



Effect of foliar application of micronutrient mixture on nutrient balance, yield and yield components of rice plant (*Oryza sativa* L.)

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Abstract

Micronutrients such as macronutrients are essential for sustainable agriculture and their importance should not be overlooked. In order to study the effect of spraying a mixture of micronutrients in different physiological growth stages of rice plant, a field experiment was conducted in Rice Research Institute of Iran (RRII), in 2015. The experimental design was 3×4 factorial in a randomized complete block with three replications. There were four levels of concentration of micronutrient mixture fertilizer [0 (C1), 2 (C2), 4 (C3), 6 (C4)] per thousand and three growth stage of rice plant for foliar application [nursery + tillering (T1), nursery + tillering + booting (T2), tillering + booting (T3)] treatments. The results showed that C2 increased height of plants (7.8 %) and number of tiller (28.5 %) with compare of control (C1). Yield grain (3992.3 kg ha⁻¹) and harvest index (52.3 %) was increasing with C4. Nitrogen, manganese and zinc uptake increased in C4. Different doses of fertilizer showed that height of plant, biological yield and manganese uptake was affected. Mean comparison with slicing method showed significant effects on different doses of fertilizer in T1. In conclusion, foliar application at T1C4 can be helpful to improve yield and nutrient grain of rice.

Keywords: Element, Growth stage, Rice; Micronutrient, Zinc, Paddy soil, Foliar