



GOBIERNO
DE ESPAÑA

MINISTERIO
DE MEDIO AMBIENTE
Y MEDIO RURAL Y MARINO

NEWCASTLE DISEASE OUTBREAK IN SPAIN

ZUMAIA (GUIPUZCOA)

27TH NOVEMBER 2009

ELENA SAN MIGUEL Y AZUCENA SÁNCHEZ

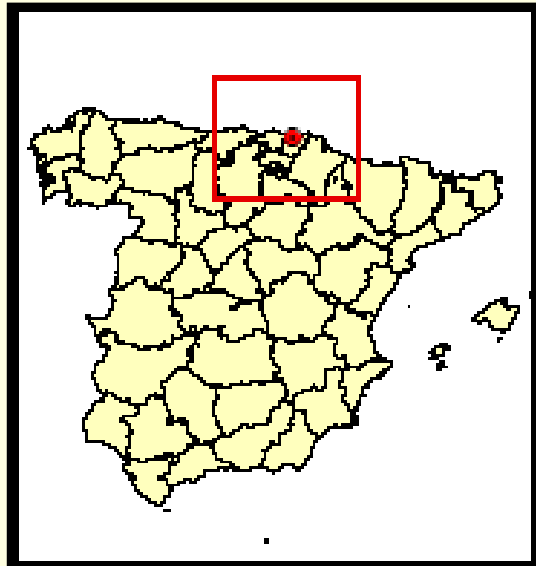
**LABORATORIO CENTRAL DE VETERINARIA (LCV) ALGETE-SPAIN
NATIONAL REFERENCE LABORATORY
MINISTRY OF THE ENVIRONMENT AND RURAL AND MARINE AFFAIRS**

**Joint Sixteenth Annual Meeting of National Laboratories for Avian Influenza
and Newcastle Disease of European Union Member States
VIENNA (AUSTRIA) 26-27 May 2010**



