

New Zealand to develop diagnostic kits to manage facial eczema (FE) on farm

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New Zealand's Ministry for Primary Industries' Sustainable Food and Fibre Futures fund is investing more than \$35,000 in a project to develop a rapid antigen test (RAT) for the early detection of facial eczema (FE) disease in ruminants. Ministry has collaborated with local firm Tokaora Diagnostics to develop a prototype facial eczema RAT and undertake field testing.

Management of Facial eczema (FE) disease in ruminants is costing the New Zealand economy more than \$200 million each year.

The test kit under clinical trials could be used to diagnose the disease among sheep, cattle, and deer but initial trials will focus on dairy cattle.

Currently, farmers are detecting the disease through blood samples taken by vets but it is expensive and time consuming. With our solution, farmers will be able to do the testing themselves quickly and easily via nasal mucus or saliva. Financial losses from FE in New Zealand have been estimated as high as \$274 million per year from lost production, and the cost of labour, treatment, and deceased animals. By detecting facial eczema accurately weâ??d expect to see significant cost savings on farms in affected areas.

"FE is a disease of the liver and often doesnâ??t show physical symptoms until itâ??s too late to save the animal. Currently thereâ??s no cheap, on-farm diagnostic on the market, so weâ??re supporting Tokaora Diagnostics to take their proof-of-

concept test to the next stage" says Steve Penno, MPI's director of investment programs. The local firm Tokaora Diagnostics is headed by chief researcher Frey Livingston and managing director Ms. Pam. The company conducted initial research and development through start-up grants from Callaghan Innovation. It also won the Venture Taranaki Power Up Awards in 2022 and received mentoring through the Sprout Agritech Accelerator programme.

"The diagnostic kit will enable farmers to surveillance test, which will facilitate timely treatment. It will also allow more informed purchasing, breeding, and culling decisions. For vets, it will be a quick diagnostic tool when called to a poorly animal, and for researchers it will give a timely answer to the "who has it and how badly" question

FE is a long-standing issue for our agricultural sector, and with climate change it's expected to get worse as the toxic spores that cause the disease are more likely to grow in warm and humid conditions. MPI has invested in a range of projects aimed at combating FE, including breeding spore-resistant grass, and working with vets, dairy farmers, and rural professionals to raise awareness about how to take preventative action. This project is another step towards better managing this disease.