

Nutrient uptake, pH changes and yield of rice under slow release sulfur-coated urea fertilizers

Abstract

Utilization of coated and uncoated urea fertilizers have impact on nutrient uptake, pH changes and nitrogen (N) release in tropical rice flooded soils, especially when coated with sulfur. Different coated fertilizers such as wax sulfur coated urea (WSCU), polymer coated sulfur coated urea (PCSCU), and uncoated fertilizers [urea, urea + sulfur (6% and 17%)] were applied on rice crop @ 60 and 120 N kg ha⁻¹ as basal and split doses, respectively. The yield components of rice, nitrogen and sulfur concentration and their uptake in grain improved through the application of urea coated polymer and wax fertilizers. These fertilizers had significant effect on soil content such as sulfur and nitrogen mainly due to increasing the soil pH. The results show that sulfur coated and slow release fertilizers are beneficial during the rice growing season as well as next season crop.

Keyword: Nutrient uptake; pH changes; Rice; Sulfur-coated; Urea fertilizer