

Effect of different levels of sulphur and varieties on growth, yield and quality of Indian mustard

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SUMMARY

Three Indian mustard (*Brassica juncea* L.) cultivars (Kranti, Bio-902 and Rohini) were tested with 4 levels of sulphur (0, 20, 40, 60 kg ha⁻¹) during the winter season of 2006-2007. The variety Rohini gave higher plant height, number of branches/ plant, siliquae/ plant, seeds/siliqua, 1000-grain weight, harvest index and resulted significantly higher seed and stover yield, oil and protein content than Bio-902 and Kranti. The application of 60 kg sulphur per hectare gave significantly higher grain yield and quality (protein and oil content in seed) over all other levels of sulphur application and control.

Key Words : Indian mustard, Sulphur, Yield attributes, Quality

How to cite this article : Singh, Rakesh, Singh, S.B., Manhas, S.S. and Kumar, Anil (2012). Effect of different levels of sulphur and varieties on growth, yield and quality of Indian mustard. *Internat. J. Plant Sci.*, 7 (2) : 290-294.

Article chronicle : Received : 13.02.2012; Revised : 05.05.2012; Accepted : 18.05.2012

Brassica are the second most important source of edible oil after groundnut in India and most commonly grown in the indo-gangatic plains. Indian mustard (*Brassica juncea* L.) is an important winter season oilseed crop grown intensively in Uttar Pradesh. Mustard is generally grown on marginal lands with poor fertility gradient. Selection of suitable cultivar and fertilizer management is essential for achieving higher yield. Sulphur is an important constituent of mustard and its deficiency caused a significant reduction in yield and oil content of mustard. Indian soils are becoming deficient in sulphur with passage of time due to intensive cultivation.

Continuous removal of sulphur from soils through plant uptake has led to widespread sulphur deficiency and affected soil sulphur budget (Aulakh, 2003) all over the world. Indian mustard responds to sulphur remarkably, depending upon soil type (Arora *et al.*, 1994). Singh *et al.* (2000) reported that application of sulphur up to 45 kg ha⁻¹ significantly increased the seed yield. Jat *et al.* (2003) concluded that application of 90 kg sulphur per hectare resulted in significantly higher seed and stalk yield. As regards the production of Indian mustard is concerned, its productivity in the Agra region of Uttar Pradesh is very low. Thus, the present investigation was conducted to compare the performance of promising varieties of Indian mustard (*Brassica juncea* L.) in relation to sulphur fertilization.

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MATERIALS AND METHODS

A field experiment was conducted during the winter season of 2006-2007 in factorial randomized block design using three varieties of Indian mustard (Kranti, Bio-902 and Rohini) as a test crop at Agricultural Research Farm of R.B.S. College, Bichpuri, Agra. The surface soil (0-15 cm) samples collected from the experimental farm were analyzed for physico-chemical properties as suggested by Jackson (1973). The soil was well drained, sandy loam in texture having pH