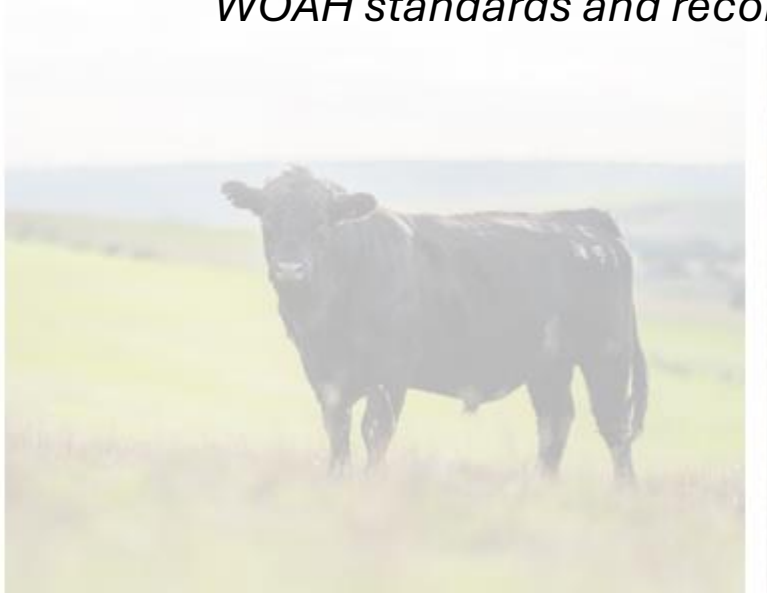
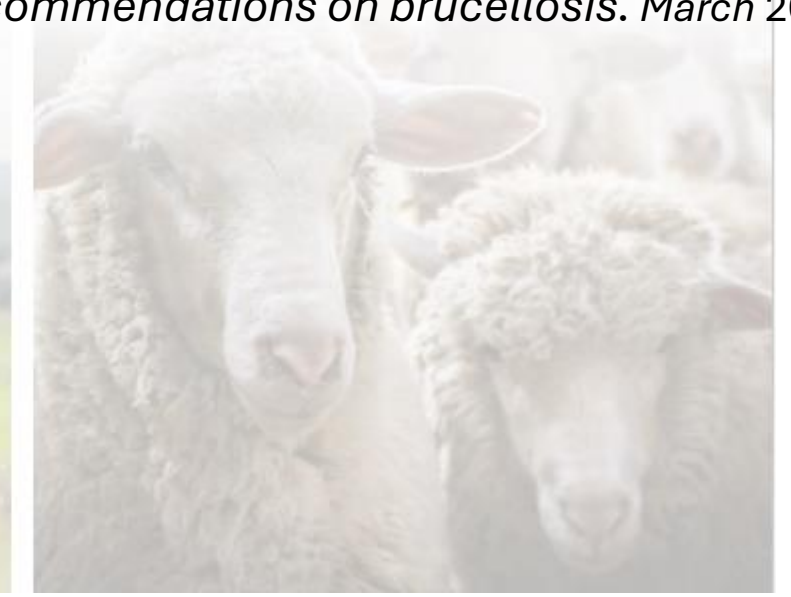




Brucellosis Control and Eradication: the Spanish experience

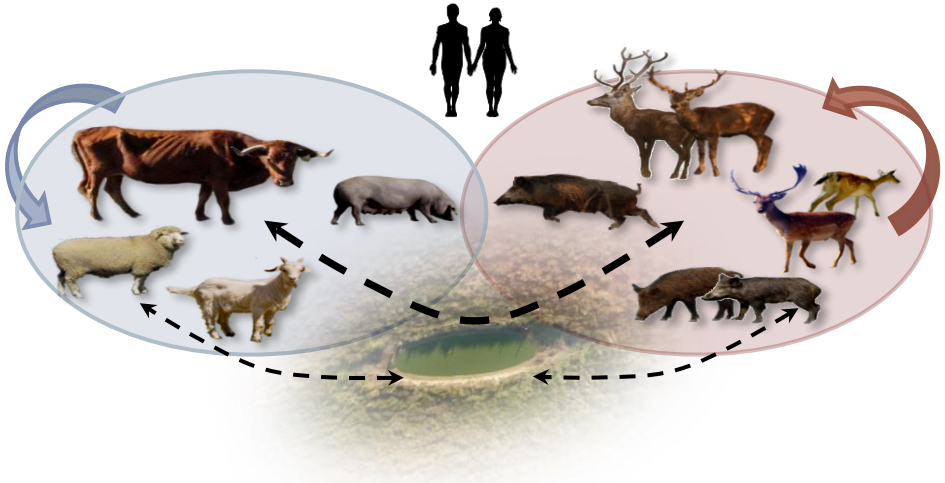
José Luis Sáez Llorente

Deputy CVO

Ministry of Agriculture, Fisheries and Food

GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACIÓN

Main challenges on control programmes of Brucellosis



Different types of production systems in ruminants and of environmental conditions

The epidemiology of the disease is frequently complex.

