

Rapid test to detect livestock parasite

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A new test developed by La Trobe University researchers will prevent the spread of deadly parasite that affects cows, sheep and other ruminants. Researchers have developed a simple, rapid test for the parasite which can be used in the field to detect early infestations, preventing the spread of the disease throughout the herd. The study is

published in *PeerJ Life and Environment*.

Fasciola hepatica, or [liver fluke](#), can cause severe damage to the liver and consequently disease, death and economic loss. Its global cost is around \$4 billion AUD annually. In Australia the parasite costs the [agricultural sector](#) up to \$80 million a year and another \$10 million on [current treatments](#).

Lead researcher, Professor Travis Beddoe, head of the Agricultural BioSolutions Laboratory at La Trobe University, said current diagnostics test for the presence of mature parasites in fecal matter but are labor intensive, expensive and have low sensitivity.

"Our test, however, detects parasite DNA in waterways, picking up the immature form of the parasite before it enters the host," Professor Beddoe said.

"Shifting focus of these stages enables indirect sampling to detect the presence of [parasites](#) in the environment without having to individually sample animals."

Professor Beddoe said the isothermal PCR test is suitable for use in the field, allowing rapid, reliable and robust detection of the parasite in water and fecal samples within one hour.

"In future, our aim is to trial this technology on farms as part of integrated parasite management plan," Professor Beddoe said.

In Australia the disease is becoming an increasing problem as the parasite develops resistance to current treatment—and the expected La Nina risk of summer floods and rains creating optimal conditions for the spread of the parasite and the disease.

Liver Fluke requires specific snails to complete their lifecycle. These snails inhabit wet marshy areas and release larvae onto pastures that infect sheep and cattle when eaten.

More information: Lily Tran et al, Environmental detection of *Fasciola hepatica* by loop-mediated isothermal amplification, *PeerJ Life and Environment* (2022). [DOI: 10.7717/peerj.13778](https://doi.org/10.7717/peerj.13778)

Provided by La Trobe University

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