

A ¹⁵N tracer study to evaluate the effects of nitrogen and copper fertilization on fertilizer nitrogen efficiency in rice production

ABSTRACT

In the study of the effects of nitrogen and copper fertilization on rice yield when four rates of N (0, 60, 120 and 180 kg N/ha) as ¹⁵N labelled urea and three rates of Cu (0, 5 and 10 kg Cu/ha) were applied, grain yield increased significantly with increasing N rates upto 120 kg N/ha. The recovery of fertilizer N was around 40% irrespective of N and Cu rates. Copper application at 10 kg/ha increased grain yield by 0.53 t/ha insignificantly. Cu content in the straw was below the critical deficiency level of 6 mg/kg. Thus higher rate of Cu fertilizer (above 10 kg/ha) in soil increase rice yield and fertilizer N efficiency if Cu is applied as basal. Alternately, Cu may be applied as foliar spray on standing crop to avoid Cu adsorption in the soil.

Keyword: ¹⁵N tracer study; Copper; Rice; Fertilizer