

GF-TADs

GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES

Africa



Food and Agriculture
Organization of the
United Nations





OIE Reference Laboratories for ASF

Challenges and oppertunities

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Onderstepoort Veterinary Institute

Mission

To provide scientific support for Veterinary Services in effective risk management for quality of life for all in South Africa.

- ▶ OVI promotes animal health and welfare by providing effective veterinary diagnostic and research services.
- ▶ OIE Reference Laboratory / FAO Collaborating center for African Swine Fever



ASF Diagnostic Capacity

Clinical Diagnosis

Clinical signs
Lesions
Sampling and shipment

Molecular Testing

Polymerase Chain Reaction (PCR)
Sequencing
Phylogenetic analysis

Antibody Detection

Competitive ELISA
Immunoblot Assay
Pen-side Antibody test

Virus Isolation

Hemabsorbtion
Cytopathic Effect

Biobanks

Reference material
Virus Repository
Serum Bank

ISO 17025 Accredited





Diagnostic Challenges

- ▶ Lack of diagnostic testing facilities and capacity at regional and national level.
- ▶ Lack of harmonization of diagnostic methods and quality assurance, biosafety and biosecurity systems.
- ▶ Lack of reference material and Diagnostic reagents.
- ▶ Lack of epidemiological information pertaining to outbreaks.



Diagnostic Support

- ▶ The reference laboratory provides diagnostic testing to member countries where national and region capacity does not exist .
- ▶ Primary or Confirmatory testing is done at no cost to the sender.
- ▶ The laboratory can assist with passive and active surveillance, but the sender will be charged for the tests conducted.
- ▶ Shipment of samples are often difficult, but the reference laboratory can assist with the logistics and authorization.
- ▶ An ASF proficiency testing scheme will be launched in 2023.



Capacity building and Training

► Regional support and training

Namibia (FMD and ASF)

Mauritius (FMD and ASF)

Botswana (FMD)

Malawi (FMD, ASF, PPR)

Uganda (FMD)

Nigeria (FMD, ASF, PPR)

Mozambique (FMD and ASF)

Zimbabwe (FMD and ASF)

SADC training courses (Diagnostics and disease surveillance)





OIE Reference Laboratories Network

Aim

To facilitate collaboration between the OIE Reference Laboratories, national reference laboratories and laboratories in low- and middle-income countries that are actively involved in efforts to control or eradicate ASF.





OIE Reference Laboratories Network

Key Objectives

- ▶ To harmonize, standardize and validate ASF diagnostic assays, including assays that are not currently describe in the OIE Manual.
- ▶ To facilitate the exchange reference material to be used for internal verification of ASF diagnostic assays.
- ▶ To provide expertise and training to OIE and OIE Member Countries in relation to ASF diagnosis, surveillance and control.
- ▶ To support national reference laboratories in relation to ASFV diagnostics by providing scientific and technical expertise.



OIE Reference Laboratories Network

Members

Geographical region	Country	Laboratory
Africa	South Africa	OIE reference laboratory for ASF Onderstepoort Veterinary Research, Agricultural Research
	Nigeria	National Veterinary Research Institute
	Côte d'Ivoire	Lanada- Central Laboraotry for Animal diseases
	Kenya	International Livestock Research Institute



OIE Reference Laboratories Network

Key Activities

- ▶ Laboratory diagnosis and surveillance of African swine fever virus: addressing novel emergent variants
 - ▶ Develop and Harmonize diagnostic assays for the detection of novel variants.
 - ▶ Update case definitions to accommodate changes in the epidemiology of ASFV due to the possible emergence variants with reduced virulence /vaccines.
 - ▶ Develop and Harmonize diagnostic assays to detect the use of illegal vaccines



OIE Reference Laboratories Network

Illegal use of ASF vaccine

Low-virulent Genotype II

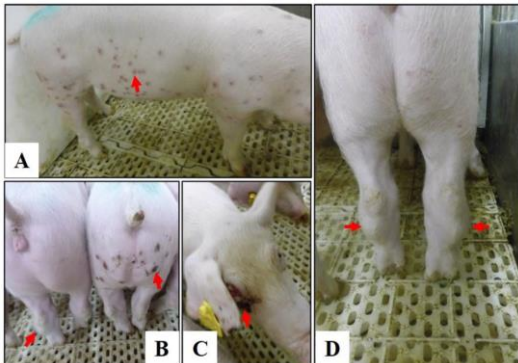
Research Paper | [Published: 26 February 2021](#)

Emergence and prevalence of naturally occurring lower virulent African swine fever viruses in domestic pigs in China in 2020

[Encheng Sun](#), [Zhenjiang Zhang](#), [Zilong Wang](#), [Xijun He](#), [Xianfeng Zhang](#), [Lulu Wang](#), [Wenqing Wang](#), [Lianyu Huang](#), [Fei Xi](#), [Haoyue Huangfu](#), [Ghebremedhin Tsegay](#), [Hong Huo](#), [Jianhong Sun](#), [Zhijun Tian](#), [Wei Xia](#), [Xuewu Yu](#), [Fang Li](#), [Renqiang Liu](#), [Yuntao Guan](#), [Dongming Zhao](#) & [Zhigao Bu](#)

Science China Life Sciences **64**, 752–765 (2021) | [Cite this article](#)

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Low-virulent Genotype I

Genotype I African swine fever viruses emerged in domestic pigs in China and caused chronic infection

Emergence of genotype I ASFVs in China.

- ▶ Both viruses were highly transmissible
- ▶ Infections resulted in non-lethal chronic disease, and persistence



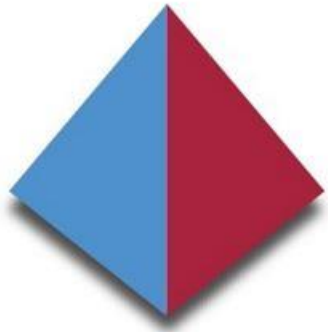
OIE Reference Laboratories

- ▶ Cross-border has spread emphasized the need for global cooperation to fight this disease.
- ▶ Rapid and accurate diagnosis remain a critical component of ASF control programmes.
- ▶ Collaboration between reference laboratories and national laboratories are encouraged.



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