



## Caucasian Bluestem Control Using Glyphosate and Imazapyr

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Caucasian bluestem [*Bothriochloa bladhii* (Retz.) S.T. Blake] is an introduced perennial warm-season grass originally seeded as a forage crop for grazing and haying. Today, Caucasian bluestem is considered an invasive species on native grasslands in the central and southern Great Plains. The objectives of this study were to 1) determine the efficacy of glyphosate and imazapyr for control of Caucasian bluestem and 2) determine the impact of these herbicides on associated species. The study was conducted in Ellsworth County, Kansas with herbicides applied in early June in 2006 and 2007 when Caucasian bluestem was at the 4-leaf stage. Glyphosate at 2.2, 3.3, and 4.4 kg/ha and imazapyr at 1.1 and 1.4 kg/ha were applied with 0.25% non-ionic surfactant using a CO<sub>2</sub>-powered backpack sprayer in 187 L/ha solutions. Individual plots were 2 x 7.6 m in size with treatments including an untreated check replicated four times in a factorial arrangement. Foliar cover was assessed at the time of treatment and at 4 and 12 months after treatment (MAT) using Daubenmire's Canopy Coverage Method with 0.25-m<sup>2</sup> frames. In 2006, imazapyr provided nearly 100% control of Caucasian bluestem 4 MAT and was superior to glyphosate applications (42-75%). At 12 MAT, glyphosate at 2.2 kg/ha was less effective than the other treatments providing 76% control. In 2007, all herbicide treatments provided greater than 88% control of Caucasian bluestem 4 and 12 MAT. Native warm-season grasses were negatively impacted by all treatments in both years, but were more tolerant to imazapyr.

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