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Determination of critical level of sulphur for soybean in inceptisol and effect of it's graded levels on nutrient uptake

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ABSTRACT

A pot culture experiment was conducted to determine the critical level of available.The result obtained indicated that the plant height was significantly increased by sulphur application upto 30 mg kg^{-1} sulphur over control. The average dry matter yield varied from 4.47 to 5.92 g $plant^{-1}$. There was significant increase in dry matter yield by application of sulphur upto 45 mg ka^{-1} soil. The nitrogen uptake values ranged from 96.2 to 165.9 mg $plant^{-1}$ and were significantly increased due to application of sulphur up to 60 mg kg^{-1} in all soils. The response was maximum in case of soils having low available sulphur, followed by soils having high available sulphur and medium available sulphur. The mean P uptake value varied from 19.97 to 32.79 mg $plant^{-1}$ that indicated the significant response to sulphur upto 45 mg kg^{-1} in soils containing low available sulphur and 60 mg kg^{-1} in soils containing low and medium available sulphur and upto 30 mg kg^{-1} in soils containing high available sulphur. The K uptake was significantly increased by sulphur application upto 60 mg kg^{-1} in all soils. The mean K uptake value ranged between 59.84 to 138.31 mg $plant^{-1}$. The mean value of sulphur concentration in the soybean plants varied from 0.227 to 0.423 per cent. There was significant increase in the concentration of sulphur in soybean plants due to application of sulphur over control. There was significant increase in sulphur uptake by soybean due to sulphur application upto 60 mg kg^{-1}. The mean value of sulphur varied from 6.21 to 16.15 mg $plant^{-1}$. The result indicated good response of soybean plants to sulphur application particularly in case of soil with low and medium sulphur content. The critical concentration of sulphur in plant for Inceptisol was found to be 0.23 per cent and the critical level of sulphur in Inceptisol soil for soybean plant was found to be 13.33 mg kg^{-1}.

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