



National Updates and Opportunities to strengthen capacities for ASF outbreak management

Principles and innovations for managing ASF covering the different production systems





Introduction: What are some of the options?



- ▶ Depopulation, partial culling, disposal and decontamination
- ▶ Quarantine, movement control
- ▶ Financial incentives
- ▶ Risk communication





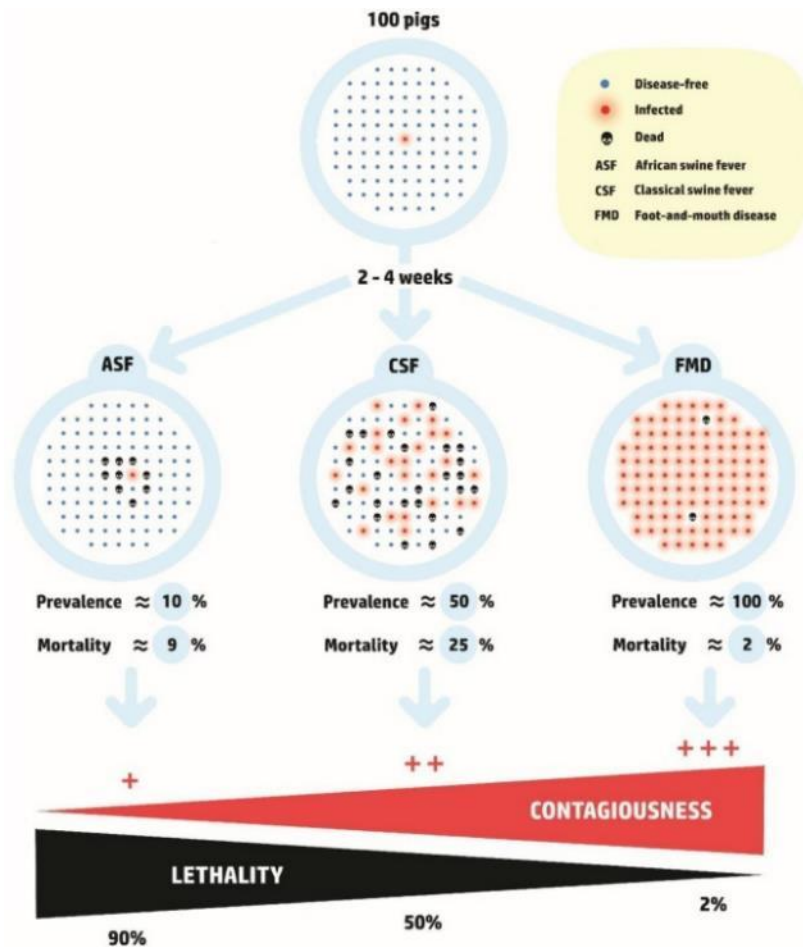
Background

- When R Eustace Montgomery published the first description of ASF in 1921, he concluded that ASF could be prevented by confining pigs in pig-proof pens so that they couldn't roam about in the same space as warthogs
- Global spread has introduced ASF into every kind of production system and type of pig, including wild boars in Europe and Asia, expanding the range of biosecurity measures to focus on those designed to stop spread by people, pigs and pork
- Depopulation through stamping out has negative effects on people, pig welfare and the environment, so less destructive but nevertheless effective measures are increasingly being tested and implemented
- Veterinarians have often devised disease control measures that are harmful to wildlife, the environment and the farmers and animals themselves!
- The guiding principle of disease management should be: «Above all, do no harm»



The Good Doctor, Iowa State University





Proven characteristics of ASFV

- Slow spread of the virus compared to other diseases that affect pigs (classical swine fever, foot and mouth disease)
- Airborne transmission limited to a few metres in an enclosed space
- Easily destroyed by heat and a wide range of disinfectants
- High oral infective dose under natural conditions
- Introduction and spread prevented by relatively simple biosecurity measures

From Busch et al.2021. Evidence-based African swine fever policies: do we address virus and host adequately? Frontiers in Veterinary Science, 8, 637487



ASF OUTBREAK MANAGEMENT

EFFECTIVE ALTERNATIVES TO MASSIVE DEPOPULATION





Negative effects of massive culling

- Negative effects are experienced in all types of production systems:
- Challenges for disposal of vast numbers of carcasses on large and mega farms
- Extinction of a breed of pigs that enabled low input pig production in Haiti, one of the poorest countries in the world
- Trauma to pig farmers from high level compartments to family level backyard farms whose pigs were ‘like our children’
- Resentment and mistrust of farmers when pigs are culled with no compensation, resulting in lack of reporting and illegal movement of pigs and pork
- Waste of edible protein on a continent where an unacceptable number of children suffer stunting due to protein deprivation in the early years





An example of negative effects in a 10 km radius

- ▶ All the pigs in isolated and biosecure premises belonging to women supported by an upliftment project were killed
- ▶ In an isolated unaffected very poor village, all confined pigs were killed but the scavenging pigs could not be captured and were the only survivors





Partial or modified culling – is it effective?



