



African Swine Fever Cross-Sectional Study

Country: Singapore



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Objectives & Expected outcomes

- Determine prevalence of ASF in Neverland
- Determine risk factors for ASF introduction and transmission
- Determine economic losses associated with ASF

Target group and case definition

- Target group – all pig households/farms in Neverland
 - Commercial piggeries
 - Backyard pig farms – Consider all pig farms within a single village as one epidemiological unit
 - Wild pigs

Stepwise approach of investigation

1. Case definition
2. Controls
3. Define target population
4. Identify possible risk factors and other information of interest
5. Design questionnaire
6. Administer questionnaire
7. Collate and analyse results

Case definition and controls

- Case definition
 - Case – properties with pigs that showed clinical signs suggestive of ASF (high fever, loss of appetite, abortion, sudden death) and/or pathological signs (lesions suggestive of ASF) and/or at least one animal from the affected household confirmed with ASF by lab diagnostics
 - Location – within Neverland
 - Time – in the last 3 months
- Controls
 - Villages/piggeries in same area of interest (i.e. Neverland)
 - Absence of ASF clinical signs in last 3 months

Study size

Type of pig holdings to be sampled

- Representative randomized sampling of all 15 administrative regions based on distribution of
 - Commercial piggeries (~400 premises)
 - Backyard pig farms (~150,000 premises)
 - Wild boars (~10,000 heads)
- Proportional sampling of backyard farms to commercial piggeries within 1 administrative region

Sample size (calculated using AusVet Epitools, to estimate a simple proportion/apparent prevalence)

- Assumptions: 0.95 CI, estimated true proportion 0.3, desired precision 0.05
- Total animals to be sampled = 323

<https://epitools.ausvet.com.au/oneproportion>



Study size

Sample types

- Commercial piggeries – live pigs (e.g. sentinels), moribund and dead pigs
- Backyard farms – live pigs, moribund and dead pigs
- Wild boars – found dead, or as part of population control measures
- Live pigs – where possible, blood serum for serological test are paired with EDTA blood for PCR test
- Dead pigs – where possible, fresh carcasses are sampled for lymphocytic organs to conduct PCR test

Stakeholder involved

- Local para-vet
 - Access local villages, administer questionnaires, take samples if necessary
- Regional vet
 - Access local commercial piggeries, administer questionnaires, take samples if necessary
- Information provider
 - Village – village chief, farmers, visiting vets
 - Commercial piggeries – farm manager, consultant/farm vet

Source and transmission

Risk factors

- Swill feeding
- Movement of pigs
- Farm visitors and equipment
- Contact with wild boars
- Presence of vectors
- Biosecurity protocols

Questions to ask:

1. Does your farm practice swill feeding?
2. Does your farm practice quarantine when introducing new pigs into the herd?
3. Do you require farm equipment and visitors to undergo disinfection prior to entering the farm?
4. Do pigs on your farm have known contact with wild pigs?
5. Do you notice presence of ticks on pigs on your farm?

Production loss

Questions to evaluate the production loss:

1. Total number of pigs on farm
2. Annual cost of farm maintenance (e.g. feed, equipment, labour)
3. Estimated value per pig
4. How many pigs developed signs consistent with ASF?
5. How many pigs died or were culled?
6. How many pigs survived?