# Better Training for Safer Food
*Initiative*

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## Early detection of ASF in domestic pigs

**BTSF**

**Belgrade, 27/02-01/03/2018**



*Food safety*

European Commission

# Key elements for the management of ASF:

- PREVENTION (preparedness, bio-security)
- EARLY DETECTION (surveillance)
- EARLY REACTION (eradication)

# Preparedness

- ✓ Risk Analysis
- ✓ Planning
- ✓ Training
- ✓ Simulation Exercises

# Early Detection System (OIE)

- ✓ *Means a system for the timely detection and identification of an incursion or emergence of diseases/infections in a country, zone or compartment. An early detection system should be under the control of the Veterinary Services and should include the following characteristics:*
- ✓ *Representative coverage of target animal populations by field services;*
- ✓ *Ability to undertake effective disease investigation and reporting;*
- ✓ *Access to laboratories capable of diagnosing and differentiating relevant diseases;*
- ✓ *A training programme for veterinarians, veterinary para-professionals, livestock owners/keepers and others involved in handling animals for detecting and reporting unusual animal health incidents;*
- ✓ *the legal obligation of private veterinarians to report to the Veterinary Authority;*
- ✓ *A national chain command.*

# National Expert Group

## OBJECTIVE to assist the Central and Local Veterinary Authorities

The group should consist of epidemiologists, risk assessors, laboratory experts, wild life experts.
On the basis of the epidemiological situation and a properly conducted risk assessment, the group should propose:

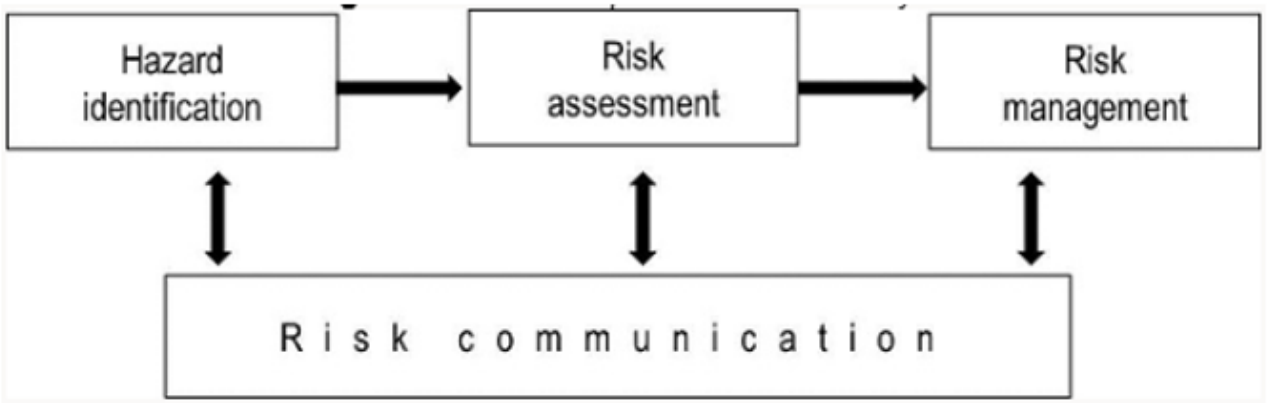
- appropriate measures of surveillance/control (PROPORTIONATE)
- sampling scheme
- testing regime for clinical and laboratory examinations

**Based on the biological properties of ASFV**

# National Expert Group (2)
# OBJECTIVE to assist the Central and Local Veterinary Authorities

Risk Analysis

Take into consideration:
- Evaluation of Vet Services
- Zoning
- Compartimentalization
- Surveillance systems



# The impact of ASF varies in different regions of the world

The **surveillance strategy** needs to be tailored to the situation and take into account:

- Prevalent type of pig production system
- Presence of wild and feral pigs
- Presence of African wild suids
- Presence of Ornithodoros ticks
- ASF situation in adjacent territories
- ASFV genotype

**Free status**

**Early Detection**

**Eradication/Endemicity**

# ASF Surveillance

***An increased likelihood of infection in particular localities or subpopulations exists, targeted sampling could be appropriate. This may include:***

