Maize Yield and Soil Property Response to Entada abyssinica Cuttings in the Adamawa Lowlands, Cameroon

Satterlee, Brian
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Michigan Technological University – Forestry

Decreasing crop yields and soil fertility are a major concern of most farmers in the Adamawa Province, Cameroon, West Central Africa. Chemical fertilizers are generally beyond their means. Thus a need exists for an inexpensive, natural, and sustainable chemical fertilizer alternative.

The purpose of this study was to determine the effects of Entada abyssinica prunings through the cut-and-carry method on maize yield and soil properties. Cuttings were applied to a 30 x 15m plot in two quantities (1.25 kg/plot and 2.50 kg/plot) and two different application methods (mixed or mulched). Optimal maize yield occurred when 2.50 kg prunings per plot were mixed with the soil. Soil samples data from the plot showed significant changes in some soil properties including increases in potassium, organic matter, organic carbon, and soil pH.

For the smallholder farmer without the means to acquire chemical fertilizer, Entada abyssinica cuttings are an effective alternative. Entada abyssinica is indigenous to Africa and is valued for its multiple uses. This study indicates that positive results can be experienced in the same cropping season, which can lead to increased adoption rates and less dependence on inorganic fertilizers.