ASFV: A old friend 1978–

MAIN WORK: DIAGNOSIS and ERADICATION MODELS
Agenda: A rapid View

1) LAB. DIAGNOSIS:
   a) Key points of Asf diagnosis
   b) Tests Available

2) ASF PROTECTION: Vaccine

3) EARLY DETECTION AND CONTINGENCY PLAN

4) THINGS TO DO
**ASF Laboratory DIAGNOSIS: KEY POINTS**

- **No Vaccine Available**
  - Antibodies = INFECTION
  - Abs good infectious marker!!!!

- **No Neutralizing Antibodies**

- **Viremia for Long period of Time**

- **Antibodies Persist During Month, Even Years**
  - From 7-12 dpi.

- **SEVERAL TEST AVAILABLE. In Good Condition**
ASF DIAGNOSIS. Key points

**INFECTION**  **DISEASES/DEAD**  **CARRIERS**

- **12 h to 1 week**
- **1 – 3 weeks**
- **4 Weeks to 2 years**

**VIRUS**

**Ab**

**Infection**  **Clinical**  **Carriers**
**ASF LABORATORY TESTs**

- **Identification of the Agent**
  - *Virus Isolation in cell cultures*: TIME: 3 to 10 Days

**Haemoadsorption‘autorosette’ (HA) test** with peripheral blood leukocytes from infected pigs.

*Mandatory in first notification in free country*

*ONLY Reference Labs!!*
ASF LABORATORY DIAGNOSIS

DNA Detection

PCR: CONVENTIONAL and REAL TIME

TIME: 5 to 6 H

MOST COMMONLY USED

King et al., 2003

Agüero et al., 2003

Agüero et al., 2004
ASF LABORATORY DIAGNOSIS

Antigen Detection

- **Direct immunofluorescence (DIF)**
  - Easy to use
  - Personal trained needed to interpretate the results

- Low sensitivity in subacute and chronic forms
  - Significant lack of sensitivity due to Ag-Ab complex formation. Not recommended for analysis of serum and tissue homogenised samples after first week pi. due to false negative results.
Antigen Detection

- Immunochromatography –
- Pen side tests

Easy to use
No special equipment needed

NEW TOOLS

TIME 30 MINUTES

PPA-CROM ANTIGEN DETECTION

POSITIVE

NEGATIVE
Antigen Detection

- **Immunochromatography**
  Good working with high levels of virus
  Lower sensibility than PCR

**NEW TOOLS**

- EASY TO USE
- RAPID RESULTS
- No training need

**ORIGINAL**
ANTIGEN DETECTION

ELISA DAS

TIME 3 HOURS

Antigen detection in spleen samples
ASF LABORATORY Ab detection

Antibody Detection

- **ELISA tests**
  - Indirect ELISA (OIE)
  - In House ELISA
  - Commercial ELISA, Ingezim PPA

  MOST COMMONLY USED. TIME 3 H

- **Indirect immunofluorescent test (IIF)**

- **Immunoblotting**

CONFIRMATORY TEST

TIME 3 H
ASF DIAGNOSIS. Key points

INFECTION
1 week

DISEASES/DEAD
2 – 3 weeks

CARRIERS
4 Weeks to 2 years

Infection
Clinical
Carriers
**ASF PROTECTION: NO VACCINE**

- NO INACTIVATED VACCINE

- NO ATENUATED VACCINE. ONLY PARCIAL PROTECTION

- NO RECOMBINAT VACCINE: NO TARGET GENES

- NO DNA

- Gene Deletion

- Subunit: partial

ANTIBODIES ARE RELATED WITH SOME TYPE OF PROTECTION AS WELL AS IN CHRONIC AND ENDEMIC ASF INFECTION

*Eradication without vaccine is possible but not easy. Spain*

ERADICATED
EARLY DETECTION

ASF CONTROL

CONTINGENCY PLANS
ASF EARLY DETECTION:

FIELD:
- Risk information
- ASF Information

LABs:
- Good connection with field
- Good test and procedure (Ag and Ab)

TRAINING: FIELD AND LABORATORY
FIELD TRAINING: Farmers and Vets
FARMERS INFORMATION: Risk points
MANUAL for a FAST RESPONSE

1. A good contingency plan adapted to the risk and scenario
2. NOTIFICATION SYSTEM
3. ZONING OF AFFECTED AREAS
4. BAN ON ANIMALS MOVEMENTS
5. LABORATORY CONFIRMATION
6. PROCEDURE FOR DESTRUCTIONS OF CARCASSES
7. DEPOPULATION
8. CLEANING AND DISINFECTION
9. SEROLOGICAL CONTROLS
10. STUDY WILD BOAR AND/OR VECTORS
11. SENTINEL ANIMALS
12. REPOPULATION
Eradication’s Key action: Our experience

a) Approved program with farmers. Good information
b) Early detection and good contingency plans
c) Detection of positives and carriers animals by serology
d) Elimination of all positives and carriers animals
e) Improvements of biosecurity in farms (inside and outside)
f) Include good Restrictions areas
g) Control of movements. Identifications
h) Control of ticks (Elisa for ticks)
i) Economical compensation
THINGS TO DO

• A good early detection program
• A good contingency plan, adapted to the Risk.
• A good control program adapted to the different scenarios.
• Better knowledge of ticks and WB: Control & distribution.
• Good collaboration. OIE Lab and our expertise is yours.
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