WIU CENTENNIAL HONORS COLLEGE
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Abstract

Poster

Major: Agriculture

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Pumpkin emergence and growth as affected by cover crop, termination time and preemergence herbicide

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Managing weeds in pumpkins is challenging because of few herbicide options, wide row spacing, and the prostrate growth habit of pumpkins. Cover crops can be managed to suppress weeds and provide nutrients for the crop, but information on cover crop use in pumpkins is limited. When grass cover crops are terminated they can form a mat of residue that suppresses weed emergence, but may also suppress pumpkin emergence. Legume cover crops fix nitrogen in addition to suppressing weeds. We hypothesized that pumpkins will grow better in an environment where cover crops are terminated two weeks prior to planting. A second objective was to compare preemergence herbicides labeled for pumpkin for their effect on pumpkin emergence and growth. Three cover crop treatments, cereal rye, wheat, and a winter pea/crimson clover mix, were planted in 10-cm square pots in a Sable silty-clay soil. Cover crops, and weeds (lambsquarters, waterhemp, horseweed, pennycress, morningglory, giant foxtail) that grew from the seedbank in a fourth treatment, were terminated using glyphosate herbicide at 4 or 6 weeks after planting. Cover crops or weeds that survived the glyphosate treatment were cut at the soil surface 2 weeks after application. Two preemergence herbicides, ethalfluralin+clomazone and S-metolachlor, were applied to bare soil treatments. Our control was an untreated, non-cover cropped soil. Three Jack-Be-Little pumpkin seeds were planted in each pot following the 6 week cover crop termination and preemergence herbicide application. Pots were monitored for pumpkin emergence and plants were measured for size and growth stage.