Chemical Fallow Water Storage in a Low Precipitation Zone of North Central Oregon. (S06-lutcher155933-Poster)

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Abstract:

Farmers in north central Oregon use tillage fallow (TF) to store soil moisture for winter wheat (Triticum aestivum L.) that is produced the following year. Improvements in direct seed equipment are responsible for a renewed interest in chemical fallow (CF). Optimism about this alternative fallow method though, is tempered by speculation of inadequate water storage. This project was designed to compare CF and TF water storage in a production zone characterized by deep soils and limited, annual precipitation (175 to 250 mm). Soil water storage in side-by-side CF and TF Ritzville silt loam (course-silty, mixed, mesic Calciorthidic Haplozeroll) profiles was compared at nine locations in 2001 and four locations in 2002. Water storage comparisons were made by evaluating the gravimetric water content of soil samples collected at 30 cm intervals-down to a depth of either 120 or 150 cm. Water storage in CF was similar to that observed in TF. Statistical analysis of a limited data set indicates the soil water content of CF might be increased if the amount of residue from the previous year's crop is equal to or greater than approximately 10 Mg ha-1. Additional work is needed to verify the effect of the quantity of residue on water storage in CF.

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