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### Movement of Dinitrotoluene Compounds in a Self Controlled Soil Ecosystem

Trinitrotoluene (TNT) and its derivatives 2, 4 dinitrotoluene (2, 4-DNT) and 2, 6-DNT are toxic organic compounds widespread in soil and water environments as a result of runoff, industrial wastes sites, and military testing sites. Thus, these compounds are significant environmental pollutants of considerable concern. This study investigated the fate of 2, 4- and 2, 6-DNT in self-contained undisturbed soil lysimeters on the Eastern Shore of Maryland using an Othello soil. The Experiment was arranged in a randomized complete block design with eight treatments and three replications. Soils were thoroughly mixed at the rate of 0, 25 and 50 mg kg<sup>-1</sup> with each of 2, 4-DNT and 2, 6-DNT, and transferred to test lysimeters. Soil cores were collected at 0-10, 10-20 and 20-30 cm after approximately 0, 30, 90 and 180 days, and examined for the presence of 2, 4- DNT and 2, 6- DNT and their metabolites using a GC-ECD Model-6890. The highest DNT concentrations were found in the 0-10 cm layer while lower concentrations were found in all other soil depths. Concentration of these chemicals at the 0-10 cm depth declined rapidly over time. It reached 17.05, 15.54, 12.14, 4.21 mg kg<sup>-1</sup> at 0-time, 30, 90, 180 days, respectively, for 2, 4-DNT, and 36.37, 34.73, 29.68, 13.72 mg kg<sup>-1</sup> for 2, 6- DNT. Further, the rate of remediation of DNT compounds was increased at all soil depths over time throughout the course of the experiment.

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