WEED PREVALENCE IN THE "I" STATES. Dawn E. Nordby, Robert G. Hartzler, Palle Pedersen, and William G. Johnson, Extension Specialist, Department of Crop Sciences, University of Illinois, Urbana, IL 61801, Professor and Professor, Department of Agronomy, Iowa State University, Ames, IA 50010, Professor, Department of Botany and Plant Pathology, Purdue University, West Lafayette, IN 47097.

Every agronomic field has a weed infestation capable of causing significant economic damage if weeds are not effectively controlled. The most effective weed management programs utilize a combination of control strategies, including cultural, mechanical and chemical tactics. In the past decade weed management programs for corn and soybean in the North Central Region have become increasingly dependant on herbicides. Of particular concern is the reliance on glyphosate in soybean, with glyphosate resistant soybean planed on 80% of the acres. This practice results in glyphosate being used in a manner that enhances the potential for shifts in weed communities.

To evaluate the impact of cropping systems and herbicide use patterns on weed community shifts a field survey was conducted in the spring and late summer of 2004 and 2005 in Iowa, Illinois and Indiana. Sites were selected to ensure fields with a range in tillage and glyphosate use intensity. A total of 48, 37, and 30 fields were surveyed in Illinois, Indiana and Iowa, respectively.

The predominant weeds found in the different tillage systems varied with state. In no-till fields, winter annuals were discovered quite frequently throughout Illinois and Indiana, while very few were found in Iowa. Over 40% of the no-till sites in Illinois and Indiana contained chickweed, speedwell, dandelion, purple deadnettle, and wild garlic. Iowa no-till sites contained far fewer weeds (five fields with no weeds at all). In Iowa, waterhemp had the greatest occurrence, with 44% of sites sampled containing this weed, followed by giant foxtail and lambsquarters with 22% of sites infested with either of these two weeds.

The diversity of weed species found at conventional tillage sites decreased from Indiana to Iowa. Seventy-two weed species were identified as escaping weed management tactics in Indiana, while only ten weeds were found in Iowa. Summer annuals such as Eastern black nightshade, velvetleaf, giant foxtail, and prickly sida were the most frequent weeds (greater than 33% of fields infested) in Indiana. Illinois sites contained velvetleaf, giant foxtail, morningglory species, and waterhemp at greater than 25% occurrence. Whereas, waterhemp, giant foxtail, and velvetleaf were found in 40%, 37%, and 25% of Iowa sites, respectively.

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