Investigation on the rate of horizontal spread of Anthracene in a Sandy Clay Soil

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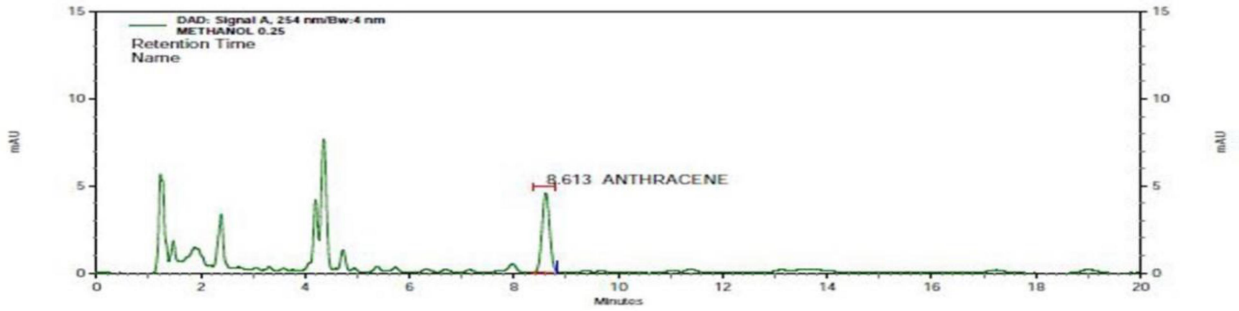

Channel A

DAD: Signal A, 254 nm/Bw:4 nm Results

Name	Time	Area	Amount
ANTHRACENE	8.613	96263	0.404
Totals		96263	0.404

Abstract:
Extent of horizontal spread of Anthracene in soil is examined in a 180 days experiment under natural environment during winter and spring seasons. Here the rate of spread is calculated from a point source in 1m radius plot. Prior to placement of known quantity of Anthracene from outside at the center of the spot, a few physico-chemical parameters of the soil were examined. It has been found from HPLC analysis that a maximum of 12020 ppm of Anthracene moves a distance of 0.50 m in 60 days and a maximum of 8473 ppm moves a distance of 0.75m in 180 days from the point source. A part of the applied PAH has undergone oxidation producing oxygenated derivatives as evidenced from the lowering of pH and increase of EC against time. It has been found that in a soil of 56% porosity, anthracene moves a maximum distance of 8.33 x10^{-3}m per day where the concentration of the point source is 5g. With the increase of time, the concentration of PAH in the point source decreases due to spreading and degradation of the PAH and by180 days of the experiment maximum speed has been found to be 4.17x10^{-3}m per day.
Key Words: Horizontal Spread Rate, Anthracene, Sandy Clay, Porosity, HPLC.