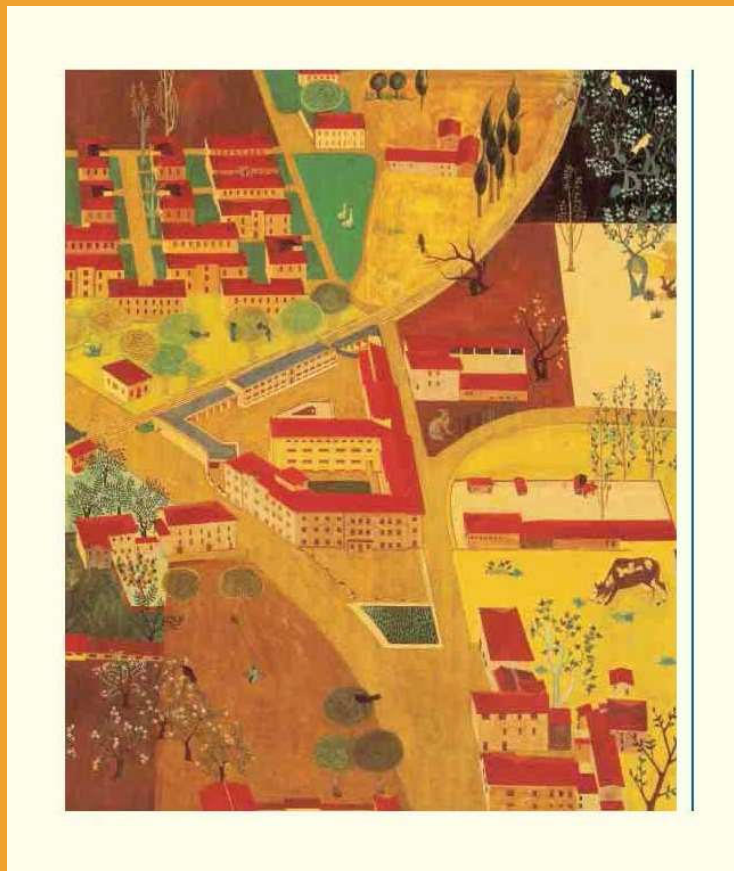




# Final international conference of the COST Action ASF-STOP - Understanding and Combating African Swine Fever in Europe

29-30 January 2020,  
Paul VI Center, Brescia, Italy



ISTITUTO ZOOPROFILATTICO SPERIMENTALE  
DELLA LOMBARDIA E DELL'EMILIA ROMAGNA  
"BRUNO UBERTINI"  
ENTE SANITARIO DI DIRITTO PUBBLICO



We welcome you to this final conference of the COST Action ASF-STOP- Understanding and Combating African Swine Fever in Europe, hosted in Brescia, Italy, 29-30 January 2020. Since the Launch Conference of ASF-STOP that took place in Pulawy, Poland, in December 2016, African swine fever (ASF) has continued to challenge scientists, stakeholders and animal health authorities. Within this short period ASF has further spread across Eurasia and continues advancing into south-eastern Asia causing devastating effects to the pork production and industry. Staying at the cutting edge to combat ASF requires close collaboration of scientists from multiple disciplines and from a broad geographical range. ASF-STOP, with its 32 participating countries in Europe and its extended international network, provides the optimal platform for knowledge sharing on ASF.

The Final International Conference of ASF-STOP, kindly organised by our colleagues of the Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia Romagna (IZSLER), seeks to disseminate and exchange scientific knowledge on ASF and to show some of the main achievements of the Action. The two-days scientific programme covers topics related to ASF virology, vaccinology, molecular biology, epidemiology, surveillance and diagnostics, as well as contingency planning, wild boar ecology, biosecurity and policy making. The venue is Centro Pastorale Paolo VI, in the historic center of Brescia.

Welcome to Brescia and to our final international conference.

