



Istituto Zooprofilattico Sperimentale
del Lazio e della Toscana *M. Aleandri*

WOAH Reference Laboratory
for Equine Infectious Anaemia

Reference
Laboratory



World Organisation
for Animal Health



Equine Infectious Anaemia

Italian National Control Programme

2022 Workshops Equine Diseases
9-10 November Maisons Alfort, Paris

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Guarantee national and
international movement of
healthy animals

Adopt a risk based surveillance
in relation to the incidence
estimated at Regional level

Implement dedicated
information systems in
support of the effectiveness
of epidemiological surveillance

**National Decree -
Feb 2016 Italian
national surveillance
plan for the control
of EIA**

MAIN OBJECTIVES

Surveillance ongoing in Italy



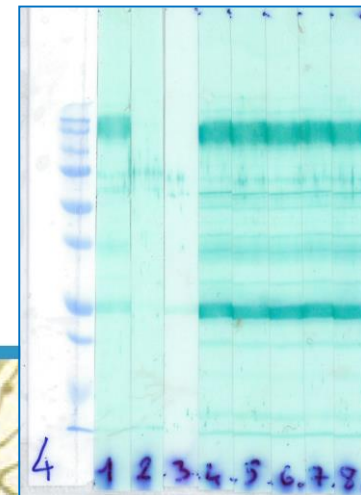
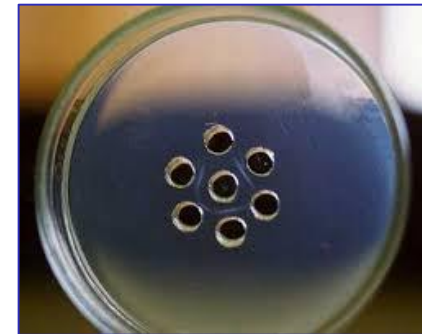
Three Tier Strategy: Field Testing



1. First (peripheral labs) \rightarrow ELISA

2. Second (Craie) \rightarrow ELISA + AGID

3. Third (Craie) \rightarrow ELISA + AGID + Immunoblotting



PROFICIENCY TEST ORGANIZED BY CRAIE

During 2016-2021 CRAIE organized the following proficiency test for AIE serological diagnosis:

YEAR	TEST	N° LAB	N° campioni	Cohen's K multiple
2017	ELISA	44	30	0,99
	AGID	29	20	0,96
2020	ELISA	45	14	1,00
	AGID	12	12	1,00





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PROFICIENCY TEST ORGANIZED BY CRAIE

The purpose of the PT is to monitor the levels of technical and diagnostic proficiency of the laboratories that carry out the EIA serodiagnosis.

The results obtained confirm the reliability of the results and the robustness of the diagnostic system throughout the national territory



2016: criteria for categorizing regional risk level

High risk areas

✓ Areas in which on the basis of the previous control plans less than 50% of the registered herds were controlled in previous years

Or

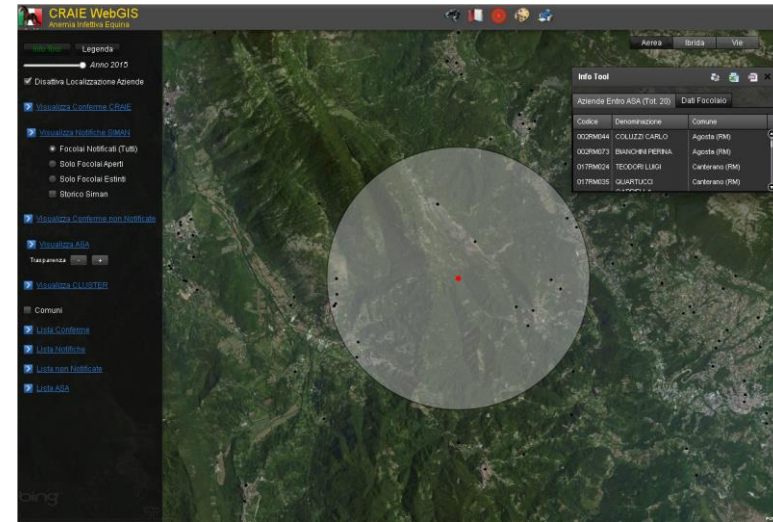
✓ Areas in which more than 50% of the herds were controlled but observed prevalence was $> 0.5\%$

Low risk areas

✓ areas not included in the previous category

Area with active surveillance (ASA): areas with a 3km radius from an incident or prevalent case of EIA

Infection clusters: areas with at least 2 incident/prevalent cases of EIA at a maximum distance of 5km



High risk areas

Annual control of all equids >12 months of age –
excluding meat equids

Low risk areas



- ✓ all equids >12 months of age, controlled every three years
- ✓ annual testing in areas with active infections and infection clusters

Independently from the risk area level

Annual control of high risk categories i.e. work horses, mules and all stables in which mules are also present and equids on slaughter.

