

ABSTRACT
ALFALFA/GRASS COMPANION CROP STUDY
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An alfalfa stand declines with age, making it susceptible to invasion by weeds. In last year alfalfa, paraquat is the only herbicide that can be used without one to two year plantback restrictions. Paraquat (Gramoxone Extra) and diuron (Karmex) or hexazinone (Velpar) applications can also stunt the alfalfa which may result in a 40 to 50 percent yield loss in the first cutting. Alternately, weedy hay is discounted ten to forty dollars per ton and hay infested with fiddleneck or groundsel is often unsalable because it is poisonous to livestock. An alternative to herbicide use in last year alfalfa is the interplanting of grasses.

A third year stand of 13RPlus Supreme was divided by checks, randomized in a randomized complete block design and replicated three times. Treatments included combinations of ryegrass and orchardgrass, ryegrass and fawn fescue, paraquat and diuron and an untreated control. All the checks were sheeped off and the checks to be planted were springtoothed twice. Planting was done on December 22, 1992 with a brillon drill, with rye at 15 lbs and orchardgrass and fawn fescue at 18 lbs per acre. The planted checks were harrowed after planting. Paraquat at 1.5 pints and diuron at 1.5 lbs per acre were applied by the grower on January 27, 1993. Bale weights and counts were obtained at each cutting and biomass and nutrient sampling were taken at every other cutting. Sweeps for alfalfa weevil populations were done on March 3, 16 and April 2 of 1993.

At the first cutting, the alfalfa/grass treatments produced over 1,000 lbs more hay than the herbicide treatment. Although the untreated control also produced more hay, there was a high percent of weeds, which resulted in lower quality hay of lesser value. At the second cutting only the ryegrass/fawn fescue treatment produced significantly more hay. At the third cutting, the herbicide actually produced significantly more hay than the other treatments and at the sixth cutting, the ryegrass/orchardgrass produced significantly less hay than the other three treatments. There were no significant differences in tonnage in any other cutting or in the overall yield. Due to plantback restrictions viable alternatives are becoming a necessity. Interplanted grasses provide some distinct advantages. First, they increase yield and reduce weeds in the first and second cuttings. Second, the use of a perennial grass aids in control of summer grasses (which paraquat does not affect). Third, the mechanics of planting the grasses reduces weevil numbers during the growing season and may eliminate the need for insecticide sprays for weevils which will also benefit the predator population and aid in lepidopteran pest control later in the season. Lastly, the interplanting of grasses in last season alfalfa can potentially provide an environment conducive to non-pesticide grown alfalfa.

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