ZINC NUTRIENT IN RICE CULTIVATION

BY

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ABSTRACT

Many experiments were conducted in the Low Country Dry Zone (LCDZ) to study the influence of zinc on rice yields and many of the findings indicated a good response. But for the Batticaloa District there is no such experiments have been carried out. Farmers use mainly the NPK fertilizers as basal and top dressing without any other macro and micronutrients, which is known to cause stagnant yield over the past two decades.

Soil fertility may be one factor that limits the growth and grain yield hampering the realization of potential productivity of rice varieties. It appears that long-term continuous cultivation and mismanagement of Soil may be one of the reasons for low productivity in these soils.

Soil test results also revealed that available Zinc in these soils is in the range of deficient (1.00ppm). Therefore, the study was conducted to assess the influence of added Zinc nutrient on growth and grain yield of rice variety Bg 94-1. Revised fertilizer Recommendation for rice 2001 for the LCDZ was at the rate of 5 kg $ZnSO_4$/ ha (1kg Zn/ha) as a basal once a year. In this experiment 0, 2.5, 5, 7.5, 10 and 12.5 kg $ZnSO_4$/ha was used as treatments with NPK and with out NPK fertilizer. Agronomic ally important traits were studied both in the laboratory and in the field up to

harvest. These include characters of yield components namely, 1000-grain weight, number of panicle per plant, panicle length, number of spikelet per panicle and fertile spikelet percentage.

The collected data were subjected to statistical Analysis of Variance (ANOVA). Mean comparison using DMRT and correlation analysis between the yield and yield components. ANOVA revealed that there were significant differences among many parameters such as total biomass, root to shoot ratio, number of panicles per plant, harvest index, average shoot weight, 1000-grain weight, grain yield, spikelet number per panicle, leaf area index of flag leaf and average shoot weight.

The experiment concludes that, Zn fertilizer increases 1000-grain weight, average root weight, average shoot weight, grain to straw ratio, harvest index, number of panicles per plant, root to shoot ratio and total biomass production.

However, Zn did not influence the acre yield of rice variety Bg94-1. Further study is necessary to study the influence of Zn on rice yields in the farmers' fields.

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