Common pastures (many times multi species) posse additional challenges.

Measures must be implemented during a long time before eradication can be achieved.

Brucellosis has great impact and restrictions on the holdings.

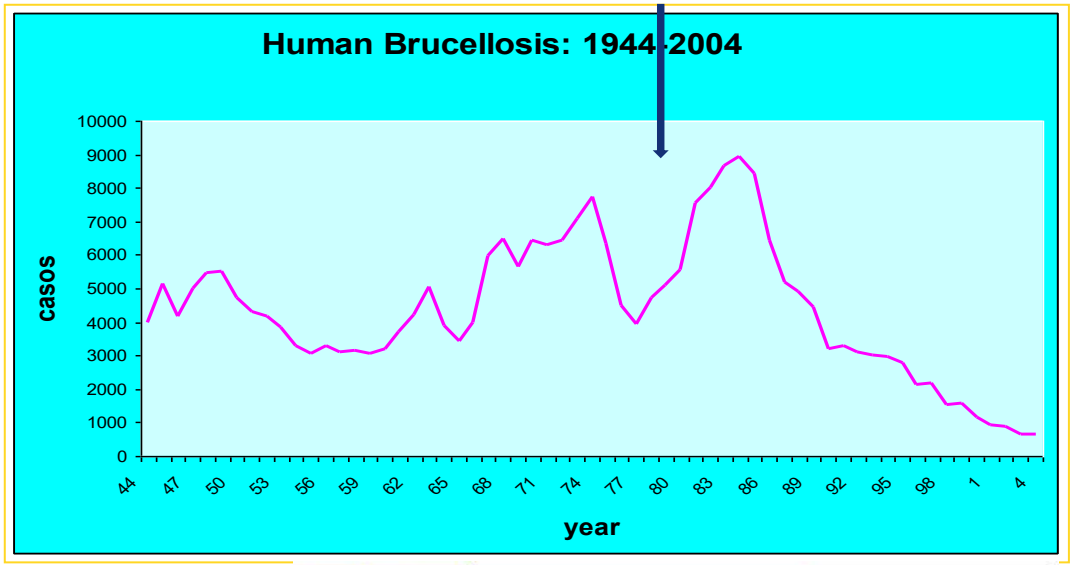
Brucellosis control offer huge benefits for the society (zoonotic disease).

Initial target

Prevention of human cases

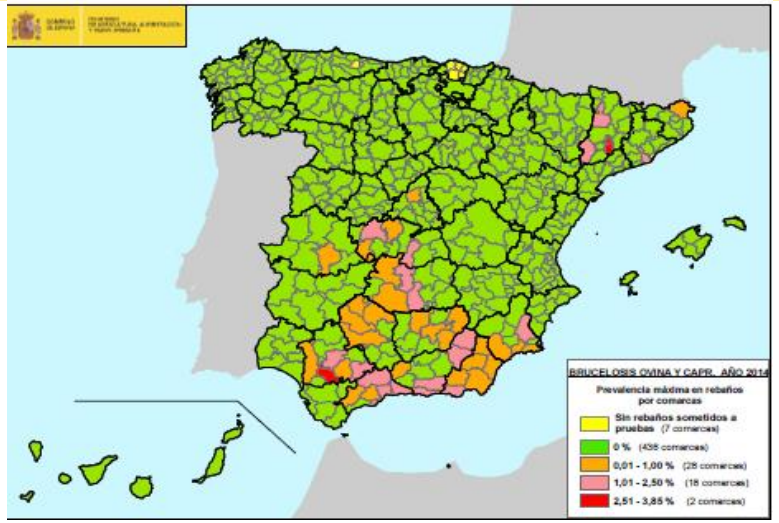
Control of prevalence

Mass vaccination of sheep and goats



Final target

Eradication



Tools Related with TRAZABILITY

Definition of the risk áreas to immplement measures

IT Systems:

