Root production in perennial grasslands

Principal investigators:

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Goal: Estimate root-rhizome production in relation to seasonality, spatial variation, and (simulated) grazing

Location: Beef Research Unit

Length of study: March November 2019

16 experimental plots (1 x 3-m) divided into 3 treatment areas (each 1-m2). Treatments include a control, a clipping, and a clipping+manure addition. Treatments are applied monthly. Root production will be measured within each treatment area using soil ingrowth cores (8-cm diameter, 30-cm length) installed at a 45-degree angle. One set of ingrowth cores will be installed sequentially in four 2-mo intervals (installed Mar, May, July, Sept), while another set will be installed in two 4-mo intervals (installed Mar and July).

8 additional subplots (each 1-m2) are also divided into three treatment areas (each 0.33 x 1-m). These subplots will allow for future chamber pulse-chase study to attain short-term allocation patterns.

Within clipped plots, all aboveground vegetation will be cut to 3” height monthly. For the manure application, we will apply 450-g/m2 monthly (~4-gal). Manure will be collected semi-fresh (~1-2 days old) each month (~14-16th of each month) and spread evenly across the treatment plots.