121/B

Studies on influence of nutrient levels on yield of rice (*Oryza sativa L.)* under System of Rice Intensification (SRI) and conventional methods of cultivation

D M D I Wijebandara
University of Agricultural Sciences, Dharwad - 05, Karnataka, India

To assure food security in the rice consuming countries the rice production should be increased by 50 % in these countries by 2025. To achieve the projected targets of 680 and 771 million tonnes sby 2015 and 2030, respectively, the productivity of rice has to be increased through adoption of suitable and newer technologies. The System of Rice Intensification (SRI) is a new methodology for increasing the productivity of irrigated rice by changing the management of plants, soil, water and nutrients resulting in both healthy soil and plants, supported by greater root growth and the soil microbial abundance and diversity. Fertilizer is one of the inputs which brings quantum jump in the yield of rice. Therefore, the investigation was carried out to evaluate the influence of different levels of Recommended Dose of Fertilizer (RDF) with and without biofertilizer on yield of rice under SRI and conventional methods of cultivation. A field experiment was conducted at the University of Agricultural Sciences, Dharwad, India during *kharif* 2006. The experiment was laid out on deep black clay (Calusterts) soil with pH 8.2, using hybrid rice variety KRH-2 by adopting split-split plot design with twenty treatments with three replicates. The treatments consisted of two methods of cultivation (SRI and conventional) as main plots and five nutrient levels (100 % RDF, 75 % RDF, 75 % RDF + biofertilizer, 50 % RDF and 50 % RDF + biofertilizer) as sub plots and two Zn levels (10 kg and 25 kg $ZnSO_4$ ha^{-1}) as sub sub plots. At harvest yield attributes and yield were recorded.

Significantly higher productive tillers $hill^{-1}$ (37), productive tillers m^{-2} (633), panicle length (27.7 cm), grains per panicle (211), test weight (28.15 g), grain yield (6.1 t ha^{-1}), straw yield (7.6 t ha^{-1}) were recorded in SRI method of cultivation over conventional method of cultivation. The treatment receiving 75% RDF + biofertilizer recorded significantly higher yield attributes, grain and straw yield than other treatments. Higher Zn level of 25 kg $ZnSO_4$ ha^{-1} recorded higher yield and yield attributes than 10 kg $ZnSO_4$ ha^{-1}. It can be concluded that 75 % RDF + biofertilizer with 25 kg $ZnSO_4$ ha^{-1} under SRI method of cultivation is the best treatment which recorded the highest yield of rice.

Financial assistance provided by ICAR/CARP MOA work plan is gratefully acknowledged.
Present address: Coconut Research Institute, Lunuwila 61150, Sri Lanka

*iraniew@gmail.com Tel: 031-2255300