

IZS

T E R A M O

/

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"

Diagnostica di laboratorio

Alessio Lorusso

IZS

T E R A M O

/

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"

Diagnostica di laboratorio..e di campo?

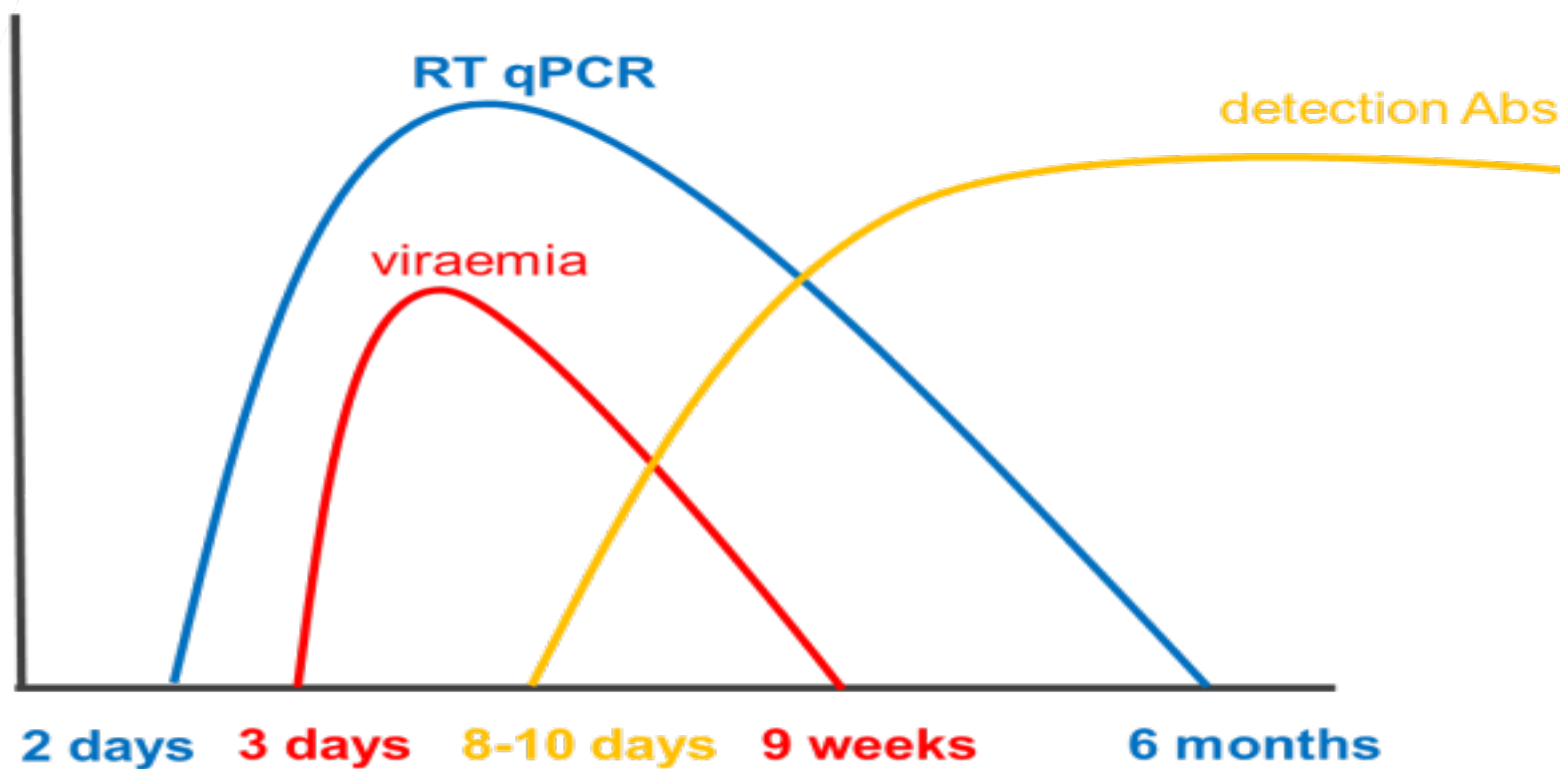
Alessio Lorusso

IZS

TERAMO

/

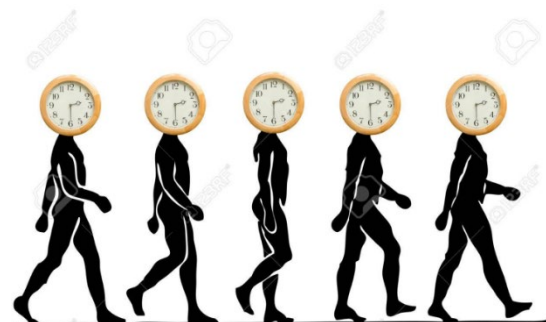
ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"



IZS

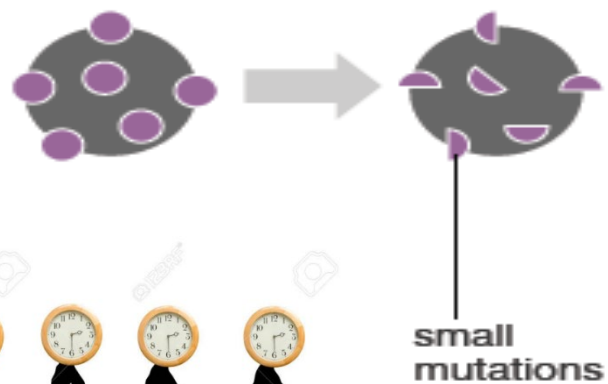
TERAMO

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"

