

WILSON, ROBERT G.^{1*}, GUSTAVO M. SBATELLA¹ and ANDREW R. KNISS², ¹University of Nebraska, 4502 Avenue I, Scottsbluff, NE 69361 and ²University of Wyoming, 1000 E. University Avenue, Laramie, WY 82071. **Volunteer glyphosate-resistant corn control and interference in glyphosate-resistant sugarbeet.**

ABSTRACT

Field experiments were conducted in 2009 and 2010 at Scottsbluff, NE and Lingle, WY to measure the competitive effect of different densities of volunteer glyphosate-resistant corn on sucrose yield. Solar radiation reaching the sugarbeet canopy was measured to further examine the competitive influence of corn on sugarbeet. A second study measured the duration of volunteer corn competition on sucrose yield while a third experiment examined the chemicals and timing of volunteer corn control on corn efficacy. Volunteer corn densities ranged from 0 to 15 plants per m² and caused yield reductions that ranged from 0 to 58 percent. A corn density of 2.5 plants per m² reduced sucrose yield by 8 percent and the quantity of light reaching the sugarbeet canopy was cut 8 percent. A corn density of 7.5 plants per m² reduced light reaching the sugarbeet canopy by 22 percent and sucrose yield by 21 percent. To avoid a sucrose yield loss volunteer corn needs to be removed with herbicides 3 weeks after emergence or by the time sugarbeet has reached the four to six true-leaf growth stage. Clethodim and quizalofop effectively killed volunteer corn when applied at the six true-leaf growth stage of sugarbeet.