Determination Some heavy metals in plants (Lepidiumruderale L., AnethumgraveolensL., Apiumgraveolns L.) that were irrigated with groundwater in Basrah Governorate, Al-Zubair District, southern Iraq

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Abstract

This field study was conducted at the University of Basra, Marine Sciences Center, Department of Chemistry and Pollution of the Marine Environment for the year 2020 with the aim of studying the impact of environmental pollution in six sites in Al-Zubair district, Basra Governorate, in the concentrations of heavy metals (nickel Ni- cadmium Cdand leadPb) accumulated in the plant (*Lepidiumruderale L.* and Dill*Anethumgraveolens L.* and celery*Apiumgraveolns L.),*) cultivated in the fields of those sites, in which groundwater was used in the irrigation process, as these agricultural fields depend on groundwater in agriculture. The results of the field study showed that the plants planted in the different sites contained heavy metals in different concentrations and their highest levels were in nickel.(1.83-1.55-1.26) ppm in *Lepidiumruderale L., Anethumgraveolens L. and Apiumgraveolns L.,* respectively, all at site F1. For cadmium it has exceeded the level permitted by the World Health Organization (0.1) ppm,Its highest levels were (2.94-2.89 - 2.80) ppm in *Lepidiumruderale L., Anethumgraveolens L. and Apiumgraveolns* L. at sites F5-F1-F6, respectively. Lead has reached its highest levelppm (7.07 - 6.45 -6.40) in cress plant *Lepidiumruderale L.and Anethumgraveolens L. and celery Apiumgraveolns L* at sites F6-F5-F5, respectively.

Keywords: heavy metals, environmental pollution, agricultural crops, Zubair
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Introduction

Pollution is defined as the undesirable effects that occur in the physical, chemical and biological characteristics of the components of the environment (air - water - soil) that affect the food chain, including plants that in turn affect human health directly or indirectly. Everything that pollutes air and water pollutes the soil Because air and water fill the voids of the soil and permeate its grainsAlso, soil contamination with toxic chemicals may occur as a result of inappropriate agricultural operations, the use of polluted irrigation water, the addition of liquid and solid waste, as well as air pollutants (Zeid, 2001).The elements are heavy, especially since most of the projects were designed without taking into account the conditionsEnvironment)(Hantoush,2004). Most plants in the environment have an important characteristic, which is their ability to store heavy elements in their roots and the ability to control the transfer of parts of the elements to leaves and fruits. Dill is an herb that is also grown in BasrahIt blooms in the spring and is a perennial herb and is eaten as cooked or soft vegetables, and it is a medicinal herb. As for celery, it is grown in Basra in the spring and summer, and it is a biennial herb, which is a medicinal herb and is eaten as a table vegetable

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