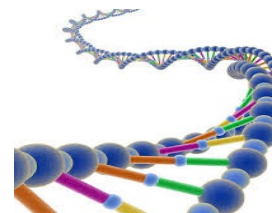
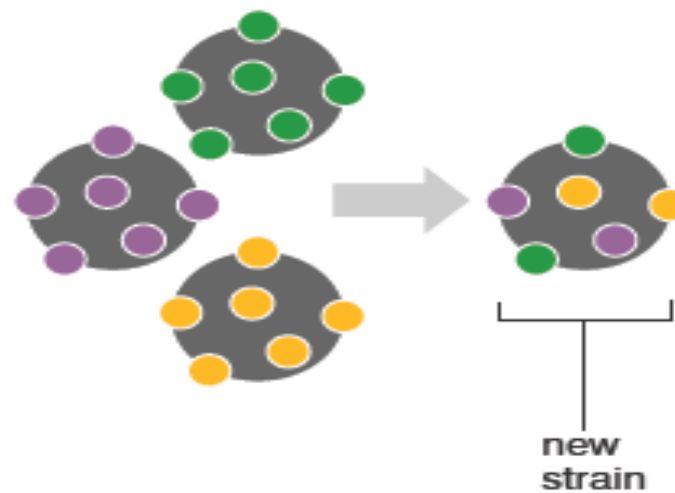


