



Modernising our diagnostics system

June 2022



Australia has a robust biosecurity system that reduces the risks posed by exotic pests and diseases, but we are always looking for ways to further strengthen and future-proof our system. A key part of our national biosecurity system is our diagnostics system. Diagnostics allow us to rapidly identify harmful pests and diseases at our border and effectively manage associated risks.

In 2021, the Australian Government launched a new \$22 million program to modernise our diagnostics system over four years. This program will include significant upgrades to our property, equipment and infrastructure, new training opportunities for our diagnosticians, and more support for our laboratories. Our diagnosticians make up a significant part of the national biosecurity diagnostics system, and so this investment will have major flow on benefits nationally.

Here are some of the improvements we have already delivered under the program and there are more to come so stay tuned!

New instrument to 'fingerprint' high-risk border pests

We are piloting the use of the MALDI Biotyper® Sirius™ device to see if it can support identification of bacteria, fungi and other plant pests intercepted at the border. The device works by comparing the profile of an unknown organism to a library of profiles of known organisms within a matter of minutes.



Partnering with universities and other research agencies



Earlier this year, our first co-supervised postgraduate student began work at our Plant Innovation Centre at Post-Entry Quarantine (PIC@PEQ) in Mickleham, Victoria.

We are working with the University of the Sunshine Coast and the University of Florida to help our postgraduate student investigate methods for efficiently identifying harmful viruses in key seed species imported into Australia.

Trialling a small but mighty tool for DNA sequencing

Our PIC@PEQ, Northern Australian Quarantine Strategy staff and border diagnosticians are trialling a breakthrough technology called the MinION DNA sequencer. The MinION, developed by [Oxford Nanopore Technologies](#), fits in the palm of the hand and can sequence every gene in any plant, animal or microbe. This means simple, reliable and efficient results to support identification of unknown specimens!

