

African Union



**AU-PANVAC  
Laboratories**



African Union  
Pan African Veterinary Vaccine Centre  
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# "ASF Virus and Challenges on Vaccines Development"

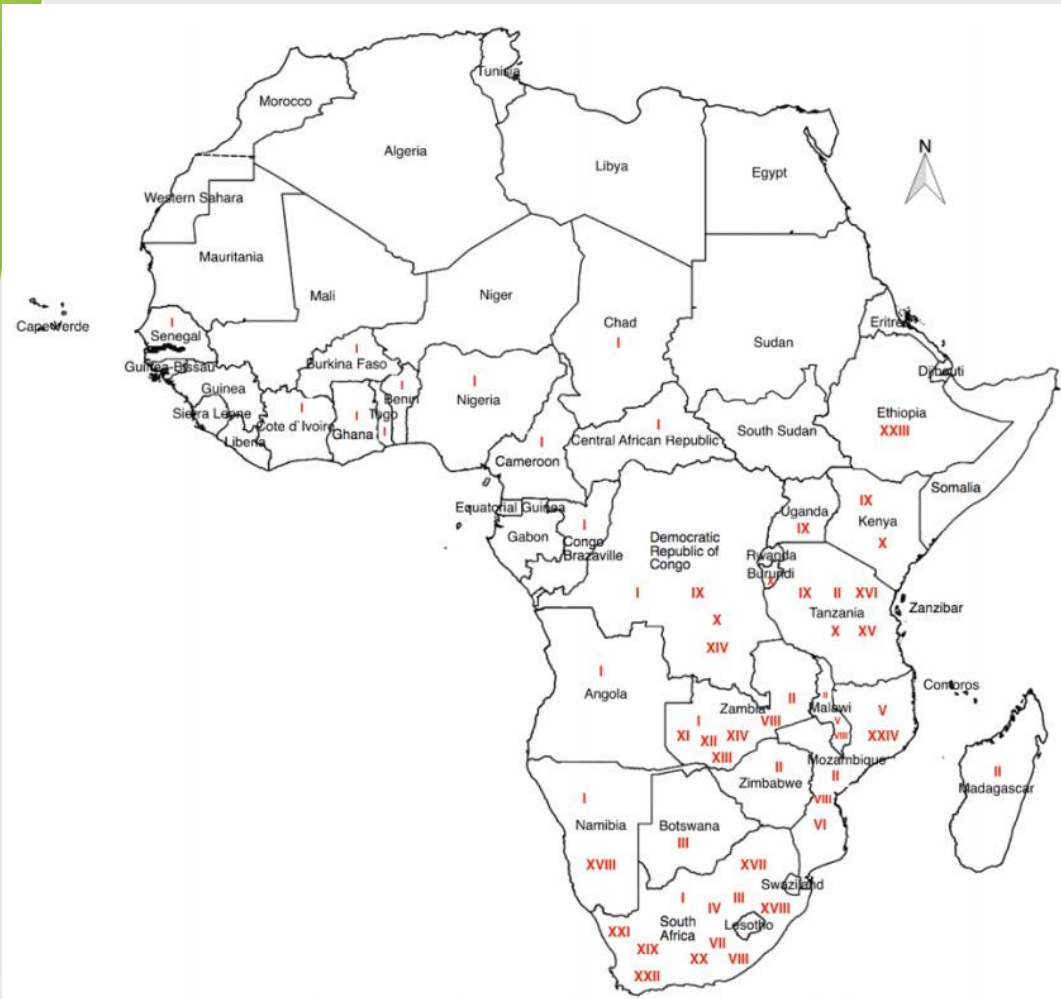
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# Previous RSC, SGEs in Africa on ASF Vaccines & Vaccination:

- ❑ 2022 Regional Steering Committee (RSC) Meeting in Nairobi recommended that:
  - Member Countries be encouraged to ensure appropriate evaluation of any new ASF vaccine through AU-PANVAC before granting authorization for its use or distribution
- ❑ 2025 Regional Steering Committee (RSC) Meeting in Eswatini recommended:
  - To encourage Member(s) Countries/States to support and implement the Continental Strategy for the Control of *African swine fever* (ASF) as per the guidance and with the support of the SGE
  - To encourage Member(s) Countries/States to ensure appropriate evaluation of any new vaccine through AU-PANVAC, based on WOAHP standards (currently not available for ASF) before granting any authorization for its use or distribution.



