

WEED CONTROL IN WIDE- AND NARROW-ROW GLYPHOSATE-RESISTANT SUGAR BEET.
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The recent commercialization of glyphosate-resistant sugar beet varieties provides growers with alternative weed management programs that will reduce the need for in-row cultivation. As a result, producers may be able to adopt planting sugar beets in narrower row widths. Field trials were conducted at three locations in 2007 and 2008 to evaluate the effect of row width on yield and weed management in glyphosate-resistant sugar beet. Three row widths, 38-, 51-, and 76-cm, were investigated at two locations and only 38- and 76-cm row widths were investigated at one location, due to equipment limitations. Populations were thinned to a uniform stand of 77,000 plants/ha in all row widths. Treatments included glyphosate applied at 0.84 kg ae/ha plus ammonium sulfate at 2% v/v when weeds averaged 5- and 10-cm in height with follow-up treatments when weeds were 10-cm in height, single glyphosate applications when weeds averaged 10- and 15-cm, conventional sugar beet herbicide programs of either a standard-split program applied twice or micro-rate program applied four times (desmedipham + phenmedipham plus clopyralid plus triflusaluron-methyl), and weed-free and untreated control plots. Sugar beet root yields were highest in 38- and 51-cm rows at locations that compared the three row-widths and highest in 38-cm rows at the other location. When averaged over row widths, yields were lowest when glyphosate applications were delayed until weeds were 15-cm in height at all locations. Yields were also lowest in the conventional herbicide treatments at the location where only the 38- and 76-cm row widths were compared. In treatments which received only a single glyphosate application when weeds were 10-cm tall, subsequent weed biomass accumulation was reduced by at least 70% in 38-cm rows and 65% in 51-cm rows compared with 76-cm rows. Results from this study indicate that planting glyphosate-resistant sugar beet in narrow rows may result in higher yields and the suppression of late-season weed growth.