

# African Swine fever in Poland

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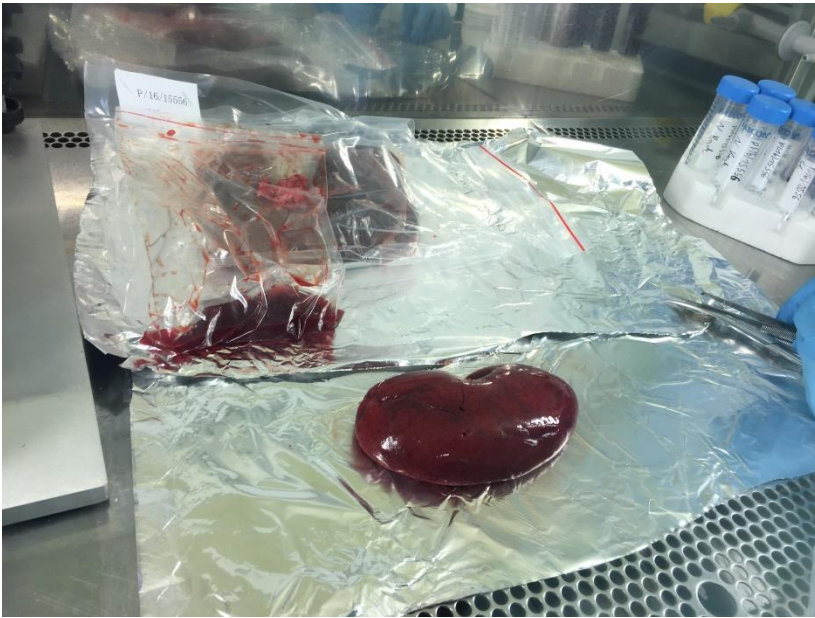


# National Reference ASF laboratory



# Diagnostic capabilities

- 800-1000 samples/day (3 – shift labour day)

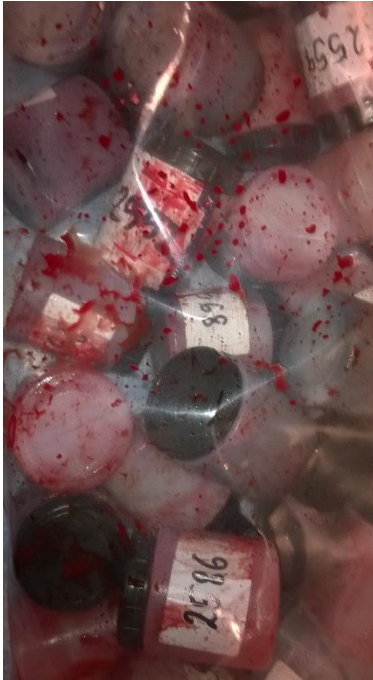


# ASF diagnostic methods applied by NVRI

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- Serological (ELISA, IB and IPT confirmatory assays,
- Molecular assays (real-time PCR),
- ELISA, real-time PCR and IPT techniques are approved and accredited by Polish Accreditation Centre

# Poor conditions of material sent for ASF diagnostic study



(a)



(b)

a) spilled and mixed blood samples, (b) a bone without any trace of bone marrow

## Laborious and time consuming !!

# ASF in wild boars

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# Passive surveillance - the most informative

## Part II + III (ASF- affected)

| Year                  | Found Dead |     |     | Car accident |   |      |
|-----------------------|------------|-----|-----|--------------|---|------|
|                       | Tested     | +   | %   | Tested       | + | %    |
| 2014                  | 115        | 46  | 40% | 68           | 0 | 0    |
| 2015                  | 130        | 67  | 51% | 53           | 0 | 0    |
| 2016                  | 149        | 63  | 43% | 95           | 3 | 3.15 |
| 2017<br>(until 31.08) | 471        | 282 | 60% | 47           | 2 | 4.25 |