NEWCASTLE DISEASE IN SPAIN

November 27th 2009



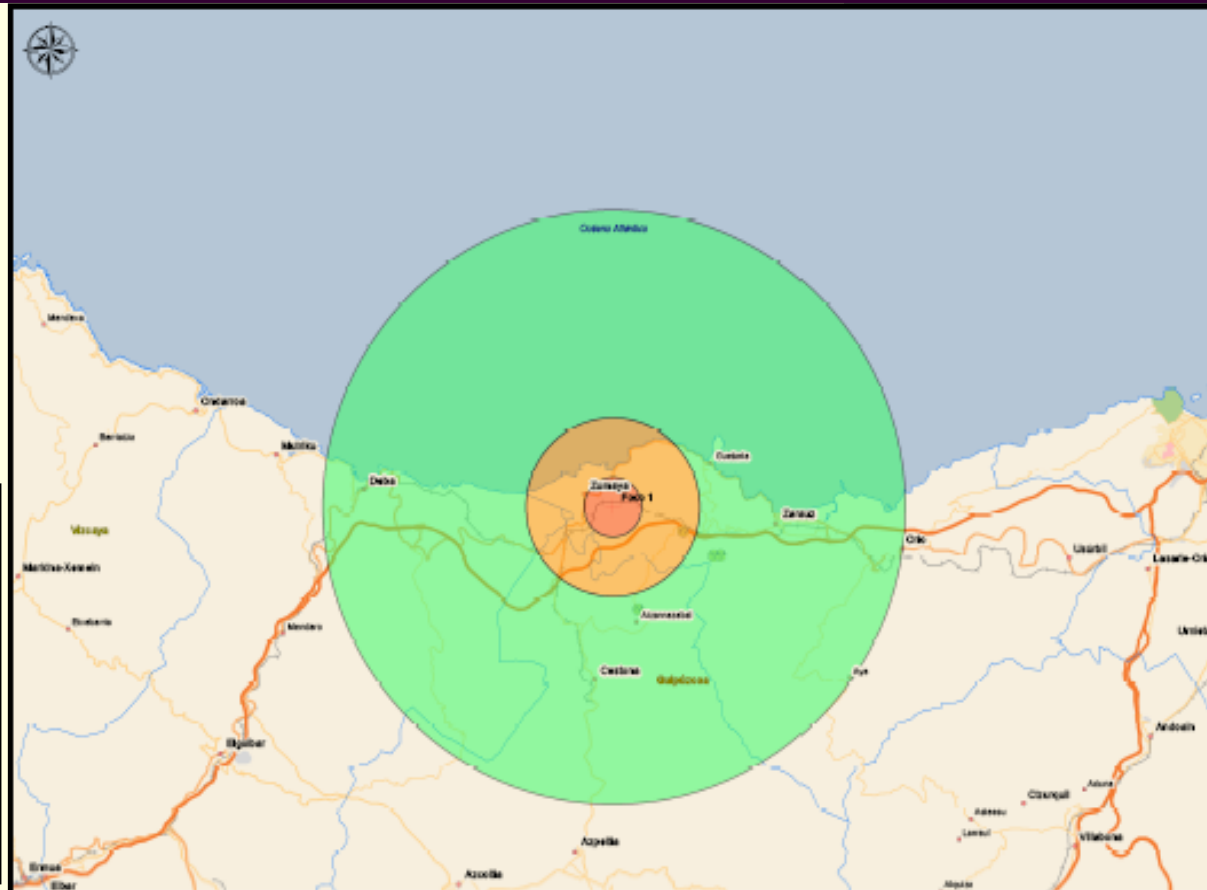
NO OUTBREAKS SINCE 1993



FARM UBICATION

Leyenda

- + Focos de infección
- Radio de 10 Km.
- Radio de 3 Km.
- Radio de 1 Km.
- Área de control
- Comarcas Veterinarias



**ZUMAIA (GUIPÚZCOA)
BASQUE COUNTRY AUTONOMOUS REGION**



NEWCASTLE DISEASE.OUTBREAK

November 18th: SUSPICION

A game bird farm shows increased mortality rates



Movement restriction and sampling



Two live pheasants with nervous signs: torticollis, paresis and lack of coordination of muscular movement and respiratory distress.



RT-PCR AIV negative; NDV Elisa positive (Neiker)



Samples were sent to NRL (LCV) (serum, swabs and organs)

SAMPLES FROM TWO ANIMALS (sent by Neiker)

SAMPLES FROM TWO PHEASANTS	NDV RT-PCR / SEROLOGY RESULTS
Cloacal swabs	RT-PCR negative and inconclusive
Pharyngeal swabs	Both animals RT-PCR inconclusive
Tracheal Swabs	RT-PCR positive and negative
Lung and trachea samples	Both animals RT-PCR positive
Sera	Both animals HI positive