THE PLAN IS CURRENTLY UNDER REVIEW, WITH A RE-MODULATION OF CONTROLS BASED ON PRODUCTION ORIENTATION.



Measures applied in case of an outbreak

On suspect

- ✓ isolation of the horse

On confirmation

- ✓ Notification on the national information system
- ✓ Removal of cases (Isolated or Culled)
- ✓ Geolocalization of epidemiological unit
- ✓ Serological control of all animals present
- ✓ Adoption of biosecurity measures
- ✓ Adoption of area with active surveillance, as described previously

Which are the restrictions? Regulation Act 2020/688

Art. 22 - the animals remaining in the establishment have to be tested for EIA by AGID or ELISA with negative results on samples taken on two occasions at least three months apart after the infected animals have not been killed and destroyed or slaughtered and the establishment has not been cleaned and disinfected.



- ✓ epidemiological investigation
- ✓ backward and forward tracing (of the last 12 months)
- ✓ application of biosecurity measures



Subjects defined as “suspect” are controlled every six months

1. All equids resulting positive to the screening test which are still to be confirmed by NRL.
2. ELISA pos/AGID neg/IB pos.
3. All equids present in an outbreak until the conclusion of the foreseen controls.
4. Born to seropositive mares until the age of 12 months.
5. All equids presenting signs referable to EIA.



Biosecurity measures on EIA positive premises

Isolation area, even in an external paddock, which must assure a distance of at least 200m from even the temporary presence of other equids.



Otherwise, the equine must be kept in a closed shelter ensuring animal welfare under veterinary surveillance

Movement to other premises must be carried out in the evening and/or during night hours using an insect repellent. The vehicle used for transport must be again cleaned and disinfected after use.

Movement of EIA pos animals must be notified to the regional/provincial veterinary services of destination.





