

Article title	Optimizing Sulfur Fertilizer for Increasing Maize Yield and Farm Profit in Bangladesh
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Abstract	<p>Sulfur fertilization plays a critical role in improving maize yield and grain quality. However, studies on economic optimum rate and right source of sulfur for maize cultivation in Bangladesh, particularly under acidic soils are limited. Multilocation field trials were conducted across northern region of Bangladesh to determine optimum rate and source of sulfur to increase maize grain yield and farm profit. Nine fertilizer treatments were arranged in a randomized complete randomized block design with four replications. The treatments included S omission, different S sources applied at 50 kg S/ha – through Thiogro urea-ES 13%, Thiogro urea-ES 75%, gypsum, Thiogro urea-ESS 13%, and ammonium sulfate, recommended practice with straight fertilizers and blended fertilizer (NPKSB) and farmer practice. At maturity, crop biomass yields (grain and straw) and yield attributes data were recorded and grain and straw samples were analyzed to determine S and N content.</p> <p>Application of sulfur regardless of its sources significantly influenced maize yield and yield components compared with S omission (no any sulfur) or farmer fertilizer practice. Maize yields increased by up to 0.44 - 2.51 t/ha. Among the different sulfur sources, ES 13% produced highest yields compared to others sources i.e., gypsum, ESS 13% and ES 75%. However, the yield differences among the sulfur sources were below statistical significance. Application of S fertilizers showed an additive effect on the grain yield, protein content, and S concentration, with an increase of up to 12%, 34%, and 26%, respectively, over farmer practice. Among the different sulfur sources, significantly higher output (biomass S or N uptake), RE (apparent recovery efficiency of applied S), and PFP (partial factor productivity of applied N or S) were observed in ES 13% and ES 75% compared to gypsum and ESS 13%. Additional results will be included during the presentation.</p>
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