- Specific high-risk feral pigs populations
- Pigs reared outdoors
- Farms which feed swill
- Areas in which the disease has been previously detected
- Evidence of involvement of ticks
- …

# ASF Surveillance

Target Animals

**Domestic Pigs:**

- commercial farms
- backyards

**Wild Boar**

- **Surveillance Methods:**

**(a) clinical, (b) virological, (c) serological**

**Based on the situation**

# ASF Surveillance

**Due to the characteristics of ASF: High Morbidity and Lethality**

**Passive Surveillance**
**Key role in Early Detection**

**any *cases* where clinical signs or lesions are suggestive of ASF should be investigated without delay**

# Clinical Surveillance

Is the most effective tool for detecting ASF [Mortality (94.5-100%)]. However, due to the clinical similarity with other *diseases*, it should be supplemented by serological and virological *surveillance*.

DOMESTIC PIGS

***In Commercial Holdings***

- *Strict health monitoring programme of pig holdings (pigs sick/dead examined and tested)*

***In Backyards***

- *Vet inspection on pig slaughtering for own consumption (pigs with lesions/simptoms examined and tested)*

# Virological Surveillance

It is important for early detection, differential diagnosis and for systematic sampling of target populations. It should be conducted:

- ✓ to investigate clinically suspected cases
- ✓ to monitor at risk populations
- ✓ to follow up positive serological results
- ✓ sentinel animals (to confirm eradication after stamping-out)

# Serological Surveillance

Serological surveillance aims at detecting antibodies against ASFV.

- Positive ASFV antibody test results can indicate an ongoing or past outbreak, if some animals recover they may remain seropositive for life.

**Serology is not suitable for Early Detection**

# Surveillance in Domestic Pigs (Example)

## Based on the biological properties of ASFV

In commercial farms <u>independently of their size</u> following tests are carried out on a monthly basis:

- 10 randomly selected pigs for the presence of ASF antibodies (ELISA test)
- 5% of dead pigs for PCR testing (organ material) ← OK
- 4% of the slaughtered animals at the abattoir: PCR tested.

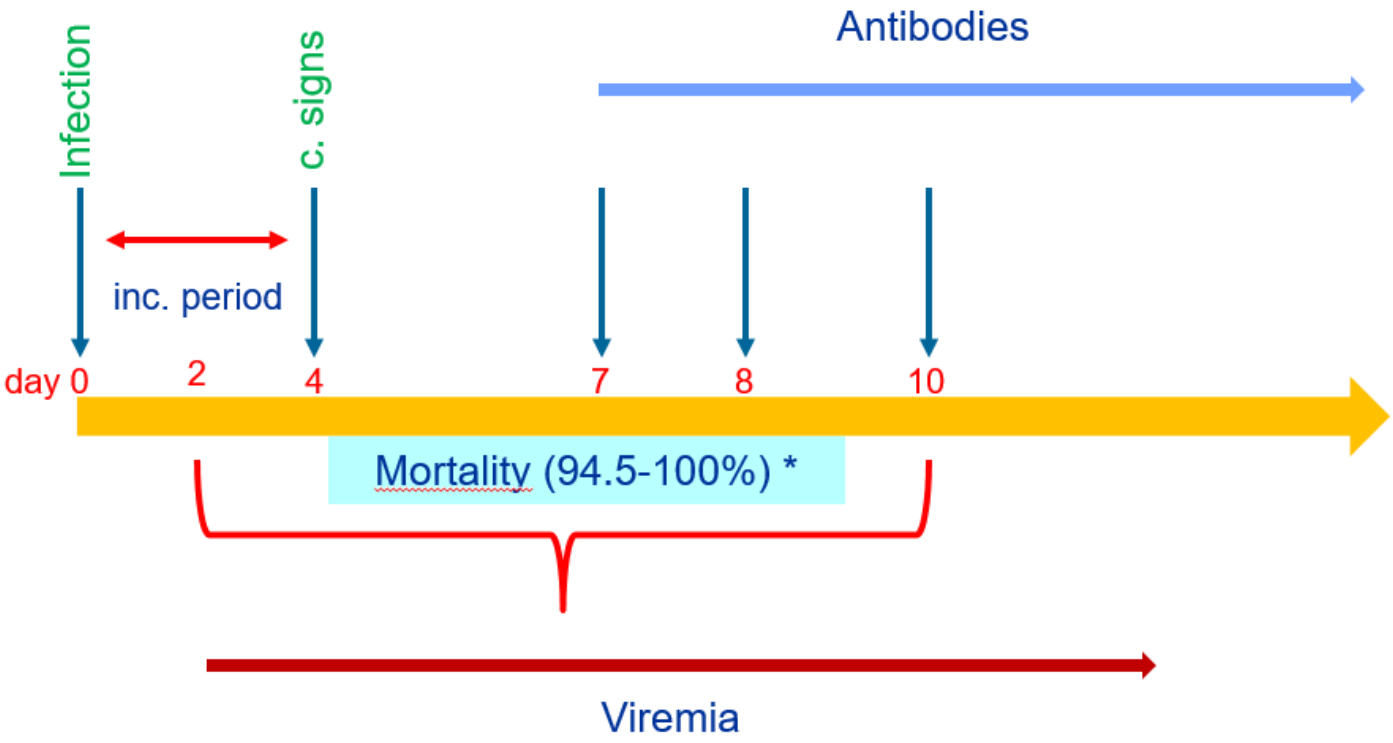
?

