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Strategies for controlling glyphosate-tolerant weeds in glyphosate-tolerant sugarbeets.

ABSTRACT

Sugarbeet growers in the Western Sugar growing area planted over 90 percent of their acreage to glyphosate-tolerant sugarbeets during the 2008 growing season. Eighty-five percent of the growers in northern Wyoming and Montana utilized two applications of glyphosate while 65 percent of the growers in western Nebraska used three applications of glyphosate in sugarbeets in 2008. Less than 5 percent of the growers applied ethofumesate at planting.

Common lambsquarters (*Chenopodium album* L.) and toothed spurge (*Euphorbia dentata* Michx) are two weeds on the increase in Nebraska, Colorado, and Wyoming and have been shown to be more difficult to control with glyphosate. Experiments were conducted on 2007 and 2008 to examine various strategies for controlling both weeds in glyphosate-tolerant sugarbeets. Adding ethofumesate at planting in conjunction with glyphosate applied postemergence resulted in 99 percent toothed spurge control compared to 62 percent control when only glyphosate was applied postemergence. Toothed spurge control in sugarbeets improved when glyphosate rate was increased from 0.84 to 1.26 kg/ha. However, glyphosate control of toothed spurge declined dramatically when spurge reached 25 cm in height. Common lambsquarters control was increased by applying three, rather than two, applications of glyphosate at 0.84 kg/ha or increasing the glyphosate rate to 1.26 kg/ha.