



Zinc in agricultural soils in the Niger inland delta in Mali

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Zinc deficiency is a problem in Sub-Saharan Africa lowering yields and ultimately threatening the survival of especially children. About 70 % of the population are considered to have too low zinc intake and about 20 % of child mortality may be due to zinc deficiency. Almost all soil were deficient having an availability of $< 0,8$ mg/kg of DTPA-extractable zinc. The soils are neutral or slightly acidic. Inherent lack of zinc in addition to heavy phosphate applications are the likely reasons for zinc deficiency. Garden soils close to villages had considerable contents of total zinc and plant available zinc. The reason is most likely used dry batteries from radio-receivers which can be seen shred on the ground. Malians use 10-12 batteries per person and year, equivalent to 0,4 kg of zinc. The possibility of using batteries as soil amendments has been considered. The only objection to that is a small amount of mercury present in the batteries. Soil amendment has been tested by adding 5 kg/ha of zinc to a test area of 100 m² and checking the availability of zinc in soil as well as the amount in rice. Higher additions are needed to get a clearcut increase in zinc availability as well as zinc content in the rice crop.