

WEED MANAGEMENT OPTIONS IN GLYPHOSATE TOLERANT CORN. Peter H. Sikkema<sup>1</sup>, Nader Soltani<sup>1</sup>, Robert E. Nurse<sup>2</sup>, Laura L. Van Eerd<sup>1</sup> and Richard Vyn<sup>1</sup>. <sup>1</sup>University of Guelph Ridgetown Campus, Ridgetown, Ontario, Canada. N0P 2C0; <sup>2</sup>Agriculture and Agri-Food Canada, Harrow, Ontario, Canada N0R 1G0.

Seven field trials were conducted at various locations in Ontario over a two-year period (2006 and 2007) to study the effect of various weed management strategies in glyphosate tolerant corn on weed control, corn yield, environmental impact and net income. There was no visible injury with the postemergence herbicides evaluated. Results were field specific. At 56 days after treatment, depending on location, glyphosate EPOST, glyphosate LPOST, dicamba/atrazine plus glyphosate EPOST, isoxaflutole/atrazine PRE fb glyphosate LPOST, and glyphosate EPOST fb glyphosate LPOST provided 45-97, 91-100, 40-98, 97-100, and 98-100% control of annual grasses and 65-97, 69-100, 83-100, 97-100, and 98-100% control of annual broadleaf weeds in glyphosate tolerant corn, respectively. The most consistent weed control was provided by the two-pass programs when a residual herbicide (PRE) was followed by glyphosate LPOST or when a sequential application of glyphosate was applied EPOST followed by LPOST. Yield was reduced as much as 86% when weeds were not controlled. There was no difference in yield among the two-pass herbicide programs evaluated. The isoxaflutole/atrazine PRE fb glyphosate LPOST had the lowest environmental impact of the two-pass herbicide programs evaluated. On average, the most profitable weed management program in corn was a sequential application of glyphosate.