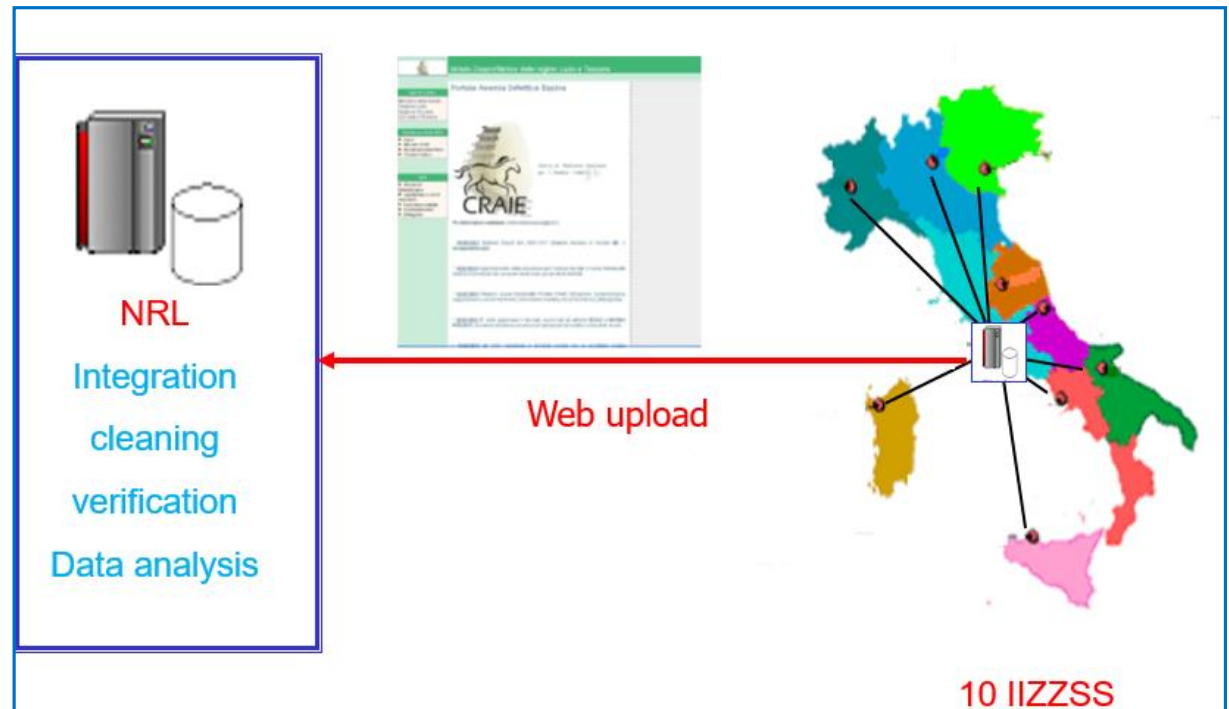
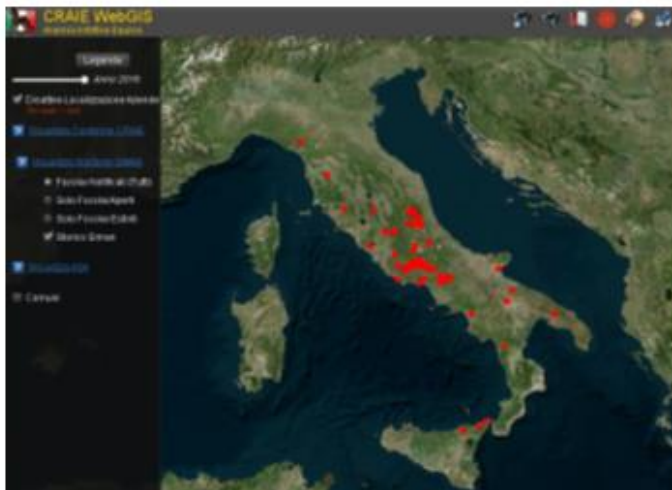
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CRAIE WEBGIS

Starting from 2016, officially adopted at National level

A WEB-based geographic information system (WEBGIS) tool for the control of equine infectious anemia (EIA)

<https://craie.izslt.it/craie/>





background



▪ The CRAIEWEBGIS was developed to support the adoption of RBS EIAV

control of Cases:

- culling
- permanent "quarantine" within authorized premises (biosecurity)

..and Outbreaks:

- All equidae within 3 Km radius (AAS) tested within 30 days
- Outbreak extinction: positive cases removal and 2 negative test performed at a 90 day interval on the remaining equidae

aims



Develop an efficient information system to:

- support Regional EIA Risk Based Surveillance
- ensure real time tracking of EIA outbreaks
- trigger immediate alerts on new cases and outbreaks
- provide instruments for outbreak management
- allow "on-field" risk evaluation and management
- provide immediate and updated information to health authorities



1. Automatic integration of the data from different sources which are updated overnight
2. The WEB GIS system displays HOLDING geolocations
3. Dynamic (interactive) maps with the tracking of outbreak status
4. Cursor activating pop-ups describing in detail each positive holding/outbreak

LOGIN PWD

Static reports (maps/list)

Open Access (general public)

CRAIEWEBGIS



Basic Functions - CRAIEWEBGIS

BASIC FUNCTIONS – Holdings confirmed positive by NRCEIA

View confirmed by NRCEIA
holdings positive first time (red dot)
holdings recurrent positive (purple dot)

Zoom

BASIC FUNCTIONS – Holdings confirmed positive by NRCEIA

View confirmed by NRCEIA

- Holding Id
- Date of confirmation
- Category (positive first time/recurrent)
- Multiple cases (Y/N)
- Region

Print or save (xls - csv)

Holdings locations





Basic Functions - CRAIEWEBGIS

BASIC FUNCTIONS – Officially Notified Outbreaks

View Notified outbreaks
 Outbreak continuing ●
 Outbreak resolved ●

Zoom

BASIC FUNCTIONS – Officially Notified Outbreaks

View Notified outbreaks

Print or save (xls – csv)

- Holding Id
- Resolved (Y/N)
- Species Involved
- Number of cases
- Dates: Suspicion Confirmation Extinction
- Region

