

CONTROLLING SUMMER GRASSY WEEDS
AN OVERVIEW OF THE PROBLEM

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Over one million acres of alfalfa hay are harvested in California each year. The crop is grown under a great diversity of conditions, from the low desert valleys in southern California where nine to ten cuttings per season are common, to mountain valleys in northern California where two to three cuttings are the usual. Six growing regions exist in the state with 60% of the production in the Sacramento and San Joaquin Valleys. The third major growing area, the low desert region of Southern California produces another 20% of the hay crop. The remaining alfalfa is grown in the Northeastern mountain region, high desert area and the coastal valleys.

Despite this diversity of environmental conditions that alfalfa is grown under, summer annual and perennial grassy weeds are a common problem throughout the state. Weedy grasses can be responsible for minimizing alfalfa yields and quality to such an extent, that the crop becomes economically unfeasible to produce.

Grasses reduce production and stand vigor by competing with alfalfa for nutrients, water and light. They also lower hay quality by reducing its feed value and palatability. In the case of yellow foxtail, bristle grass or pigeon grass (Setaria sp) one of the main summer grass problems, the sharp spiker or awns on the flower head irritate or ulcerate the inside of the mouths of livestock.

Quality can be reduced from U.S. No. 1 hay to U.S. No. 3 or sample grades. This reduction in quality can translate into a \$25 to \$35 per ton loss to the grower. And in extreme cases, if weed infestations are bad enough, contaminated hay may be unfit for livestock consumption.

Annual grasses, especially yellow foxtail (Setaria sp) and barnyard grass (Echinochloa crusgalli) cause the major summer weed problems in both seedling and established alfalfa throughout the state. Bermudagrass (Cynodon dactylon) can become a problem at the end of fields where the stand has drowned out due to standing water.

Weed management systems to control summer grassy weeds include cultural and chemical methods.

Present weed management systems for seedling alfalfa include cultural practices conducive to a healthy vigorous stand and both preemergence and postemergence herbicides which will control many of the broadleaf weeds, but are very weak on the grassy weeds. At present, there are no selective herbicides that effectively control established grasses in newly planted alfalfa.

Weed management systems in established alfalfa stands again include cultural practices (irrigation and cutting schedules) conducive to a healthy stand and the use of pre and post emergence herbicides. Preemergence herbicides are applied during the winter dormant period and effectively control weeds in the early part of the growing season but after the 3rd and 4th cuttings, summer grasses begin to invade the stand. Summer grasses not yet germinated can be controlled by using herbicides applied in the irrigation water after each cutting, but fields must be level and the slope must be adequate for good distribution in the field. This control program does not control yellow foxtail (Setaria sp) already established which escape the cutter bar due to their prostrate growth habits. Postemergence contact herbicides are available for use only as a one time application during the winter dormant period when summer grasses are not present.

New experimental postemergence selective grass herbicides have been tested and look very promising for combating summer annual and perennial grasses in alfalfa. These materials, when and if registered on alfalfa will give the grower a weed management tool with the advantages of increased efficacy on summer annual and perennial grasses, with no limit on crop rotation and the option to spot treat infestation.

It is apparent from this discussion that summer grassy weeds can be a deturant to the

production of high quality, palatable hay that is a viable economic crop. Satisfactory control is not always achieved with present weed management programs but with proper cultural operations and new selective herbicides on the horizon, control of troublesome grassy weeds may be achieved.

With these points in mind we have assembled a panel to address this universal problem from both the researchers and growers point of view.