Mutation

Antigenic drift



Antigenic shift

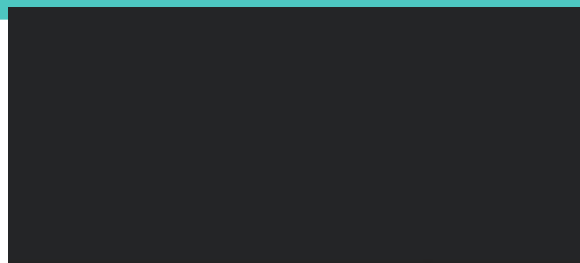


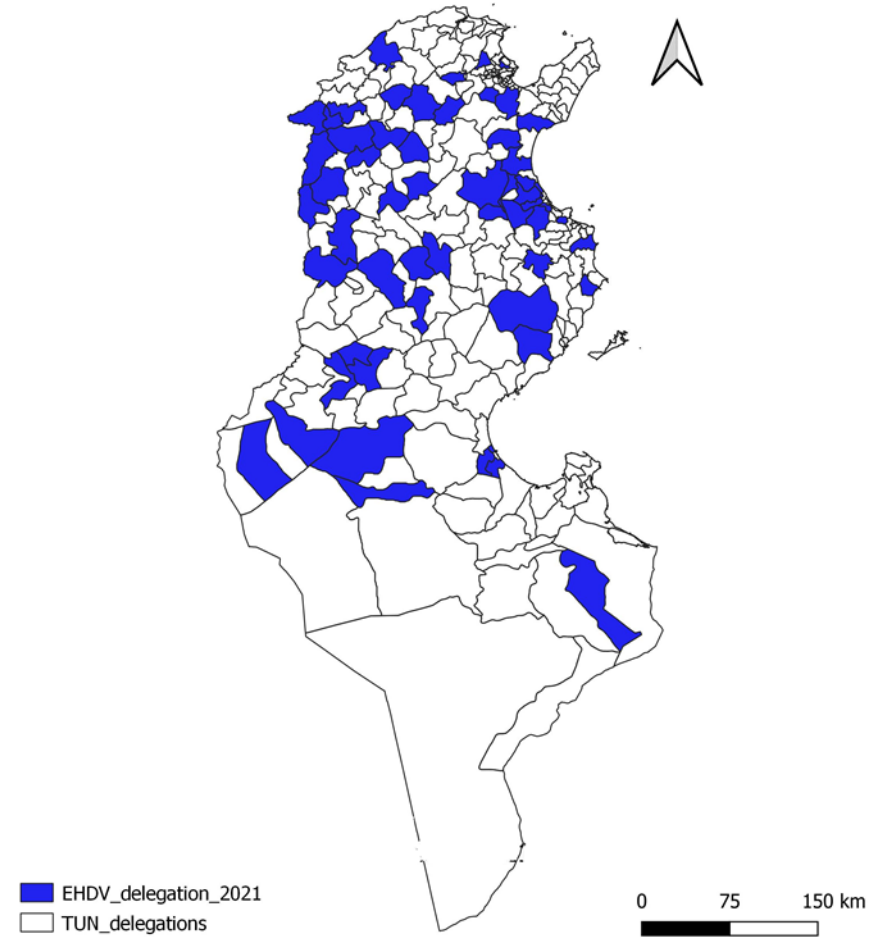
IZS

T E R A M O

/

**ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE**
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"

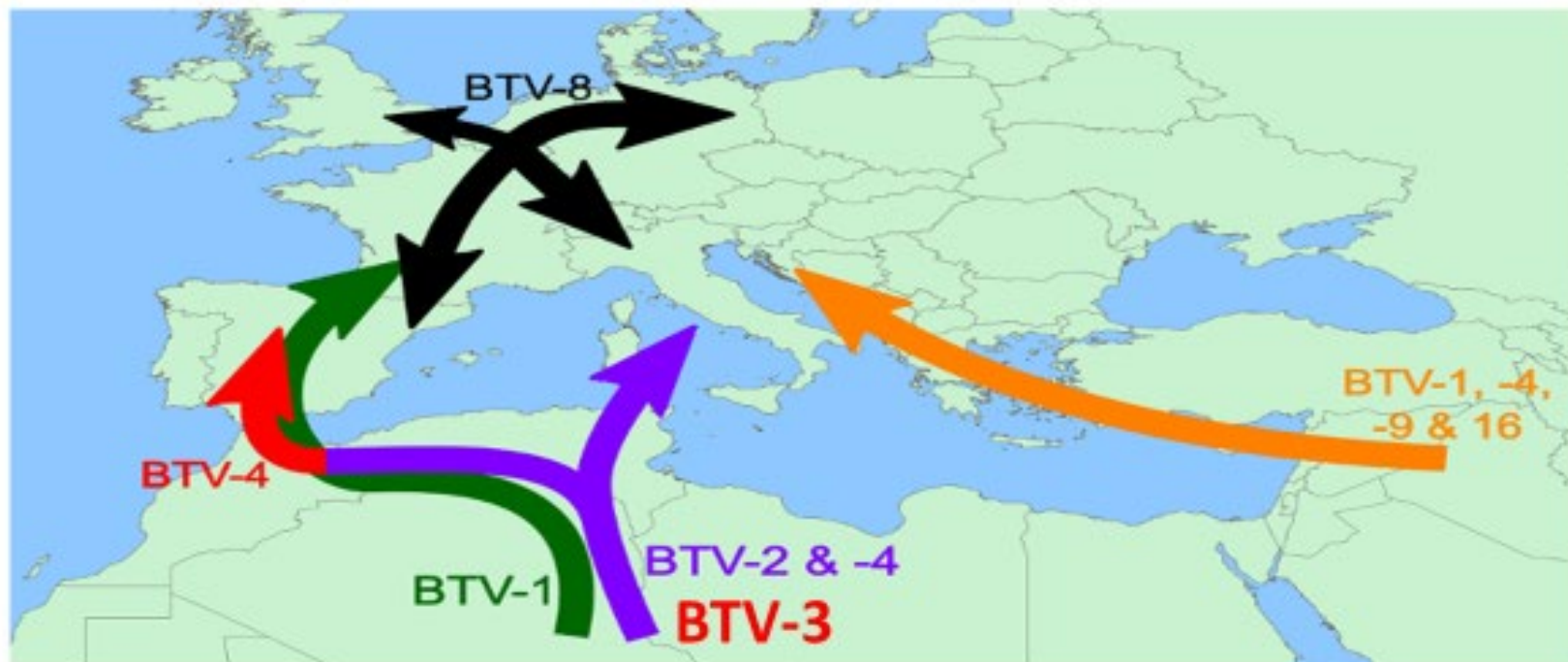


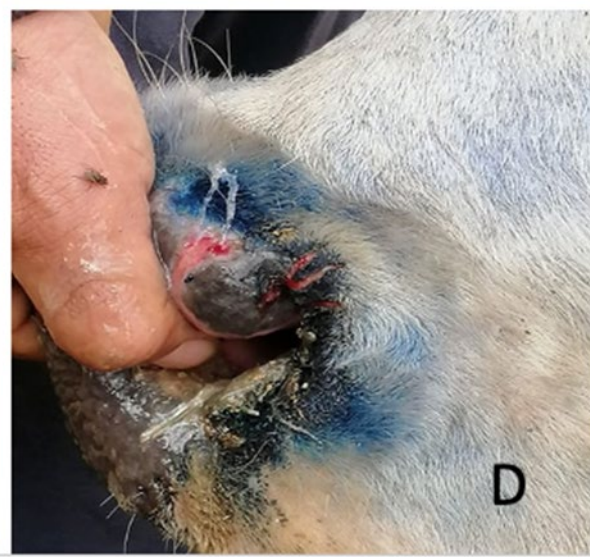
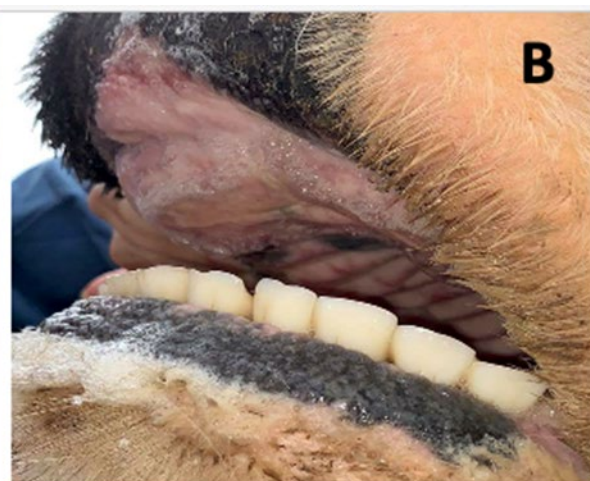


IZS

TERAMO

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"



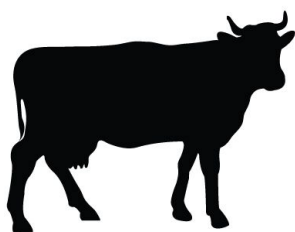


IZS

T E R A M O

/

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"



Symptomatic cattle

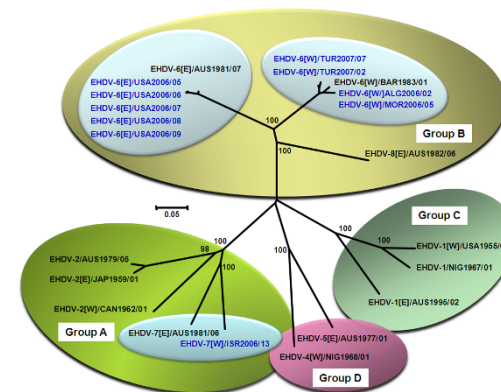
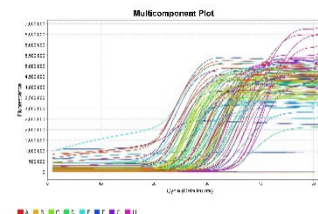


174

whole blood samples



VetMAX™ EHDV Kit

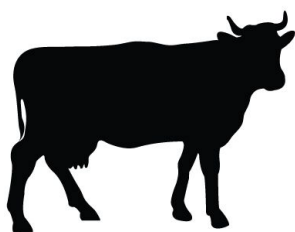


Genotyping by rRT-PCR_{VP2}
(Maan et al., 2017)

IZS

T E R A M O

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"



