

SUMMER WEED CONTROL IN ALFALFA – LOW DESERT

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ABSTRACT

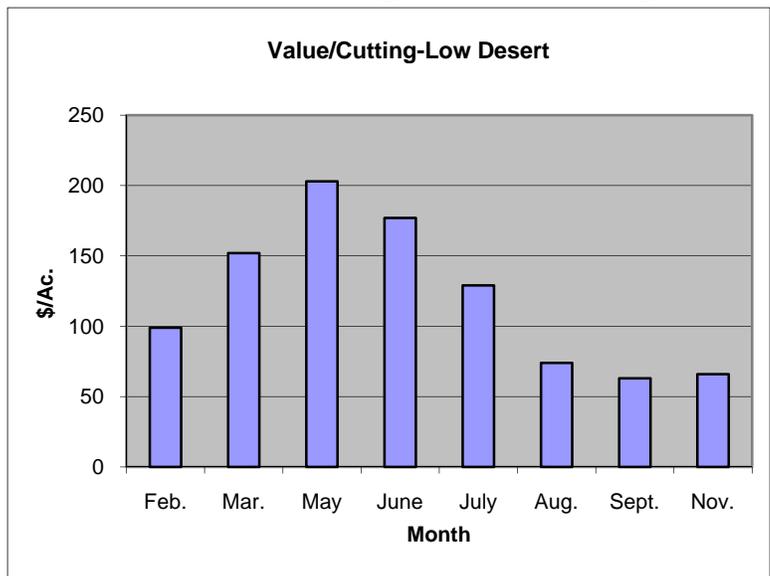
Although the market prices for alfalfa produced in the low deserts are lowest during the summer months this is when yields are highest and net dollar returns to the grower are greatest. Losses from weeds are often highest during the summer months. New herbicides have been continually developed and there are more herbicides available for alfalfa now than ever before. Growers have selected for those weeds that escape their control practices. Three summer weeds that have become increasingly widespread over the past ten years in the low deserts are sprangletop, sandbur and nutsedge. New herbicide registrations and application techniques have been adopted in recent years to help keep these weeds in check. These include Halosulfuron (Sanda) and water run applications of Pendimetholin (Prowl H₂O) and Norflurazon (Solicam).

Key words: alfalfa, weed control, herbicides

INTRODUCTION

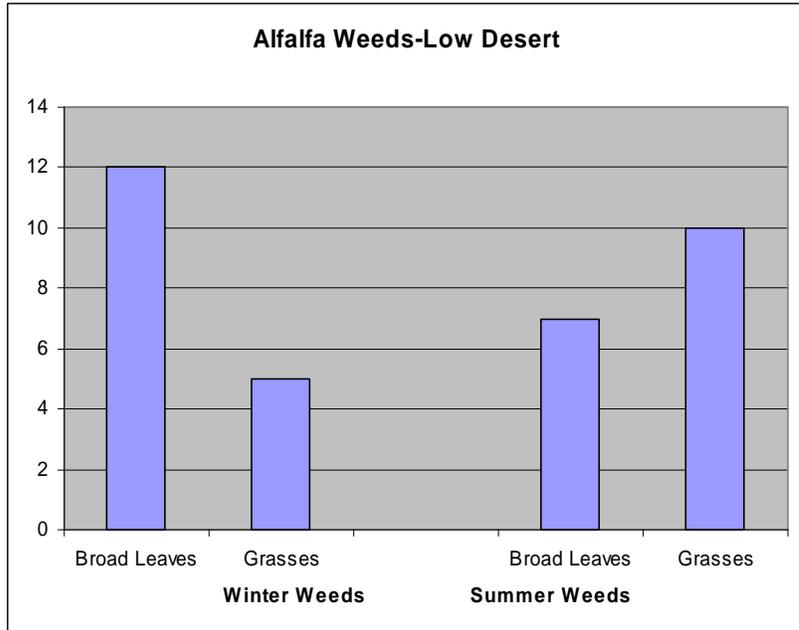
Extremely non-dormant varieties of alfalfa are grown in the southwestern low deserts. Typically, alfalfa is cut 8 to 10 times per year to produce 8 to 10 tons per acre per year. Although the highest market prices are received in the fall and spring when the highest quality is produced, the highest per acre returns are received during the summer cuttings. The reason for this is that yields during the summer are 1.5 to 2.25 tons per acre while they are only half this at other time of the year. (Graph 1)

Weeds are a problem year round. During the summer months the predominant weeds are grasses while broadleaf weeds predominate during the winter. Perennial weeds, such as nutsedge and Bermudagrass are actively growing during the summer. (Graph 2)



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Summer annual weeds, especially grasses, emerge continually with each irrigation and after each cutting. A test was conducted to determine weed germination times and the results are presented in graph 3. During the year that this test was conducted, grasses began to emerge in March, reached a peak in June but continued to emerge until October. This will vary from field to field and year to year but these results were thought to be typical.

