SULFUR USE EFFICIENCY OF RADISH (*Raphanus sativus* L.)

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by

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ABSTRACT

Plants need sulfur (S) mainly for the production of proteins, volatile compounds, and sulfates. The amount needed for such tasks varies significantly in different families and genera of plants. Radish is one of the important root crops that belongs to the family brassicaceae and is reported to increase its yield with S. A pot experiment was conducted to study S use efficiency of radish in Reddish Brown Latosolic and Regosol soils. Treatments consisted with four levels of sulfur, 0, 3, 6, 9, and 12 kg ha^{-1} applied as $(NH_4)_2SO_4$. Measurements were undertaken to record radish root yield (g), total fresh weight (g), total dry weight (g), total plant sulfur uptake (g) and plant sulfur uptake efficiency (%). According to the results, effect of fertilizer level on total dry weight was significant ($P<0.05$) and also, there was a significant effect of soil type on plant S uptake efficiency ($P<0.05$). Further, the plots amended with $(NH_4)_2SO_4$ at the rate of 6, 9, and 12 kg ha^{-1} showed a significantly ($P<0.05$) higher total dry weight compared to the control. However, there was no significant ($P>0.05$) effect of either soil type or fertilizer level on radish root yield, fresh weight and total plant S uptake. As determined, S use efficiency in Reddish brown latosolic soil was significantly ($P<0.05$) higher than that of the Regosol soil. Application of S in radish seems to increase the level of S in the plant. Also, S use efficiency depends on level of S amended and the type of soil. Field level studies are suggested to confirm the results.

Key words: Radish yield, Sulfur uptake, Sulfur uptake efficiency