

EFFECT OF DIFFERENT RATE OF SULPHUR SOURCES ON GROWTH, YIELD AND QUALITY OF SESAME (*SESAMUM INDICUM* L.) GROWN IN THE ALLEY SPACE OF GUAVA (*PSIDIUM GUAJAVA* L.)

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Abstract: A field experiment was conducted in a sandy loam soil during *kharif* season, 2012-2013 at Rajiv Gandhi South Campus, Barkachha, BHU, Mirzapur, Uttar Pradesh, India to find out the effect of different rate of sulphur sources on growth, yield and quality of sesame (*Sesamum indicum* L.) grown in the alley space of guava (*Psidium guajava* L.). The experiment was laid out in a randomized block design with 3 replications and three sources of sulphur viz. single super phosphate, gypsum and elemental sulphur and three levels of sulphur viz 15, 30 and 45 kg ha⁻¹ with control. The total treatment combination for all the levels were ten (T₁-Control, T₂-15 kg Sulphur ha⁻¹ through SSP, T₃-15 kg Sulphur ha⁻¹ through ES, T₄-15 kg Sulphur ha⁻¹ through gypsum, T₅-30 kg Sulphur ha⁻¹ through SSP, T₆-30 kg Sulphur ha⁻¹ through ES, T₇-30 kg Sulphur ha⁻¹ through gypsum, T₈-45 kg Sulphur ha⁻¹ through SSP, T₉-45 kg Sulphur ha⁻¹ through ES, T₁₀-45 kg Sulphur ha⁻¹ through gypsum). The crop was fertilized with recommended dose of NPK of 60:30:30 kg ha⁻¹. Results revealed that application of 45 kg S ha⁻¹ through elemental sulphur recorded the highest plant height, number of branch plant⁻¹, dry matter accumulation, capsules plant⁻¹, seeds capsule⁻¹, seed weight plant⁻¹ and test weight, seed yield, stover yield, biological yield, harvest index, protein content per cent, oil content per cent, carbohydrate per cent, total nutrient uptake and available nutrient in soil. It was significantly superior over 45 kg S ha⁻¹ through gypsum over rest of the treatment. The highest net monetary return (Rs. 24921.27 ha⁻¹) and Benefit: Cost (B: C) ratio (1.52) was obtained when 45 kg sulphur was applied through elemental sulphur this was also found to be best treatment for sesame.

Keywords: Sesame, Agroforestry, Sulphur, Alley space, Oil content, Benefit

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