Info Tool	
Dati Focolaio Azienda	
Campo	
Azienda	102RM207
Estinto	No
Specie	Mulo
Casi	1



BASIC FUNCTIONS – Confirmed but not notified outbreaks

- Info Tool
- Legenda
- Anno 2011
- Attiva Localizzazione Aziende
- Visualizza Conferme CRAIE
- Visualizza Notifiche SIMAN
- Visualizza Conferme non Notificate
- Visualizza ASA
- Visualizza CLUSTER
- Comuni
- Lista Conferme
- Lista Notifiche
- Lista non Notificate
- Lista ASA



View confirmed but not yet notified outbreaks

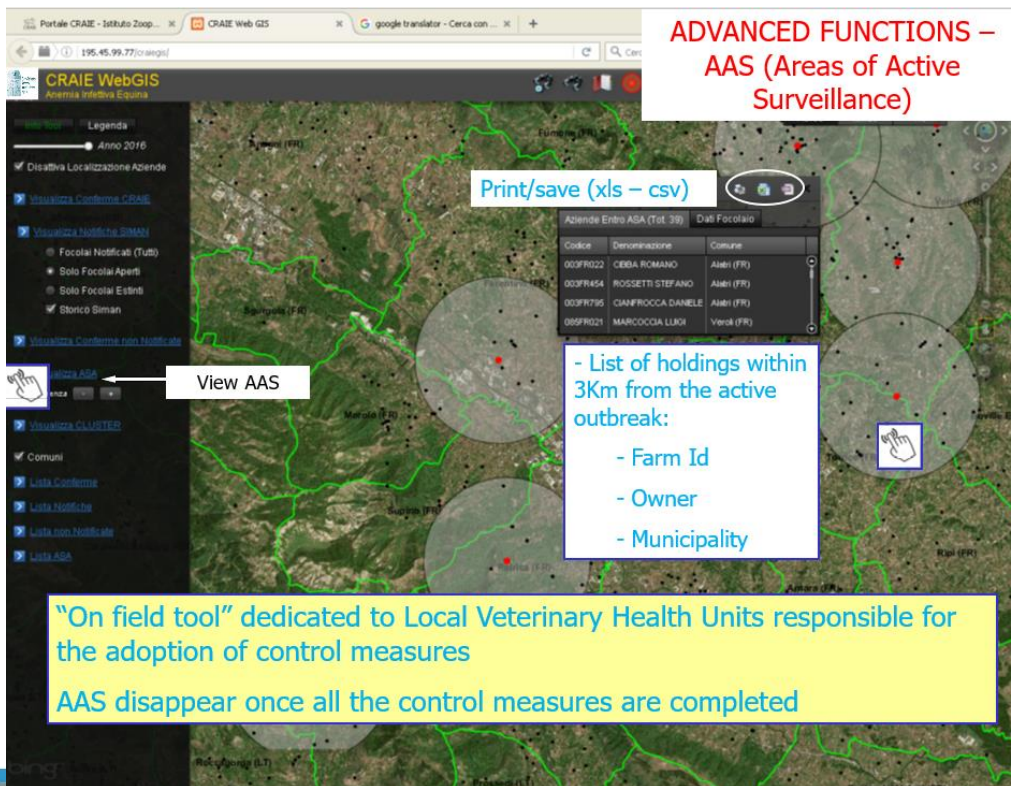
Zoom

A "supervision tool" made available in real time to Central/Regional Authority;

Reminder for the competent Local veterinary Health Unit for timely official communications.

Advanced Functions CRAIEWEBGIS

- Automatic creation of Areas of Active Surveillance around an outbreak (AAS)
- Automated identification of holdings for control within the areas at risk (maps and lists)
- updates to the program are currently underway to improve its functionality



ADVANCED FUNCTIONS – AAS (Areas of Active Surveillance)

