

Spring Wheat Cultivar Harrowing Evaluation in Minnesota

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Summary

Weed control is a major management issue in the production of spring wheat (*Triticum aestivum* L.). Harrowing can be used in an integrated weed management program. The objectives of this research were to determine initial plant density, plant density reduction, spike density, yield, and the relationship between plant and spike density with yield of spring wheat cultivars after harrowing on a certified organic farm with farm size equipment near Fertile, MN, in 2003 to 2005. Averaged across cultivars, there was a 16, 8, and 12% reduction in emerged seedlings relative to planted live seeds in 2003, 2004, and 2005, respectively. Post-emergence harrowing reduced plant density by 46% in 2003 (harrowed 2×), 16% in 2004 (harrowed 2×), and 25% in 2005 (harrowed 1×). Post-harrowing plant density and yield were positively correlated in 2003, uncorrelated in 2004, and negatively correlated in 2005. There were differences in yield among the tested cultivars. No cultivar could be identified with consistent lower plant density reduction percentage after harrowing. Our suggestion is to adjust the live seeding rate to locally recommended established wheat plant density, by considering anticipated plant loss before plant establishment (average is 12%), and plant density reduction from post-emergence harrowing (average is 29%).

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