Effect of Prairie Conservation Strips on Soil Properties within a No-till Corn and Soy System

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Prairie conservation strips are an in-field conservation practice that reduces water runoff, decreases nutrient losses, and increases biodiversity in row-crop systems. Previous research has shown prairie striprs in foot-slope landscape positions improve soil structure and function. The present study sought to determine the effect of mid-slope prairie conservation strips on selected soil functional characteristics relative to adjacent cropland managed without tillage for seven years to produce corn and soybean. Parameters measured were soil carbon and nitrogen concentrations, microbial biomass, aggregation, saturated hydraulic conductivity, pore size distribution, and bulk density. Plant surveys were conducted at each sampling position. Samples were collected at 0-10 cm, 10-20 cm, and 20-30 cm depths in cropped areas at least 5 m up and downslope from the prairie strips; in cropped areas 1.8 m up and downslope from the prairie strip edge; inside prairie strips 1.8 m from strip edge; and in the center of prairie strips. Preliminary results suggest that the interaction of prairie conservation strip roots with the soil alters soil properties in ways indicative of overall improved soil structure and function. Final soil property and plant data from this project will be presented.