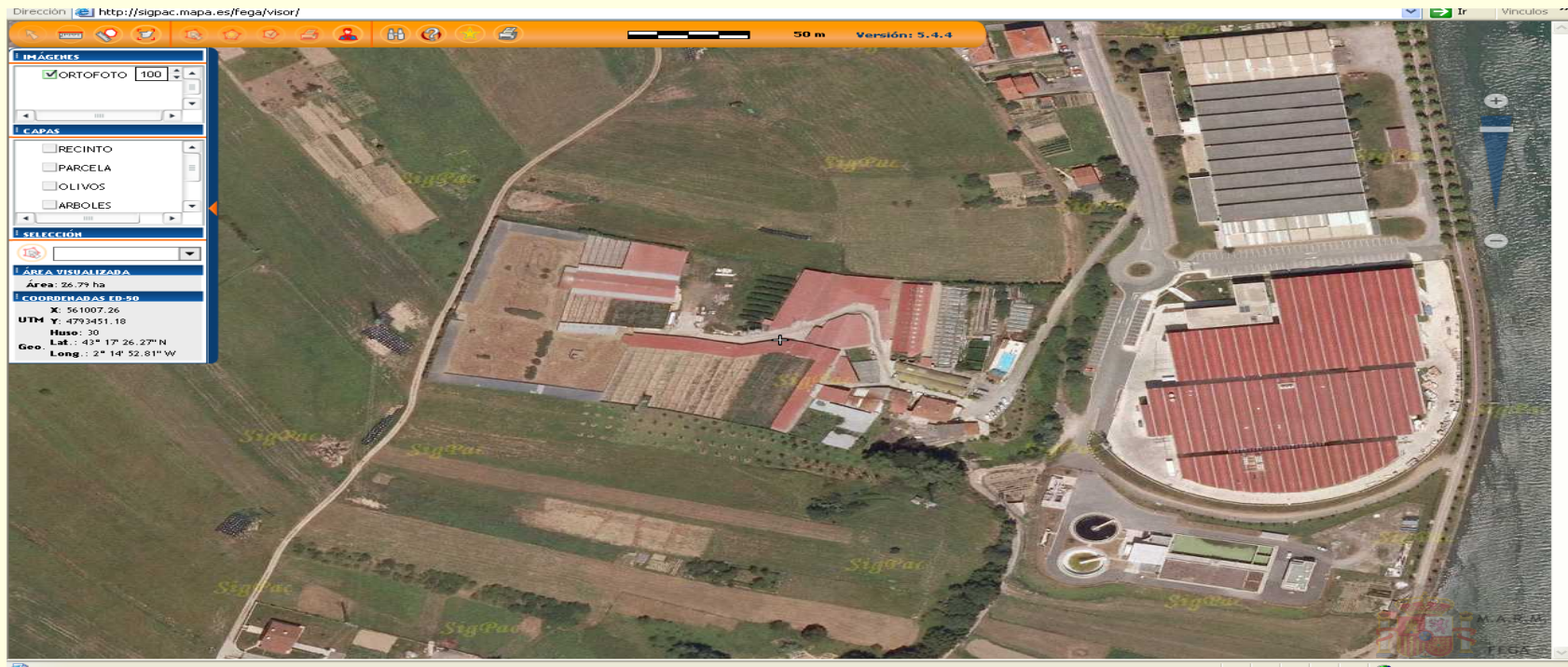
OTHER SAMPLES COLLECTED IN THE FARM (sent by local veterinary services)

SAMPLES	NDV RT-PCR / SEROLOGY RESULTS
Pheasants cloacal swabs (12), faeces (1) and organs (liver, trachea and lung)	RT-PCR positive (8), inconclusive (4), negative (2)
Quail cloacal swabs (4)	RT-PCR negative
Partridge cloacal swabs (4)	RT-PCR negative
Quails (2) and Partridges (2) sera	HI negative (4)
Pheasants sera (6)	HI positive: 1/128 (4), 1/64 (1), 1/32(1)

All samples were NEGATIVE for AIV test



NEWCASTLE DISEASE IN SPAIN. EPIDEMIOLOGICAL INFORMATION



- 11000 pheasants, 4000 quails and 6700 partridges
- Outdoor farm
- No risk movements to and from the affected farm
- Not NDV vaccinated