Silvia Bellini, chair Scientific Committee

Dolores Gavier-Widén, chair ASF-STOP

**Local organising committee**

Silvia Bellini

Marco Tamba

Luisa Garau

Gabriele Casadei

**Scientific committee**

Silvia Bellini (chair)- Italy

Dolores Gavier-Widén – Sweden

Francisco Ruiz-Fons – Spain

Laura Iacolina – Croatia

Ferran Jori – France

Maria Montoya – Spain

Erika Chenais – Sweden

**Final international conference of the COST Action ASF-STOP- Understanding and Combating African Swine Fever in Europe**

29-30 January 2020, Paul VI Center, Brescia, Italy

**Programme**

**29th January 2020**

8:00-9:00 Registration

9:00-9:30 Opening Session

9:35–10:20 **Plenary talk, invited speaker Dr. Nguyen Van Long**

**Session I: Virus, Diagnosis and Vaccinology**

**Chairs: Maria Montoya and Marie-Frédérique Le Potier**

10:25–10:55: **Key-note speaker Germán Andrés:** Structure and composition of African Swine Fever virus

10:55-11:10 Maria Montoya - Serum-Derived Extracellular Vesicles from African Swine Fever Virus-Infected Pigs Selectively Recruit Viral and Porcine Proteins

11:10-11:25 Linda Dixon - The African swine fever virus A179L Bcl-2 family member is required for efficient replication in porcine macrophages.

11:25-11:40 Fernando Ferreira - Studies on viral DNA replication-related genes towards the ASFV control

11:40-11:55 Vlad Petrovan - Investigating the role of African swine fever virus Gene EP402R in virus persistence in blood in vivo

11:55-12:10 Pedro José Sanchez-Cordón - Neuropathology and viral antigen distribution in the central nervous system of domestic pigs experimentally infected with African swine fever virus

**12:10–13:10 Lunch break**

**Session II: ASF in wild boar and Control Strategies**

**Chairs: Ferran Jori and Carolina Probst**

13:15-13:45 **Key-note speaker Vittorio Guberti** - Surveillance of ASF in wild boar: from early detection to long lasting endemic situations

13:45-14:00 Sofie Dhollander - -Seasonality of African swine fever incidence in wild boar in the Baltic States and Poland

14:00-14:15 Vladimir Grosbois - Mapping the detectability of wild boar carcass with the SIG MCDA approach

14:15-14:30 Tomasz Podgórski - Spread by the dead: role of live and dead wild boar in spatio-temporal dynamics of African swine fever

14:30-14:45 Andrzej Jarynowski - Evaluation of mitigation strategies (border fencing and blocking animals corridors on motorway) for ASF in Poland

14:45-15:00 Xander O'Neill - Modelling the transmission and persistence of African swine fever in wild boar in contrasting European scenarios

**15:00–15:25 Coffee break**

**Chairs: Edvins Oļševskis and Sofie Dhollander**

15:30-15:45 Arnoldas Pautienius - Change in prevalence and spatial distribution of African swine fever in Lithuanian wild boar population

15:45-16:00 Kerli Mõtus - A participatory approach to support the control of African swine fever in wild boar

16:00-16:15 Ömer Orkun - Initial results of the study investigating the presence of ASF virus in wild boars and their ticks in Turkey

16:15-16:30 Rémi Pereira De Oliveira - Vector competence: a co-evolution story between African Swine Fever Virus and soft ticks Ornithodoros?

16:30-16:45 Claude Saegerman - Assessment of the impact of forestry and leisure activities on wild boar spatial disturbance and the associate risk of spreading African swine fever virus

16:45-17:00 Carolina Probst - Decomposition of wild boar carcasses

17.00-17.15: Annick Linden - ASF-WB in Belgium, one year after the emergence

**19:00 Conference dinner**

**30th January**

**Session III: ASF in domestic pigs and Biosecurity**

**Chairs: Silvia Bellini and Marco Tamba**

9:00-9:30 **Key-note speaker Anette Boklund** - Risk factor in Romanian backyard farms

9:30-9:45 Ana de la Torre - Flyers on ASF preventive measures for pig farms

9:45-10:00 Timothée Vergne - Modelling the role of stable flies in the transmission of African swine fever virus in outdoor pig farms

10:00-10:15 Jasna Prodanov Radulović - African swine fever: a biosecurity challenge for pig production in Serbia

10:15-10:30 Branko Angjelovski - Biosecurity assessment of Macedonian commercial pig farms using an online scoring system

10:30-10:45 Arvo Viltrop - Risk factors for introduction of African swine fever to domestic pig herds with emphasis to external biosecurity measures - a case-control study in Estonia