REGA

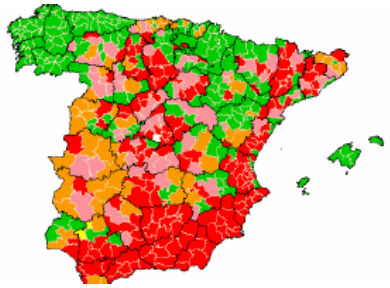
RIIA

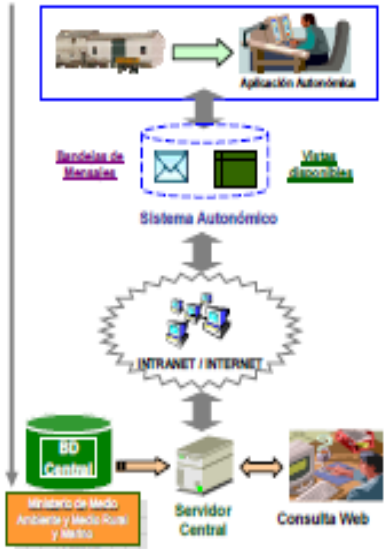
Health documents for the movement of animals

Certification of health status of herds

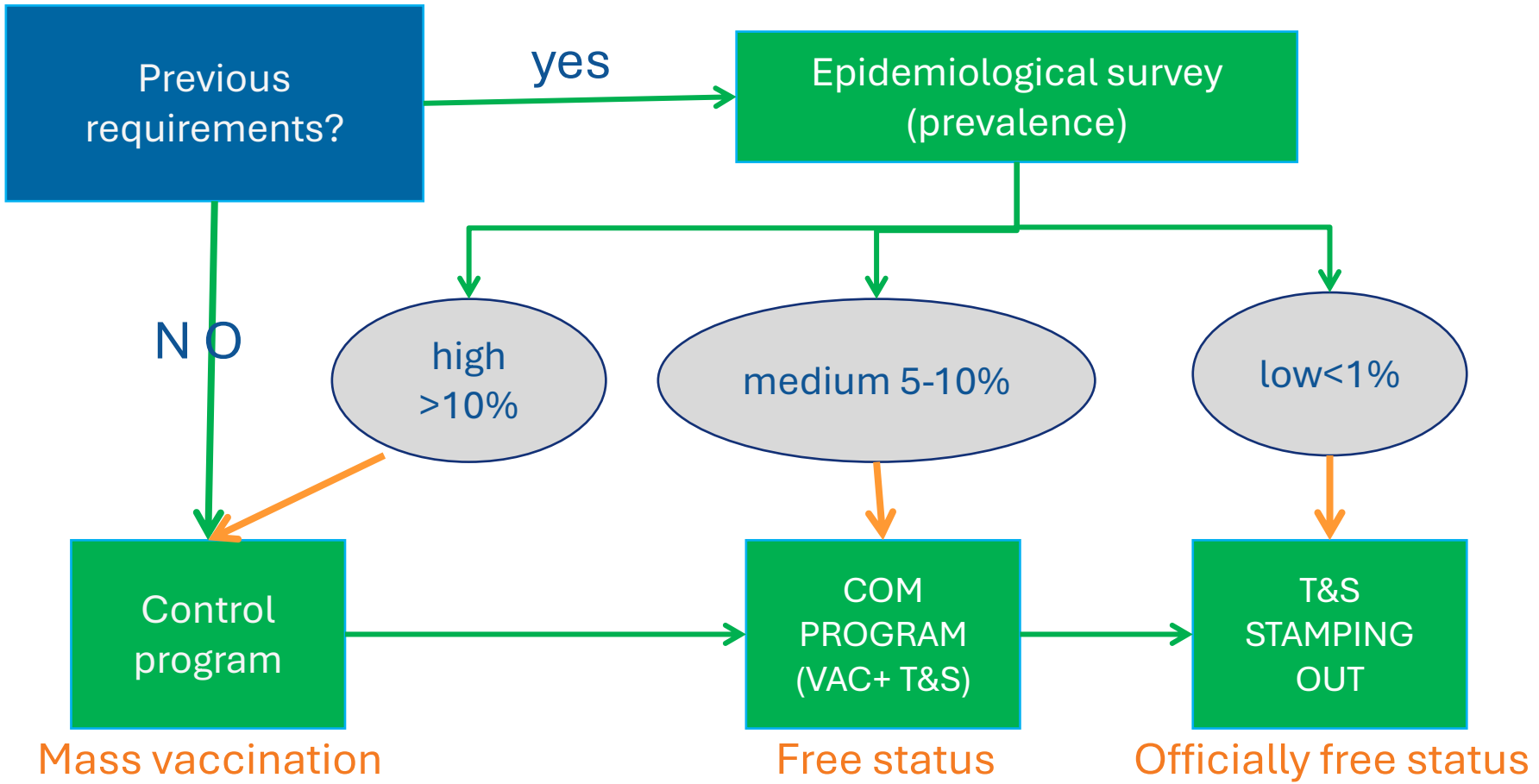
IT system for animal movements:

