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Influence of potash and sulphur levels on yield, quality and economics of sesamum (*Sesamum indicum* L.)

N.D. BHOSALE, B.M. DABHI, V. P. GAIKWAD AND M.C. AGARWAL

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SUMMARY

A field experiment was conducted during *Kharif* season of 2008-09 at instructional farm, Junagadh Agricultural University, Junagadh to study the influence of potash and sulphur levels on yield, quality and economics of sesamum. Result of the experiment revealed that an application of potash @ 50 kg ha^{-1} recorded significantly higher seed yield (813 kg ha^{-1}), stover (1165 kg ha^{-1}) yield, oil content (44.89 %), protein content (27.82 %) with the highest net return of Rs. 27937 ha^{-1} and BCR value of 2.58 over control. Similarly sulphur level also recorded significant effect in increasing all these yield and quality parameters. The highest seed yield (804 kg ha^{-1}), stover (1146 kg ha^{-1}) yield, oil content (45.46 %) and protein content (28.04 %) with net return of Rs. 27478 ha^{-1} and BCR value of 2.56 was obtained under the application @ 40 kg ha^{-1} followed by application of sulphur @ 20 kg ha^{-1}.

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Sesamum indicum L. (Syn. *Sesamum orientale* L.), which is known variously as sesamum, til, gingelly, simsim, gergelim etc. is one of the most important oilseed crop grown extensively in India. Sesamum is the oldest indigenous oil plant with longest history of its cultivation in India. India is still the world leader. India, China, Burma, Sudan, Pakistan and Mexico are the main sesamum producing countries of the world. In India, sesamum is an important edible oilseed crop, stands next to groundnut. It is mainly grown in Gujarat, Uttar Pradesh, Madhya Pradesh, Karnataka, Orissa, Bihar, Jharkhand, Andhra Pradesh, Kerala and Tamil Nadu.

Fertilizers, even though comparatively a costly input of production are essential for securing higher yields. The prudent use of fertilizers with appropriate method and time of application are the prime importance in securing higher and economic yields. The potassium is one of the major plant nutrients for the growth and development of plants. The major functions are enzymes involved in photosynthesis, metabolism of carbohydrate and protein. The potassium also improves crop quality and yield characteristics by increasing disease resistance in a number of crops. Sulphur as a plant nutrient can play a key role in augmenting the production and productivity of oilseeds in the country as it has a significant influence on quality and development of oil seeds which positively reflect the economics of the Sesamum.

Correspondence to:
N. D. BHOSALE
Department of Agronomy, Anand Agricultural University, ANAND (GUJARAT) INDIA
nileshbhosale007@gmail.com

Authors' affiliations:
B.M. DABHI, Department of Agronomy, Junagadh Agricultural University, JUNAGADH (GUJARAT) INDIA

V.P. GAIKWAD, Department of Agronomy, Anand Agricultural University, ANAND (GUJARAT.) INDIA

M.C. AGARWAL, Department of Soil Science and Agricultural Chemistry, Anand Agricultural University, ANAND (GUJARAT.) INDIA

MATERIALS AND METHODS

A field experiment was conducted during *Kharif* season of 2008 at Instructional Farm, Junagadh Agricultural University, Junagadh to study the influence of potash and sulphur levels on yield, quality and economics of sesamum. The soil of the experiment field was clayey in texture, medium in available nitrogen (266.5 kg ha^{-1}), medium in available phosphorus (38.3 kg ha^{-1}), available sulphur (19.85 kg ha^{-1}) and fairly rich in available potassium (232.4 kg ha^{-1}) with 7.9 pH. Nine treatment combinations comprised of three levels of potash *viz.*, Control (K_0), potash @ 25 kg K_2O ha^{-1} (K_1) and potash @ 50 kg K_2O ha^{-1} (K_2) and three levels of sulphur *i.e.*