

WINTER ANNUAL WEED INTERFERENCE IN SOFT RED WINTER WHEAT. Christopher M. Zwiener and Shawn P. Conley, Graduate Research Assistant and Assistant Professor, Department of Agronomy, University of Missouri, Columbia, MO 65211.

Stand loss due to winterkill can be a serious problem for soft red winter wheat producers. Reduced stand often leads to growers questioning whether to establish another crop and concern over the impact on weed-crop interference. Therefore, research was conducted to quantify the effect of % stand loss and weed interference on soft red winter wheat yield. Field studies were conducted at two locations in Missouri with two winter wheat varieties. The experimental design was a randomized complete block, split-plot arrangement. The main plot affect was either weed-free or weedy plots. The sub-plot affect was % stand loss of 0, 20, 40, 60, 80, or 100%. Weed density and biomass were collected for winter annual and summer annual weeds. Winter annual weed density and biomass were taken at weed physiological maturity. Summer annual weed density and biomass were taken at wheat harvest. Winter wheat was harvested at physiological maturity and adjusted to 13% moisture. Percent stand loss affected test weight at both locations. At Columbia, yield decreased as stand loss increased. At Novelty, stand loss $\leq 40\%$ did not affect yield. At Columbia, yield was reduced 38% in the weedy plots as compared to the weed-free treatments. Winter annual weed interference did not affect yield at Novelty. Results indicated that % stand loss decreased yield and that high density of winter annuals may decrease wheat yield.