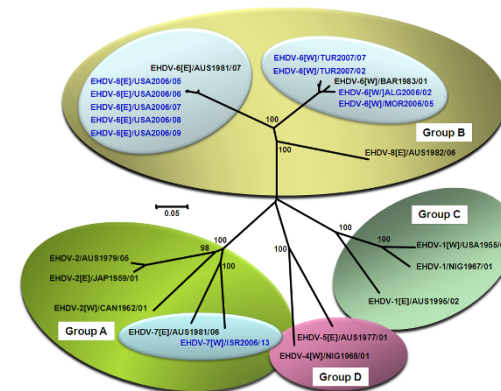
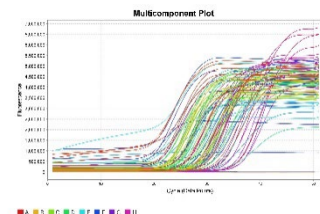
Symptomatic cattle



174
whole blood samples



VetMAX™ EHDV Kit



Genotyping by rRT-PCR_{VP2}
(Maan et al., 2017)



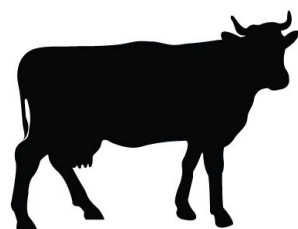


IZS

T E R A M O

/

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"



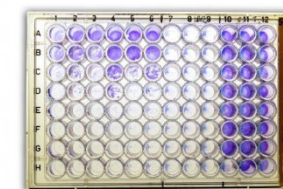
Symptomatic cattle



241 serum samples



c-ELISA
ID Screen® EHDV



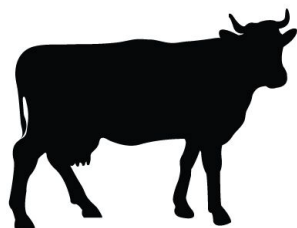
Serum neutralization test
(WOAH)

IZS

T E R A M O

/

ISTITUTO
ZOOFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"



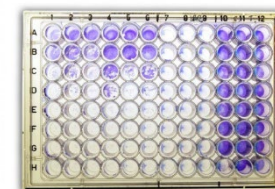
Symptomatic cattle



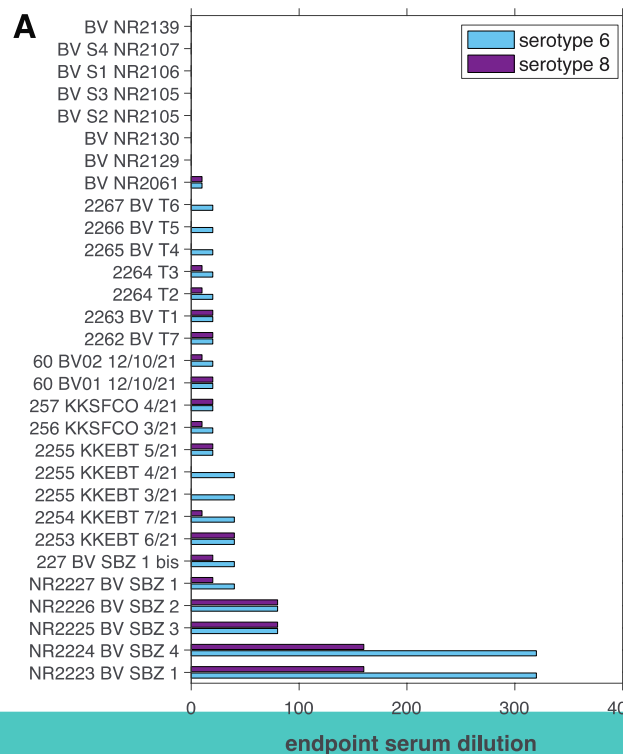
241 serum samples



c-ELISA
ID Screen® EHDV



Serum neutralization test
(WOAH)



**Positive for
EHDV-6 and EHDV-8 Ab**

IZS

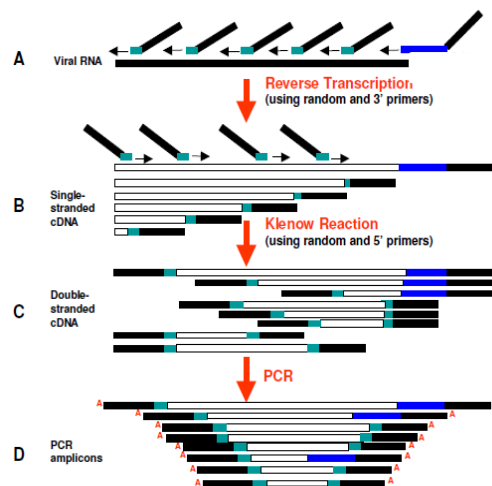
T E R A M O

/

ISTITUTO
ZOOFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"



6 EHDV positive
blood samples



SISPA protocol+
EHDV specific primers for 5'-3' termini

NGS on blood samples



Illumina DNA prep kit



NextSeq 500
MidOutput cartridge 300 cycles
150 paired-end reads



IZS

T E R A M O

/

ISTITUTO
ZOOFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPOREALE"

