



# Role of *Calliphora vomitoria* larvae as possible reservoirs and mechanical vector of African Swine Fever virus: preliminary results



E. Rossi<sup>1</sup>, M. Pela<sup>1</sup>, L. Ceglie<sup>2</sup>, F. Montarsi<sup>2</sup>, S. Carlin<sup>2</sup>, C. Montagnin<sup>1</sup>, F. Feliziani<sup>1</sup> and M. Giammarioli<sup>1</sup>

<sup>1</sup>National Reference Laboratory for *Pestivirus* and *Asfivirus* (CEREP), Istituto Zooprofilattico Sperimentale dell'Umbria e delle Marche "Togo Rosati", V. G. Salvemini 1, 06126, Perugia, Italy;

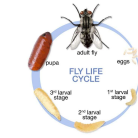
<sup>2</sup>Istituto Zooprofilattico Sperimentale delle Venezie, Viale dell'Università, 10, 35020 Legnaro (PD), Italy.

## Introduction

African swine fever (ASF) is a highly contagious viral disease affecting wild and domestic pigs. Transmission occurs through:

- direct and indirect contact with infected animals and contaminated fomites,
- biological vectors → tick species, i.e. *Ornithodoros*.

### *Calliphora vomitoria* life cycle



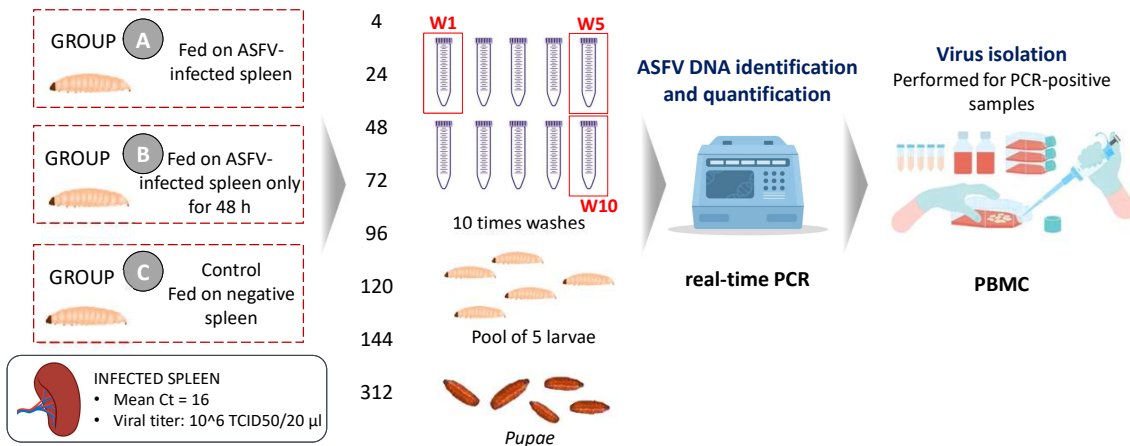
Given the high resistance of ASFV in the environment and its proven ability to survive cadaveric decomposition, some necrophagous insects are supposed to play an important role as potential mechanical vectors and/or reservoir for ASFV.



**AIM** : ASSESS WHETHER ASFV CAN SURVIVE AND REPLICATE IN THE DIGESTIVE TRACT OF CALLIPHORIDAE FLIES AND BE TRANSMITTED THROUGH INSECT STAGES



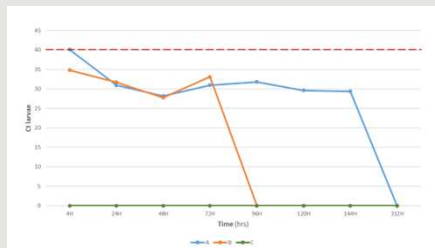
## Materials and Methods



## Results

### real-time PCR on LARVAE POOLS

- ASFV was detected in Group A larvae pools until 144h post feeding (ranging from 30 to 39.50 Ct),
- ASFV was detected in Group B larvae pools until 72h post feeding (ranging from 32 to 35 Ct),
- ASFV was not detected in Group C.



### real-time on WASHES (W1, W5, W10)

- ASFV was detected only in W1 in both Group A and Group B (ranging from 30 to 39.30 Ct),
- For Group A W1 at 144h ASFV was not detected,
- For Group B W1 at 96h ASFV was not detected,
- ASFV was not detected in Group C.



**All pupae and fly pools were negative for ASFV DNA.**

**Virus isolation on ASFV PCR-positive larvae pools and washes from group A and B resulted negative.**

## Discussion and conclusions

These preliminary findings suggest that larvae of *C. vomitoria*, fed on ASFV-infected tissues, could host the virus, which do not replicate nor survive through the stages, thus their potential role as reservoirs or mechanical vectors of ASFV could be excluded.

**Funding:** This research was supported by funds from the Italian Ministry of Health: Grant number: Research Project RCIS VE 04/22 - Modello sperimentale per la valutazione di insetti appartenenti alla famiglia di Calliphoridae come vettori o reservoir potenziali di agenti patogeni epizootici e zoonotici: Call4Tracing

