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How RT-PCR (Real-time polymerase chain reaction) Kits are Saving Lives through Early, Accurate Testing of Water Contamination

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As the world observes Food Safety Day, it is important to recognise that food and water safety are closely interconnected. In a country with a population of over 1.4 billion, clean drinking water is a precious resource. For most people living in both rural and urban areas, however, clear water is often mistaken as safe to drink but the truth is far from this. Clean-looking water often carries invisible, harmful waterborne pathogens or microorganisms such as bacteria, viruses, Protozoans and parasites that contaminate water and can cause serious illnesses, if not detected well in time before consumption.

Health risks

Some of the common bacterial contaminants found in water include E. coli, Salmonella, Coliforms, Shigella, Vibrio cholerae, Campylobacter, Legionella and viral contaminants like Enterovirus, Hepatitis A and Bacteriophage These can cause serious diseases like cholera, typhoid, dysentery, diarrhoea, and hepatitis among both individuals and communities. Several other factors can contaminate the drinking water such as sewage leaking into water pipelines, industrial waste discharges, or agricultural runoffs carrying animal waste, fertilisers or pollutants entering into water systems. Such worrying concerns, therefore, make it imperative for industries to invest in testing and monitoring mechanisms that work quickly and effectively on a large scale.

RT-PCR-based tools

Recent incidents in Indore and Haryana, where people lost their lives because of the consumption of contaminated water, could have easily been avoided if the water had been tested before. That is why identifying harmful pathogens at the right time remains crucial in the prevention of the spread of infections, protection of communities, and giving authorities enough time to take suitable preventive action.

How they work

Advanced RT-PCR based testing kits are helping laboratories and industries to detect waterborne pathogens with greater speed - in less than three hours, sensitivity, and accuracy in monitoring the quality of water. They analyse samples at a much deeper level by studying the DNA of contaminants present in water, further helping improve the precision and reliability of testing outcomes.

These versatile kits, which include 100 tests each, can be used to test drinking water, groundwater and industrial water. As the demand for safe drinking water continues to grow in a fast growing, large population like India, regular and reliable testing becomes essential for protecting public health and building trust in water safety. These technologies enable faster intervention and better public health response.

Versatile solutions

In addition to testing water samples, these RT-PCR-based kits are so versatile, they can also be used to test contamination in food products and dairy industries . They are rapid, easy to use and highly efficient, helping laboratories, industries, and public health authorities maintain the highest safety standards, and they are compatible with existing laboratory systems.

With the latest, fastest and most advanced molecular testing technologies now available in India, communities can be assured of their water safety.