



Response of sulphur fertilization on yield and nutrient content and uptake by rice (*Oryza sativa* L.)

G. SHAIENDRA KUMAR, S.K. GALI AND S. RAVI

ABSTRACT

An Experiment was conducted at Khalaghatagi Taluk of Dharwad district, during the year 2001-2002, to study the response of sulphur fertilization on yield and nutrient content and uptake by rice (*Oryza sativa* L.). Sulphur applied at different doses viz., 15, 30 and 40 kg S/ha through single super phosphate making the four treatment combinations and replicated five times. The results of the various levels of soil applied sulphur failed to bring the about the significant difference in yield (grain and straw). The number of filled grains per panicle and panicle weight increased significantly due to 40 kg S/ha. The per cent increase over control was 23.07 and 45.64, respectively. Other yield parameters like panicle per square meter, panicle length and thousand grain weight also increased due to sulphur applications, however the increase was not significant. The grain yield and straw yield of rice increased with increased application of sulphur. The increased grain yield was 11.37, 20.67 and 23.93 per cent at 15, 30 and 40 kg S/ha, respectively. The increased straw yield was 4.8, 11.14 and 14.14 per cent at 15, 30 and 40 kg S/ha, respectively. The highest nutrient content and uptake was recorded in the treatment receiving 40 kg/ha in respect of NPS nutrient

Shailendra Kumar, G, Gali, S.K. and Ravi, S. (2010). Response of sulphur fertilization on yield and nutrient content and uptake by rice (*Oryza sativa* L.). *Asian J. Soil Sci.*, 5(2): 300-303

Key words : Sulphur, Soil application, Yield, Rice

INTRODUCTION

Sulphur (S) is one of the essential plant nutrients and its contribution to increase in crop yield is well documented. It is being recognized as the fourth major plant nutrient after nitrogen (N), phosphorus (P) and potassium (K). It is well known for its role in the synthesis of the three essential S containing amino acids viz., cystine, cysteine and methionine. It is required for the formation of chlorophyll, vitamins, glycosides, ferredoxins and certain disulphide linkages besides activation of proteolytic enzymes and ATP- sulphurylase enzyme. Sulphur is also associated with the metabolism of carbohydrates and oils and in the formation of flavour and crop management through its favorable effect on drought tolerance, winter hardiness, control of pests and

diseases and decomposition of crop residues. Apart from increasing the crude protein content of fodder, sulphur reduces nitrate levels in forages and thus improves their quality. It also improves the quality of cereals for milling and baking. It increases oil content of oilseeds. Sulphur improves the quality, colour and uniformity of vegetable crops.

Rice (*Oryza sativa* L.) is one of the important staple food crops of the world and ranks next to wheat as the second most important crop. Rice occupies an important place in Indian economy too. Besides, being a potential source of food for human beings, it is used in industries for the production of starch, syrup and alcohol etc. In India, rice is grown over an area of 43 million hectares with a production of about 86.0 million tonnes at a

Correspondence to :

G. SHAIENDRA KUMAR, Department of Soil Science and Agricultural Chemistry, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA
Email: shailendra_kssca@rediffmail.com

Authors' affiliations:

S.K. GALI, Department of Soil Science and Agricultural Chemistry, College of Agriculture, University of Agricultural Sciences, DHARWAD (KARNATAKA) INDIA

S. RAVI, Krishi Vigyan Kendra, Janawada, BIDAR (KARNATAKA) INDIA