

Removal of Nitenpyram from Farmland Runoff by an Integrated Ecological Ditches with Constructed Wetland System

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Abstract : The removal of Nitenpyram from farmland runoff by an integrated eco-ditches and constructed wetland system was investigated in the case of different HRT. Experimental results show that the removal of COD, N and P was not influenced by the Nitenpyram. When the HRT was 2.5 d, 2 d, and 1 d, the Nitenpyram removal efficiency could reach 100%, 100% and 84%, respectively. The removal efficiency in the ecological ditches was about 38%-40% in the case of different HRT, while that in the constructed wetland was influenced by the HRT variation. The optimum HRT for Nitenpyram and pollutants removal was 2 d. The substrate zeolite with soil and hollow brick layer enabled higher Nitenpyram removal rates, probably due to the cooperative phenomenon of plant uptake and microbiological deterioration as well as the adsorption by the substrate.

Keywords : ecological ditch, vertical flow constructed wetland, hydraulic retention time, Nitenpyram

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