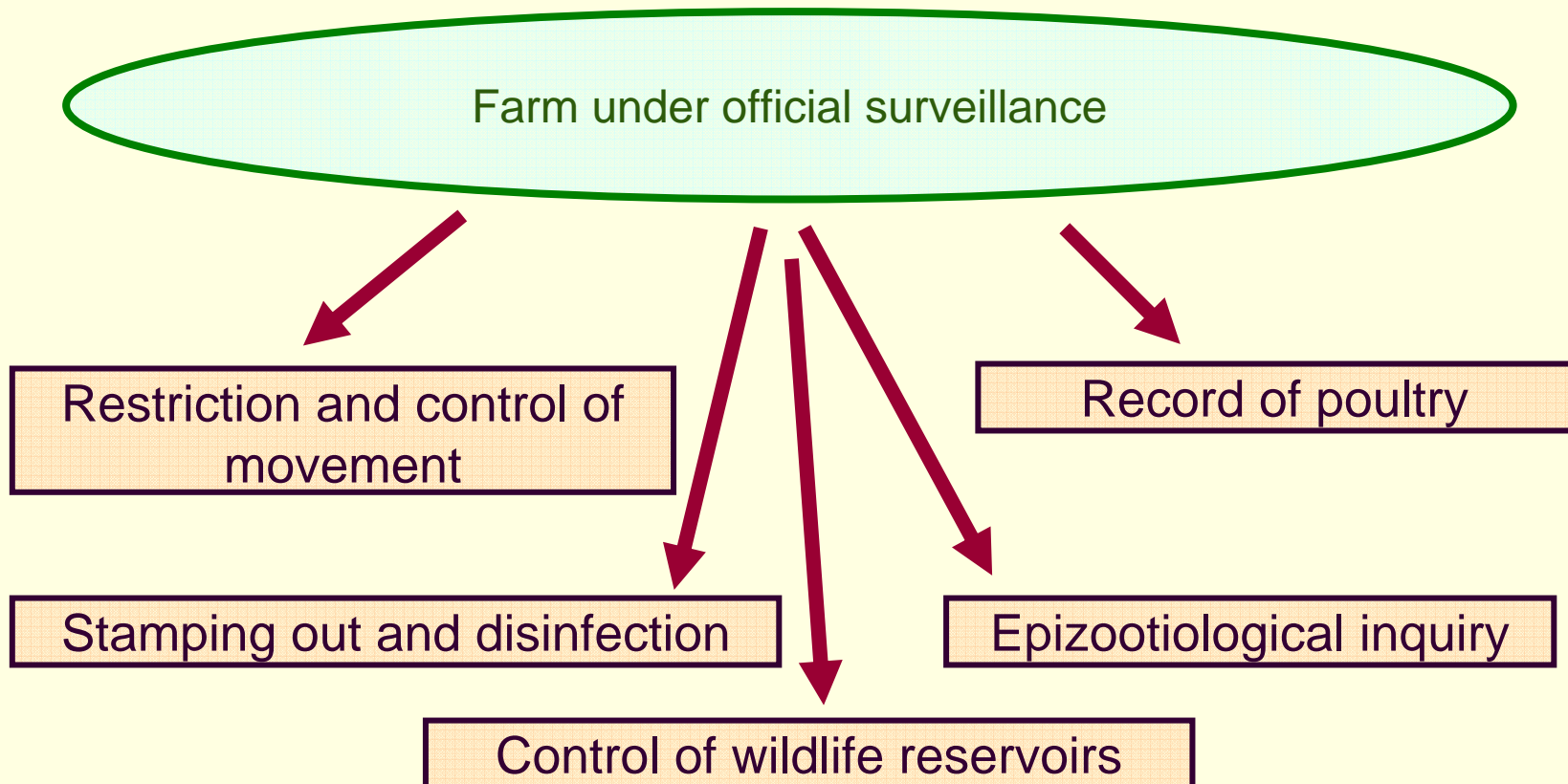
NEWCASTLE DISEASE IN SPAIN MEASURES ADOPTED (I)



- ▶ Immediate notification of the ND outbreak to ADNS and OIE
- ▶ Communication to Spanish Regional Authorities and stakeholders
- ▶ Informative meetings with local vets, hunters and farmers

