

عنوان مقاله:

Microbial exposure risk assessment of urban wastewater by irrigation of agricultural products

محل انتشار:

چهارمین کنگره علوم و مهندسی آب و فاضلاب ایران (سال: 1401)

تعداد صفحات اصل مقاله: 11

نویسندگان:

Yadollah .Ghafuri - *Research Center for Environmental Pollutants, Qom University of Medical Sciences, Qom, Iran*

Ahmad Reza Yari - *Research Center for Environmental Pollutants, Qom University of Medical Sciences, Qom, Iran*

Rahim Aali - *Research Center for Environmental Pollutants, Qom University of Medical Sciences, Qom, Iran*

Mohammad Reza Khaksar - *Occupational Health and Safety Department, Health School, Qom University of Medical Sciences, Qom, Iran*

خلاصه مقاله:

This study was designed to investigate microbial exposure risk assessment and consequences of adverse health effects due to the use of irrigation of fields with wastewater in Qom province Environmental monitoring program for ۳ pathogens including Escherichia coli, Vibrio cholerae and E.coli O157 in raw sewage and treated wastewater and irrigated products with wastewater, was performed. Results was shown that in the raw wastewater, concentrations of E.coli, Vibrio Cholerae and E.coli O157:HY, $۳.۴ \times 10^3 \pm 500$, $۲.1 \times 10^3 \pm 100$ and ۳۱۲ respectively were determined. Concentrations of E.coli, Vibrio Cholerae and E.coli O157:HY in wastewater effluent $۲.1 \times 10^3 \pm 100$, $۰.۸ \times 10^3 \pm 100$ and ۱۷۶ respectively were determined. Based on these findings, it is determined that the conventional wastewater treatment system has been effective in removing E.coli, Vibrio Cholerae and E.coli O157: HY by ۵۰%, ۵۹% and ۴۳%, respectively. Irrigated crops with wastewater effluent containing ۴۰۰ ± ۲۵۰ , $۰.1 \times 10^3 \pm ۰.۰۱۹$ and ۵۲ for E.coli, Vibrio Cholerae and E.coli O157:HY respectively were measured. In this study according to the exposure scenarios including accidental drinking, food crop consumption, dermal contact by wastewater effluent and dermal contact by raw wastewater, total annual Probability of infection in studied population for E.coli, Vibrio Cholerae and E.coli O157:HY, ۸×10^{-۲} , ۸×10^{-۴} and ۰.۱۷ respectively was determined. Implementing of wastewater safety plans (WWSP) to safeguard wastewater quality, raising awareness in the population in contact with urban wastewater and upgrading wastewater treatment plants is inevitable.

کلمات کلیدی:

.Microbial, Wastewater, Risk, Qom, Irrigation, Products

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1630741>



