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Research
Paper

Effect of rice (*Oryza sativa* L.) to integrated nutrient management on yield attributes, yield and microbial population under system of rice intensification

J.S. ARUN KUMAR, JOY DAWSON, AKHILESH KUMAR AND K. HARICHARAN REDDY

See end of the article for authors' affiliations

Correspondence to :

J.S. ARUN KUMAR

Department of Agronomy,
Allahabad School of
Agriculture, Sam
Higginbottom Institute of
Agriculture Technology and
Sciences, ALLAHABAD
(U.P.) INDIA
Email : joydawson106@
gmail.com

ABSTRACT

The experiment was laid out in simple Randomized Complete Block Design (RCBD) with ten treatments replicated thrice. The treatments consisted of 100%, 75%, 50% and 25% recommended doses of nutrients (RDN) through chemical fertilizers and 25%, 37.5% and 50% RDN through organic sources like Farm yard manure, poultry manure and neem cake. Significantly higher number of productive tillers per hill (33.4), number of filled grains per panicle (154.3), panicle length (21.07 cm), panicle weight (4.59 g) and thousand grain weight (22.77 g) was recorded with recommended dose of nutrients (120:60:40kg N:P:K ha⁻¹) along with 10 tonnes of FYM ha⁻¹.

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Key words : Organic, Inorganic, INM, SRI, Rice

INTRODUCTION

Rice (*Oryza sativa* L.) is the principal food crop to billions of people around the world. India occupies a pride place in rice production among the food crops cultivated in the world. About 90 per cent of rice grown in the world is produced and consumed in Asian countries, China and India accounting more than half of the total acreage. India has the largest area (43.77 million hectare) among rice growing countries and stands second in production (96.43 million tonnes) with a productivity of 2203 kg ha⁻¹ (Anonymous, 2008). Rice production is the most water consuming system and utilizes about 60 per cent of total available irrigation water. To meet the water crisis head on, valuable gains can be achieved by growing rice with less water. Therefore, there is a need to develop an alternate system that requires less water. SRI is a new concept of growing rice. It is a production system, which concentrates on as controlled supply of water, planting

younger seedlings and providing wider spacing. The concept of organic farming has been gaining momentum with the use of different manures and crop residues in order to increase the productivity of crop as well as the soil fertility status. So, the present investigation on response of rice to INM on yield attributes, yield and economics of SRI for achieving maximum production has been carried out.

MATERIALS AND METHODS

Field experiment was conducted during *Kharif* season of 2010 at Central Research Farm, Sam Higginbottom Institute of Agriculture Technology and Sciences, Allahabad. The soil of the experimental site was sandy loam with pH (7.7) and medium in organic carbon (0.4%). The experiment was laid out in a Randomized Complete Block Design with ten treatments replicated thrice. The treatments were recommended dose