

Reducing Aluminum Toxicity in Acid Soils with Animal Manure and Lime. (S04-tang103626-Oral)

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Abstract:

Aluminum toxicity is one of the major problems for wheat production in the southern Great Plains. An alternative method to ameliorate aluminum toxicity is the application of animal manure. Pot experiment was conducted to investigate the effects of poultry litter and feedlot manure on the alleviation of Al toxicity on a low pH soil compared with lime. Manures and lime were mixed with soil at 4 rates each and incubated at 80% field water holding capacity for 30 days. Winter wheat were planted and allowed to grow for 35 days. Poultry litter and feedlot manure significantly increased soil pH and reduced soil exchangeable Al. Biomass of winter wheat was inversely correlated with exchangeable Al and increased by 15 to 562% compared with check. Manure, if applied enough, is as effective as lime in reducing Al toxicity as well as a good nutrient source.

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