

Análisis de crecimiento y producción vegetal de Leersia hexandra Swartz en el trópico húmedo mexicano en función de petróleo y surfactante [

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Analítica

text (article)

Leersia hexandra Swartz is a forage specie that grows in tropical wetlands in Mexico. This grass is established at sites contaminated with chronic crude oil spills in the José Narciso Rovirosa ejido, two kilometers southwest of the La Venta Gas Processing Complex in Huimanguillo, Tabasco, Mexico. Its potential for adaptation and growth in Gleysol with fresh oil and assisted with Tween 80 (Tw) in the process of environmental recovery is unknown. There is no knowledge on its production and growth potential when growing in Gleysol exposed to fresh crude oil and supplemented with Tween 80 (Tw) for environmental recovery purposes. The aim of the study was to evaluate the effect of the concentration of total hydrocarbons fresh oil (TPH) and assisted with the commercial surfactant Tw in the growth, chlorophyll pigments and dry matter production of L. hexandra. An experiment was conducted in a microtunnel using 15 treatments based on five concentrations of TPH (mg kg-1 dry basis): 693 biogenic oil, 4000, 30000, 60000, 90000; and three concentrations of Tw (%): 0, 2.5 and 5. The variables evaluated at 30, 60, 120 and 180 days after the establishment of the experiment (dds) were: 1) length of stolons (LE), 2) number of seedlings perc luster (PJM), and 3) growth rate (TCR). The variables evaluated at 180 dds were: a) concentration of chlorophylls a, b and total (Cla, Clb, Clt), b) aerial dry matter (MSA), root dry matter (MSR) and root volume (VR). The PJM and TCR differed between the four times evaluated due to effect of oil and Tw. The PJM, MSR and VR increased at 180 dds with the highest concentration of TPH and Tw. The effect of 90000 mg kg-1 was an increase in TCR TPH, PJM, MSR and VR, but LE, Cla and Clb showed no statistical differences. A concentration of 5% of Tw stimulated the PJM, Clb, MSA, MSR and VR. These results demonstrate the ability of L. hexandra to increase its TCR, PJM and root system when growing in Gleysol with ≤ 90000 mg kg-1 of fresh oil and Tw (5%)

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