# Active surveillance

| Year               | Part II + III (ASF - affected) |    |            |
|--------------------|--------------------------------|----|------------|
|                    | Tested                         | +  | Prevalence |
| 2015               | 3387                           | 14 | 0.41%      |
| 2016               | 4221                           | 24 | 0.56%      |
| 2017 (until 31.08) | 3528                           | 66 | 1.87%      |



# Confirmation of 100% of results obtained by NRL at PIWet-PIB by EURL (Spain)

## CONCLUSION\*

1. The **presence of ASF** has been confirmed throughout antibody and/or ASFV genome detection in **all wild boar** received from the **cases** occurred in **Poland from December 2016 (case 165) up to March 2017 (case 250)**.
1. The **presence of ASF** has been confirmed throughout antibody and/or ASFV genome detection in **all wild boar** received from the **cases 107 to 162** which were occurred in **Poland from August 2016 (case 107) up to December 2016 (case 162)**.

In Valdeolmos. Madrid (Spain), 24th May 2017



**Dr. Carmina Gallardo Frontaura**  
Researcher, Laboratory Coordinator  
EU Reference Laboratory for ASF  
INIA-CISA

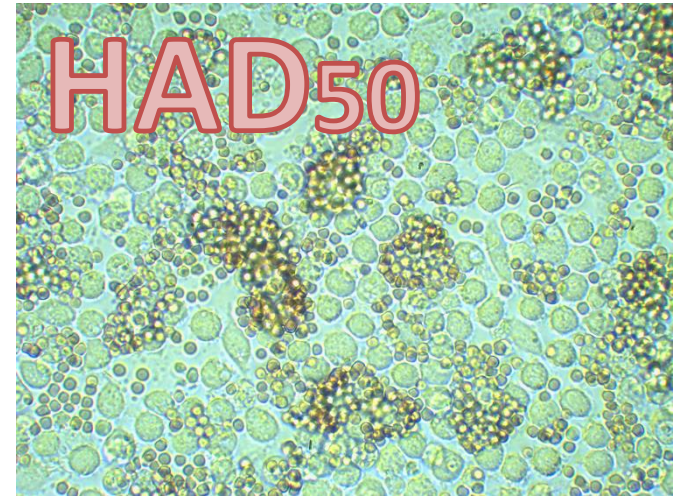
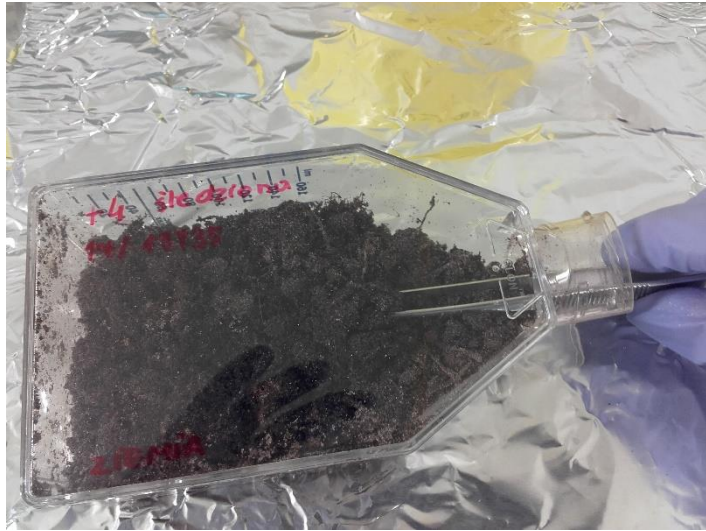
**Dr. Marisa Arias Neira**  
Technical Director  
EU Reference Laboratory for ASF  
INIA-CISA