IZS.IT

segment 2 - VP2

serotype 1

serotype 2

serotype 4

serotype 5

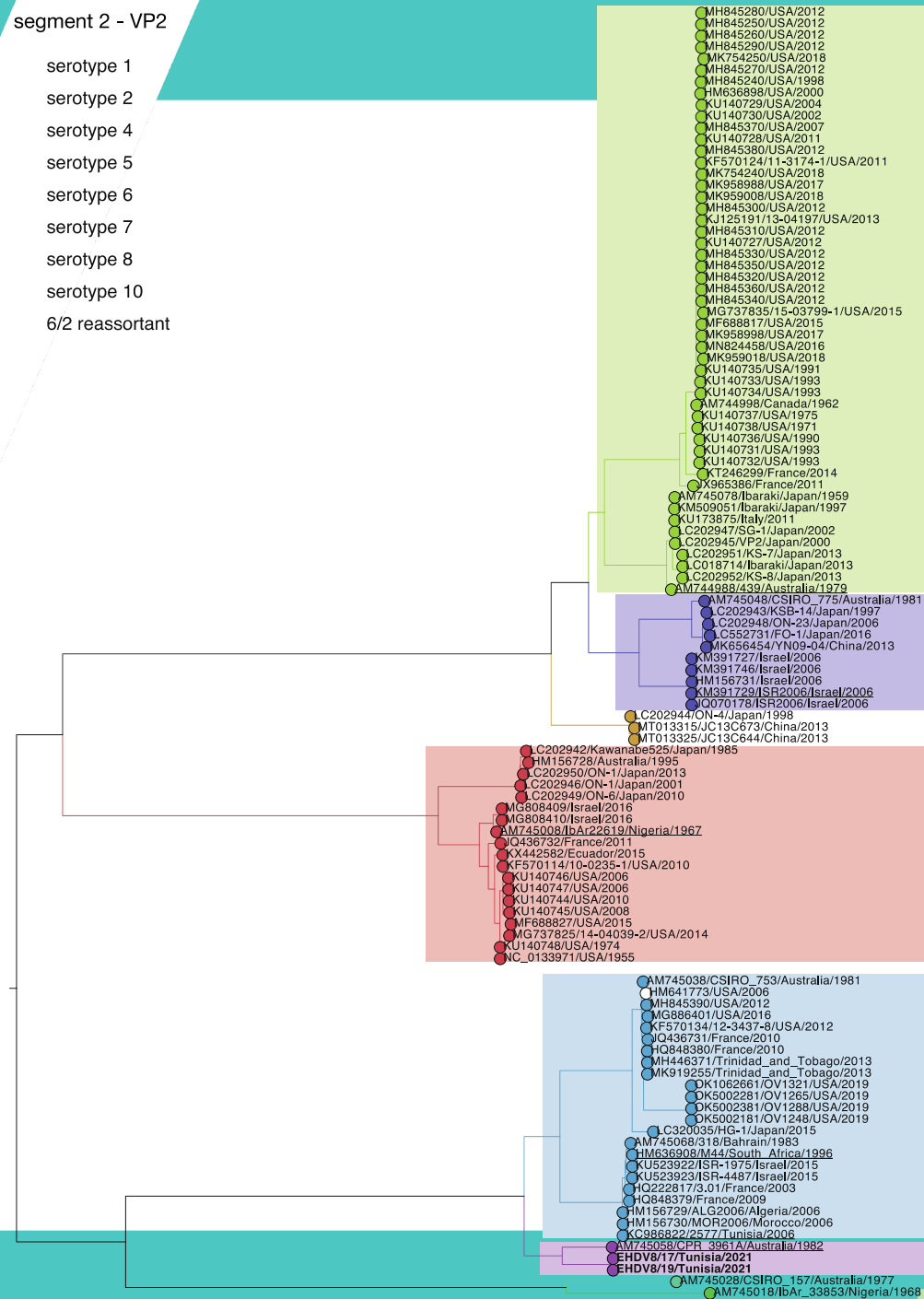
serotype 6

serotype 7

serotype 8

serotype 10

6/2 reassortant



nt ID Seg-2 TUN2021

77% EHDV-8 Australia 1982

71% EHDV-6 Tunisia 2006

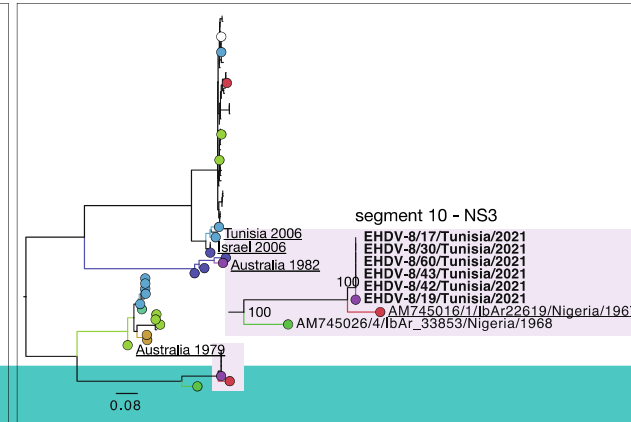
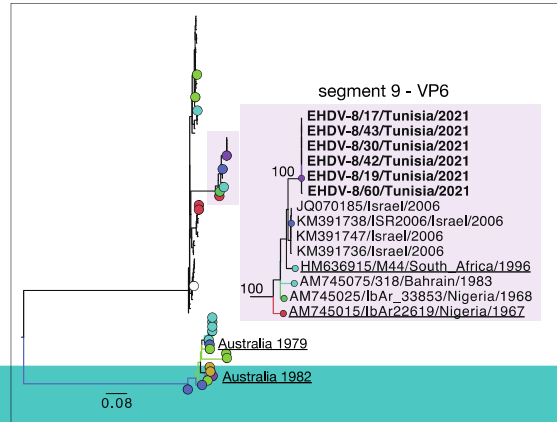
