

# Length and Timing of Grazing on Postburn Productivity of Two Bunchgrasses in an Idaho Experimental Range

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## Abstract

Plant mortality and productivity in semiarid grasslands may be affected by the length of time grazing is excluded during the postfire regeneration period. The degree of grazing tolerance for the semiarid bunchgrass species, *Festuca idahoensis* and *Agropyron spicatum*, exposed to fire, and how the variation in grazing tolerance was affected by the length of time allowed for undisturbed plant regeneration after fire, were central questions addressed in this study. We examined the degree of plant mortality and productivity that resulted from the interaction of fire and grazing. Plants exposed to fire alone, i.e., without subsequent defoliation, exhibited low plant mortality, although culm production was reduced relative to unburned plants. An early-season-defoliation treatment after fire resulted in the plant mortality as high as 50% for *Festuca* and 70% for *Agropyron* bunchgrasses. Plant height and the number of vegetative and reproductive culms were also most affected by this defoliation treatment. These detrimental effects were lessened when defoliation was delayed by one growing season after the fire. Although our results suggest that one growing season seems to be enough for both species to recover after the fire, more studies will be necessary to confirm these trends, and induce changes in current grazing management policies.

**Keywords:** Fire; grazing; *Agropyron spicatum*; *Festuca idahoensis*; *Pseudoroegneria spicata* ; bunchgrasses

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