

# Australian Centre for Disease Preparedness

(Formerly Australian Animal Health Laboratory)

## *Update*

OIE Reference Laboratory for African swine fever

*Expert: Dr David Williams*

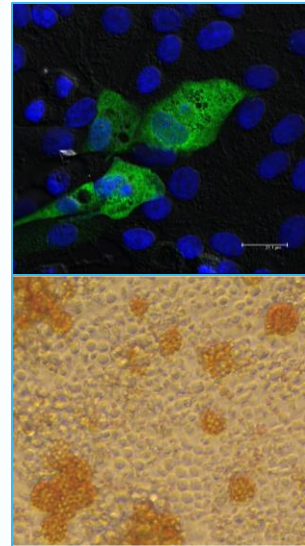
OIE Reference Laboratory for classical swine fever

*Expert: Prof. Trevor Drew*



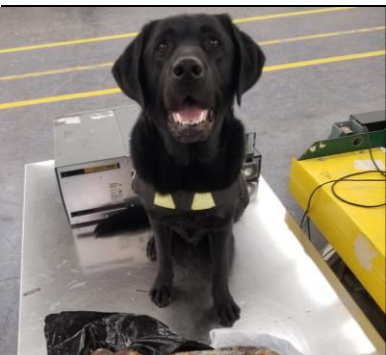
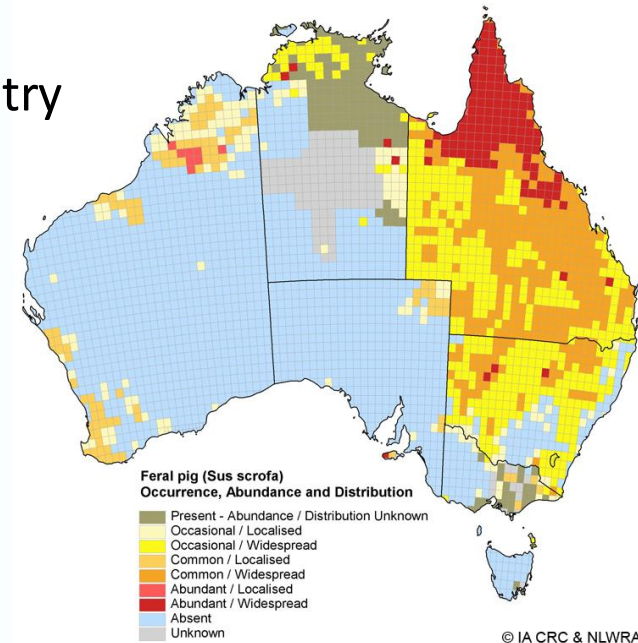
# ASF laboratory diagnosis at ACDP

- Multidisciplinary diagnostic capability
  - Molecular (PCR and sequencing), virology, serology and pathology
- Confirmatory testing for outbreak response
  - Vietnam, Myanmar, Timor Leste
  - Papua New Guinea (exclusion and surveillance)
- Working with PNG National Agriculture Quarantine & Inspection Authority (NAQIA) on ASF Diagnostic capacity building
- *No ASF in Australia*
  - AUSVETPLAN recently updated
  - PCR testing established in State labs (LEADDR network)



# ASF: threats to Australia

- Potential threat to Australia's ~\$US 2-3 billion pork industry and export markets (~\$100m)
  - 2,700 pork producers, 34,000 workers in the industry
- Large feral pig population is potential reservoir
- Likely sources
  - Illegally imported pork
    - swill fed to domestic pigs
    - eaten by free-range or feral pigs
  - e.g. waste from unregulated mooring of yachts or foreign vessels in Northern Australia
- Contaminated equipment, clothing → domestic pigs
- Infected pigs or carcasses of infected pigs → feral pigs





# ASF Research Activities at ACDP

- Whole genome sequencing of SE Asian and Pacific isolates for improved molecular epidemiology
  - 7 WGS from isolates from Vietnam, Timor Leste and PNG
- Comparative evaluation of PCR diagnostic tests for the detection of ASFV virus DNA in oral fluids and whole blood
  - Led by Kansas State University (US National Pork board)
- Test validation of LAMP assay for ASF
  - Collaboration with AgriBio (Centre for AgriBioscience, Victoria)
  - LAMP testing deployed by AgriBio in Timor Leste, 2019
- Developing early detection surveillance for African swine fever in feral pigs in remote areas of Australia
  - Engage local communities, e.g. producers, hunters, rangers
  - Evaluation of suitable dry swabs to withstand high temps

# ASF Research Activities at ACDP (2)

- Established *in vivo* ASF models in domestic pigs using various infection routes, performed in high containment (PC3) animal rooms
- Capability for performing high quality assessments of candidate vaccine safety and efficacy
- Investigating host responses host responses in pigs to infection with highly virulent ASF G2
  - Transcriptome, proteome, metabolome
- Assessing the potential role of Australian soft tick species to act as a reservoir for African swine fever virus
  - High containment (PC3) insectary
- *Collaborations welcome!*





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