



## **Grazing Management Effects on Soil Aggregate Size Distribution and Stability in the Missouri Coteau Region**

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This study was designed to determine the long-term effects (> 20 yr) of different livestock grazing systems on soil aggregate size distribution and stability. The study was conducted at the Central Grasslands Research and Extension Center near the eastern edge of the Missouri Coteau, 14 km northwest of Streeter, ND. Four treatments were studied and include: 1) long-term light to none-use grazing (NG), rotational grazing (RG), season-long moderate grazing (SLM), and season-long extreme grazing (SLE). Each treatment was replicated three times in three different pastures. In 2006, each replicate pasture was stratified by soil series with the same soil type/ecological site with a slope of 6 to 9 percent selected and a 100 m permanent transect established parallel with the slope. The topographic locations of each transect included summit, backslope, and toe. Soil samples were collected at each topographical position in five horizons: 0 - 5 cm, 5 - 10 cm, 10 - 15 cm, 15 - 20 cm, and 20 - 25 cm. Samples were air dried, gently crush, and sieve through a nest of sieves to obtain > 2, 1 to 2, 0.25 to 1, and < 0.25 mm diameter soil aggregates by employing the dry-sieving method to determine aggregate size distribution. Aggregate stability was determined by the wet-sieving method. This is an on-going study with analysis incomplete at abstract due date and findings presented at the annual meeting.

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