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Investigation of heavy metals Pb and Cd in Alfalfa irrigated by wastewater of two industrial factory of Esfahan

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The contamination and quality of irrigation water is of the main concern especially in the regions with limited water resources. In such region not only, the water resources should wisely be utilized at the same time should be prevented from contamination. Therefore, it is necessary to set plan to study the long-term affects of application of EW on environment, food chain and, human health. The quality of industrial EW of Zob-Ahan (Unit 1) and Fulad-Mobarkeh (Unit 2)(Iron foundries) and its impact on Alfalfa plant was studied for one year. The EW were sampled, seasonally every 6 hours during 24 hours periods. During a one-year study, In area irrigated with industrial EW, two zone were selected, one irrigated with industrial EW from Zob-Ahan and one irrigated With EW from Fulad-Mobrakeh.In each zone, 3 Alfalfa farms of approximately 0.3 ha were selected. The comparison of chemicals properties and concentration of heavy metals of Pb and Cd in industrial EW with permissible level shows that BOD, EC, COD, TSS, N-NO_3, Cl^- and SO_4^{2-} are limited for discharging into surface water and, disposal into absorption wells and BOD, EC, COD, TDS, SAR, HCO_3^-,TSS, N-NO_3, Cl^- and SO_4^{2-} and concentration of Cd for utilization as the irrigation water. Comparison of the result with the permissible level show that the concentration of Pb and Cd don't exceed the permissible level in Alfalfa plant.

Keywords: Wastewater, Permissible level, Pollution, Heavy metals

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