



## Effect of phosphorus and sulphur on content, uptake and quality summer soybean

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**Abstract :** A field experiment was conducted during summer season of 2010 at the Instructional Farm, Department of Agronomy, College of Agriculture, Junagadh Agricultural University, Junagadh to know effect of phosphorus and sulphur on content, uptake and quality of summer soybean. Result of the experiment revealed that an application of phosphours @ 60 kg ha<sup>-1</sup> recorded significantly higher content and uptake of N, P, K and S in grain and stover. Similarly, the levels of sulphur @ 30 kg ha<sup>-1</sup> showed significantly highest content and uptake in grain and stover. Phosphorus @ 60 kg ha<sup>-1</sup> and sulphur @ 30 kg ha<sup>-1</sup> gave significantly highest oil and protein in soybean.

**Key Words :** Phosphorus, Sulphur, Uptake, Soybean

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### INTRODUCTION

Soybean [*Glycine max* (L.) Merrill] is considered to be a miracle crop because of its dual qualities viz., high protein content and oil. It has high yield potential, wide adaptability and short duration, very high nutritional value, having a vast multiplicity of uses as food and industrial products. Moreover, being a legume, the crop fix large amount of atmospheric nitrogen in soil. Therefore, soybean crop is known as Golden Bean, Miracle Crop, Wonder Crop and Gold of Soil. From nutritional point of view soybean contains 43.2 per cent protein and 20.0 per cent edible oil. Soybean protein is also rich in valuable amino acid lysine (5%) which is deficient in most of the cereals. In addition, it contains good amount of minerals, salts and vitamins (thiamine and riboflavin) and its sprouting grains contain considerable amount of vitamin C . Soybean contains less starch, thus, it is good for diabetic patients. Symbiotically soybean fixes 125-150 kg N ha<sup>-1</sup>. Therefore, it not only

maintains the soil fertility by fixing the atmospheric nitrogen, but also reduces nitrogen requirement of plants.

Phosphorus is a key element in process of photosynthesis, root nodulation and for growth, yield and quality. It is known to be associated with several vital functions in the plant body such as utilization of sugar and starch, photosynthesis, nucleus formation, cell division, fat and albumin formation, cell organization and transfer of the heredity. The availability of phosphorus form soil to plants depends on the equilibrium adjustment around the root zone.

It plays an important role in carbohydrate metabolism and formation of chlorophyll, glycosides, oils and many other compounds that are involved in N-fixation and photosynthesis of plants. It lowers the HCN content of certain crops, promotes nodulation in legumes and produces heavier grains of oilseeds. Sulphur improves carbohydrate metabolism and formation of chlorophyll, glycosides, oils and many other compounds that are involved in N-fixation and photosynthesis of plants.

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