**Session IV: Infection Dynamics and Control**

**Chairs: Erika Chenais and Fernando Boinas**

10:50-11:20 **Key-note speaker Karl Ståhl** - Lack of evidence for long term carriers of African swine fever virus - a systematic review

11:20-11:35 Ludek Broz - Towards Veterinary Anthropology: Manifesto of an Emerging Field

11:35-11:50 Alvydas Malakauskas - Why me? Patterns in African swine fever outbreak farms in Lithuania

11:50-12:05 Imbi Nurmoja - Five years of African swine fever in Estonia: How close we are to freedom?

**12:10–13:10 Lunch break**

**Chairs: Imbi Nurmoja and Karl Ståhl**

13:15-13:45 **Invited speaker Andrei Blokhin** - Spatio-temporal analysis of the spread of ASF in the Russian Federation in 2017-2019

13:45-14:00 Anton Gerilovych, African swine fever and its way through Asia and towards Europe (Ukraine 2016-2019: lessons learned)

14:00-14:15 Kathryn Gowan - Housing ASF pigs in high containment

14:15-14:30 Kristīne Lambergā - Can we improve ASF control by learning from outbreaks?

14:30-14:45 Claude Saegerman - Ranking of blood feeding arthropods in Metropolitan France based on their putative vector capacity to transmit African Swine Fever virus: a first expert knowledge elicitation

**14:45-15:10 Coffee break**

### Session V: Knowledge Communication

**Chairs: Laura Iacolina and Tomasz Podgórski**

15:15-15:25 **Key-note speaker Dolores Gavier-Widén** - Four years of advances in African swine fever in Europe by the ASF-STOP COST Action

15:25-15:30 Marco De Nardi. Pitch presentation of SAFOSO (<https://www.safoso.ch/>)

15:30-15:45 Alberto Laddomada - African swine fever eradication programme in Sardinia: an update

15:45-16:00 Laura González Villeta - Research gap analysis on African swine fever

16:00-16:15 Jan Hendrik Forth - Eight years wasting money - do we need ASFV whole-genome sequencing?

16:15-16:30: Marco De Nardi - Are we replacing African Swine Fever (ASF) with Avian Influenza (AI)?

### 16:30–17:00 Poster presentations

-Bojan Adžić, Surveillance of African Swine Fever in wild boars and domestic pigs in Montenegro

-Giorgia De Lorenzi, African swine fever: pig farms cleaning and disinfection procedures

-Kastriot Korro, Could African Swine Fever be spread in wild boars of Albania

-Branislav Kureljušić, The first occurrence of African Swine Fever in Serbia – epidemiological, clinical, pathological and molecular investigation

-Jonna Kyyrö, African swine fever surveillance in Finland 2010-2018

-Emil Wikström Lassa, Improvements in pathology capacity and early detection of African swine fever in Sweden by Short-Term Scientific Missions

-Jovan Mirčeta, Preventive measures in wild boar population in the Republic of Serbia

-Andrius Petrašiūnas, Possible transmission of ASFV by insects: studies in Lithuania

-Tamas Petrovic, Surveillance of ASF in domestic pigs after the first introduction of disease in Serbia

-Claude Saegerman, African Swine Fever virus in illegal pork meat imported in Belgium by travellers from Cameroun, August 2017

-Patricia Sastre, Diagnostic tools for the surveillance and control of African swine fever in domestic pigs and wild boar

-Alessandra Scaburri, Analysis of the introduction of pigs in Lombardy region as a tool for assessing the potential risk of introducing pathogens and to plan control activities

-Marina Štukelj, Short Term Scientific Mission in Lithuania: African Swine Fever Management and Control

-Marco Tamba, A method to identify areas at risk of African Swine Fever diffusion where planning a preventive wild boar population control program

-Ivan Toplak, The preventive measures for incursion of African swine fever in Slovenia

-Ina Toppari, Improving biosecurity on Finnish pig farms by Biocheck.UGent® evaluations

