EVALUATION OF COVER CROP BURNDOWN OPTIONS

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Abstract

There has been increased interest in cover crops among Arkansas farmers as a result of increasing occurrence of herbicide-resistant Palmer amaranth and federal conservation program payments associated with the planting of cover crops. Despite the known benefits, widespread adoption of cover crops still remains limited due to the potential cost and management implications associated with their termination and subsequent crop establishment. Cover crop termination is vital for the success of the subsequent crop, and generally, chemical termination of cover crops is poorly understood, especially for the less common cover crops. A field study was conducted in the fall of 2015 at the Arkansas Agricultural Research and Extension Center in Fayetteville to evaluate burndown options for cover crops. This experiment was organized as a randomized complete block with a strip-plot, where herbicide treatments were the main plots and cover crops were the strip-plots. Herbicide treatments were composed of 25 termination options. Cereal cover crops, such as wheat and cereal rye, were effectively terminated by glyphosate. The legumes cover crops hairy vetch, Australian winterpea, and crimson clover were better controlled when auxin herbicides were present in the tank mixture. Paraquat plus metribuzin was effective in controlling both cereal and legume cover crops; however, metribuzin does have an eight month plant back period for cotton. Rapeseed was not well controlled by any of the termination options, which include various combinations of glyphosate, auxin herbicides, and paraquat among others. Earlier application of burndown herbicides might be needed for control of more difficult-to-terminate cover crops; albeit, earlier termination is expected to reduce cover crop biomass production and in-crop weed suppression. Due to the plantback period for metribuzin, fluometuron or diuron could be substituted and provide similar control when mixed with paraquat.