

PRESS RELEASE

J-WAFS develops low-cost handheld technology to monitor milk quality and safety

- *J-WAFS is developing new portable technology that provides cheaper, more accurate and instantaneous testing to allow early detection of contaminated milk.*
- *Battery-powered device improves real-time control across the dairy industry supply chain - from farmers to collection centers to processing plants.*

Jeddah, Saudi Arabia, March 25, 2018: A new low-cost handheld device that tests the quality and safety of milk is being developed by the Abdul Latif Jameel World Water and Food Security Lab (J-WAFS) at the Massachusetts Institute of Technology (MIT).

Current methods of testing milk in countries such as India that have complex supply chains which involve numerous small-scale dairy producers can be unreliable. Quality can be affected at numerous points in the supply chain by factors such as variations in temperature and humidity, multiple handling methods, and the use of unreliable technology. Testing is also carried out at processing plants using stand-alone systems, after which time the milk is transported to end-users. This means that the risk of contamination can occur both before and after testing has been carried out.

J-WAFS researchers are developing a solution that can be utilized at any point in the supply chain to ensure consistent quality from farm to market. This new technology is a battery-powered, portable, handheld device that tests milk for fat and protein, which generally indicates its quality, and provides instantaneous results.

It works by dipping the device into a sample of milk where a built-in sensor detects particle concentrations of milk fat and protein. Results are then displayed via a built-in screen in less than a minute.

The benefit of the technology is that testing can be carried out on the ground and in real-time at any stage of the supply chain. It also means that inconsistencies, quality, and safety concerns in milk samples can more easily be traced back to individual farms and middlemen, while providing increased real-time control to manage supply and prevent spoilage.

Milk production is a large global industry – for example, India's milk production in 2016 alone was 155 million tonnes, and the country has over 75 million dairy farmers. However, according to the World Health Organization, globally one in ten people fall ill every year from consuming contaminated food, including dairy products. Children under five years of age are at particularly high risk, with 125,000 children dying from foodborne diseases every year. This new tool could help to bring to light quality and safety concerns for milk in particular. Since it can be used at many points throughout the supply chain it has the potential to contribute to a reduction of instances of food-borne contamination of dairy products and ensure quality consistency.

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Co-founded in 2014 by Community Jameel and MIT, J-WAFS promotes the development and deployment of technologies, policies, and programs that target diverse challenges related to the world's water and food systems.

The research was developed by MIT's Vice President for Open Learning Sanjay Sarma.

For more information on the research click [here](#)

Notes to Editors

Community Jameel is a social enterprise organisation that helps communities transform themselves through a wide range of initiatives. It works to create job opportunities, tackle unemployment, promote arts and culture in the Middle East and around the world, enable research for poverty alleviation and food and water security, and provide education and training opportunities. Community Jameel was formally established in 2003 to continue the Jameel family's tradition of supporting the community, a tradition started in the 1940s by the late Abdul Latif Jameel, founder of the Abdul Latif Jameel business, who throughout his life helped tens of thousands of disadvantaged people improve their lives.