REMO





See: F. Crespo León, J.L. Sáez Llorente, F.J. Reviriego Gordejo, E.F. Rodríguez Ferri & M. Durán Ferrer. Complementary tools for the control and eradication of caprine and ovine brucellosis in the European Union Rev. sci. tech. Off. int. Epiz., 2012,



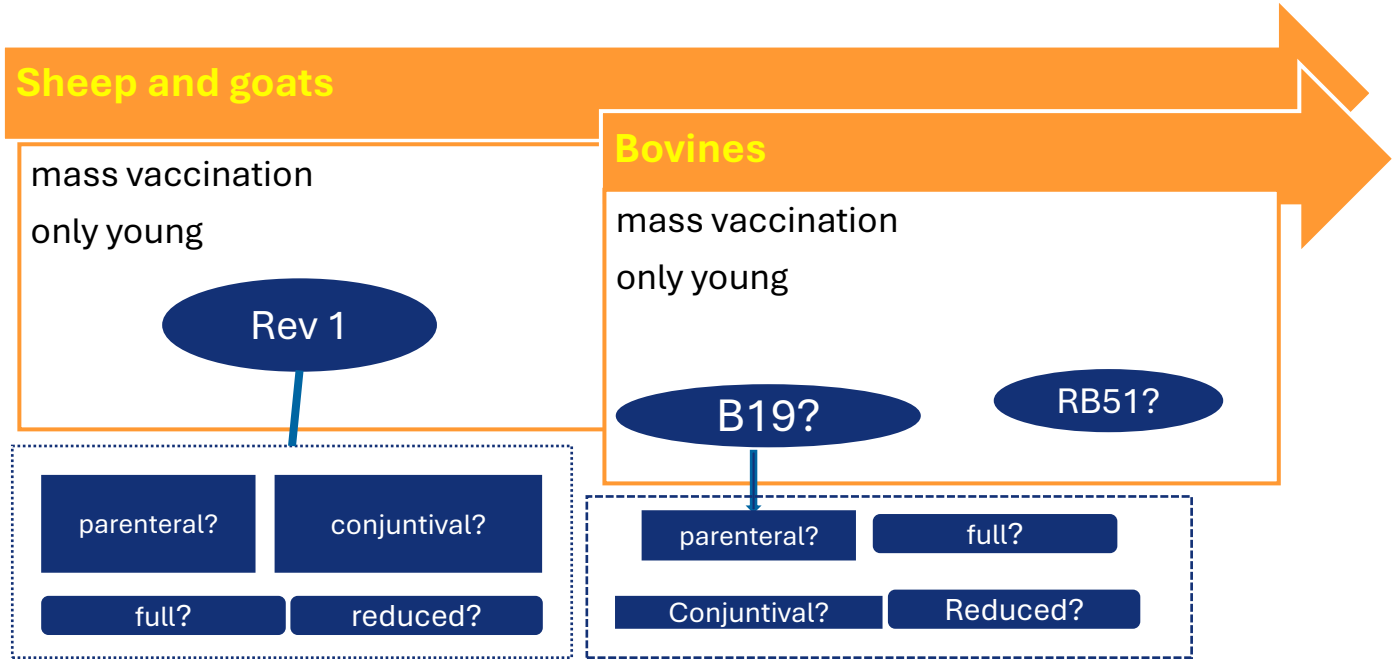
"Brucelosis". Elías F. Rodriguez Ferri y Fernando Crespo León. *Veterinaria Castilla y León, 65:1*.




