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*Effects of Crop Residue, Wind, Radiation, and Temperature on Surface Soil Water Evaporation*

Storing precipitation in crop soil is strongly important in the Central Great Plains. There are three stages in the drying of soil. A rapid linear the first stage, a curvilinear the second stage, a slow linear the third stage. The purpose of this project is to test the effects of wheat residue on soil water evaporation rate under four different simulated environments. My hypothesis is that crop residues on the soil surface will reduce soil water evaporation rate and that greater amounts of residue will be more effective than lower amounts. My procedure: gather materials; fill cups with soil to designated amount; fill four cups with water to designated amount; create the four environmental treatments in sectors; average all replicas and environmental treatments; and calculate all water loss and plot. My results are that the lights-on/fan-on had the highest evaporation rate and the lights-off/fan-off had the lowest evaporation rate. The residue treatments had an effect on the evaporation. The increasing amount of residue decreases the amount of evaporation. In conclusion, my hypothesis was partially correct. It was correct for the lights-on/fan-on environment and the lights-off/fan-off environment. But for the lights-on/fan-off and lights-off/fan-on environments residue reduced evaporation rate compared with bare soil evaporation. These results demonstrate the ability of residue to reduce the soil water evaporation rate. If I was to do this project again I would make the cups and soil volume larger and use lower wattage lights so the first stage drying doesn't happen in one day.