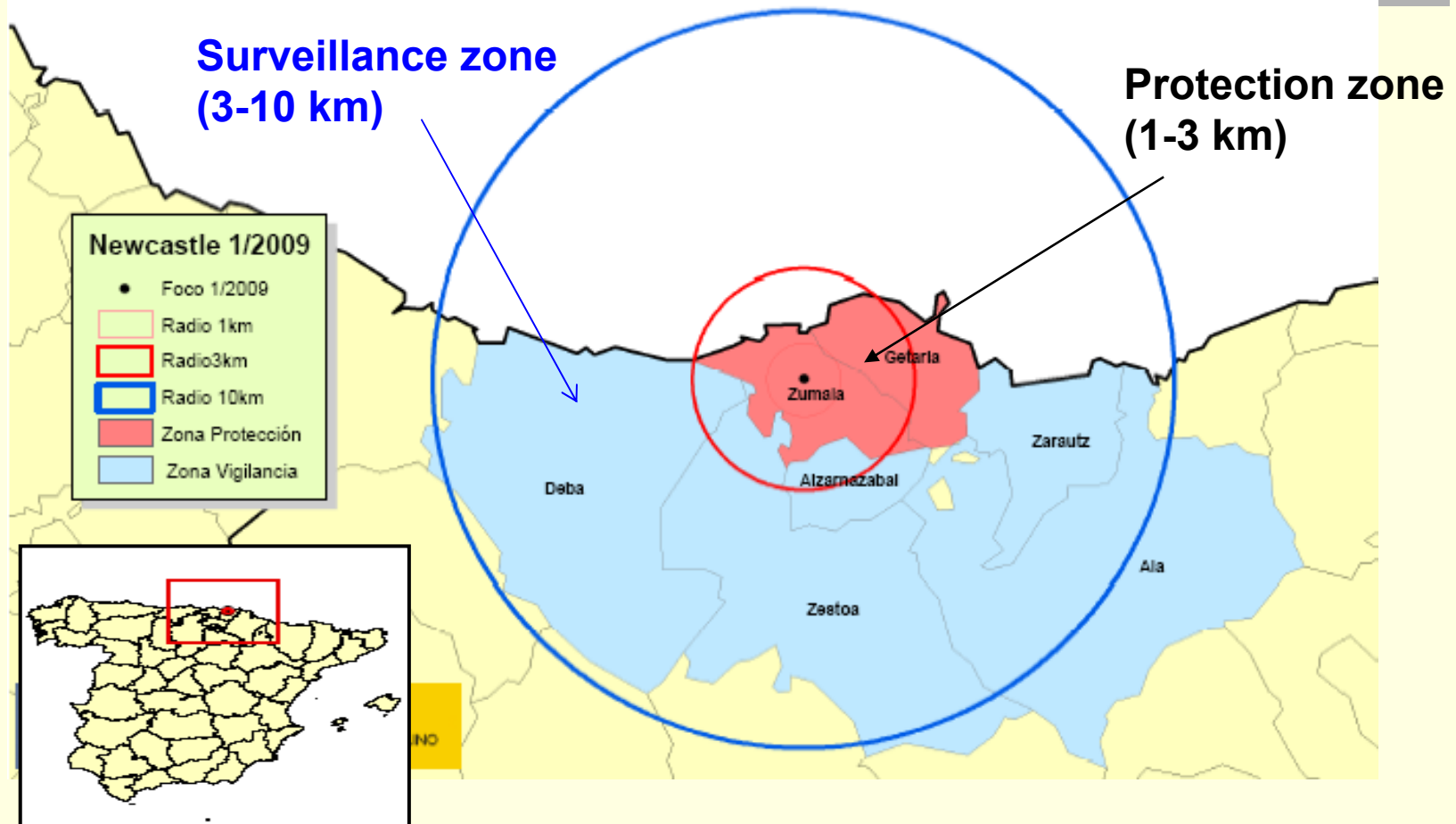


NEWCASTLE DISEASE IN SPAIN MEASURES ADOPTED (II)





NEWCASTLE DISEASE. FARMS WITHIN 3-10 KM.



