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Effect of irrigation with paper making wastewater on heavy metals in wetland soil and the tread assessment

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To study the accumulative rules of paper making wastewater irrigation on soil heavy metal in reed wetlands was very significant to effectively using paper making wastewater and controlling the heavy metal pollution. This article studied the seasonal variation regularity of heavy metal in the soil in Shuangtai estuarine reed wetland, effects of paper making wastewater on soil heavy metal was analyzed after irrigation three concentration of wastewater (300 mg•L-1,175 mg•L-1,50 mg•L-1) used the remnant model to forecast and assess the accumulation of heavy metal contaminations. The results showed that irrigation with paper making wastewater can increase the heavy metal content in soil. There was a significant correlation between the wastewater irrigation and wastewater consistence. There was a different vertical distribution rule. Between different heavy metals: The As, Pb were accumulated in middle level of soil (20~40 cm) and the content of Cd, Cu in each solum had a smaller change, the Ni were accumulated in lower medium level of soil with the deepening of solum, the content of Ni was decreased gradually. Every heavy metal in the test could accumulate in soil with 300 mg•L-1. After about 10 years of irrigation, the accumulated Cd in the soil was found to be higher than the first grade of National Soil Environmental Quality Standard. When irrigated with 50 mg•L-1potency, Pb, Ni, Cu accumulated lightly, after about 50 years of irrigation the accumulated Pb, Ni, Cu in the soil were found to be less than the first grade.

Biography

Lifeng Li is an Associate Professor in the year 2008 and worked in Shenyang Agricultural University. She is the leading researcher both of Liaoning Shuangtai Estuary Wetland Station and Wetland and Water Ecology Research Group. She has published more than 10 papers and serving as a Secretary of College of Science.

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