Approval **Dr. Marisa Arias Neira**  
Technical Director  
INIA-CISA

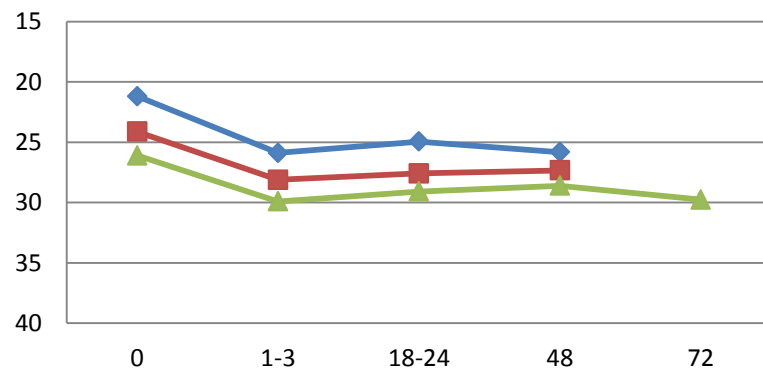
# **Latest laboratory scientific activity**



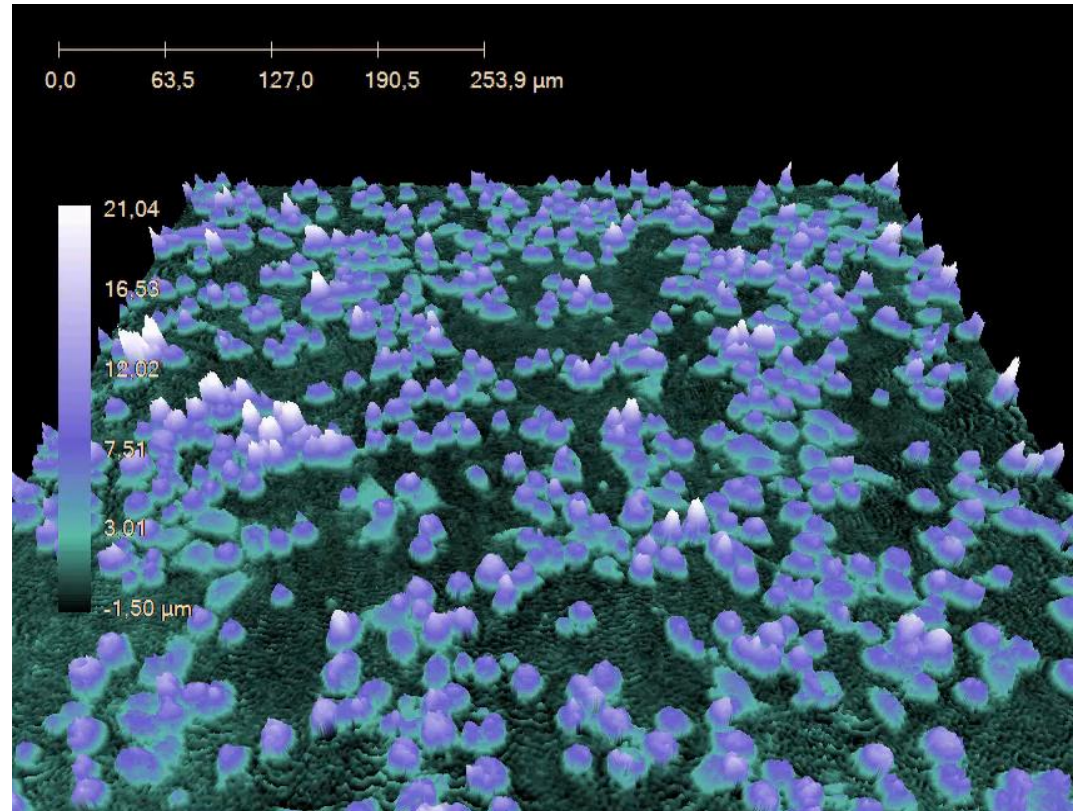
# Examination of ASFV infectivity/survivability after incubation of infected organs from pigs and wild boars in soil, liter and water (different conditions)