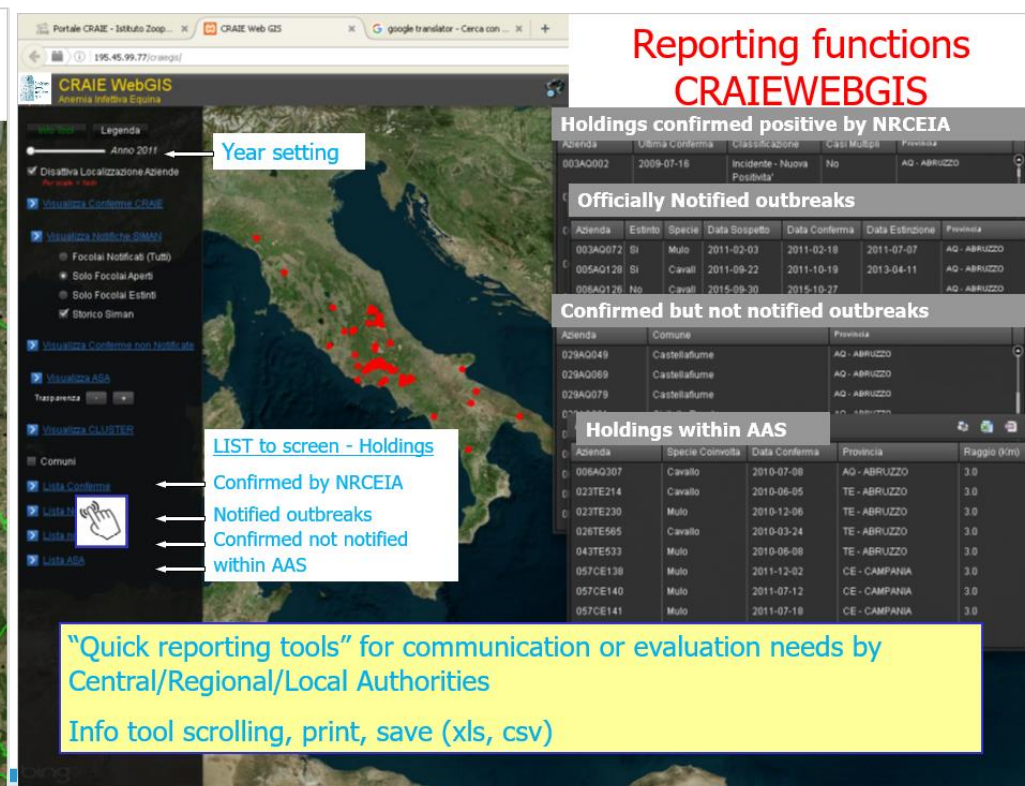
Print/save (xls – csv)

View AAS

- List of holdings within 3Km from the active outbreak:

- Farm Id
- Owner
- Municipality

"On field tool" dedicated to Local Veterinary Health Units responsible for the adoption of control measures
AAS disappear once all the control measures are completed



Reporting functions CRAIEWEBGIS

Holdings confirmed positive by NRCEIA

Officially Notified outbreaks

Azienda	Ultima Conferma	Classificazione	Casi Moltip.	Provincia
003AQ002	2009-07-16	Incidente - Nuova Positivita'	No	AQ - ABRUZZO

Confirmed but not notified outbreaks

Azienda	Estinto	Specie	Data Sospetto	Data Conferma	Data Estinzione	Provincia
003AQ072	Si	Mulo	2011-02-03	2011-02-18	2011-07-07	AQ - ABRUZZO
005AQ128	Si	Cavali	2011-09-22	2011-10-19	2013-04-11	AQ - ABRUZZO
005AQ120	No	Cavali	2015-09-30	2015-10-27		AQ - ABRUZZO

Holdings within AAS

Azienda	Specie Convolta	Data Conferma	Provincia	Raggio (km)
006AQ307	Cavallo	2010-07-08	AQ - ABRUZZO	3,0
023TE214	Cavallo	2010-06-05	TE - ABRUZZO	3,0
023TE230	Mulo	2010-12-06	TE - ABRUZZO	3,0
026TE565	Cavallo	2010-03-24	TE - ABRUZZO	3,0
043TE533	Mulo	2010-06-08	TE - ABRUZZO	3,0
057CE138	Mulo	2011-12-02	CE - CAMPANIA	3,0
057CE140	Mulo	2011-07-12	CE - CAMPANIA	3,0
057CE141	Mulo	2011-07-18	CE - CAMPANIA	3,0

Year setting

LIST to screen - Holdings

- Confirmed by NRCEIA
- Notified outbreaks
- Confirmed not notified within AAS

"Quick reporting tools" for communication or evaluation needs by Central/Regional/Local Authorities
Info tool scrolling, print, save (xls, csv)





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Thank you

