BLUE GRAMA GROWTH AND PATCHINESS AFTER FIRE AND HERBICIDE TREATMENTS FOR BROOM SNAKEWEED CONTROL

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Land managers and livestock producers have long acknowledged the problem of broom snakeweed encroachment and subsequent declines in forage production on blue grama grasslands. Fire and herbicides have been used for broom snakeweed control to maintain the grassland aspect and sustain forage production required by livestock operators using this important plant community. The merits of these control practices are often based on their ability to eliminate broom snakeweed but, either approach could adversely affect other aspects of the plant community, such as the amount and distribution of bare ground versus cover, and species composition of the grasses. This study is the continuation of work initiated in 1990 on the NMSU Corona Range and Livestock Research Center investigating broom snakeweed control. A single spring burn in 1990 is being compared to a treatment consisting of spring fires repeated at 2 to 4 year intervals (5 burns) from 1990 to 2003. Also, herbicide treatment and untreated controls for the same time frame are incorporated into the study. In July 2003, field data was collected from all treatments to determine grass cover, and to evaluate grass patchiness. Preliminary results suggest that long term (14 yr) effects from a single burn and herbicide treatment on blue grama cover are not different from untreated rangeland. Research plots burned 5 times had less blue grama cover and greater patchiness than untreated research plots at one of the 2 study sites, but not at the other. Galleta, another important grass, increased in both the number of clumps and average clump size when subjected to frequent fire at both study locations. Initially it was thought that frequent repeated burns would result in an increase in grass patchiness (number of interspace gaps) relative to single burn treatments. However, the long term (14 yr) effect of both burn treatments on the number of interspace gaps was similar by study site.