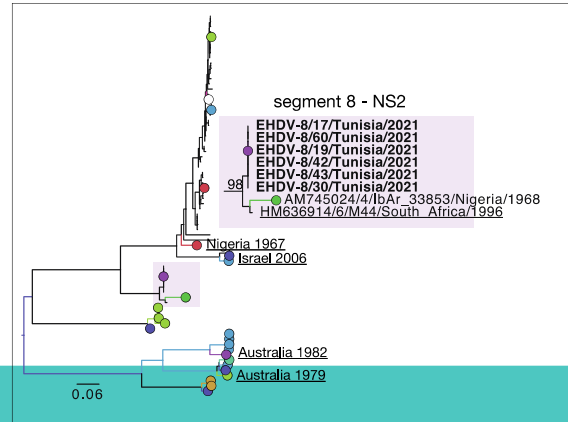
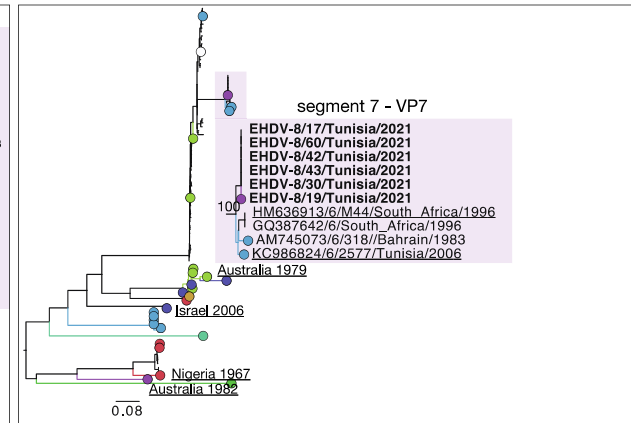
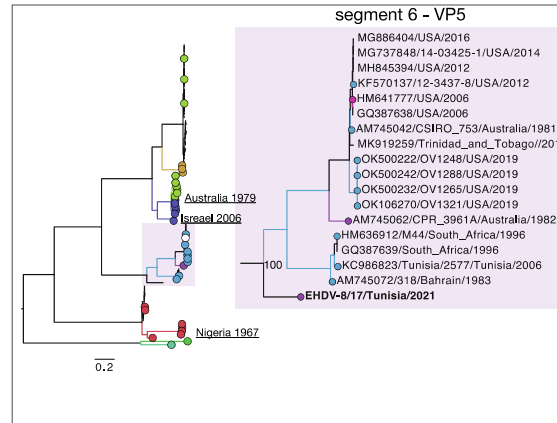
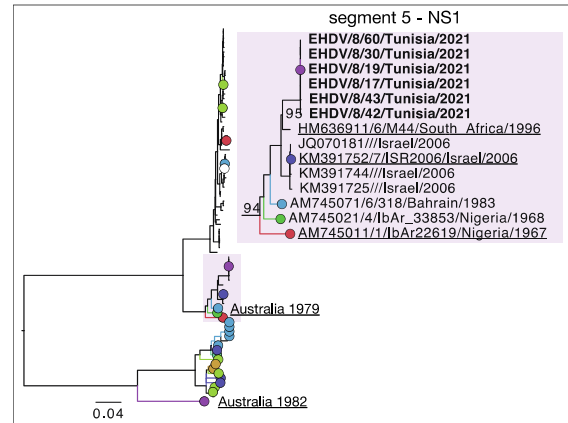
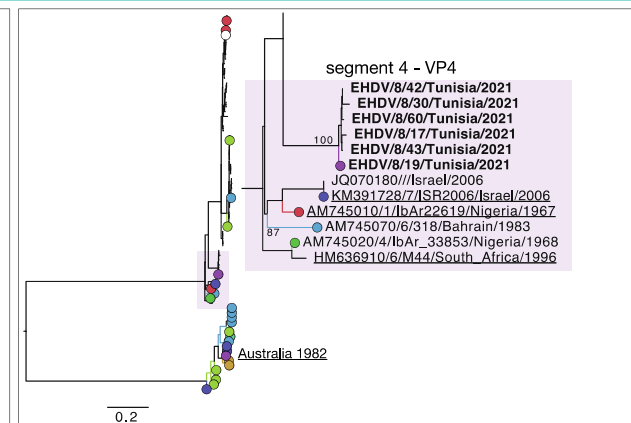
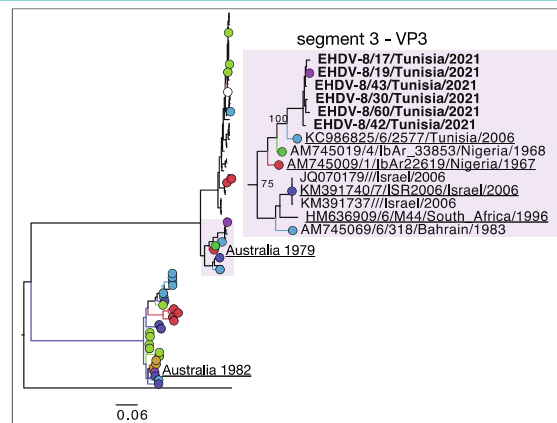
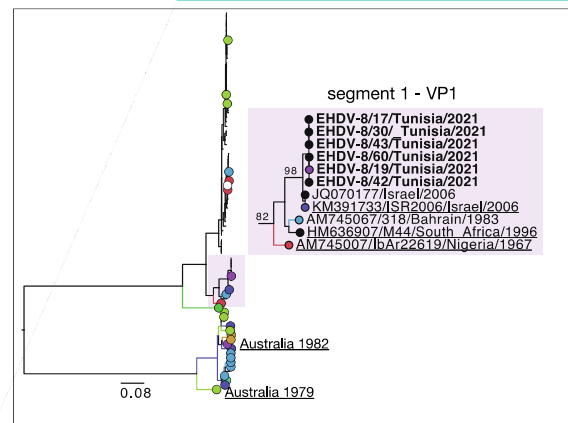
Seg-2
EHDV-8 TUN2021!!!!

