

Assessment of efficient of organic and inorganic sorbent materials to remove nitration forms

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INTRODUCTION: In general, an adsorbent can be termed as a low cost adsorbent if it requires little processing, is abundant nature or is a by-product. Dry rice husk contains 70-80% of organic matter (lignin, cellulose, etc.) and the reminder consists of silica, which is present in the cellular membrane (Khan et al., 2004). Whereas, the CEC is a characteristic property of expandable clay minerals such as vermiculate for treatment processing (Stuedel et al., 2009).

MATERIALS AND METHODS: This research was done in khoradgan's farm under Olive cultured with heavy texture. An experiment plan with 2 treatments of Clay pot included Vermiculite and rice husk and two soil treatments in 4 replications that irrigated by Zob-Ahan wastewater in 12 events. All analyses were done at 2 stages by APHA (1995). The pH and EC of soil were 7.6 and 4.1 dS/m. also, pH of wastewater were 8.5 and 1.6 dS/m with high concentration of anions especially NO_3^- (82.5 Mg /Kg).

RESULTS AND DISCUSSION: The increase of concentration of total-N happened (about 5.78 times) in vermiculate than rice husk in contrast to decreasing it in soil treatments. The N-NO_3^- declined about 441-541 units in soil than an increase of 139-143 units by rice husk and vermiculate absorption .whereas, the concentration of absorbed N-NH_4^+ showed an increase about 63.22 and 10.69 unites by rice husk and vermiculite, respectively. Overall, rice husk is more efficient to removal N-NH_4^+ than vermiculite to eliminate of N-NO_3^- from industrial wastewater whit acidic pH.

Keywords: Rice husk, Vermiculite, N-NH_4^+ , N-NO_3^-

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The 1st International Conference on New Ideas in Agriculture
Islamic Azad University Khorasgan Branch
26-27 Jan. 2014, Isfahan, Iran

