

WEED CONTROL WITH CORN HERBICIDES THAT ALLOW ROTATION TO SUGARBEET

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Corn is an important rotational crop with sugarbeet in the High Plains. Glyphosate is the primary herbicide used in both glyphosate-resistant corn and sugarbeet. To reduce selection pressure for glyphosate-resistant weeds, it is important to identify herbicide programs for corn that increase herbicide diversity and also allow planting sugarbeet the following year. Field studies were conducted in 2011 & 2012 to evaluate corn herbicide programs that: (1) are effective on the weed spectrum in the High Plains; (2) allow rotation to sugarbeet the following season; and (3) utilize multiple modes of action for herbicide resistance management. Corn was planted on May 6 in 2011 and May 8 in 2012 at 84,000 seeds ha⁻¹ in 76 cm rows. Plots were 3 m by 9 m and arranged in a two-factor factorial design with four replications. Factor one consisted of three PRE herbicides and an untreated check, while factor two included three POST herbicides and an untreated check. PRE herbicides included saflufenacil + dimethenamid-P at 70 and 612 g ai ha⁻¹ respectively, acetachlor at 2100 g ai ha⁻¹, and *S*-metolachlor at 1390 g ai ha⁻¹. POST herbicides consisted of glufosinate at 350 g ai ha⁻¹, glyphosate at 1270 g ae ha⁻¹, and diflufenzopyr + dicamba at 56 and 140 g ai ha⁻¹. Visual control ratings were taken at 5, 8, and 16 weeks, and 6, 8, and 14 weeks after planting in 2011 and 2012 respectively. Corn was harvested on October 24 in 2011.