % Control @ 95 days after treatment.
 Spring application treatment = February 6, 1997. % Control @ 20 days after treatment.
 EVO = HASTEN® @ 1 pt/acre
 NIS = Unifilm 707 @ .25% VV
 UN 32 = Liquid Fertilizer @ 2 qts/acre

Cheeseweed: are a broadleaf plant in the mallow family and a frequent problem in newly planted seedling alfalfa. In California's central valleys moderate climate, it will survive the winter months and continue into the summer, therefore classifying it as a biennial. Cheeseweed, once established, is a difficult weed to control in any crop. In seedling alfalfa it is very competitive, robbing the young alfalfa seedlings of light, moisture and nutrients. Once mature, one cheeseweed plant can reach 5' in height, 2' in diameter and have a large taproot. The entire plant is considered toxic, with horse, cattle and sheep having been affected. Two unsaturated fatty acids, malvalic acid and sterculic acid are considered the cause of the toxicity.

BEST TREATMENTS AND APPLICATION TIMING FOR CONTROL OF CHEESEWEED

Treatment	Rate lb/A	Early Timing	% Control
Pursuit+EVO+UN 32	.063		100%
Pursuit+EVO+UN 32	.094		95%
Pursuit+Butyrac+NIS	.063+.75		81%
Pursuit+Butyrac+NIS	.047+.5		70%
Butyrac+NIS	.75		53%
Buctril+EVO	.375		33%

Cheeseweed size = 3 to 5 leaf, 2" to 5" diameter
 Treatment Date = January 7, 1997
 % Control @ 105 days after treatment
 NIS = Unifilm 707 @ .25% VV
 EVO = HASTEN @ 1 pt/acre
 UN 32 = Liquid fertilizer @ 1 qt/acre

Treatment	Rate lb/A	Late Timing	% Control
Pursuit+Butyrac+ Buctril+NIS	.047+.5+.25		69%
Pursuit+COC+UN 32	.063		60%
Pursuit+Buctril	.063+.375		55%
Pursuit+NIS	.063		17%
Butyrac+NIS	.75		15%
Buctril+COC	.375		13%

Malva size = 6 to 12 leaf, 3" to 8" diameter

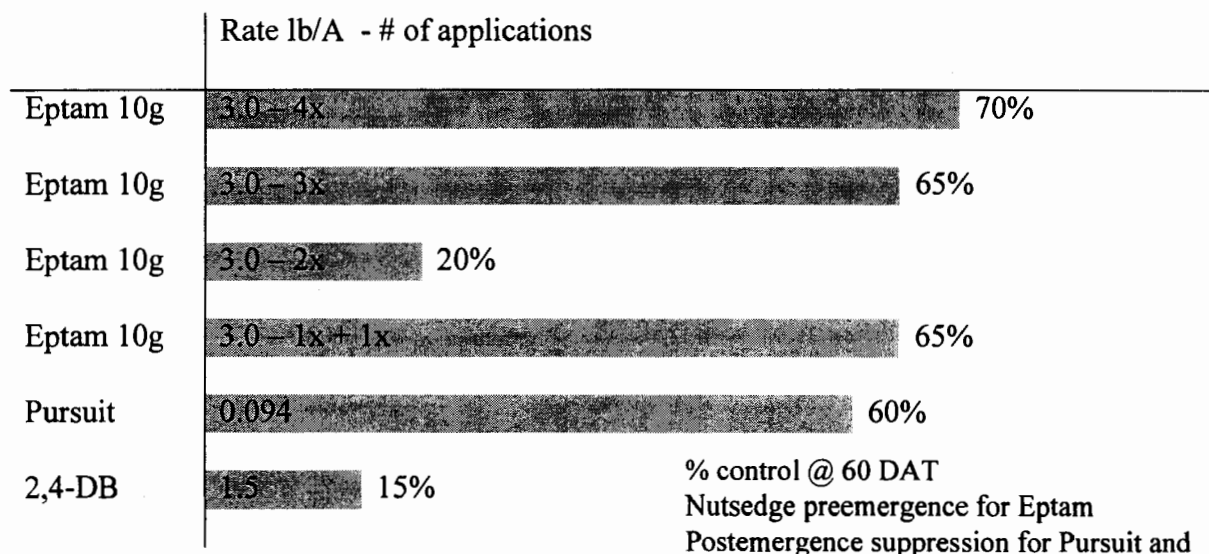
Treatment Date = February 6, 1997

% Control @ 75 days after treatment

Yellow Nutsedge: is a perennial distributed throughout the entire alfalfa growing area of California. It is a troublesome weed in newly planted and established alfalfa as well as other field and vegetable crops. It is commonly referred to as nut grass for its similarity of grass like leaf blades. It produces underground nutlets that give rise to new plants, as does its ability to produce seeds as a means of reproduction. Nutsedge begins to emerge in February and continues through September in the northern San Joaquin valley. In alfalfa it reduces the palatability and the nutrient value of the forage.

Alfalfa: due to its competitive ability and multiple harvests, it can be considered a crop to reduce nutsedge populations when timed with an effective herbicide.

BEST TREATMENTS FOR CONTROL OF YELLOW NUTSEDGE IN ESTABLISHED ALFALFA



% control @ 60 DAT
Nutsedge preemergence for Eptam
Postemergence suppression for Pursuit and 2,4-DB

SUMMARY

The best weed management strategies for cheeseweed, curly dock and yellow nutsedge involves a crop rotation pattern where different cultivation practices and other herbicides can be used to prevent establishment of the weed or allow seed development. Once the problem weeds seed bank has been reduced, entering back into alfalfa production can successfully be achieved. The importance for a good seedbed, adequate fertilizing, land leveling for water management with proper variety selection are as important as any herbicide to control weeds. Combining this information with label recommendations will provide satisfactory results in controlling some of alfalfa's toughest weed competitors.