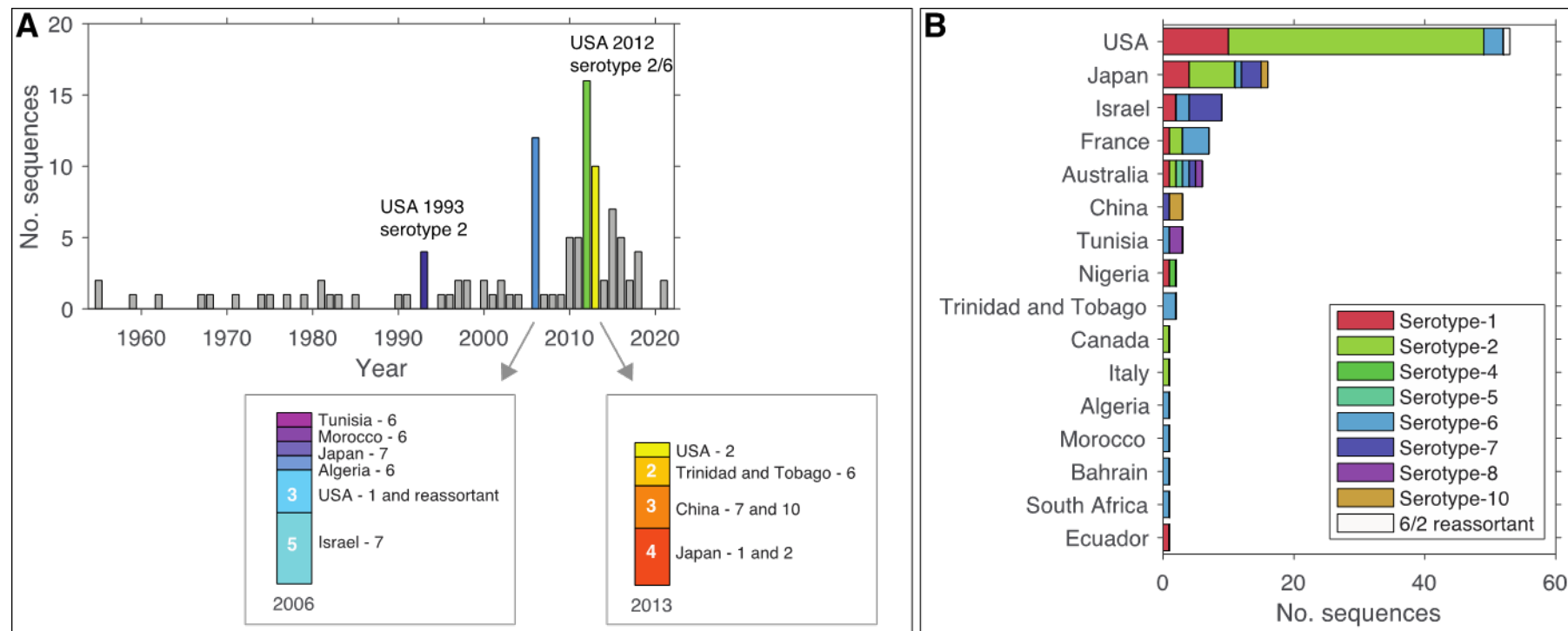
IZS

TERAMO

/

ISTITUTO
ZOOFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPORALE"







IZS

T E R A M O

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPOREALE"



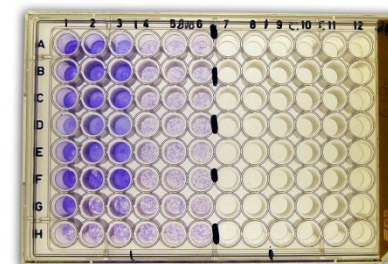
Virus isolation on BSR cell line



EHDV isolate 13446



EHDV isolate 13443



Virus neutralization test

Two isolates clearly identified as EHDV-8

IZS

T E R A M O

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPOREALE"



3 EHDV positive
samples with Ct 20-24-28



Shotgun metagenomic analysis
MinION Oxford Nanopore



Species identification



NO Geno-/Sero-type identification

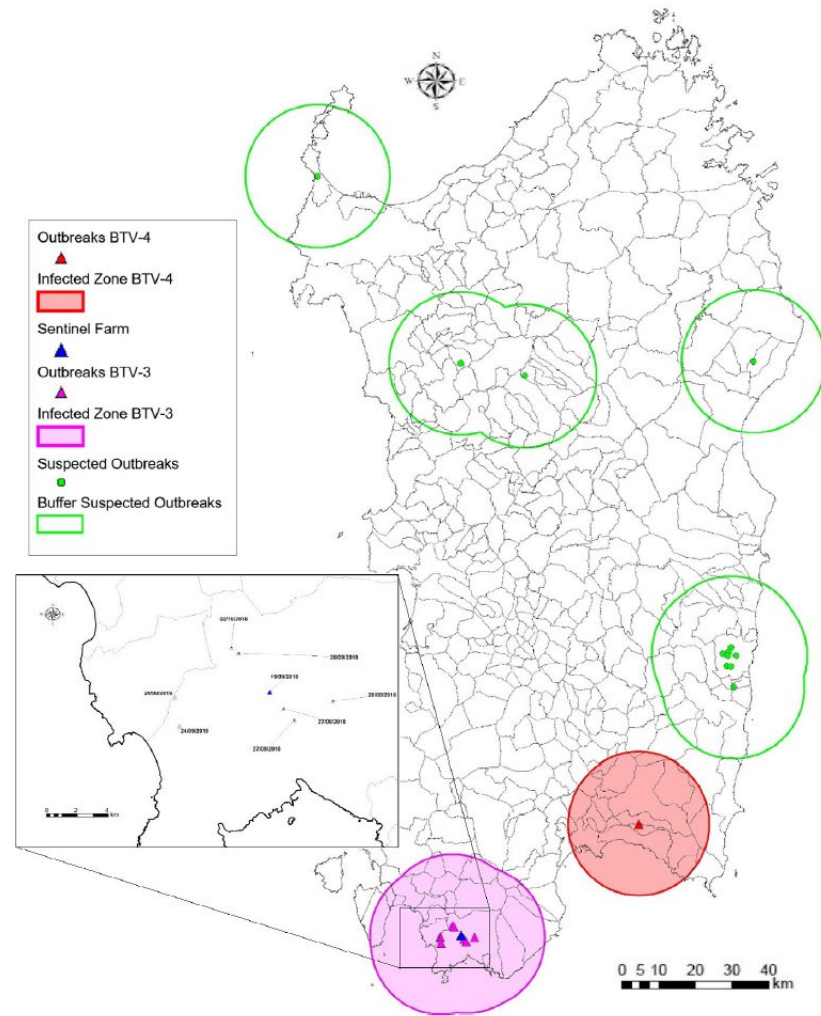


FIGURE 1 Map illustrating the confirmed or suspected BTV outbreaks (10th October 2018). Inset: location of the farms involved in the BTV-3w outbreaks in the surroundings of the municipality of Teulada



