

# Synergistic Interaction of Nitrogen and Sulphur and its Effect on Fertilizer Management in Mustard (*Brassica juncea* L.)

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**Abstract**—Interaction effect of Nitrogen and Sulphur in mustard is studied with the help of the present investigation conducted through a pot experiment followed by laboratory analysis of the soil and plant samples in the Department of Soil Science and Agricultural Chemistry, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi (UP), during the year 2016-17. This experiment consists of four Nitrogen level treatments i.e., 0, 50, 100 and 150 kg N ha<sup>-1</sup> designated as N<sub>1</sub>, N<sub>2</sub>, N<sub>3</sub> and N<sub>4</sub>, respectively and three levels of sulphur 0, 25, and 50 kg S ha<sup>-1</sup> indicated as S<sub>1</sub>, S<sub>2</sub> and S<sub>3</sub> respectively. The experiment was analyzed using Factorial CRD with three replications. The plant height increases up to highest level of treatment (150 kg N ha<sup>-1</sup> + 50 kg S ha<sup>-1</sup>) but the number of branches per plant, the number of siliqua per plant, and yield increased with increasing N level up to 100 kg N ha<sup>-1</sup>. Further increasing in N level i.e. 150 kg N ha<sup>-1</sup> have negative effect on seed yield, oil content and other growth factors. On the other hand, with increase in sulphur levels plant height increases up to highest i.e., 50 kg S ha<sup>-1</sup> where siliqua per plant, 1000 seed weight, branches per plant and seed and stover yield increases significantly up to 25 kg S ha<sup>-1</sup>. Considering the combined effect of N and S, the treatment combination N<sub>2</sub>S<sub>3</sub> produced the maximum seed yield.

**Keywords:** Fertilizer, Treatment level, Seed and Stover yield, Siliqua.