**17:00 Closing remarks**



## Contents

<b>African Swine Fever in Vietnam</b> .....	11
<b>Molecular architecture of African swine fever virus</b> .....	12
<b>Serum-Derived Extracellular Vesicles from African Swine Fever Virus-Infected Pigs Selectively Recruit Viral and Porcine Proteins</b> .....	13
<b>The African swine fever virus A179L Bcl-2 family member is required for efficient replication in porcine macrophages</b> .....	14
<b>Studies on viral DNA replication-related genes towards the ASFV control</b> .....	15
<b>Investigating the role of African swine fever virus Gene EP402R in virus persistence in blood in vivo</b> .....	16
<b>Neuropathology and viral antigen distribution in the central nervous system of domestic pigs experimentally infected with African swine fever virus</b> .....	17
<b>Surveillance of ASF in wild boar: from early detection to long lasting endemic situations</b> .....	18
<b>Seasonality of African swine fever incidence in wild boar in the Baltic States and Poland</b> .....	19
<b>Mapping the detectability of wild boar carcass with the SIG MCDA approach</b> .....	20
<b>Spread by the dead: role of live and dead wild boar in spatio-temporal dynamics of African swine fever</b> .....	21
<b>Evaluation of mitigation strategies (border fencing and blocking animal's corridors on motorway) for ASF in Poland</b> .....	22
<b>Modelling the transmission and persistence of African swine fever in wild boar in contrasting European scenarios</b> .....	23
<b>Change in prevalence and spatial distribution of African swine fever in Lithuanian wild boar population</b> .....	24
<b>A participatory approach to support the control of African swine fever in wild boar</b> ...	25
<b>Preliminary results of the study investigating the presence of ASF virus in wild boars and their ticks in Turkey</b> .....	26
<b>Vector competence: a co-evolution story between African Swine Fever Virus and soft ticks <i>Ornithodoros</i>?</b> .....	27
<b>Assessment of the impact of forestry and leisure activities on wild boar spatial disturbance and the associate risk of spreading African swine fever virus</b> .....	28
<b>Decomposition of wild boar carcasses</b> .....	30
<b>ASF-WB in Belgium, one year after the emergence</b> .....	31
<b>Risk factor in Romanian backyard farms</b> .....	32
<b>Flyers on ASF preventive measures for pig farms</b> .....	33



<b>Modelling the role of stable flies in the transmission of African swine fever virus in outdoor pig farms .....</b>	<b>34</b>
<b>African swine fever: a biosecurity challenge for pig production in Serbia .....</b>	<b>35</b>
<b>Biosecurity assessment of Macedonian commercial pig farms using an online scoring system.....</b>	<b>36</b>
<b>Risk factors for introduction of African swine fever to domestic pig herds with emphasis to external biosecurity measures - a case-control study in Estonia .....</b>	<b>37</b>
<b>Lack of evidence for long term carriers of African swine fever virus - a systematic review .....</b>	<b>38</b>
<b>Towards Veterinary Anthropology: Manifesto of an Emerging Field.....</b>	<b>39</b>
<b>Why me? Patterns in African swine fever outbreak farms in Lithuania.....</b>	<b>40</b>
<b>Five years of African swine fever in Estonia: How close we are to freedom? .....</b>	<b>41</b>
<b>Spatio-temporal analysis of the spread of ASF in the Russian Federation in 2017-2019 .....</b>	<b>42</b>
<b>African swine fever and its way through Asia and towards Europe (Ukraine 2016-2019: lessons learned).....</b>	<b>43</b>
<b>Housing ASF pigs in high containment .....</b>	<b>44</b>
<b>Can we improve ASF control by learning from outbreaks? .....</b>	<b>45</b>
<b>Ranking of blood feeding arthropods in Metropolitan France based on their putative vector capacity to transmit African Swine Fever virus: a first expert knowledge elicitation.....</b>	<b>46</b>
<b>Four years of advances in African swine fever in Europe by the ASF-STOP COST Action .....</b>	<b>48</b>
<b>African swine fever eradication programme in Sardinia: an update.....</b>	<b>49</b>
<b>Research gap analysis on African swine fever.....</b>	<b>50</b>
<b>Eight years wasting money - do we need ASFV whole-genome sequencing? .....</b>	<b>51</b>
<b>Are we replacing African Swine Fever (ASF) with Avian Influenza (AI)? .....</b>	<b>52</b>
<b>Improvements in pathology capacity and early detection of African swine fever in Sweden by Short-Term Scientific Missions .....</b>	<b>54</b>
<b>Surveillance of African Swine Fever in wild boars and domestic pigs in Montenegro.....</b>	<b>55</b>
<b>African Swine Fever virus in illegal pork meat imported in Belgium by travellers from Cameroun, August 2017 .....</b>	<b>56</b>
<b>African swine fever surveillance in Finland 2010-2018.....</b>	<b>57</b>
<b>Surveillance of ASF in domestic pigs after the first introduction of disease in Serbia .....</b>	<b>58</b>
<b>Short Term Scientific Mission in Lithuania: African Swine Fever Management and Control .....</b>	<b>59</b>

