

USING WILD PIGS TO TRACK TB

The TBfree programme uses a number of methods to track the presence or absence of bovine tuberculosis in New Zealand. This surveillance helps to guide the design of disease management and possum control programmes in specific areas. Where wild pigs are available, they provide important data on the disease status of wildlife in the area.

HOW PIGS HELP TRACK TB

Pig populations are not controlled under the TBfree programme – they don't spread TB to livestock or other pigs. However, they are valuable to OSPRI because they scavenge the carcasses of potentially infected possums over a home range of up to 1000 hectares, and in turn can become infected. This makes them effective indicators of where TB is present, or absent, in the possum population where the home ranges of both species overlap. This information helps to inform the design of TBfree's pest control programme.



Tagged with radio-frequency transmitters, this wild pig is sent to scavenge for TB-infected wildlife.

Research shows that TB in feral pigs nearly always comes from some other species – mostly possums, but occasionally deer or other wildlife hosts. Importantly, studies have shown that if possum control is undertaken where TB has historically been present in possums and pigs, the TB prevalence in pigs drops rapidly to near zero within a couple of years. Pig control alone had no effect on the persistence of TB in wild pig populations.

WHAT PIG SURVEILLANCE TELLS TBFREE

- TB detected in wild pigs shows where in a geographic area disease is likely to be carried by possums and where targeted possum control will be most effective.
- Where TB is not detected during wild pig surveillance, veterinary epidemiologists can be more confident that disease has been removed from the possum population.

It has been proven that when TB is present in possums in an area it is highly likely it will also be present in resident pigs.

Research papers available at ResearchGate.net:

Reduced spillover transmission of Mycobacterium bovis to feral pigs (Sus scrofa) following population control of brushtail possums (Trichosurus ulpecula)

Intraspecific transmission of mycobacterium bovis among penned feral pigs in New Zealand

WHAT DOES TB LOOK LIKE?

In pigs, TB lesions are usually found in the head, below the jaw. In extreme cases, lesions can be found in the gut and intestine. TB shows differently in pigs than in cattle and deer, where TB might appear in the abdominal or chest lining with grape-like lesions.

If you suspect TB, contact OSPRI on 0800 482 463.



TYPES OF PIG SURVEILLANCE UNDERTAKEN FOR THE TB PROGRAMME

GROUND HUNTING

Hunters collect pigs' heads from designated areas of interest for inspection by independent technicians. Contracted hunters provide auditable information including GPS locations of the capture, track logs and date-stamped photographs. These stringent requirements are necessary to guarantee the integrity of the research data. Hunters can be contracted directly with OSPRI or through a third party contractor.

AERIAL SURVEY

Contractors survey specific areas of interest using helicopters and shoot a selection of pigs for examination. GPS locations of pigs and barcoding of samples underpin the integrity of the data received.

JUDAS PIG SURVEY

In areas of interest, resident pigs are captured, ear-tagged with a radio frequency transmitter and released. Over time these pigs find resident pigs and travel around the area in groups. After a set period, tagged pigs are tracked and shot, along with a sample of untagged pigs found with them, and inspected for signs of TB.



Wild pigs caught on camera scavenging a possum carcass.

SENTINEL PIG SURVEY

TBfree pigs are captured and translocated into an area of interest, ear-tagged with a radio frequency device to enable tracking, and released. The animals are left for a minimum of six months then tracked, shot and inspected for TB by independent trained technicians.

For all types of surveys, knowing the age of a captured pig helps identify the earliest approximate date it could have been infected, and whether it was born before or after possum control activities had been undertaken. The approximate age of a feral pig is assessed by examining their teeth to see which teeth have erupted and how worn they are.

LABORATORY ANALYSIS

Any suspicious samples from pig surveys are sent laboratories for diagnostic testing. Any positive TB samples are DNA strain-typed to assess the likely source of infection. This is compared to types found historically in the area. If the strain type is one not normally identified from the area, an assessment is needed to ascertain whether the pig has been shifted into the area, or a new strain type has been introduced into wildlife populations.

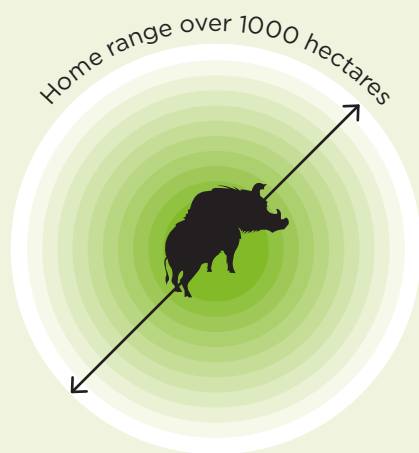
PIG RELEASES AND DISPOSAL OF WASTE

Moving wild pigs from one area and releasing them in another is illegal. Dumping potentially TB-infected pigs' heads and other material where it can be scavenged by possums or ferrets risks reseeding TB infection into an area that may have already been declared free of TB.

OSPRI encourages hunters to ensure effective disposal of heads by burying unwanted offal at the site of capture in a covered pit. This reduces the likelihood that local wildlife might scavenge infected carcasses and offal.

Wild pig surveys are critical to the goal of achieving TB freedom in wildlife and ultimately eradicating TB from New Zealand by 2055.

HOME RANGES OF PIG



WILD PIGS FOR SURVEILLANCE

x50
MORE EFFICIENT
THAN SAMPLING
INDIVIDUAL POSSUMS



x4
MORE EFFICIENT
THAN SAMPLING AN
INDIVIDUAL FERRET

