

EGU2020-116

<https://doi.org/10.5194/egusphere-egu2020-116>

EGU General Assembly 2020

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Management Practices Influenced Corn Grain Yield and Soil Chemical Properties

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Land sustainability could be influenced by management decisions, soil nutrients content, and soil erosion potential. This study evaluates the management that consist on two sources of nitrogen (cattle beef manure, M; and synthetic fertilizer, F) and two levels of residue removal (0% and 80%) on corn yield and soil chemical properties in a no-tillage irrigated field. The study was initiated in 2011 in Tribune, Kansas where the nitrogen treatments and residue removal were organized in randomized strip design with four replications. After Seven years of annual M addition, corn yield and soil chemical properties significantly increased compared with synthetic fertilizer. Annual residue removal at 80% level greatly reduced soil chemical properties measured especially STN, SOC, and soil P availability for subsequent crops. Residue removal at 80% show a potential to decrease soil EC compared with 0% removal, but the EC reduction was not significant. The data generated from this study shows that soil nutrients content was reduced with removing the residue even in irrigated and well fertilized field unless organic amendment was accompanied the residue removal practice.