# Genotypes Circulating in Sub-Saharan Africa



- ❑ ASFV strains are currently grouped into **24 genotypes (I to XXIV)** with all the gene variants being associated with the disease
- ❑ Most of the Genotypes have been linked to ASF outbreaks in various parts of SSA, BUT **Genotype I dominates in Central Africa and West Africa**

Viruses 2021, 13, 2285. <https://doi.org/10.3390/v13112285>



# Prototypes of ASF Vaccine Strains

## Modified Live Vaccines (MLV) from Genotype II ASF Virus

- ❑ **ASFV-G- $\Delta$ MGF**: A highly attenuated strain developed from the highly virulent ASFV Georgia 2007 isolate by deleting multiple genes from the MGF regions  
(*Pathogens* 2022, <https://doi.org/10.3390/pathogens11090996>)
- ❑ **ASFV-G- $\Delta$ I177L**: A modified-live strain derived from the same Georgia isolate, featuring a deletion in the I177L gene. This strain was later found to revert to virulence and is associated with adverse events in commercial vaccines. (*Viruses* 2022, <https://doi.org/10.3390/v14050878>)
- ❑ **Lv17/WB/Rie1**: A natural attenuated non-haemadsorbing genotype II ASFV. (*Front Immunol.* 2021, . <https://doi.org/10.3389/fimmu.2021.761753>)



# Challenges for using ASF Vaccine Strains

## ❑ Field Strain Matching with prASF Vaccine

- Efficacy of the **MLV ASF Vaccine** is restricted to those strains that are antigenically related and, in most cases, only provide **protection against homologous strains**
- This is a critical bottleneck due to the large genetic and antigenic heterogeneity among all ASFV field isolate



# Challenges for using ASF Vaccine Strains...

- ❑ **Genetic change of vaccine** (*candidate ASFV-G- $\Delta$ MGF*) **with virus variants** (*NPJ vaccines, 2023. <https://doi.org/10.1038/s41541-023-00669-z>*)
- ❑ **Reversion to virulence:**
  - ASFV-G- $\Delta$ I177L reverted to virulence during passaging in pigs, with severe ASF-specific clinical signs at passages 3 and 4, **associated with increased viremia**. (*<https://doi.org/10.1038/s41541-025-01099-9>*)
  - The data show that ASFV-G- $\Delta$ I177L is not genetically stable
- ❑ **Possible recombination with wild strains**
  - Whole Genome sequencing (WGS) as the most reliable method to detect recombination events



# African Swine Fever (ASF) vaccines

## 2025: World Organisation for Animal Health **92nd General Session**

- ❑ Adopted the first standards for the production of safe and effective vaccines against ASF
- ❑ Importance of using high-quality vaccines that comply with newly adopted standard
- ❑ Urges vaccine manufacturers and Members to consider these standards when developing and evaluating ASF vaccine candidates for regulatory approval.
- ❑ In addition to the standards, the **necessary tools and guidance to conduct independent vaccine field trials** to generate the evidence on the quality parameters (purity, safety and effectiveness).



# Guidelines for African Swine Fever (ASF) vaccines field evaluation and post-vaccination monitoring



World Organisation  
for Animal Health  
Founded as OIE

Initiated the development of a Guideline

- ❑ *ad hoc* Group meeting on ASF vaccines: field evaluation and post-vaccination monitoring held on 22–24 July 2025, Paris
- ❑ These guidelines aims to provide the necessary tools and practical advice for conducting independent vaccine trials in the field, prior to authorisation of the national vaccination programme, or as pre-purchase trials before rolling out the vaccination programme.



# Guidelines for African Swine Fever (ASF) vaccines field evaluation and post-vaccination monitoring

- ❑ **Study Design for Evaluation of ASF vaccine efficacy in the field**
  - Study site selection & Ethical considerations
  - Sample size, Inclusion and exclusion criteria, Randomisation
  - Blinding, Vaccination protocol, sampling and data collection
- ❑ **Field monitoring following implementation of an ASF vaccination programme:** Identification of side effects following vaccination (Reversion to virulence and recombination)
- ❑ **Vaccination effectiveness:** evaluating how vaccines perform in real-world settings (**should supported by an INDEPENDENT ADVISORY COMMITTEE without conflicts of interest in vaccine production or distribution**)
- ❑ **Cost Risk-Benefit Assessment of the vaccination programme**





# GF-TADs

CADRE MONDIAL POUR  
LE CONTRÔLE PROGRESSIF DES  
MALADIES ANIMALES TRANSFRONTALIÈRES



Organisation des Nations Unies  
pour l'alimentation  
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de la santé animale

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