Strategic challenges to global control of African Swine Fever

Current epidemiological situation:

- Notification to OIE (WAHIS)
  - Africa (Sub Sahara)
  - Europe
  - Asia
- 24 genotypes of ASFV
  - Only two genotypes outside Africa (I and II)
- The most evident long-distance transmission of the disease in literature
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- Cumulative presence of ASF at country level since 2005, WAHIS
- Notified by OIE Member up to 20/3/2019
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- Increasing of the number of affected countries
- Under-reporting remains a challenge
- ASF is not notifiable in almost 10% of the countries

OIE dedicated web pages with updated information
- Disease
- Epidemiological situation
- Geographical distribution
- Control measures
- ASF documentary repository
- GF-TADs Europe
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Key features of recent ASF outbreaks

Characteristics of ASF epidemics:
1. Slow transmission within affected farms
2. Huge long distance transmission
3. High incidence in pig farms with low biosecurity (backyard farms)
4. Establishment in wild pig population
5. Environmental contamination

- geographical expansion
- endemic persistence
- long lasting transmission
- for both domestic pigs and wild boars.

Characteristics of ASFV:
1. Contagiousity
   - high (up to 90–100%)
   - medium
   - low
2. High tenacity:
   - very stable over wide ranges of temperatures and pH levels for long periods.
   - High local persistence in the environment
3. High case-fatality rate:
   - Per-acute or acute lethal ASF (90-100)
   - Chronic, apparently asymptomatic

Chennais et al. 2019
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Key features of recent ASF outbreaks

Epidemiological characteristics of ASF:

i. Reservoirs
   i. Tick
   ii. Environment

ii. Human transmission

iii. Early detection of ASF is likely to be delayed
   i. Lethal cases could be shadowed by concomitant diseases
   ii. Limited number of secondary cases
   iii. It will take longer to suspect and recognize ASF

iv. Increasing probability of secondary outbreaks

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Key features of recent ASF outbreaks

Epidemiological characteristics of ASF:

• Source of infection:
  • Live pigs
  • Pig products
  • Vectors

• Transmission routes:
  1) Direct transmission: from pig to pig, wild boar to wild boar, wild boar to pig
  2) Indirect transmission: fomites-to-pig transmission.
  3) Feed-to-pig transmission:
  4) Competent and mechanical vector transmission
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Key features of recent ASF outbreaks

ASF dynamics:
- Incursion of ASF into a previously free country – anthropogenic:
  - introduction of contaminated materials (e.g. pig products, swill) or live animals
  - illegal or uncontrolled imports of pig meat products
  - accidentally by tourists, farm workers or hunters returning from endemic areas,
  - intentionally by smuggling meat products for personal or commercial use.
- The spread of the disease within the country
  - most likely due to poor farm biosecurity
  - indirect contact through illegal movement of pigs, contaminated fomites or feed
    (i.e. swill feeding)
  - spill over from affected wild pig populations in the vicinity of farm

ASF dynamics – wild boar population:
- initially - spill over events from domestic pigs
- Habitat contamination – virus reservoir
- Evidence from Europe:
  - high case-fatality rate – not fade out spontaneously
  - prevalence below 5%
  - disease maintained and spread because of:
    - intrinsically low contagiousity
    - high lethality
    - environmental contamination
    - lack of biosecurity during hunting practices
    - inadequate wild boar management
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Prevention and control measures

- **Successful eradication of ASF:**
  - Spain, Portugal, France, Malta, Belgium, The Netherlands, Brazil, Haiti, Dominican Republic, Cuba, the Czech Republic
- **Major challenge - vaccines**
- **Effective tools for preventing ASF introduction to pig holdings:**
  - farm biosecurity and good farming practice - the most effective
  - improved early detection
  - animal identification, movement control of animals and product
  - surveillance and monitoring
  - official controls by veterinary authority
  - awareness raising and continuous education

During an ASF outbreaks:

- timely and appropriately applied **depopulation** on infected farms,
- collection, testing and safe **disposal** of carcasses,
- **cleaning** and **disinfection**, *
- **zoning** and **movement restrictions**, *
- enhancing **early warning** capacity through passive and active surveillance,
- a strict **ban on hunting and feeding** of wild boar in the immediate vicinity of infected wild populations;
- **control** of touristic activities and overall wild pig management;
- **training** and **awareness** campaigns
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Prevention and control measures

- Surveillance (passive and active)
  - the most effective for early detection
  - domestic and wild pig populations
  - testing of dead and sick animals,
- Preparedness:
  - Contingency planning
  - Capacity building, strengthening of VSs
- Behavioral change
  - human-related risk factors
  - collaboration with social scientists
  - dependence on stakeholders
  - trans-disciplinary activities,
  - intersectoral coordination and collaboration

- Risk communication and awareness raising – crucial to:
  - improve disease surveillance, early detection and reporting:
    - farmers, forestry guards, hunters and field veterinarians,
    - customs authorities
    - tourists…
  - promote biosecurity
  - reduce specific practices that may increase risk of infection
    - swill feeding
    - using boar from other holdings for reproduction.

OIE Communication campaign

https://trello.com/b/GioZok/african-swine-fever-oie
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Take-home messages for control of African Swine Fever:

Conclusions:
- ASF = global (pandemic) threat
- ASF = human driven disease
- ASF control = global public good
- Effective measures: biosecurity

Holistic approach:
- Collaboration and coordination
- Risk assessment, management and communication
- Innovation
- Trust
- Harmonization
- Strengthening of VS
- Public-private partnership
- Regional and global framework
- Best practices and experience

Recommendations:
- International standards
  - Risk Analysis,
  - Zoning, regionalisation
  - Compartmentalisation
  - commodity-based trade measures
- Roles and responsibilities
  - National Veterinary Services
  - International organizations
  - Partners and stakeholders

Global coordination and partnership - framework on ASF
- GF-TADs
Thank you for your attention!

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