

ENHANCED HYDROCARBON REMEDIATION USING HUMALITE



RESEARCH COOPERATORS

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RESEARCH OBJECTIVE

Hydrocarbons solid phase remediation is dependent on microorganism activity and can be enhanced by improving the quality of soil. Black Earth product is an effective source of organic material for the growth of microorganisms.

EXPERIMENTS

High clay content soil was contaminated with diesel up to 1% by weight. Black Earth was added between dosages of 0 to 5% by weight. The soil was tilled weekly and its moisture content was adjusted to its optimum at 50%.

The experiments were conducted over a 90-day period. Soil samples were taken periodically, and analyzed for particle size distribution, pH, moisture content, total extractable hydrocarbon (TEH), total nutrients, and heterotrophic plate count (HPC). The results indicated that humalite improved the soil structure by breaking up clay lattices. The soil water retention was increased by 21% over the control. Black Earth benefited the growth of microorganisms and increased the biodegradation of hydrocarbons by 3.5 times or more in comparison to the control. After 90 days of treatment, initial TEH values of 4,700 and 8,800 mg/kg were lowered to tier one (1) guideline of 800 mg/kg by applying humalite at dosages of around 1.5%.

CERTIFICATIONS

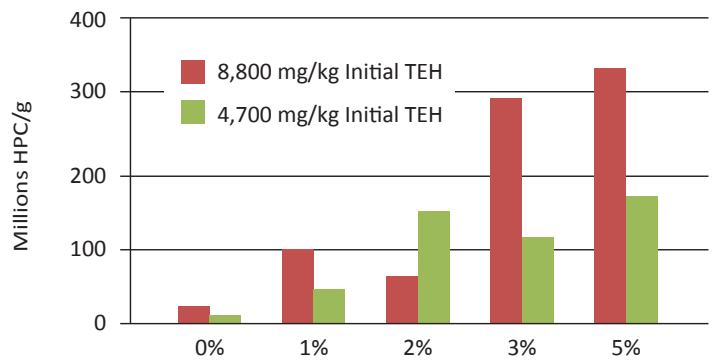
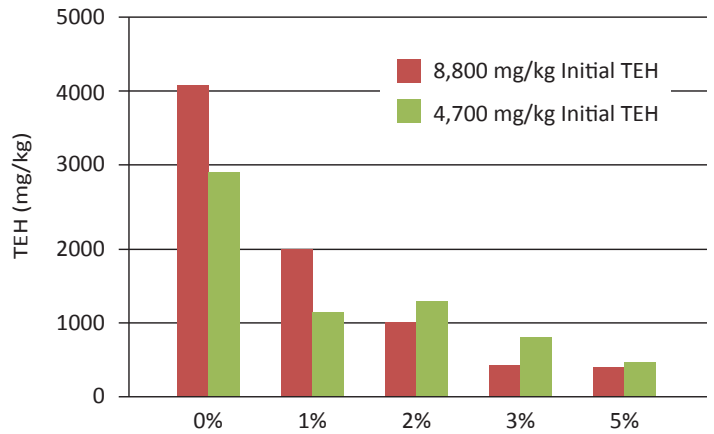
Black Earth Humic products are:

- » Listed by OMRI
- » Registered with CFIA
- » Certified for use for NOP
- » Certified by the CDFA



RESULTS


Black Earth improved the quality of soil and facilitated the growth of microorganisms responsible for the biodegradation of hydrocarbons. In a 90-day of treatment, humalite dosages around 1.5% were able to decrease initial TEH in soil of 4,700 and 8,800 mg/kg down to tier one (1) at 800 mg/kg. These represented 3.5 times enhancement or more over the controls.



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