Backyard pigs are inspected during home slaughtering by a veterinarian. In case of suspicion organ samples are taken for ASF testing.

Sero-prevalence: 25-30%

Healthy Animals (??)

# ASF pathogenesis




*Gallardo C., et al. 2014; Blome S., et al 2012..

# An Effective Passive Surveillance

***Requires: REPORTING***

***the trust of pig owners that report the disease to the Veterinary Authorities:***

***..rapid diagnosis, eradication***

**AWARENESS CAMPAIGN**

# Results of surveillance activities

## (example)

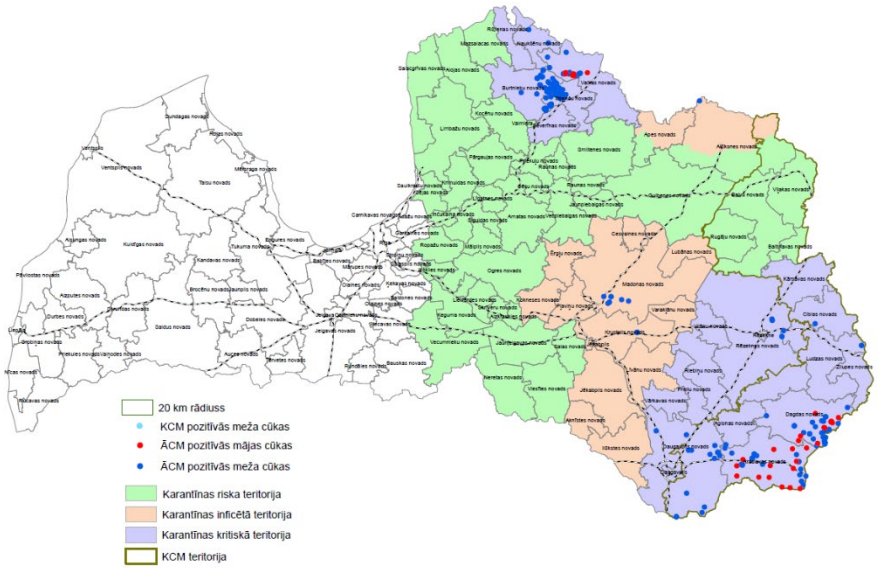
## Wild Boar

On 1.04.14, the population density ranged from 12,82 to 4,2 WB/10 km2. A decrease in WB was reported in 2015, max in Burtnieku county (from 11,35 to 0,6 WB/10 km2).

Despite the decrease, ASF cases were still occurring in that Unit.


Surveillance 2015 (January/May)

- 119 WB found dead, 98 virus pos. (82, 4%) [PASSIVE]
- 487 WB hunted, 3 virus pos. (0,62%) [ACTIVE]



# Early detection of ASF in domestic pigs

Thank You
for Your Attention

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