Control PROGRAMME

Quality Controls correct application (Rev.1, B.19): serology

2 weeks post-vaccination




Pictures: J.C. Moreno (Junta de Extremadura)

Combined programme

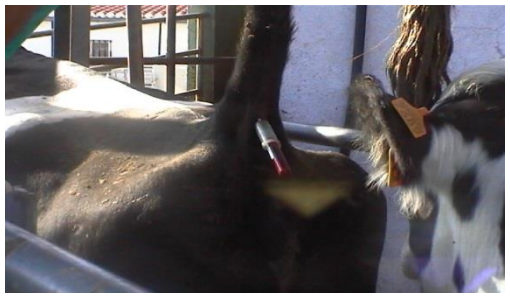
From mass vaccination to vaccination of young animals + test and slaughter

- 30 months post adult vaccination
- Serological studies at intervals to evaluate antibody kinetics

Age of animals selectable for serological diagnosis

S&G
- 18 months (vaccinated animals)
- 6 months (non vaccinated animals)

Cattle
- 18-30 months (vaccinated females with B.19)
- 12 months (Females RB51 non vaccinated females , Males)



Eradication Programme

Intermediate Objective

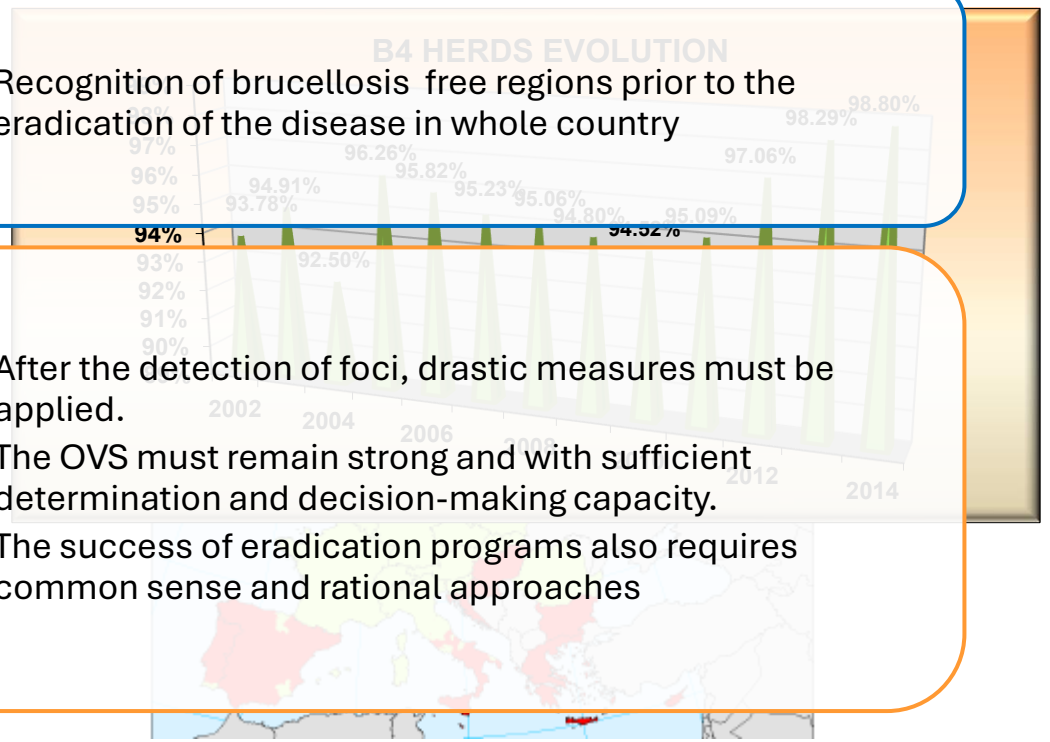
Rapid increase in the percentage of brucellosis free herds

Final Objective

- Recognition of brucellosis free regions prior to the eradication of the disease in whole country

Additional Requirements

- After the detection of foci, drastic measures must be applied.
- The OVS must remain strong and with sufficient determination and decision-making capacity.
- The success of eradication programs also requires common sense and rational approaches



EVOLUTION OF BB IN SPAIN AND STRATEGY FOR ITS CONTROL AND ERADICATION(PHASES)

