

Research Article

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Influence of phosphorus and sulphur on growth, yield and yield attributes of tomato in calcareous soil

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Summary

Tomato is an important commercial vegetable crop grown throughout the world, is also known to tolerate the calcareous soil conditions. But, phosphorus availability is a major constrain affecting its yield and productivity. Application of sulphur(S) is known to enhance its availability through bio-chemical reactions and desorption process. To ascertain the quantity of P and S required to enhance the productivity of tomato, a field experiment was conducted in calcareous clay loam soil with five levels of P_2O_5 (312.5, 250, 187.5, 125 and 0 $kg\ ha^{-1}$) and four levels of S, applied at the rate of 2.5, 1.5, 0.5 and 0 per cent (w/w) equivalent to active $CaCO_3$ in soil. Increased rate of P and S application enhanced tomato growth recording highest with $P_{312.5} + S_{2.5}$ which was on par with $P_{250} + S_{2.5}$. But, the highest fruit setting rate (69.37%) was obtained with $P_{250} + S_{2.5}$ resulting in higher number of fruits per cluster (4.94), fruits per plant (41.17), fruit weight (77.60 g), fruit diameter (5.17cm). All these yield parameters were manifested into marketable tomato fruit yield recording maximum of 42.30 $t\ ha^{-1}$ with $P_{250} + S_{2.5}$. The study established that application of 250 $kg\ ha^{-1}$ P + 2.5% S found to be statistically optimum for tomato in terms of its yield (42.30 $ton\ ha^{-1}$).

Key words : Phosphorus, Sulphur, Calcareous soil, Tomato, Yield

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