

ABSTRACT

Two contaminated soils were studied, the first is soil of Tanta nearest to petroleum compound , and the second is soil of Mustorod adjacent to petroleum companies group. Total petroleum hydrocarbons (TPH) were analyzed by Gas Chromatography (GC) in soil samples of the two polluted areas at different distances from the pollution sources. Available contents of some heavy metals were also estimated. The resulted data showed the presence of heavy metals and TPH especially paraffins by values highly exceeded the permissible values. To remedy these hydrocarbons, we used humax (humic acid 85 %) as a remedy in an isolated experiment. Humax was added with percents 0, 7 and 11 % to soil samples polluted with crude oil by rates 2, 4 and 6 % . TPH were examined after 3 months of treatment. Application of humax reduced TPH by percents ranged between 16 – 19 % and 24 – 30 % when 7 and 11 % of humax were applied, respectively.

الموجز العربي

أجريت هذه الدراسة لتحديد مدى إمكانية استخدام بعض المعالجات العضوية في معالجة الأراضي الملوثة بالمخلفات البترولية. أولاً تم دراسة موقعين ملوثين بالمخلفات البترولية ، الموقع الأول هو الأراضي القريبة من مجمع بترول طنطا والذي يضم مصانع لتكرير البترول بالإضافة إلى شركة خطوط أنابيب البترول التي تنقل الزيت الخام إلى هذا المجمع ، أما الموقع الآخر فهو الأراضي المجاورة لمجمع بترول مسطرد والذي يقع بالقرب من المنطقة الصناعية بمسطرد . هذه الأراضي ملوثة بمخلفات البترول المختلفة وأهمها المواد الهيدروكربونية خاصة البرافينات بالإضافة أيضاً إلى مياه الري الملوثة بهذه المخلفات والتي تؤثر سلباً على هذه الأراضي الزراعية. تم تقدير تركيزات المواد الهيدروكربونية وبعض العناصر الثقيلة في عينات الأراضي في موقعي الدراسة على أبعاد مختلفة من مصادر التلوث ووجد أنها تتعدى بكثير النسب المسموح بها .

لمعالجة هذه الهيدروكربونات أجريت تجربة استخدمنا فيها مادة الهيوماكس (85 % حامض هيومك) كمعالج عضوي. تم إضافة الهيوماكس بنسب 0 ، 7 ، 11 % إلى عينات أراضي ملوثة بنسب 2 ، 4 ، 6 % من البترول الخام . وبتقدير تركيزات الهيدروكربونات المختلفة في هذه العينات بعد 3 أشهر من المعالجة وجدنا أن هذه التركيزات قد انخفضت بنسب تتراوح بين 16-19% عند إضافة 7 % من الهيوماكس بينما انخفضت بنسب تتراوح بين 24-30 % عند إضافة 11 % من الهيوماكس.

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