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EFFECT OF SODIC SOILS ON CONCENTRATION OF SOME NUTRIENTS IN RICE PLANT

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ABSTRACT

This paper deals with chemical changes in some nutrients in rice plant underneath sodic soil. during this paper it's represented that the sodic soils square measure low in many nutrients like on the market N,P,K,S,Zn,Mn and carbon. this experiment reveals that the balanced fertiliser use will increase the concentration of nutrients in rice plant underneath sodic soils.

1.INTRODUCTION

Some components square measure essential for plant to growth, development and production. The plants cannot complete their traditional life with none of the essential components. The essential components square measure C, O, H, N, P, Ca, Mg, S, Fe, Mn, Zn, Cu, B, Mo and Cl. Out of those C, O and H square measure required in highest amounts and their supply is atmosphere C and O comes from atmospherical CO2 and H comes from binary compound Rest square measure mineral components and every one of them square measure obsessed by the plants from soil. Out of those N is that the most limiting mineral components within the world soil. N is important for all living organism. N is constituent of macromolecule and variety of nonprotein natural merchandise like hormones, glycosides and chlorophylls in inexperienced plants. N carries genetic data i.e polymer and RNA square measure atomic number 7 compounds (Tisdale et al 1993). Phosphorus is that the second most macronutrient needed by all plants for growth and development. several vital biochemicals in plants contain phosphorus and phospholipids that square measure primary structural element of membranes that encircled every plant cell and cell organelles. polymer associate degreed RNA contain P as an integral element. These genetic informational molecules guide the synthesis of proteins. abundant of the metabolism within the cell is controlled by phosphorylation and dephosphorylation of sure proteins i.e. enzymes. The supply of phosphate for signal events is ATP, that conjointly is the most important energy currency within the cell. (Blevin 1999) atomic number 19 isn't a constituent of any compound within the plant its concentration is sort of high a while quite atomic number 7. K is concerned in diffusion regulation in plant roots. The plants that square measure deficient in K suffer from water stress. atomic number 19 is important for chemical action, the plants conjointly need K for manufacturing ATP for CO2 assimilation, formation and transport of sugars. (Tisdale et al 1985) Sulphur has important metabolic perform in plants; it's needed for synthesis within the style of sulphur containing amino acids like amino acid, cystein, methionine, adenosyl essential amino acid, and formyl essential amino acid, that square measure essential parts of proteins. Sulphur is additionally required for synthesis of different metabolites together with co-enzyme, biotin, thiamin, glutathione, S-adenosyl essential amino acid, formyl essential amino acid lipoic acid, sulpholipid and ferredoxin. Sulphur provides resistance for many diseases, improves quality and production of crops (Mengel and Kirkby 1987) atomic number 30 is most significant ion substance and its deficiency is of wide prevalence in Indian Soils, atomic number 30 promotes the formation of hormones, starch and saccharose (Nicholas 1961). atomic number 25 may be a substance that concerned within the evolution of O2 as a results of photolysis of binary compound in chemical action. It conjointly takes half in reaction reduction processes and in chemical process and reaction reactions. Mn is required for activation of the many enzymes in acid cycle. (Romheld and Marscher 1992). The plant unremarkably absorb the only style of the higher than nutrients, however, profound chemical changes happen within the soil and plants. Keeping the higher than views and facts this experiments were conducted on recently rescued sodic soils for paddy crop.

Material And ways associate degree accommodative trial on farmer's field of faizabad district was conducted throughout the year 2009-2010 and 2010-2011 on mounted layout. The experiment was conducted on recently rescued

sodic soils. The rice selection Ushar-1 was taken for study. Soil analysis was done by international measuring instrument methodology as represented by piper (1966). pH and international organisation of soil was analysed by the tactic given by Jakson (1967). on the market N resolve by alkalic salt methodology (Subbiah and Asija 1956). Organic carbon resolve by weekly and black's fast volumetric analysis methodology (Olsen et al 1977) and on the market K resolve by flame mensuration methodology (Jackson 1967). on the market sulphur resolve by turbidimetric methodology (Chesnin and Yien 1950) Availavle metal and Mn was measured by atomic absorption photometer once preparation of DTPA (Diethylene Triamine penta carboxylic acid acid) extract (Lindsay and Norvell 1978).

