

## New Product Combines Residual Herbicides with Glyphosate for Glyphosate-Resistant Corn

Russell R. Hahn and Paul J. Stachowski, Department of Crop and Soil Sciences,  
Cornell University

Residual herbicides provide value in glyphosate-resistant corn weed control programs. In the short term, reduced rates of residual herbicides with glyphosate will improve late-season weed control. This often results in higher corn yields as demonstrated with a multi-state project (33 experiments) across the Northeast in 2000 and 2001. In this project, early postemergence (EPO) applications of glyphosate alone, when weeds were 1 to 3 inches tall, produced an average yield of 144 Bu/A while EPO applications of glyphosate plus a reduced rate (2/3 normal) of residual herbicides produced an average of 153 Bu/A. In the long term, addition of residual herbicides with different site-of-action (ways of killing weeds) classifications than glyphosate should delay or prevent development of glyphosate-resistant weed populations.

### Halex™ GT Introduced

Results from the Northeast regional project and from similar projects around the country likely prompted the development and introduction of Halex GT. This new product, which is available in bulk only, combines residual herbicides with glyphosate in a single product for postemergence use in glyphosate-resistant corn. Along with glyphosate for control of emerged weeds, Halex GT includes Dual Magnum (*S*-metolachlor) for residual grass control and Callisto (mesotrione) for residual broadleaf weed control. In addition to providing residual activity against a broad spectrum of weeds, this mixture provides three different site-of-action classifications. The Halex GT label clearly shows that the product includes herbicides from Groups 5 (Dual Magnum), 9 (glyphosate), and 27 (Callisto). With multiple sites-of-action, this product can be an important tool in herbicide resistance management programs. The label also allows for the addition of atrazine with a fourth site-of-action (Group 5). In fact, Halex GT use guidelines encourage the addition of atrazine if broadleaf weeds are greater than 4 inches in height.

### 2007 Research Results

Halex GT treatments were included in experiments at Aurora and Valatie, NY during the 2007 growing season with favorable results. When applied at 4 pt/A, EPO (1- to 3-inch weeds) applications of Halex GT controlled an average of 99 to 100% of common ragweed, common lambsquarters, and giant foxtail at the two locations (Table 1). Mid-postemergence (MPO) applications of 22 fl oz/A Roundup Original Max, applied 6 days later when weeds averaged 2 to 4 inches in height, controlled 94% of common ragweed and 87% of giant foxtail. While common lambsquarters control was excellent at Valatie, a significant amount of lambsquarters emerged after the MPO Roundup application at Aurora resulting in an average of 72% lambsquarters control. Improved weed control with the EPO Halex GT application produced an average of 149 Bu/A compared with 140 Bu/A with the MPO Roundup only application.

**Table 1.** Average weed control ratings and corn yields with EPO Halex GT applications compared with MPO Roundup Original Max applications in glyphosate-resistant corn at Aurora and Valatie in 2007.

Herbicides	Rate Amt/A	When Appl	% Control			Yield Bu/A
			Rag	Lambs	Fox	
Halex GT*	4 pt	EPO	99	100	99	149
Roundup OM**	22 fl oz	MPO	94	72	87	140

\*Halex GT applied with 0.25% (v/v) NIS and 1.7 lb/A AMS and  
\*\* Roundup OM applied with 1.7 lb/A AMS.

### Conclusions

Preliminary results with Halex GT in 2007 suggest that this new product, with reduced rates of Dual Magnum and Callisto pre-mixed with glyphosate, will provide improved control of annual grass and broadleaf weeds that might emerge after application. In addition, Halex GT simplifies efforts to prevent development of herbicide resistant weed populations.