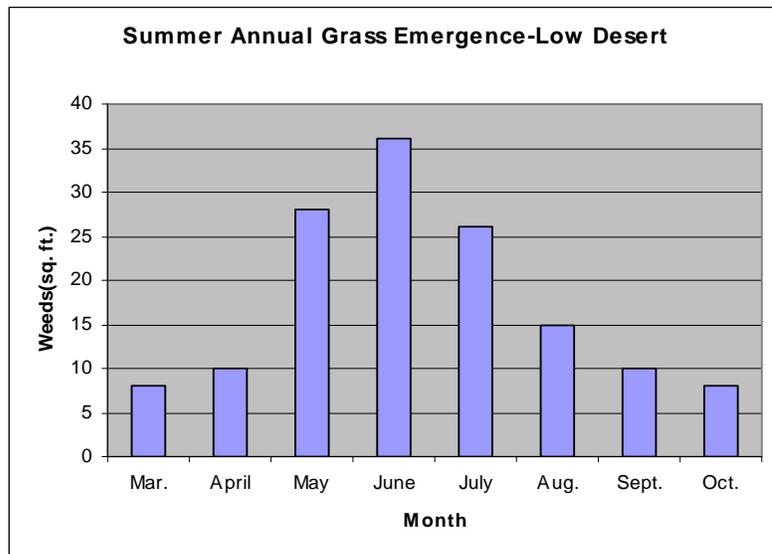


Weed control practices in the low desert involve both cultural practices and herbicide use. These control practices will be reviewed in this paper.

WEED MANAGEMENT PRACTICES

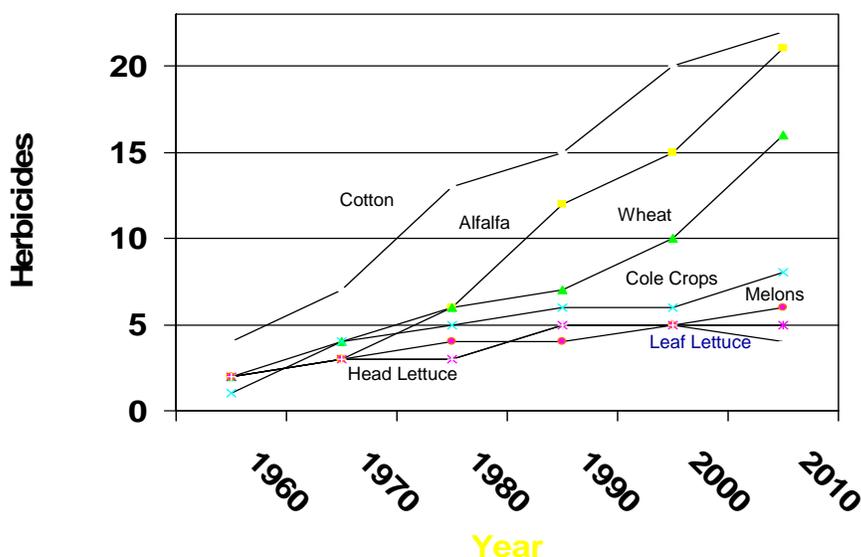
Frequent cutting and rapid crop regrowth allows alfalfa to compete effectively with most weeds when properly managed.

Any cultural practices that give the crop a competitive edge over the weeds is helpful. These include timely cutting, proper irrigation and fertility management, insect and disease control, minimizing wheel traffic and other practices. There are times, however, when herbicides are needed to help keep weeds in check.



New herbicides have been developed and registered for alfalfa since the mid 1950's. Three to five new products have become available every five years and there are more herbicides registered today for use on alfalfa than ever before.

Herbicide Registrations



Although new herbicides have been developed over the past four decades, growers are continually selecting for those weeds that survive their control practices. Notable among these are two summer annual summer grasses, sandbur and sprangletop and the perennial nemesis, nutsedge. Some newer treatments have shown promise in controlling these weeds.

SPRANGLETOP AND SANDBUR

Sprangletop, both red (*Leptochloa filiformis*) and mexican (*Leptochloa uninervia*) have become increasingly widespread largely because they are capable of surviving through the winter in the low deserts and they tolerate many of the post emergent grass herbicides. Trials conducted in alfalfa in the low deserts for sprangletop control indicated that only high rates of clethodim and quizalofop control these weeds. Quizalofop is not registered on alfalfa. Both of these species of sprangletop are controlled when they germinate from seed by all of the preemergent alfalfa herbicides including trifluralin, pendimethalin and EPTC. A newer formulation of pendimethalin, Prowl H₂O, was recently registered that can be applied by chemigation when flood irrigating. Herbicide deposition is improved when using this technique with pendimethalin which stays in suspension after metering and incorporates well into the soil. It is difficult to keep this water based formulation in suspension when it is diluted with water and continuous agitation is necessary.

Sandbur, both field (*Cenchrus pauciflorus*) and southern (*Cenchrus echinatus*) are restricted to sandy soils but have become increasingly widespread again because they characteristically overwinter and come back from established crowns and are tolerant to both sethoxydim and clethodim.

NUTSEdge

Both purple nutsedge (*Cyperus rotundus*) and yellow nutsedge (*Cyperus esculentus*) have long been difficult to control perennial weeds in alfalfa. Two recent herbicide registrations have helped keep these weeds in check.

Sandea (halosulfuron) was registered for use in alfalfa in the desert southwest in 2008. This herbicide is very effective in controlling both species of nutsedge but will cause severe crop injury when applied to actively growing alfalfa. It has been effective, however, when applied during the “summer slump” period of August through September in the low deserts. It is during this period that nutsedge is growing most actively and the crop is least productive. These combine to increase weed control and minimize crop injury.

Solicam (norflurazon) was approved as a water run application in certain counties in Arizona in 2008. Applying this herbicide in the irrigation water when using flood irrigation increases soil deposition and improves weed control. Continuous agitation is necessary and multiple applications over multiple years is normally required to suppress nutsedge.