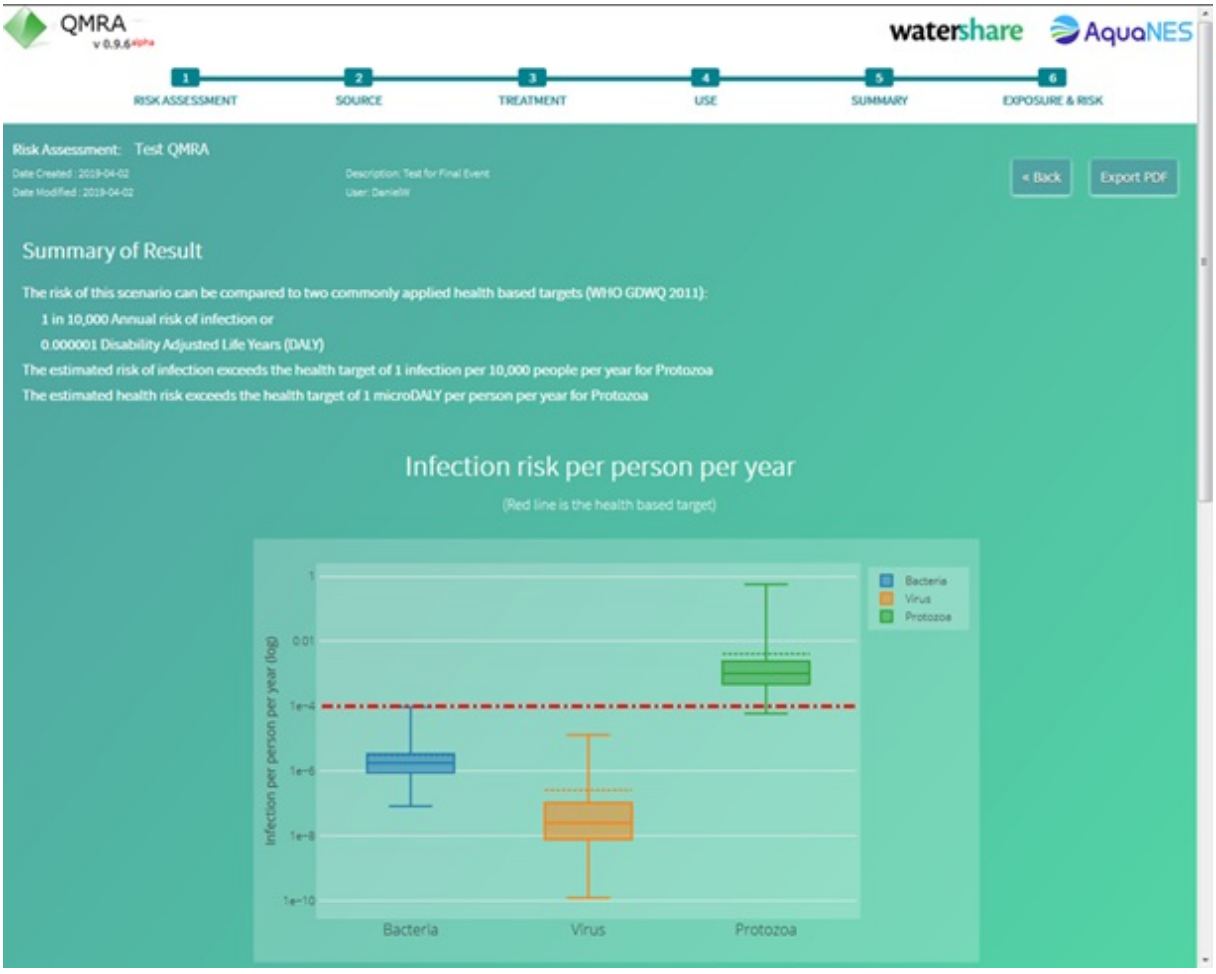
Product factsheet

Quantitative Microbial Risk Assessment

Software solution
Methodology or process



Description

Quantitative Microbial Risk Assessment (QMRA) is a methodology that can be applied to assess risks of water (re)use and thus support decisions. The QMRA tool enables users to estimate the microbial health risk of using various water sources, including reuse of wastewater. A treatment system can be designed by selecting treatment steps from a wide array of possible treatment technologies. These treatment trains result in a product water quality for which the application can be selected to assess the exposure of humans to this product water and the pathogens it may contain. A calculation is performed according to the QMRA approach that involves the estimation of infection risk per person per year and the DALYs (disability-adjusted life years) per person and year for bacteria (Campylopbacter jeuni),

viruses (rotavirus) and protozoa (Cryptosporidium).

Training material of QMRA is available at https://youtu.be/Cg4ng8r6QdM.

Target audience

Risk managers, regulators, inspectorates, engineers, stakeholders of water systems (to support discussions), students and water professionals.

Actors, their roles and interactions

- The tool can be used by individuals to perform risk assessments.
- The tool can be used for QMRA introduction, education, training.
- The tool can be used by teams to support discussions and decisions on water system development.

Unique selling points

The tool is very user friendly compared to other available QMRA tools (e.g., QMRAspot). It is very flexible allowing a wide range of water sources, treatment processes and uses. No user data is required for the basic functionality, however advanced users can adapt input parameters based on their own data.

Technical requirements

- The tool can be used through any popular internet browser and does not require downloads or computer capacity.
- Web-based.

Software data

- Version: V 0.9.7 alpha
- Initial release: 2019

Publications

- Smeets, P. W. M. H., & Miehe, U. (2019, 16 – 20 June). AquaNES QMRA tool: a webtool for quantitative microbial risk assessment of water reuse applications. Paper presented at the Workshop 12th IWA International Conference on Water Reclamation and Reuse, Berlin, Germany.

URL

https://tinyurl.com/QMRAplus

Technologies applied by the product

- **Groundwater systems**
- **Rainwater harvesting systems**
- **Surface water and infiltration systems**
- **Wastewater treatment technologies for water reuse**
- **Water recovery technologies for water reuse**

Costs

The webtool is freely available.

Case Study applying the product

Flanders, Belgium



https://mp.watereurope.eu/d/CaseStudy/32

Related tags

QMRA | health risk assessment | microbiology | pathogens | DALY