P/17/00750



# Construction of recombinant ASFV strain lacking genes involved in evasion host-immune response using CRISPR/Cas9



**Observation of virus replication in infected pig macrophages using Holographic Microscope (no virus staining required)**

# Scientific papers published by the research team of the National Reference ASF Laboratory at the NVRI

## EMERGING INFECTIOUS DISEASES®

### African Swine Fever Epidemic, Poland, 2014–2015

Krzysztof Śmietanka, Grzegorz Woźniakowski, Edyta Kozak, Krzysztof Niemczuk, Magdalena Frączyk, Łukasz Bocian, Andrzej Kowalczyk, Zygmunt Pejsak

In Poland, African swine fever (ASF) emerged in February 2014; by August 2015, the virus had been detected in >130 wild boar and in pigs in 3 backyard holdings. We evaluated ASF spread in Poland during these 18 months. Phyloge-

very near (<1 km) the border with Belarus (6). As of August 31, 2015, a total of 76 cases in wild boar and 3 outbreaks among domestic pigs had been found in 3 counties (6 administrative regions of Poland).

Letters in Applied Microbiology

Letters in Applied Microbiology ISSN 0266-825

ORIGINAL ARTICLE

### Development of cross-priming amplification for direct detection of the African Swine Fever Virus, in pig and wild boar blood and sera samples

M. Frączyk<sup>1</sup>, G. Woźniakowski<sup>1</sup>, A. Kowalczyk<sup>1</sup>, K. Niemczuk<sup>2</sup> and Z. Pejsak<sup>1</sup>

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<sup>2</sup> National Veterinary Research Institute (NVRI), Pulawy, Poland

[www.nature.com/scientificreports](http://www.nature.com/scientificreports)

nature.com

SCIENTIFIC REPORTS

OPEN

### Polymerase cross-linking spiral reaction (PCLSR) for detection of African swine fever virus (ASFV) in pigs and wild boars

Received: 30 June 2016  
Accepted: 03 January 2017  
Published: 15 February 2017

Grzegorz Woźniakowski<sup>1</sup>, Magdalena Frączyk<sup>2</sup>, Andrzej Kowalczyk<sup>1</sup>, Małgorzata Pomorska-Mól<sup>1</sup>, Krzysztof Niemczuk<sup>2</sup> & Zygmunt Pejsak<sup>2</sup>

Veterinary Microbiology 193 (2016) 133–144

Contents lists available at ScienceDirect

Veterinary Microbiology

journal homepage: [www.elsevier.com/locate/vetmic](http://www.elsevier.com/locate/vetmic)



### Evolution of African swine fever virus genes related to evasion of host immune response



Magdalena Frączyk<sup>a</sup>, Grzegorz Woźniakowski<sup>a,\*</sup>, Andrzej Kowalczyk<sup>a</sup>, Łukasz Bocian<sup>b</sup>, Edyta Kozak<sup>a</sup>, Krzysztof Niemczuk<sup>c</sup>, Zygmunt Pejsak<sup>a</sup>

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*J Vet Res* 60, 119–125, 2016  
DOI:10.1515/jvetres-2016-0017



DE GRUYTER  
OPEN

REVIEW ARTICLE

### Selected aspects related to epidemiology, pathogenesis, immunity, and control of African swine fever

Grzegorz Woźniakowski, Magdalena Frączyk, Krzysztof Niemczuk, Zygmunt Pejsak

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*Arch Virol* (2016) 161:189–195  
DOI 10.1007/s00705-015-2650-5



BRIEF REPORT

### Current status of African swine fever virus in a population of wild boar in eastern Poland (2014–2015)

Grzegorz Woźniakowski<sup>1</sup> · Edyta Kozak<sup>1</sup> · Andrzej Kowalczyk<sup>1</sup> · Magdalena Łyjak<sup>1</sup> · Małgorzata Pomorska-Mól<sup>1</sup> · Krzysztof Niemczuk<sup>2</sup> · Zygmunt Pejsak<sup>1</sup>

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## Acknowledgements

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