70s

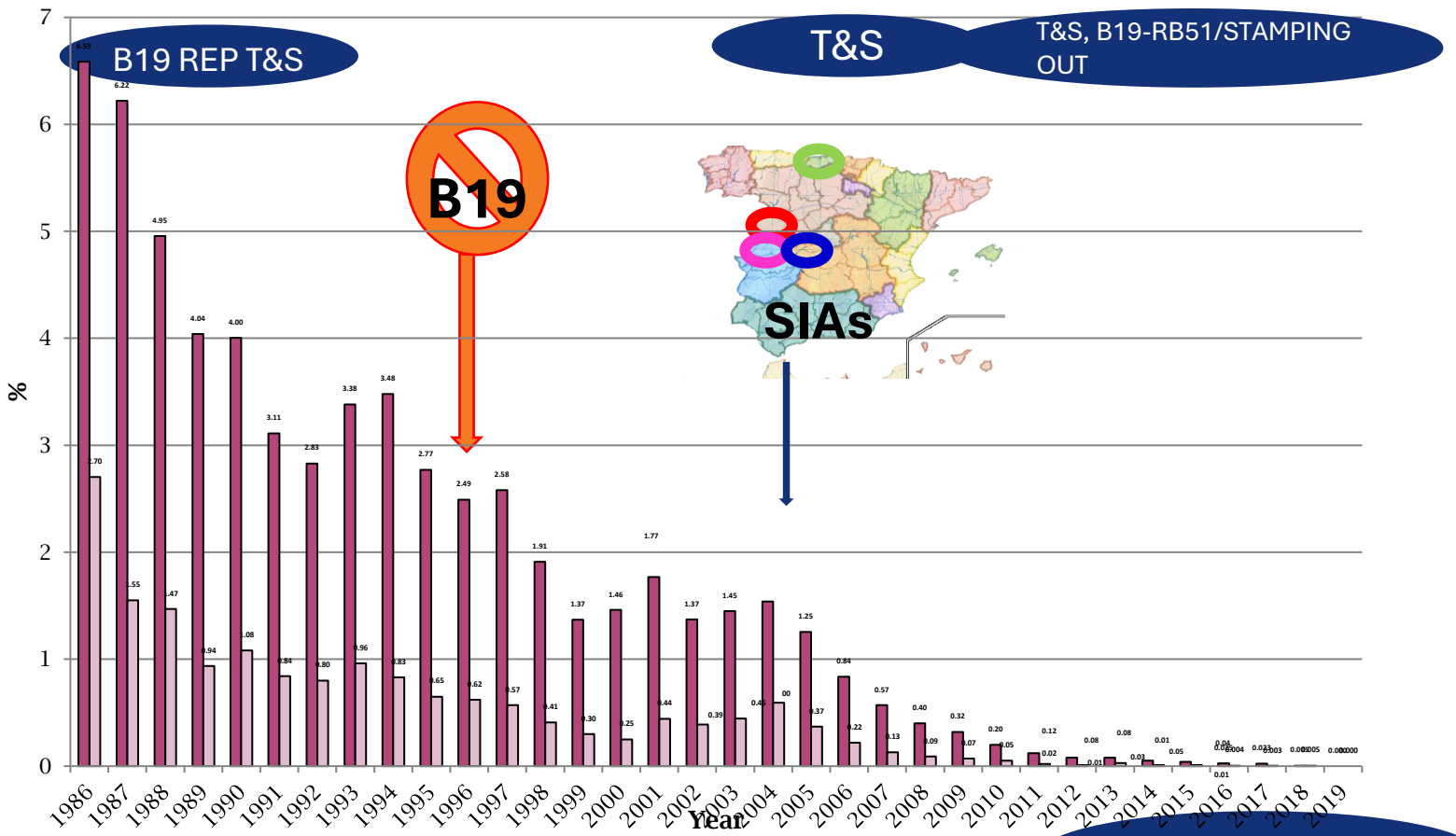
Incidence 20%

B19 rep

80s

Incidenci 2.5%

T&S (EXCP)



2012

REG OBF (5)

2015

14/17 REG P=0

STAMPING OUT

2019: P=0

2020: P=0,02

2021: P=0

2022: Spain BB officially free (whole country)

"EVOLUCIÓN DEL PROGRAMA NACIONAL DE ERRADICACIÓN DE LA BRUCELOSIS BOVINA. EVALUACIÓN DE DIFERENTES ESTRATEGIAS DE LUCHA.PERSPECTIVA HISTÓRICA." *Trabajo de investigación para el Examen de Suficiencia Investigadora D.E.A. J.L. Sáez Llorente. U.C.M.2012.*

GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACIÓN

Contents lists available at ScienceDirect
Preventive Veterinary Medicine
Journal homepage: www.elsevier.com/locate/prevetmed

