

عنوان مقاله:

Effect of diesel contamination and diesel degrading bacteria on Zea mays growth and degradation of diesel oil

محل انتشار:

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خلاصه مقاله:

Soil pollution by oil compounds is one of the most common environmental problems. To study the effect of four different treatments of soil diesel pollution and diesel degrading bacteria (control, diesel, one bacterium and three bacteria) on some growth and biochemical factors of two cultivars of Zea mays (۷۰۴ and ۶۴۰) a factorial research was undertaken in the form of a completely randomized design with four replications in ۲۰۱۴. In addition, microbial parameters and gas chromatography analysis of plant and soil samples were performed. The results showed that in the presence of diesel contamination, dry weight (۸۳%), leaf area (۶۱%), chlorophyll content (۷۱%) and relative water content (۱۷%) of both cultivars decreased in comparing to the control plants. In all treatments, the amount of malondialdehyde (۵۰%), flavonoids (۷۰%), catalase enzyme (۸۳%) and EC (۳۵%) increased in comparing to the control. According to the results of GC analysis, the highest degradation of diesel oil in soil was related to the consortium bacteria. Researches have indicated that collaboration between plant and bacteria can speed up the removal of oil pollution from the soil.

کلمات کلیدی:

Bioremediation, Degrading bacteria, Diesel, Oil pollution, Zea mays

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