# The Kinetics of Cadmium Release from Phosphate Fertilizers in Soil. (S11-kuo155518-Poster)

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## Abstract:

The rate of Cd release from P fertilizers is a major factor determining its availability to plants. This incubation study examined the rate of Cd release from a triple superphosphate and a western phosphate rock by determining the amount of added Cd extracted by diethylenetriaminepentaacetic acid over time in a Sultan silt loam. The superphosphatae contained 132.1 mg Cd per kg as compared to 40.1 mg Cd per kg for the phosphate rock. The initial amount of Cd desorbed by the chelate in the soil treated with varying rates of the P fertilizers was determined by their amount applied and solubility. As incubation time increased to 20 d for superphosphate and 80 d for phosphate rock treatments more Cd was released at a rate higher for superphosphate than for phosphate rock treatments and well described by a zero order equation. For superphosphate further increase in the incubation time beyond 20 d led to a gradual decline Cd desorption depending on theamount of superphosphate added initially. The superphosphate not only provided Cd but also regulated Cd desorption by the chelate in the longterm. The same decline was not found in the soil treated with phosphate rock.

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