

Smartphone to help farmers test for poultry infection

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Credit: Brunel University

Chicken farmers in the Philippines will soon test their birds for deadly pathogens with a new hand-held device and smartphone app they can use on their own farms.

It will help farmers act fast before disease can spread and potentially

infect people. It also cuts out the need to send samples away for expensive lab tests.

A team of scientists lead by Brunel University London will develop a molecular test and a smartphone app that, when used together, detect six key pathogens in poultry.

Farmers will collect samples from their birds using a large-matchbox-sized instrument that screens the DNA and RNA. The device connects wirelessly to the app to display the results, which can also feed into a central store to help track outbreaks across the islands. The whole process takes less than an hour.

"Near-patient molecular diagnostics have been very important in improving human health, said Brunel University London's Professor Balachandran. "But such technology in animal health in farms is less advanced.

"This will make a massive change to the poultry industry, especially for low and middle-income countries."

Hundreds of thousands of people in the Philippines and other poorer countries make a living farming poultry, so disease outbreaks can devastate their economies. But standard molecular tests don't work well for developing countries. Equipment is expensive, mobile instruments are rare and lab results can take hours or days.

Backed by £615,000 from the UK government's Newton Fund, Prof Balachandran will work with the University of Surrey and Lancaster University to develop the tests over the next three years.

"This quick and easy test will help vets identify disease among poultry, which helps prevent it spreading," said Professor Roberto La Ragione at

the University of Surrey's School of Veterinary Medicine."The technology will not only benefit the Philippines, but could be rolled out to other developing countries."

Reliable and affordable tests for viral diseases in poultry are one of the most important and challenges in poultry health in the developing world, said Molecular Virologist Dr Muhammad Munir at Lancaster University. "Many viruses and bacteria infect chickens simultaneously, especially in developing countries, and complicate the clinical signs of individual disease," he said. "This makes molecular diagnostic tests that can be applied in less-equipped laboratories and on the farm a necessity."

Provided by Brunel University

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