Biochemistry

CHEMICAL SIGNALING BETWEEN BLACK LOCUST AND SOIL BACTERIA

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Black locust (*Robinia pseudoacacia*) plants were used in a study to determine whether black locust roots emitted a signal into the rhizosphere to affect the growth or metabolism of the soil bacteria. Black locust plants were contaminated with trichloroethylene and toluene (100ppm each). Soil and root samples from these plants and from controls were extracted with methylene chloride and methanol. The extracts were analyzed by gas chromatography (GC) and high performance liquid chromatography (HPLC), respectively. GC analysis of the methylene chloride extracts showed that there was an increase in organic compounds in the treated samples. This suggests that either the bacteria or black locust sends (or inhibits) an organic signal when treated with trichloroethylene (TCE) and toluene. Results from the HPLC analysis of the methanol extracts also supported this conclusion.