

WEED CONTROL IN NO-TILL PUMPKINS. Elizabeth T. Maynard, Regional Extension Specialist, Purdue University, Westville, IN 46391-9542.

No-till production systems for pumpkins are of interest to Midwest producers, but achieving acceptable weed control without cultivation can be difficult. Research was conducted in Wanatah, IN in 2007 to evaluate postemergence (POST) weed control options for pumpkins no-till (NT) planted into a fall-seeded, spring-killed winter wheat cover crop. Weed control and yield in the no-till system were compared to those for conventional tillage with one cultivation (CT). Winter wheat in NT plots was treated on 21 May and 8 June with glyphosate at 0.75 lb ae/A. After seeding 'Magic Lantern' pumpkins on June 11, four NT treatments and CT were sprayed with a premix of ethalfluralin + clomazone (Strategy) at 0.8 + 0.25 lb ai/A. A fifth NT treatment received no herbicide (WDY). On July 13 CT plots were cultivated and the following POST treatments were applied to separate NT treatments: nothing (ST), halosulfuron broadcast at 0.375 oz/A (SAN), or glyphosate between rows at 0.75 lb ae/A using a hooded sprayer (GLY). One of the remaining NT treatments was handweeded (HW) between July 13 and Aug. 3. Three wk after planting overall weed control was worst in WDY plots. For the most prevalent weeds, common lambsquarters and carpetweed, there was no difference in control between other treatments. Eight d after POST treatments, crop injury was worse for SAN than for GLY and other treatments showed no injury. Overall weed control was better in GLY and CT than ST; weed control in HW and SAN was intermediate between GLY and ST; WDY had the heaviest weed pressure. Control of common lambsquarters was best in CT but not significantly different from GLY. Thirty-three d after POST treatments, crop vigor was better in CT and GLY than ST, SAN or WDY; HW plots were between GLY and ST. Crop injury remained highest in SAN. Overall weed control was better in HW than CT, SAN, ST or WDY; GLY plots were between HW and CT. Control of common lambsquarters was best in CT, GLY and HW, followed by SAN and ST, and worst in WDY. Marketable yield and fruit number per acre were highest in GLY and HW treatments, followed by CT which was not significantly lower, and lowest in WDY. ST and SAN treatments produced yields between CT and WDY treatments. Average fruit size was larger for GLY, CT, HW, and ST than for SAN and WDY. The results suggest that weeds in no-till pumpkins can be controlled reasonably well using a combination of a preemergence herbicide and a row-middle application of a nonselective herbicide with no residual activity, resulting in yield and fruit size comparable to conventional tillage with a preemergence herbicide and one cultivation. Additional measures would be required to prevent weed seed production and shed. Future trials could include additional herbicides labeled for preemergence or row-middle use, different cover crop management practices, and treatments designed specifically to minimize weed seed additions to the soil.