The plant grain and straw samples were processed for qualitative analysis. The straw samples were initial dried in air and so in associate degree kitchen appliance at 70c for eight hours, grounded in an exceedingly Wiley mill and hold on in an exceedingly clean polyethylene luggage. equally dried grain samples were processed. P resolve by vanadamolybdeat yellow color methodology.(Chapman and pratt 1961). P resolve in triacid extract by flame photometer, metal and Mn resolve by atomic absorption photometer.

2.RESULTS AND DISCUSSION

The atomic number 7 content of rice grain (table.1) varied from one.32% to 1.44% throughout the primary year and one.37% to 1.47% throughout the second year. In straw (table.2) it varied from zero.21% to 0.26% and 0.21% to 0.25% within the initial and second year severally. The results were important for each grain and straw. just in case of grain atomic number 7 concentration looked as if it would increase with the addition of different nutrients considerably and NPKS+Zn+Mn gave the best worth in grain and straw each. so appeared that addition of nutrients in sequence increased with nutrient content.Similar results has been rumored by Armstrong (1999), Tiwari and Gupta (2006) The phosphorus content of grain varied zero.30% to 0.37% and 0.30% to 0.38% in initial and second year severally. The phosphorus content of straw varied zero.15% to 0.22% and 0.17% to 0.21% in initial and second year severally. the most phosphorus content was discovered within the treatment NPKS+Zn+Mn throughout each the years, indicating that balanced use of nutrient increase the concentration of phosphorus in grain and straw each. The trends of variation in phosphorus concentration of straw were like that of grain and with the sequent addition and every nutrient gave important increase in phosphorus concentration. Our results square measure similar with many different staff.(Yadav et al 2002 and Brady 2007) The concentration of atomic number 19 in rice grain showed a spread of variation from zero.24% to 0.34% and 0.25% to 0.34% throughout the primary and second year severally. The concentration of K in straw varied from one.21% to 1.28% and 1.22 to 1.29% throughout the primary and second year severally. There was alittle however important distinction within the atomic number 19 content of grain and straw. Addition of various nutrients together with atomic number 19 increased the atomic number 19 content of grain and straw with every sequent addition of nutrients. not like different nutrients atomic number 19 concentration was abundant higher in straw than in grain (about six times). Our results fall within the line of results rumored by Pathak (2009) Sulphur content in grain varied from zero.20% to 0.26% and 0.21% to 0.27% in initial and second year , severally, Sulphur content in straw varied from zero.10% to 0.12% and 0.10% to 0.13% throughout the primary and second year, severally. Addition of nutrients increased the sulphur content considerably and treatment NPKS+Zn+Mn gave the most sulphur concentration. many staff have represented the role of sulphur in terms of yield response of crop. (Tiwari and Gupta 2006 , Millar 2007) altogether the higher than cases it's clear that the treatment NPKS+Zn+Mn gave most concentration of nutrients in grain and straw each. The grain yield (Table.3) varied from twenty.20 to 36.36 Qha-1 throughout the primary and nineteen.90 to 37.30 Qha-1 throughout the second year, severally and therefore the results were important for every sequent addition of nutrients. The straw yield varied from twenty seven.81 to 51.24 Qha-1 and twenty six.80 to 53.30 Qha-1 throughout the primary and second year, severally. Addition of every components resulted in important increase in yield over the treatment while not that part. The responses of additional nutrients were high and it appeared even to feature the essential dements in sequence. Similar results are rumored by many different staff. (Singh et al 2004 and Dabermanne et al 2004)

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