

1 REMOVAL TIMING OF WINTER ANNUAL WEEDS IN A NO-TILL CORN AND SOYBEAN  
2 CROPPING SYSTEM AND ITS EFFECT ON SOIL WATER AVAILABILITY AND YIELD.  
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6 The adoption of no-till has led to increased winter annual weed pressure in many fields. There is  
7 little data available on how winter annual weeds affect corn and soybean growth and yield. A  
8 particular concern in Nebraska is how much soil water winter annuals may transpire. The objective of  
9 this research was to measure how winter annual weed removal timing affects soil water availability  
10 and yield of corn and soybean. A field experiment was conducted at the South Central Agricultural  
11 Laboratory (SCAL) near Clay Center, NE and at the Agronomy Farm in Lincoln, NE. Weeds were  
12 removed at five timings: mid-November, mid-March, mid-April, mid-May, and mid-June. Plots were  
13 kept weed free after the removal timing. Volumetric soil moisture to a depth of 1 m was measured  
14 weekly using a Troxler model 4301 <sup>241</sup>Am (Be) neutron probe. Corn and soybean were planted on May  
15 15 in both the locations. Grain was harvested using a small plot combine and yield was calculated. At  
16 SCAL there were no differences in soil moisture among removal timing treatments at the time of  
17 planting. Delaying removal until mid-June depleted soil water in the surface 12” in corn treatments but  
18 not in soybean. At the time of planting in Lincoln there was less soil moisture available in the mid-  
19 May and mid-June removal timing treatments compared with the earlier removal timings. Delaying  
20 removal until mid-June further depleted soil moisture in the surface 12” of both corn and soybean  
21 crops. Corn yield was reduced by delaying weed removal until mid-May or mid-June at both Lincoln  
22 and SCAL. Soybean yield was reduced by delaying weed removal until mid-June in Lincoln. Weed  
23 removal timing did not have an effect on soybean yield at SCAL.