Influence of Cattle Grazing on Soil Phosphorus in Wetlands of Subtropical Rangelands. (S10-graetz144738-Poster)

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Abstract:

It is pertinent to investigate key nutrient processes in wetlands and evaluate their response to various management practices in order to understand the function of wetlands in agricultural settings. The objective of this research was to analyze the influence of cattle grazing densities (0, 0.46, 0.62, and 1.08 cow-calf pairs/ha) on soil P concentrations of isolated freshwater wetlands in improved and semi-native pastures. Soil samples were taken at wetland edges and interiors at depths of 0-15, 15-30, and 30-45 cm along with the associated detrital layer. Grazing density showed no effect on P concentrations after two years of the study. Water-soluble P (WSP) and Total P (TP) concentrations were highest in the detrital layer and decreased with soil depth. Concentrations of both parameters were higher in improved pasture wetlands than in semi-native pasture wetlands and were higher in the interior than the edge of the wetlands. These results suggest that wetlands accumulate P in both the detritus and the soil but it is difficult to assess the quantitative significance by concentration data alone. Cattle grazing density effects are likely to be observed over longer time periods.

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