Boron nutrition of tomato (*Lycopersicon esculentum* L.) grown in the laterite soils of southern Kerala

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Abstract

A pot culture experiment was conducted to study the effects of 0, 0.5, 1.0, and 1.5 kg B ha–1 with recommended doses of chemical fertilizers (75:40:25 kg N, P2O5, and K2O ha–1; RDF) and RDF+ farmyard manure (FYM; 25 tonnes ha–1) on growth, yield, and quality of tomato as well as the B status of a lateritic soil in southern Kerala. B significantly increased plant height and number of primary branches. It also reduced the days to flowering and increased fruit set (12.5 to 20% more at the highest level) both with and without FYM. Benefit–cost ratio was 40% greater for the highest level of B when applied in conjunction with RDF compared with RDF alone (no B). Quality parameters like reducing sugars, total sugars, vitamin C, and lycopene concentrations also improved following B application. Nevertheless, B availability in these soils attained sufficiency levels (2 mg kg–1) at 0.5 kg ha–1 of applied B, implying the need to exercise caution especially when applying higher doses.

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