GROWER-IMPLEMENTED HERBICIDE STRATEGIES FOR WEED MANAGEMENT IN GLYPHOSATE-RESISTANT CROPS. Bryan G. Young, Southern Illinois University, Carbondale, IL 62901; Robert G. Wilson, University of Nebraska, Scottsbluff, NE 69361; William G. Johnson and Stephen C. Weller, Purdue University, West Lafayette, IN 47907; Micheal D. K. Owen, Iowa State University, Ames, IA 50011; David R. Shaw, Mississippi State University, Mississippi State, MS 39762; John W. Wilcut, North Carolina State University, Raleigh, NC 27695.

During 2006 and 2007 a total of 156 commercial fields in Illinois, Indiana, Iowa, Nebraska, North Carolina, and Mississippi were monitored for weed management practices implemented by growers. Fields were initially selected and categorized into three cropping systems based on a minimum history of three years: 1) a single continuous glyphosate-resistant (GR) crop, 2) a rotation of two GR crops, and 3) a GR crop rotated with a non-GR crop. The primary crops included corn, cotton, and soybean. Data on weed management strategies were collected over a period of two years to allow for each field to go through a complete crop rotation cycle.

When pooled over crop, growers in a continuous GR cotton, corn, or soybean production system used glyphosate as their sole herbicide for weed management in 45% of the fields in 2006 which declined to only 33% of the fields in 2007. In the same continuous GR crop system, a 15% increase in the use of residual herbicides was evident from 2006 (39%) to 2007 (54%). When rotating two GR crops growers used only glyphosate for weed management in 38% of the fields over 2006 and 2007 compared with 56% of the fields receiving a residual herbicide. The residual herbicide was most commonly used in the production of cotton and corn rather than soybean. Grower tendencies to use glyphosate alone or residual herbicides for weed management were similar for fields where two GR crops were rotated compared with a GR crop rotated with a non-GR crop. In summary, the reliance on glyphosate as the only herbicide used for weed management by growers has decreased in these study fields over the past two years with a concomitant increase in the use of residual herbicides. However, herbicide use patterns by growers still remain in conflict with best management practices to help mitigate glyphosate-resistant weeds from evolving.

2007 North Central Weed Science Society Proceedings 62:198.