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A CULTURAL METHOD OF REDUCING POCKET GOPHER IMPACT ON ALFALFA YIELD

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Abstract: Low Input Sustainable Agriculture (LISA) strives to minimize input of agrichemicals for farmers while maintaining profits. Alfalfa fits into this scheme in 2 ways. First, the plains pocket gophers *(Geomys bursarius)* can reduce yield of alfalfa, thus an effective, economical means of control with minimal environmental impact would be desirable. Second, the increased use of alfalfa in rotation with row crops to increase soil nitrogen may increase pocket gopher problems by increasing their habitat. Our objective was to evaluate a cultural method to control pocket gopher damage, namely, by comparing 2 different varieties of alfalfa. One variety is tap-rooted (Wrangler) while the other has a more fibrous-rooted system (Spredor 2). We hypothesized that damage would be less in the fibrous-rooted alfalfa as it is capable of vegetative reproduction and could recolonize areas. We released live-trapped pocket gophers on 4 treatment areas in each alfalfa variety. Pocket gophers were present on plots of each variety from the fall of 1988 through the fall of 1989. Damage caused by pocket gophers was measured by clipping 80 samples/harvest during the 1989 growing season. Yields were 15 to 19% less in treatment areas than in control areas for both varieties. Sampling continued through the 1990 growing season to determine the recovery rate of each variety after gophers had been removed. The tap-rooted variety showed no improvement in 1990 over 1989. On the other hand, the fibrous-rooted alfalfa exhibited a 4% increase in treatment over control areas after gopher removal.

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