

EVALUATION OF COVER CROPS AS A COMPONENT OF A WEED MANAGEMENT SYSTEM IN CORN AND SOYBEAN

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ABSTRACT

The recent interest in cover crops as a component of Midwest corn and soybean production systems has led to a greater need to understand the most effective herbicide program for cover crop termination prior to planting corn or soybean. Previous research has shown that certain cover crop species can significantly reduce subsequent cash crop yields if not properly terminated. Two field experiments were conducted in 2013, 2014 and 2015 to determine the most effective herbicide program for the termination of winter wheat, cereal rye, crimson clover, Austrian winter pea, Italian ryegrass, and hairy vetch. Cover crops were planted in early September and herbicide treatments were applied at different timings from early to late in the spring. Visual control and above-ground biomass reduction was determined 28 days after application (DAA). The most consistent control of broadleaf cover crops occurred following treatment with glyphosate + 2,4-D, dicamba, or saflufenacil. In general, glyphosate-containing herbicide treatments provided the most consistent control of grass species compared to paraquat and glufosinate. Across all timings, 1.4 kg ae ha⁻¹ glyphosate + 0.136 kg ai ha⁻¹ clethodim provided at least 98% control of Italian ryegrass while 1.4 kg ha⁻¹ glyphosate provided between 87 and 94% control of cereal rye and winter wheat. Biomass reduction (BR) was greater following earlier applications, but certain treatments still provided adequate control at mid or late application timings. Thus, growers seeking to maximize cover crop residue can delay termination without sacrificing effective control.