- 3 AVIAN FARMS WITHIN 3 KM
- 7 AVIAN FARMS WITHIN 10 KM

Serology (-)
RT-PCR (-)

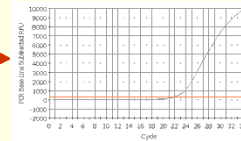


LABORATORY FINDINGS IN LCV

Swabs, faeces, tissue samples

Extraction

RNA

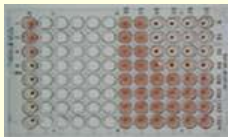


2 hours

Result +

Sera

Serology HI Test



Result +

HI (1/64 y 1/256)

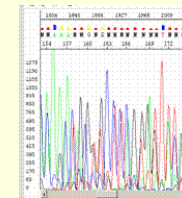
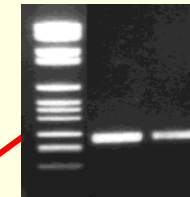
Eggs inoculation



Virus isolation at LCV: negative
Virus isolation at EU-RL: negative

NDV RRT-PCR

RT-PCR
Fusion protein (F)



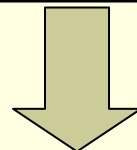
Molecular pathotyping

Result: virulent strain
R R Q R R F



Analysis of animal samples in the farm

Serology	+
RT-PCR	+
Pathogenicity	Virulent strain Cleavage site sequence R R Q R R F



First outbreak NDV in domestic birds in Spain

Sequence & phylogenetic analysis

GenBank: GU289877.1

Newcastle disease virus strain pheasant/7361-6/2009/ESP fusion protein (F) gene,

[Features](#) [Sequence](#)

LOCUS GU289877 363 bp cRNA linear VRL 07-FEB-2010
DEFINITION Newcastle disease virus strain pheasant/7361-6/2009/ESP fusion protein (F) gene, partial cds.
ACCESSION GU289877
VERSION GU289877.1 GI:285206569
KEYWORDS .
SOURCE Newcastle disease virus
ORGANISM [Newcastle disease virus](#)
Viruses; ssRNA negative-strand viruses; Mononegavirales; Paramyxoviridae; Paramyxovirinae; Avulavirus.
REFERENCE 1 (bases 1 to 363)
AUTHORS Rocha,A., Tena-Tomas,C., San Miguel,E., Aduriz,G. and Agüero,M.
TITLE Highly Pathogenic Newcastle Disease Virus in Spain 2009
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 363)
AUTHORS Rocha,A., Tena-Tomas,C., San Miguel,E., Aduriz,G. and Agüero,M.
TITLE Direct Submission
JOURNAL Submitted (07-DEC-2009) Laboratorio Central de Veterinaria-Sanidad Animal, Laboratorio Central de Veterinaria, Ctra Algete km 8, Algete, Madrid 28110, Spain

EU-RL-VLA REPORT

17 th March 2010 NRL (LCV) sent samples to EU-RL-VLA:

3 Supernatant nervous system tissues of pheasant

24th March 2010 Report 1(Preliminary)VLA:

Isolate	Cleavage site motif Samples 1 and 3	Pathogenicity	Genotype	Highest homology
No isolate	RRQRRF	VIRULENT	5b	Isolate from Sweden in 2009 (98.9%)

16th April 2010 Report 2 (Final) VLA:

Isolate	Cleavage site motif Samples 1 and 3	Pathogenicity	Genotype	Highest homology
No isolate	RRQRRF	VIRULENT	5b	Isolate from Sweden in 2009 (98.9%)



NEWCASTLE DISEASE. OUTBREAK CRONOLOGY (I)

November 18th: SUSPICION

November 26th: Confirmation → NRL
(Algete) confirms Newcastle disease by
PCR and sequencing.



NEWCASTLE DISEASE. OUTBREAK CRONOLOGY (II)

November 27th : Outbreak notification
to ADNS and OIE

TOTAL OUTBREAKS: 1

Apparent morbidity rate: 18.86% (2,075)

Apparent mortality rate: 15.45% (1700)

Origin of infection: unknown

- November 27th: Stamping out



NEWCASTLE DISEASE. OUTBREAK CRONOLOGY (III)

November 30th- December

2nd: Cleaning and disinfection followed by inspections

January 23rd: Restriction lifted in surveillance and protection zone

March 23rd: **Spain recovers free of Newcastle Disease status**



**THANKS FOR
YOUR KIND
ATTENTION**



**LABORATORIO CENTRAL DE VETERINARIA (ALGETE)
MARM**