

Article title	Increasing Nutrient Use Efficiency in Acid Soils through Amelioration of Soil Acidity with Lime Microdosing
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Abstract	Soil acidity is a major production-limiting factor for maize production in most parts of the Savanna and Sahel agroecological zones (AEZ) of sub-Saharan Africa (SSA). For several decades, mitigation of the negative effects of soil acidity on crop production has been the application of tons of agricultural lime per hectare, depending on the intensity of soil acidity and the desired pH level. With increasing production costs in recent times, such approach is no longer sustainable and a new method to mitigate soil acidity for enhanced productivity is required. During a two-year study across six locations in the Guinea Savanna, Sudan Savanna, and the Sahel AEZs in northern Ghana, and Burkina Faso, we evaluated the effectiveness of lime microdosing on maize productivity in acid soils. Four microdosing (MD) strategies were compared with the traditional liming (TL) approach. Treatments were (i) 250 kg CaCO ₃ ha ⁻¹ (MD-1), (ii) 500 kg CaCO ₃ ha ⁻¹ (MD-2), (iii) 750 kg CaCO ₃ ha ⁻¹ (MD-3), (iv) 1000 kg CaCO ₃ ha ⁻¹ (MD-4), (v) 3000 kg CaCO ₃ ha ⁻¹ (TL), and (vi) control (no lime supplied). All limiting essential plant nutrients were supplied to each treatment, such that soil acidity was the only controllable limitation. Each treatment was replicated four times at all sites.
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