

Kanokwan Paluka 2010: Efficiency Study on Adsorption and Desorption of Atrazine onto Loamy Soils in Corn Field Area in Lakdan Sub-District, Nam Nao District, Phetchabun Province. Master of Science (Environmental Science), Major Field: Environmental Science, College of Environment. Thesis Advisor: Associate Professor Kanita Tungkananuruk, M.S. 83 pages.

Atrazine is a selective triazine herbicide used to control broadleaf and grassy weed in corn field area. The use of atrazine may have caused the soil contamination and will affect both the environment and human health. This research was to study the efficiency of adsorption/desorption of atrazine onto loamy upper soil, loamy lower soil and sediment soil from corn field area in Lakdan Sub-District, Nam-Nao District, Phetchabun Province. The batch equilibrium method and a spectrophotometric at 470 nm were employed in this research. From the study, found that the efficiency of the atrazine sorbed onto the three soils were 55.28, 53.54 and 21.78 percent, respectively. Langmuir isotherm provided the best fit for loamy upper soil and loamy lower soil sorption data and Freundlich isotherm provided the best fit for sediment soil sorption data. Addition of organic material (humic acid) increase the efficiency sorption to 73.13, 73.13 and 55.56 percent, respectively. The efficiency of desorption atrazine for all of soils at 4 hour were 8.33, 18.92 and 53.54 percent, respectively. Our results suggest that attention should be paid to the atrazine sorbed to the soil which can be potentially contaminated in this corn field.

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Thesis Advisor's signature