- Culling of only infected herds or barns and tightening biosecurity in unaffected barns, sites and neighbouring premises
- Isolating and culling only affected animals to minimize financial losses, livelihood destruction and disposal problems
- Applied successfully in low- and middle-income countries where no compensation was available (Ghana, Mauritius, South Africa)
- Applied successfully on commercial and mega farms in China, called 'tooth pulling', based on rapid detection, removal and destruction of infected pigs
- Studies on commercial farms in Vietnam have confirmed the efficacy of partial culling





Disposal of carcasses and solid waste



- Traditional methods of disposal are deep burial and burning
 - Deep burial not recommended in areas with a shallow water table
 - Burning effectively is expensive in terms of fuel and causes air pollution
- Composting of both waste and carcasses
 - Shown to be effective in rapidly destroying the virus
 - Studies have shown that no viable ASF virus is present after 3-5 days, although viral DNA could be detected for much longer





Decontamination of infected premises



- Studies in South Africa and Denmark published in 1932 and 2018 showed that premises where pigs had died of ASF were safe for introduction of naïve pigs after 3-5 days without cleaning or disinfection
- Cleaning and disinfection are nevertheless recommended - thorough washing with water and a detergent destroys 99% of pathogens; allow to dry before disinfection
- For pig pens with earth floors, remove visibly contaminated soil and disinfect with a product that is effective in the presence of organic matter, for example caustic soda (1-2%)
- Exposure to strong sunlight will also rapidly destroy the virus



Financial incentives for control

- When funds are available, market-related compensation can be a strong incentive for cooperation with outbreak control measures
- Alternatives to market-related compensation have had variable success and still require funds for implementation
 - Insurance schemes seem to have variable degrees of success
 - Mauritian pig farmers offered soft loans to restart were rejected because farmers feared they would be unable to pay them back
- Financial compensation is not always the best solution
- Many farmers have indicated that replacement stock would be better, as money from compensation was often spent on short-term needs and not available for restocking when that became permissible





Quarantine and movement control



- Quarantine of infected premises and movement control are essential at the start of an outbreak - rapid investigation is needed to determine the extent of the outbreak
- Unless an outbreak has spread widely, restrictions should be limited to the affected epidemiological unit (farm, village), not an arbitrarily determined geographic area, for example a 10 km radius around the infected focus
 - Area-based restrictions may include biosecure unaffected premises that will be unfairly disadvantaged financially
 - Larger areas are more difficult to manage
- Stakeholder and community engagement are necessary to ensure both feasibility of and compliance with the measures





Risk communication



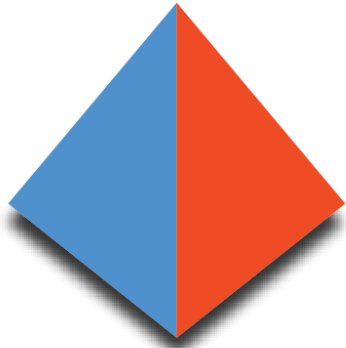
- Risk communication is a powerful tool in the management of ASF
- It is the first essential step towards developing a culture of biosecurity on pig farms in all the different production systems
- Compartments that are certifiably free of ASF are based on 24/7 implementation of an evidence-based biosecurity plan designed to cover all proven and credible risks for introduction of ASF in their area
- In one of the poorest districts in Uganda, researchers successfully piloted co-created community contracts based on biosecurity measures that the pig farmers identified as feasible and agreed to implement, and achieved very promising results (Chenais et al., 2023a, b, Preventive Veterinary Medicine, 212, 205840 & 214, 105902)
- Communicating risk to policy makers can result in evidence-based legislation
- Communicating risk and risk mitigation measures needed can result in support for implementing the measures



Conclusion

- Prevention is better than cure and far more cost-effective, even when losses are minimized by alternative approaches to outbreak control
- A model developed in Uganda indicated that biosecurity measures applied within 14 days of the start of an outbreak can save more than 70% of the pigs; having basic biosecurity measures in place that will prevent an outbreak will save all the pigs
- Implementing evidence-based and effective approaches to outbreak control that support livelihoods and business continuity can improve reporting and cooperation from pig farmers and value chain actors





GF-TADs

GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES

Africa



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health
Founded as OIE

