ACCURACY OF WEEDSOFT FOR PREDICTING EARLY-SEASON COMPETITIVE LOADS FOLLOWING RESIDUAL HERBICIDES IN GLYPHOSATE-RESISTANT CORN. Daniel D. Schnitker, Bryan G. Young, William G. Johnson, and Mark M. Loux, Graduate Research Assistant and Associate Professor, Southern Illinois University, Carbondale, IL 62901, Associate Professor, Purdue University, West Lafayette, IN 47907, Professor, The Ohio State University, Columbus, OH 43210.

Full adoption of integrated weed management will never be realized until growers have the experience or tools necessary to estimate potential crop yield loss from weed competition. The utilization of weed management decision support software could have significant implications for weed management in glyphosate-resistant corn due to the reliance on postemergence glyphosate applications. Early and total season yield loss is calculated in WeedSOFT by using the competitive load parameter. Each weed species has a competitive index, which is multiplied by the number of plants/100 ft^2 and by a weed height multiplier to obtain the competitive load for that species. Field studies were conducted in Illinois, Indiana, and Ohio in 2006 using residual herbicides followed by a POST application of glyphosate. The objective of this research was to evaluate the competitive load of weeds present at the POST timing and test the accuracy of WeedSOFT at predicting crop yield loss.

Linear regression analysis by individual state and pooled across states was conducted to determine the correlation between predicted and observed yields. A slope equal to one indicates a close relationship between predicted and observed yields. The slope value estimate for Illinois was equal to one. However, WeedSOFT underestimated yield losses in Indiana, Ohio, and combined across states, especially when yield loss estimations were minimal. Further analysis is justified to determine what underlying factors contribute to the inaccuracy of WeedSOFT prediction models under certain environments and weed dynamics.

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