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February 1997

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Case, Ronald M.; Baker, Debra; Luchsinger, James ; and Jasch, Bruce , "CULTURAL CONTROL OF DAMAGE TO ALFALFA CAUSED BY POCKET GOPHERS" (1997). *Great Plains Wildlife Damage Control Workshop Proceedings*. 361.

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Concurrent Session #4 (Rodents)

CULTURAL CONTROL OF DAMAGE TO ALFALFA CAUSED BY POCKET GOPHERS

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Abstract: In 1989 we postulated that using different varieties of alfalfa might minimize damages caused by pocket gophers (*Geomys* spp.). We tested a tap-rooted variety (Wrangler) and a fibrous-rooted variety (Spredor 2). From previous studies, Wrangler out performs Spredor 2 by as much as 27% by the fourth year after planting. Spredor 2, however, has a creeping habit and it sends up new shoots on lateral roots. When a root breaks, it sends up new shoots. Therefore, we predicted that Spredor 2 would be damaged less by below-ground foraging by plains pocket gophers (*G. Bursarius*). Additionally, Spredor 2 would send up new shoots when pocket gophers damaged part of the root system and perhaps this would compensate for losses caused by gophers. During three difficult studies that were characterized by drought, floods, and predation on pocket gophers by coyotes (*Canis latrans*), red-tailed hawks (*Buteo jamaicensi*), and badgers (*Taxidea taxus*), we finally had sufficient statistical power to make some conclusions. We planted the alfalfa varieties in 9 paired fields and further divided them in 2; with 1 field receiving pocket gophers as a treatment and the other serving as a control. On the control fields, Wrangler out yielded Spredor 2 ($P = 0.01$), but only by 9%. Wrangler yields were reduced by 19% ($P = 0.01$) when pocket gophers were present. We did not detect a difference in yields of Spredor 2 ($P = 0.30$) due to pocket gophers. We think that these exciting data offer great promise to alfalfa growers that experience troubles with pocket gophers. We encourage others to duplicate these experiments in other regions.

Page 106 in C. D. Lee and S.E. Hygnstrom, eds. Thirteenth Great Plains Wildl. Damage Control Workshop Proc., Published by Kansas State University Agricultural Experiment Station and Cooperative Extension Service.

Key Words: cultural control, pocket gopher, alfalfa