# Sorption-desorption of isoxaflutole and a diketonitrile degradate on organoclays. (S11-koskinen151229-Poster)

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## Abstract:

Isoxaflutole rapidly converts to its active diketonitrile degradate, DKN in soil and water. Sorptive behavior of isoxaflutole and DKN on natural clays, Arizona (SAz) and Wyoming (SWy) montmorillonites and hectorite, and their organoderivatives, has been investigated. Isoxaflutole degradation was measured over time in an herbicide solution with or without clay. After 48 hours, 82 % of the parent compound, isoxaflutole, remained in solution in the clay-free system, 65-82%, in presence of natural clays, and only 2% in presence of organoclays. Isoxaflutole hydrolysis occurred so rapidly in the presence of organoclays that sorption could not be characterized. No measurable sorption of DKN was observed on the natural clays. DKN sorption was higher on paraffin-like organoclays (high-charge SAz) than on bilayered or monolayered organoclays (medium and low charge clays, SWy and hectorite). The nature and amount of organic cation in the interlayer also influenced DKN sorption on the different organoclays. DKN desorption isotherms revealed irreversibility of the sorption-desorption process.

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### **Presentation Information:**

Presentation Date: Wednesday, November 13, 2002

Presentation Time: 2:00-4:00 pm Poster Board Number: 1442

## Keywords:

sorption, organoclays, isoxaflutole, DKN