

SOIL COMPACTION IMPACTS FROM CONSERVATION-TILLAGE IN A STOCKER/WINTER WHEAT PRODUCTION SYSTEM

John A. Daniel

¹USDA-ARS Grazinglands Research Laboratory, 7207 West Cheyenne Street, El Reno, OK 73036

*Corresponding author's e-mail address: John.Daniel@ars.usda.gov

ABSTRACT

Winter wheat grown in the southern Great Plains can be used in the fall and winter as forage for beef cattle. While, fallow is a common summer practice associated with winter wheat, summer forage can possibly extend the grazing season and increase profits. But little is known about the increase grazing on soil compaction, particularly with conservation-tilled winter wheat. Soil compaction determined from two summer practices associated with winter wheat production systems (summer fallow and summer forage) were evaluated on 4 experimental paddocks at the USDA-ARS Grazinglands Research Laboratory at El Reno, Oklahoma from 1998 to 2000. Two exclosures were located in each paddock and were used as ungrazed control sites. Soil compaction impacts were determined by calculating a cone index using resistance to penetration methods. Results show that soil surface cone index values were higher in both grazing production systems as compared to the ungrazed control sites. However, as compared to ungrazed summer paddocks, the additional summer grazing of the legumes did not further increase soil compaction. The results from this study suggest that fall and winter grazing increased soil compaction, but additional summer grazing during the fallow period does not further increase soil compaction.