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Effect of integrated nutrient management on quality and yield of soybean

P. M. JADHAV, S. D. RANE, N. J. RANSHUR AND S. M. TODMAL

See end of article for authors' affiliations

Correspondence to :
N.J. Ranshur
Department of Soil Science and Agrl. Chemistry,
College of Agriculture,
PUNE (M.S.) INDIA

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ABSTRACT

A field experiment was conducted to study the effect of integrated nutrient management on quality and yield of soybean. The experimental soil was alkaline (pH 8.18), having low salt content (EC) 0.26 dSm^{-1}). As regards available nutrients the available nitrogen (194.4 kg ha^{-1}), phosphorus (20.8 kg ha^{-1}) and potassium (392 kg ha^{-1}) were low, medium and high, respectively. Application of fertilizer for 20 q ha^{-1} target with 5 t FYM and biofertilizers, soybean grains showed significant increase in concentration of N, P and Mg. However, for 25 q ha^{-1} target with 5 t FYM and bioferilizers showed higher concentration of Ca(0.71 %) and S (0.47 %). Crude protein content in soybean grain was higher (39.18) in combined application of organic, inorganic and biofertilizers (T_6). Per cent oil content was maximum (19.54) in T_6 as compared to control. The value of methionine and tryptophan content varied from 1.36 to 1.41 and 1.11 – 1.19 g/16g N, respectively. The thousand-grain weight was increased with application of nitrogen and phosphorus dose from 125.69 to 156.86 g. Specific gravity of soybean oil was at par in all treatment. In treatment T_3 fertilizers were applied as per soil test showed least percent of shriveled grains (3.12) ultimately results were higher grains weight. In targeted yield treatment the yield target of 20 ha^{-1} and 25 q ha^{-1} were fulfilled. It was observed that there was significant positive correlation between nitrogen and phosphorus content in soybean grain and calcium, magnesium, sulphur, crude protein, thousand-grain weight. Whereas potassium content in soybean grain was significantly and positively correlated with magnesium and crude protein.