

INFLUENCE AND CONTROL OF VOLUNTEER CORN IN SUGARBEET. Robert G. Wilson, Gustavo M. Sbatella, and Andrew R. Kniss, Professor and Post-doc, Department of Agronomy and Horticulture, University of Nebraska, Scottsbluff, NE 69361, Assistant Professor, Department of Plant Sciences, University of Wyoming, Laramie, WY 82070.

Growers have expressed concerns about the increase in the occurrence of volunteer glyphosate-resistant corn in glyphosate-resistant sugarbeet fields. To gain a better understanding of the competitive effect of volunteer corn on sugarbeets, experiments were conducted near Scottsbluff, NE and Lingle, WY during the 2009 growing season. Shortly after sugarbeet planting corn seeds were planted in the crop row at densities of 0, 0.3, 0.5, 0.8, 1.2, and 1.6 plants/m². Light readings were taken in mid August to measure the interceptance of light by different densities of corn. Volunteer corn densities of 0.6 and 0.9 plants/m² reduced the amount of sunlight reaching the top of the sugarbeet canopy by 14 and 19%, respectively, which caused a 5 and 10% loss in sucrose yield at the end of the growing season. At Scottsbluff an additional experiment was conducted to measure the efficacy of quizalofop and clethodim tank mixed with glyphosate for volunteer glyphosate-resistant corn control. Quizalofop and clethodim applied at the six true-leaf sugarbeet growth stage provided better corn control than applications made at sugarbeet canopy closure. The addition of crop oil concentrate to quizalofop and clethodim in combination with glyphosate also resulted in improved corn control. At an application rate of 0.6 kg ai/ha, without crop oil concentrate, and at canopy closure, clethodim was more efficacious than quizalofop for corn control, however with the addition of crop oil concentrate both herbicides provided similar control.