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Data Article

Q1 Data on nitrate and nitrite of Taham dam in Zanjan (Iran)

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ARTICLE INFO

Article history:

Received 13 December 2017

Received in revised form

15 January 2018

Accepted 19 January 2018

Keywords:

Nitrate

Nitrite

Water quality

Dam

ABSTRACT

In recent years, contamination of water resources, with pollutants such as nitrate and nitrite, has significantly increased. These compounds can have harmful effects on human health, especially children such as methemoglobinemia. The main objective of this study was to measure the concentration of nitrate and nitrite and its health-risk assessment in the rivers entering Taham dam in Zanjan. USEPA Method was used to assess the health-risk of nitrate and nitrite. According to the obtained results, the concentration of nitrate and nitrite was in the range of 0.51–14.93 mg/l and 0.001–0.061 mg/l, respectively. According to the results, the mean of the CDI for nitrate and nitrite was 9.52×10^{-2} and 3.63×10^{-4} mg/kg/day, respectively. Furthermore, the mean HI for nitrate and nitrite was 5.97×10^{-2} and 3.63×10^{-3} , respectively. The concentration of nitrate and nitrite in rivers was lower than the WHO and Iran guidelines. Based on the results, the HI value in all samples was less than

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<https://doi.org/10.1016/j.dib.2018.01.055>

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1 which indicating the non-carcinogenic effects of nitrate and nitrite in these rivers.

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Specifications Table

Subject area	<i>Chemistry, biology</i>
More specific subject area	<i>Water monitoring and quality</i>
Type of data	<i>Table, figure</i>
How data was acquired	<i>UV-vis spectrophotometer (DR-5000)</i>
Data format	<i>Raw, analyzed</i>
Experimental factors	<i>According to the study area, 36 sampling stations were identified. After sampling, all samples were stored in standard condition. Then, The concentration of nitrate and nitrite was measured</i>
Experimental features	<i>Measuring the concentration of NO_3^- and NO_2^- in the samples</i>
Data source location	<i>Zanjan city, Zanjan province, Iran</i>
Data accessibility	<i>Data are included in this article and supplemented excel file</i>

Value of the data

- Nitrate and nitrite are one of the most common pollutants of water resources. Therefore, its continuous monitoring is very important.
- One of its most important disadvantages is the formation of methemoglobinemia (blue baby), especially in children (< 6 months), which may have adverse effects.
- Dams are one of the main sources of water supply that are subject to various contaminants. Nitrogen compounds are one of these pollutants that can enter to water resources through agricultural sewage.
- One of the methods for assessing the effect of these compounds on human health is the health risk assessment.
- The data of this study shows the concentration of nitrate and nitrite in the Taham dam, so it can be considered in environmental planning.

1. Data

Zanjan is located in west of Tehran. According to the latest census, the city population is around 411,001 people. The study area is located northwest of Zanjan and has two main rivers (Golherod and Sarmesaghlo). These two rivers flow to Taham dam which is the main source of drinking water of Zanjan city.

2. Experimental design, materials, and methods

In recent years, contamination of water resources has increased significantly with pollutants, such as nitrate and nitrite. These compounds (nitrate and nitrite) can have harmful effects on human

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