Hidden threats in a bucket

Water stored in buckets for prolonged periods is often not safe to drink.

Dr Muthumuni Managa is a senior lecturer at the Institute for Nanotechnology and Water Sustainability at the University of South Africa.

ORCID ID

0000-0003-4578-9861

https://www.sciencedirect.com/science/article/abs/pii/S1572100020300892?fr=RR-2&ref=pdf_download&rr=7192a910f99fb285

Water stored in buckets can contain dangerous health risks.

When drinking water is stored in buckets for future use, it leads to the development of a thin layer of bacteria growing on the inside of the bucket. This thin layer is called a biofilm and it worsens the problem of bacterial infestation in the water. Water stored in buckets with biofilms is unsafe to drink.

Access to water and sanitation is a basic human right provided for in the South African constitution. Yet, only 65% of households have access to reliable water sources accodring to the South African department of water and sanitation. Many rural areas and villages experience severe water shortages. Water is provided on a rotational basis in some sort of container, or community members have to collect water directly from an often polluted river. People then store the water for use over time in buckets, which poses a health risk.

Using contaminated water has led to the loss of lives in these areas, particularly among children aged five years and below. Young children and people living with immune-related diseases are the most vulnerable to diseases caused by unsafe drinking water. Unsafe water can cause cholera, typhoid fever and diarrhoea.

"Nanotechnology makes the development of an affordable water purification system possible. Our research looks into the development of a low-cost water storage container with antimicrobial properties to use in low-resource communities and rural areas. This invention is highly effective in preparing and storing safe water by using normal sunlight to kill bacteria," says Dr Muthumuni Managa.

It remains important, however, to teach people to store and treat water correctly and to implement basic water purification techniques to save lives.