

## PLANT GROWTH

Plant dry weight at 21 days as percent of average growth in uncontaminated soil.

<u>SOIL</u>	<u>Oil</u>	<u>corn%</u>	<u>wheat%</u>	<u>oat%</u>
Norwood <small>Lo organic, Lo N&amp;P</small>	heavy	118	101	93
	medium	121	93	110
	light	92	62	53
Norwood	heavy	61	84	72
+	medium	150	106	120
Baccto	light	91	108	89

Hi organic,  
Hi N & P

Adapted from: J. P. Salanitro, et al., (Shell)  
Environ. Sci. Technol. 31, 1769-1776 (1997)

**Citing other studies,  
the authors conclude:**

**"...hydrocarbon phytotoxicity cannot be  
predicted and varies widely with oil  
and soil type, concentration, and plant  
species tested."**

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*Salnitro studies ...*

40%-95% of the BTEx evaporated during a 3-day interval while soils were being prepared on plastic sheets.

Examined seed germination and early growth in lab studies.

Duplicate soil samples had 10%-20% variation in hydrocarbon content.

# Petroleum hydrocarbons in soil

## Chaineau, et al. studies of bioremediation and toxicity

Fertilizer and straw speeded remediation.

Standard deviations of concentrations  
were <50% in biopiles and <25% in  
tilled windrows.