

Cadmium availability and uptake by rice from lime, cow-dung and poultry manure amended Ca-contaminated paddy soil

ABSTRACT

Industrial wastes and effluents are being discharged directly to soils, canals and rivers, which may contain a lot of toxic heavy metals like cadmium (Cd). Thus, the polluted soils need to be amended for crop production. With this idea in mind, pot experiments were conducted at Bangladesh Agricultural University to examine the effect of organic and inorganic amendments on growth, yield and Cd concentrations in rice grown in polluted soils. The addition of cow-dung (CD), poultry manure (PM) and lime significantly increased the grain and straw yields of rice, reduced Cd concentration and uptake of Cd in grain and straw compared with control. However, the addition of PM increased more rice yields, reduced more Cd concentration and uptake and decrease the heavy metal phytoavailability.

Keyword: Cadmium; Rice; Lime; Cow-dung; Poultry manure; Paddy soil