WHEAT YIELD RESPONSE TO WINTER ANNUAL WEED INTERFERENCE AND CROP STAND LOSS. Shawn P. Conley, Assistant Professor, Department of Agronomy, University of Missouri, Columbia, MO 65211.

No-till production systems coupled with decreased use of soil residual herbicides has led to increased populations of winter annual weeds. Therefore, research was conducted to quantify the effect of winter annual weed interference and crop stand loss on soft red winter wheat yield and quality. The experimental design was a randomized complete block split-plot design with four replications. The main-plot effect consisted of weed-free versus weedy plots. The sub-plot effect was winter wheat stand loss treatments of 0, 20, 40, 60, 80, and 100%. Henbit or common chickweed interference did not affect test weight; however test weight decreased as percent stand loss increased. Henbit did not reduce crop yield at 18 plants m^{-2}, however at 82 and 155 plants m^{-2} crop yield was reduced 13 and 38%, respectively, whereas common chickweed reduced crop yield 28% at 169 plants m^{-2}. Yield estimates based on tiller or head number m^{-2} indicated that crop yield decreased linearly as stand loss increased. These results suggest that winter annual weed interference and crop stand loss may significantly impact soft red winter wheat grain yield and quality.

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