

## Evaluation of glyphosate antagonism from Sharpen on Canada thistle control

In 2010, we observed that tank mixing Sharpen and glyphosate (11 fl oz) resulted in reduced long-term Canada thistle control. In 2011, our main objective was to determine if higher rates of glyphosate would help overcome the antagonism from Sharpen. Glyphosate was applied at 11, 16, and 22 fl oz alone or with Sharpen at 1 fl oz. Treatments were applied on June 9 to 2- to 6-inch weeds. Canada thistle treated with Sharpen + glyphosate were quickly burned down; however, by 3 weeks after application, treated Canada thistle had started to re-grow. Plants treated with just glyphosate provided more consistent control over time. Increasing the glyphosate rate from 11 to 22 fl oz did increase Canada thistle control, but not to the level of glyphosate applied alone. It should be noted that we have not observed antagonism from Sharpen + glyphosate on annual weeds.

Treatment <sup>ab</sup>	Rate	Canada Thistle Control		
		18-Jun	29-Jun	15-Jul
		-----%-----		
Glyphosate	11 fl oz	60	83	79
Glyphosate	16 fl oz	60	85	82
Glyphosate	22 fl oz	60	87	82
Sharpen + Glyphosate	1 fl oz + 11 fl oz	76	43	38
Sharpen + Glyphosate	1 fl oz + 16 fl oz	83	60	58
Sharpen + Glyphosate	1 fl oz + 22 fl oz	85	69	65
Untreated		0	0	0
LSD (0.05)		6	16	17
CV		6	13	17
<sup>a</sup> Glyphosate applied with AMS (2.5%); Treatments applied to 2-6 inch weeds				
<sup>b</sup> Sharpen applied with MSO (1%)				