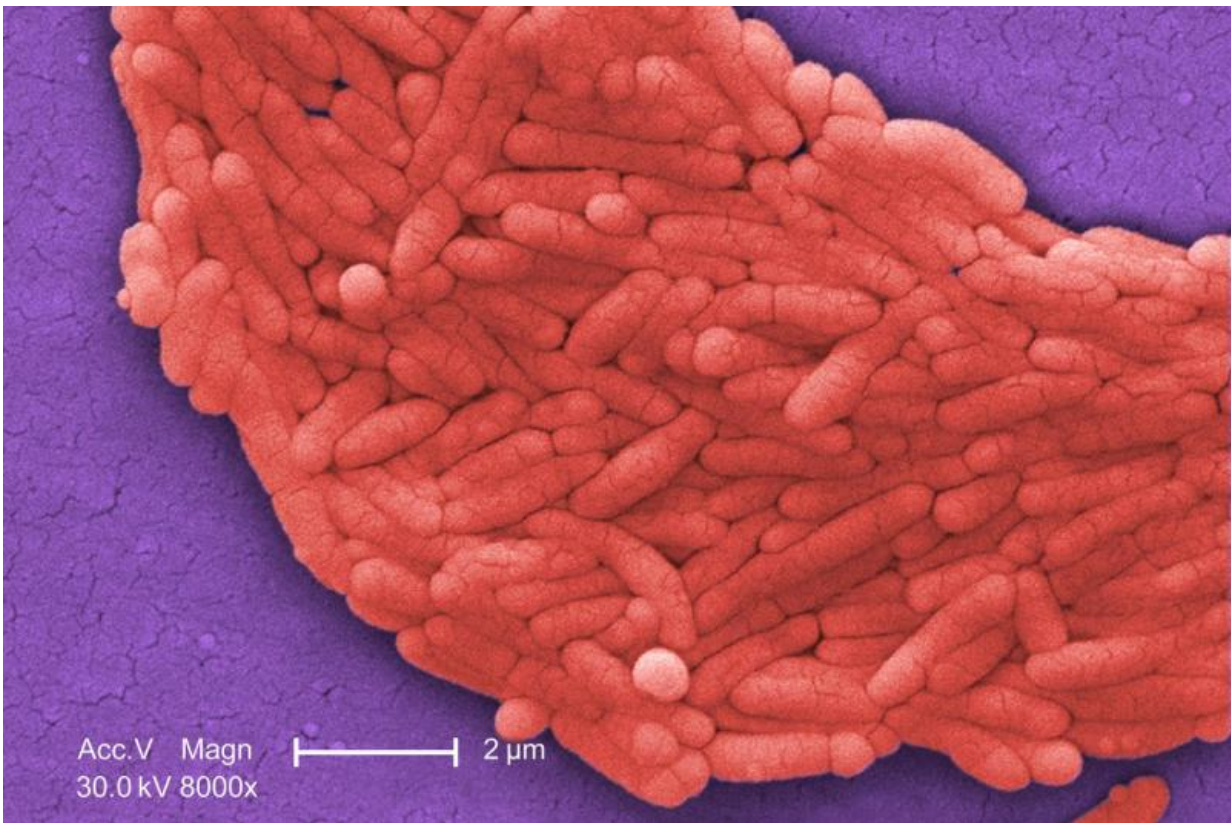


Faster *Salmonella* test boosts food safety for humans and animals

October 5 2017, by Joe Schwartz



Salmonella forms a biofilm. Credit: CDC

A new test allows accurate, rapid testing for *Salmonella*, a bacteria that is one of the leading causes of food-borne illness across all regions of the world. *Salmonella* can infect animals as well as people, with commonly

reported cases of people falling sick after handling pets and livestock.

Tests that used to take days now take 24 hours, with a hundredfold improvement in detection for at least one type of *Salmonella* - called *Salmonella* Dublin - that is an emerging concern and is difficult to grow in culture, making diagnosis difficult.

The new method, first developed for automated food safety testing and then adapted by Cornell scientists for a wider range of sample types, can detect the bacteria from environmental and clinical samples, including swabs, feces, milk and blood.

The [test](#) improves diagnosis time from as many as five days using current procedures, according to a recent study published Sept. 1 in the *Journal of Veterinary Diagnostic Investigation*.

"Because we have this 24-hour turnaround time with the [new test](#), there are veterinary hospitals and clinics that can test and get results rapidly and make sure they are not exposing other [animals](#) to *Salmonella*," said Belinda Thompson, assistant clinical professor at the Animal Health Diagnostic Center and a senior author of the paper.

Fast clinical diagnoses also allow veterinarians to quickly quarantine an infected animal.

Salmonella Dublin is "host adapted" in cattle, meaning infected animals can become permanent or long-term carriers, putting herd mates, especially susceptible calves, at risk. This strain can infect people who may be exposed by contact with infected animals, by drinking raw milk, or by consuming other contaminated food products. In humans, *Salmonella* Dublin has higher hospitalization and fatality rates than other *Salmonella* types; it causes systemic infection of body tissues, similar to typhoid.

"*Salmonella* biosurveillance in veterinary facilities is critical because animals can shed the bacteria without showing clinical disease signs," said Laura Goodman, a senior research associate in the Department of Population Medicine and Diagnostic Sciences and lead author of the study. Goodman added that the method described in the study is now available as an environmental testing program through the Animal Health Diagnostic Center.

More information: Laura B. Goodman et al. Detection of *Salmonella* spp. in veterinary samples by combining selective enrichment and real-time PCR, *Journal of Veterinary Diagnostic Investigation* (2017). [DOI: 10.1177/1040638717728315](https://doi.org/10.1177/1040638717728315)

Provided by Cornell University

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