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Response of mustard to potassium in combination with other nutrients

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ABSTRACT : Plant height and number of primary and secondary branches at different crop growth stages were not affected significantly due to different nutrient levels, however exhibited some improvement over control. Dry matter accumulation by individual plant increased with advancement in cropage till harvest. The highest dry matter accumulation were recorded at 100% NPK + S @ 40kg/ha treatment. 100% NPK + FYM @ 2.5 t/ha (dry weight) and 100% NPK + ZnSO₄ @ 25kg/ha ranked second and third, respectively in dry matter accumulation after 100% NPK + S @ 40kg/ha. Days taken to 50% flowering and 80% maturity remained unaffected by different nutrient application levels. 100% NPK + S @ 40kg/ha recorded significantly higher number of total branches at harvest than remaining treatments. 100% NPK + Borax @ 0.2% (foliar) and 100% NPK + FYM @ 2.5t/ha (dry weight) recorded next higher to values 100% NPK + S @ 40kg/ha. Yield attributes viz. number of siliquae per plant, length of siliqua, 1000- seed weight and seed weight per plant were affected significantly due to different nutrient levels. 150% NPK recorded higher number of siliquae per plant, higher number of seeds per siliqua, length of siliqua, 1000- seed weight and seed weight per plant. 150% NPK recorded significantly higher values of seed, stover and biological yield per hectare than remaining treatments. This treatment was followed by 100% NPK + FYM @ 2.5t/ha (dry weight). Harvest index did not differ significantly under different nutrient levels. The nutrients (N, P and K) concentration in seed and stover remained unaffected by different nutrient levels. The nutrients (N, P and K) uptake by seed, stover and crop was recorded maximum at 150% NPK. The protein content in seed was found non- significant under different nutrient levels. However, it was recorded maximum at 100% NP treatment. The protein yield was found maximum at 150% NPK. The oil content in seed was found non- significant under different nutrient levels. Oil yield in seed was recorded maximum at 150% NPK. The maximum net returns and gross return were recorded at 150% NPK. Highest return per rupee invested was recorded at 150% NPK which was followed by 50% NPK. However, the lowest return per rupee invested was recorded in control condition.

KEY WORDS : Borax, FYM, NPK, Plant height, DAS

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