EFFECT OF POTASSIUM AND SULPHUR ON GROWTH, YIELD AND QUALITY OF INDIAN MUSTARD (*Brassica juncea* L.)

**ABSTRACT**

*Key words:* Indian Mustard, *Brassica juncea* L., Potassium, Sulphur, Growth, Yield, Quality

A field experiment was conducted on clayey soil having medium status of available N, P<sub>2</sub>O<sub>5</sub>, K<sub>2</sub>O and S at Junagadh during *rabi* season of 2016-17 to study the “Effect of potassium and sulphur on growth, yield and quality of Indian mustard (*Brassica juncea* L.).” The experiment comprising of 16 treatment combinations with four levels of potassium (0, 25, 50 and 75 kg/ha) and four levels of sulphur (0, 10, 20 and 30 kg/ha) was laid out in Factorial Randomized Block Design with three replications. Mustard variety “GDM 4” was sown at 45 cm row spacing. 50 kg N/ha (50% at sowing + 50% at 45 DAS) and 50 kg P<sub>2</sub>O<sub>5</sub>/ha was applied uniformly to all the plots at sowing. Entire dose of potassium and sulphur as per treatments was applied at sowing.

The experimental results revealed that application of 50 kg K<sub>2</sub>O/ha promoted growth parameters *viz.*, plant height, no. of branches per plant, plant spread; yield attributes *viz.*, length of siliqua, no. of siliqua per plant, no. of seeds per siliqua, 1000-seed weight and ultimately gave higher seed yield (2459 kg/ha), stover yield (4820 kg/ha); quality parameters *viz.*, oil content, protein content in seed and N, P, K & S content and uptake by crop over control.

Application of 20 kg S/ha enhanced growth parameters *viz.*, plant height, no. of branches per plant, plant spread; yield attributes *viz.*, length of siliqua, no. of siliqua per plant, no. of seeds per siliqua, 1000-seed weight and resultanty gave higher seed yield (2492 kg/ha), stover yield (4800 kg/ha); quality parameters *viz.*, oil content, protein content in seed and N, P, K & S content and uptake by crop over control.

Based on finding and economics, it can be concluded that the maximum gross returns (₹ 109304/ha), net realization (₹ 68142/ha) and B : C ratio (2.66) was obtained from irrigated mustard crop (GDM 4) with basal application of 50 kg K<sub>2</sub>O/ha and 20 kg S/ha along with 50 kg P<sub>2</sub>O<sub>5</sub>/ha (basal) and 50 kg N/ha (50% as basal + 50% as top dressing at 45 DAS) on clayey soil having medium status of available N, P, K and S under South Saurashtra Agro-climatic Zone.