Received: 3 January 2019

Revised: 21 February 2019

Accepted: 21 February 2019

DOI: 10.1111/tbed.13156



Check for
updates

SHORT COMMUNICATION

WILEY

Transboundary and Emerging Diseases

Western Bluetongue virus serotype 3 in Sardinia, diagnosis and characterization

S. Cappai¹ | S. Rolesu¹ | F. Loi¹  | M. Liciardi¹ | A. Leone^{2,3} | M. Marcacci^{2,3} |
L. Teodori^{2,3} | I. Mangone^{2,3} | S. Sghaier⁴ | O. Portanti^{2,3} | G. Savini^{2,3} |
A. Lorusso^{2,3} 

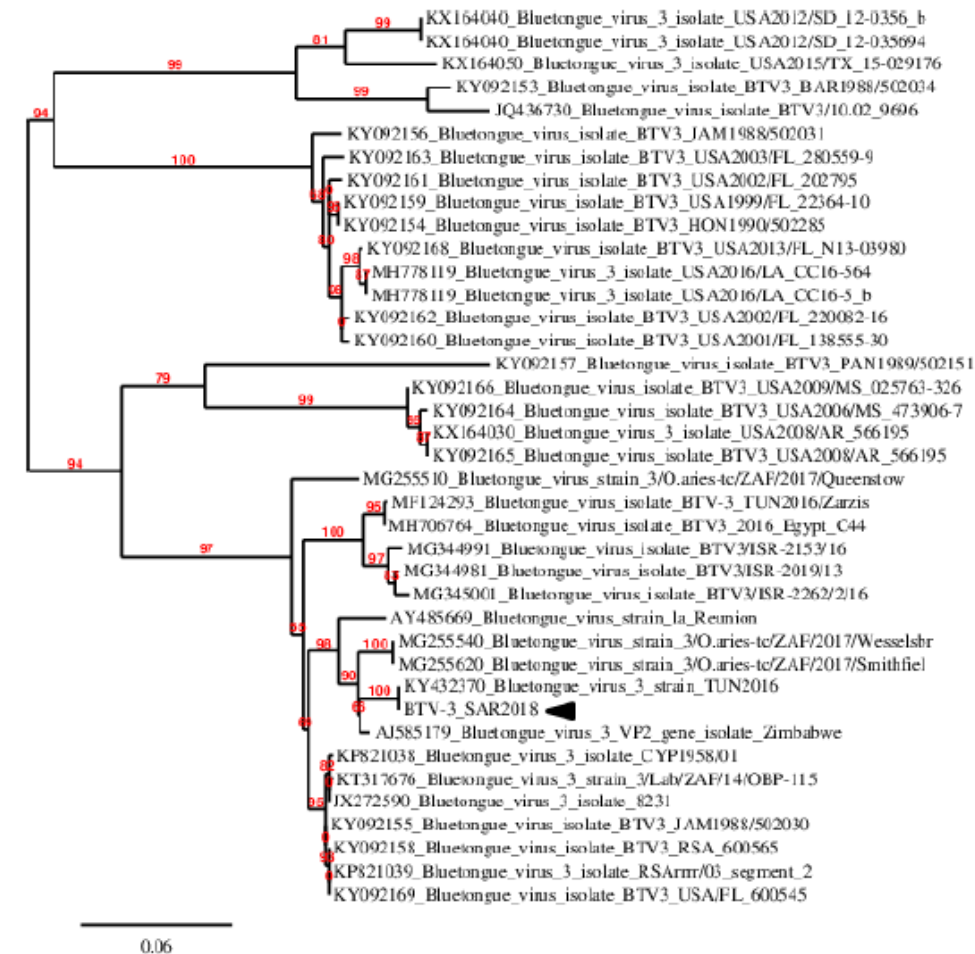


FIGURE 3 Seg-2 phylogenetic tree of western strains of BTV-3. The tree was reconstructed using the maximum likelihood method implemented in the PhyML program (<http://www.phylogeny.fr/>). Parameters of analysis are available within the text. Eastern BTV-3 strains have not been included. Bootstrap values ≥ 70 have been provided at the corresponding nodes. Accession numbers have been also provided. BTV-3 SAR2018 is indicated by a black arrow



BLUE-MED / A novel integrated and sustainable approach to monitor and control Bluetongue spread in the Mediterranean Basin



WP2 - To introduce innovative diagnostic tools, including portable next generation sequencing platforms to be used in the field



1 *Article*

2 **Epizootic Haemorrhagic Disease virus serotype 8 in**
3 **Tunisia, 2021**

4 Soufien Sghaier¹, Corinne Sailleau², Maurilia Marcacci³, Sarah Thabet¹, Valentina Curini³, Thameur Ben Hassine⁴,
5 Liana Teodori³, Ottavio Portanti³, Salah Hammami⁵, Lucija Jurisic^{3,6}, Massimo Spedicato³, Lydie Postic², Ines Ga-
6 zani⁷, Raja Ben Osman⁸, Stephan Zientara², Emmanuel Breard², Paolo Calistri³, Juergen A. Richt⁹, Edward C. Hol-
7 mes¹⁰, Giovanni Savini³, Francesca Di Giallonardo¹¹, and Alessio Lorusso^{3*}

IZS

T E R A M O

/

ISTITUTO
ZOOPROFILATTICO
SPERIMENTALE
DELL'ABRUZZO
E DEL MOLISE
"G. CAPOREALE"

- **Test specifico IZS-Te per EHDV-8 in via di validazione (Portanti et al.,)**
- **SN specifica in funzione**
- **NGS**
- **Diagnostica itinerante**
- **Vaccine tests**