<b>Analysis of the introduction of pigs in Lombardy region as a tool for assessing the potential risk of introducing pathogens and to plan control activities .....</b>	<b>60</b>
<b>A method to identify areas at risk of African Swine Fever diffusion where planning a preventive wild boar population control program .....</b>	<b>61</b>
<b>Preventive measures in wild boar population in the Republic of Serbia .....</b>	<b>62</b>
<b>Could African Swine Fever be spread in wild boars of Albania? .....</b>	<b>63</b>
<b>The first occurrence of African Swine Fever in Serbia – epidemiological, clinical, pathological and molecular investigation .....</b>	<b>64</b>
<b>The preventive measures for incursion of African swine fever in Slovenia .....</b>	<b>65</b>
<b>Improving biosecurity on Finnish pig farms by Biocheck.UGent® evaluations .....</b>	<b>66</b>
<b>African swine fever: pig farms cleaning and disinfection procedures .....</b>	<b>67</b>
<b>Diagnostic tools for the surveillance and control of African swine fever in domestic pigs and wild boar .....</b>	<b>68</b>
<b>Possible transmission of ASFV by insects: studies in Lithuania .....</b>	<b>69</b>
<b>Alphabetical listing of attendees .....</b>	<b>70</b>

# ORAL PRESENTATIONS

## **Biosecurity assessment of Macedonian commercial pig farms using an online scoring system**

**Branko, A.**<sup>1</sup>

<sup>1</sup>Faculty of Veterinary Medicine, Ss. Cyril and Methodius University in Skopje, Lazar Pop Trajkov 5-7, 1000 Skopje, Republic of North Macedonia

Nowadays implementation of biosecurity measures on commercial pig holding is of paramount importance regarding prevention of exotic disease such as African swine fever (ASF). The objective of this study was to assess the biosecurity status in 13 Macedonian farrow-to-finish pig herds by using Biocheck.UGent<sup>tm</sup> online scoring tool and to compare implemented biosecurity measures between large scale and small-scale farms. Descriptive statistical analysis was used to examine obtained data.

The mean score for total biosecurity was 55.4, while average scores for external and internal biosecurity were 63.7 and 46.8 respectively. Regarding the subcategories for external and internal biosecurity, purchase of animal and semen had the highest score of 79.7 for external, while fattening unit with 69.3 received the highest scores for internal biosecurity. Feed, water and equipment supply scored lowest score (37.6) for external biosecurity, whereas lowest score for internal biosecurity was recorded for farrowing and suckling period (31.6). Large-scale farms had significantly higher scores in contrast to small-scale farms for total biosecurity (65.8 vs.46.4), internal biosecurity (59.7 vs. 35.9) and external biosecurity (71.7 vs. 56.9). For internal biosecurity, large farms had higher scores for measurements between compartments and the use of equipment ( $p=0.003$ ), for cleaning and disinfection ( $p=0.009$ ), nursery unit ( $p=0.027$ ) and for disease management ( $p=0.029$ ). Additionally, large farms had higher scores than small ones for external biosecurity for feed, water and equipment supply ( $p=0.020$ ) and for personnel and visitors ( $p=0.007$ ).

This study reveals that biosecurity practices in Macedonian commercial pig farms are poorly implemented regarding global average scores. Although large-scale farms showed higher biosecurity level than the small farms, there is a need for further enhancement as well. Therefore, it is highly recommended for Macedonian commercial pig farms to improve both external and internal biosecurity in order to prevent entering and spreading infectious diseases.