



Studies on chemical properties and sulphur status of rice growing soils of Kalaghatagi Taluk in Dharwad district

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ABSTRACT

An Experiment was conducted at khalaghatagi Taluk of Dharwad district, during the year 2001-2002, involving chemical properties and sulphur status of rice growing soils, the rice soils of kalaghatagi taluk were found to be acidic in soil reaction, because of high rainfall, the electrical conductivity of these soils were very low in salt content (0.12-1.0 dSm⁻¹). Lower soil pH and EC of soils indicated that these soils have undergone higher leaching as the area falls under hill zone, receiving average annual rainfall of 1000 mm. The organic carbon in general was medium in status, which is probably due to more vegetation and slow rate of decomposition than in dry region. The available sulphur content of these soils is higher.

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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 favourable 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.

Sulphur is present in soils in both inorganic and organic forms- But, the properties of inorganic and organic forms vary widely depending upon the nature of soil and its depth and management practices to which the soil is subjected. It is reported that most of the sulphur, atleast in surface soils, is present in soil organic matter and thus its distribution in soil is very much associated with organic carbon and nitrogen.

The available sulphur is often not uniformly distributed down the profile. While sulphur in surface layers supply the needs during seedling establishment, sulphur in deeper layers can be of considerable importance during later stages of crop growth and will be utilised to different degree depending on the rooting pattern of plant species.

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