Short communication

Mass vaccination as a complementary tool in the control of a severe outbreak of bovine brucellosis due to *Brucella abortus* in Extremadura, Spain

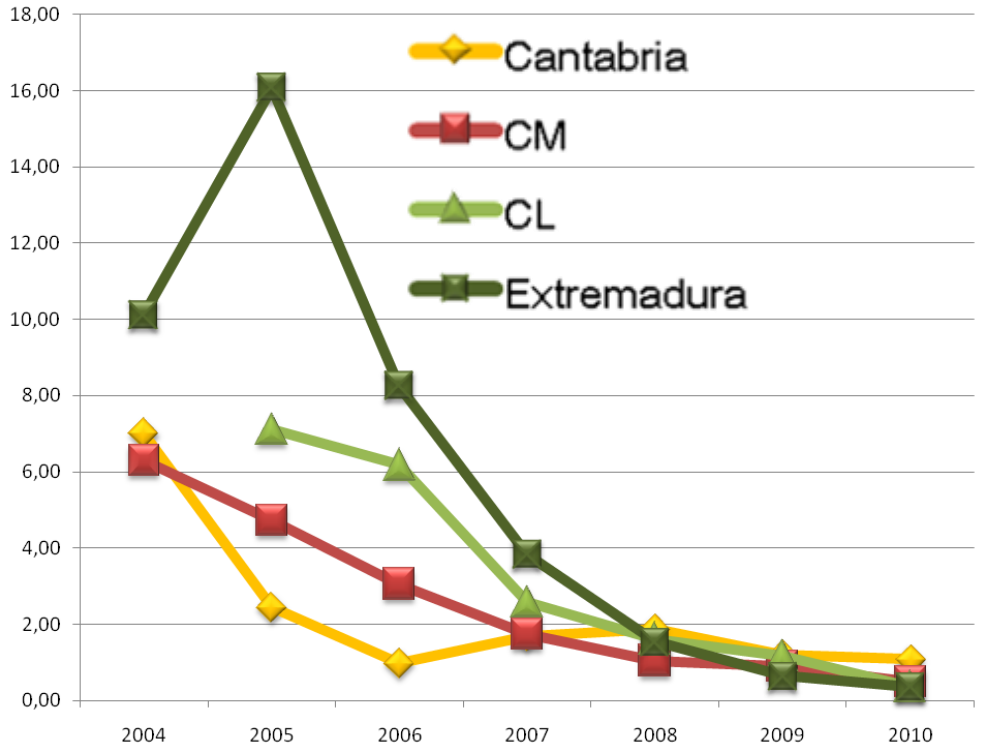
Cristina Sanz[a], José Luis Sáez[b], Julio Álvarez[c,d,*], María Cortés[e], Gema Pereira[e], Aurelia Reyes[a], Félix Rubio[a], Javier Martín[a], Nerea García[c], Lucas Domínguez[c,f], María Hermoso-de-Mendoza[e], Iavier Hermoso-de-Mendoza[e]

Vaccination vs Stamping Out: Common and Specific Measures in Sias

Main *Common Measures* of the Spanish BB Erad. Programme (*)	**Vaccination Strategy**	**Stamping Out Strategy**
Herd registration and animal identification	YES	YES
Periodical testing (serology) and culling of positive reactors	YES	YES (positive and in-contact animals)
Movement Restrictions in case of suspicious or confirmed breakdowns	YES	YES
Compulsory reporting of abortions and Laboratory investigation	YES	YES
Epidemiology Investigation (trace-back and trace-forward of breakdowns)	YES	YES
Schedule of Sanitary Qualification of non-infected herds	YES	YES
Specific Measures **(*)**	**Vaccination Strategy**	**Stamping Out Strategy**
Vaccination schedule (B-19/RB-51)	YES	**NO**
Increase of routine testing (serology)	YES	YES
Segregation and rapid compulsory culling of positve reactors	YES	---
Total depopulation of herd	**NO**	YES
Desinfection under official supervision and quarantine of facilities and pastures (90 days)	---	YES

Results: HP evolution

- Overall decrease in all SIAs: differences in mean annual decrease rates



SIA	Adjusted annual decrease rate	5%	95%
Cantabria	20.39	3.57	34.27
CM	35.24	32.5	37.86
CL	44.28	36.04	51.46
Extremadura	47.45	38	55.47

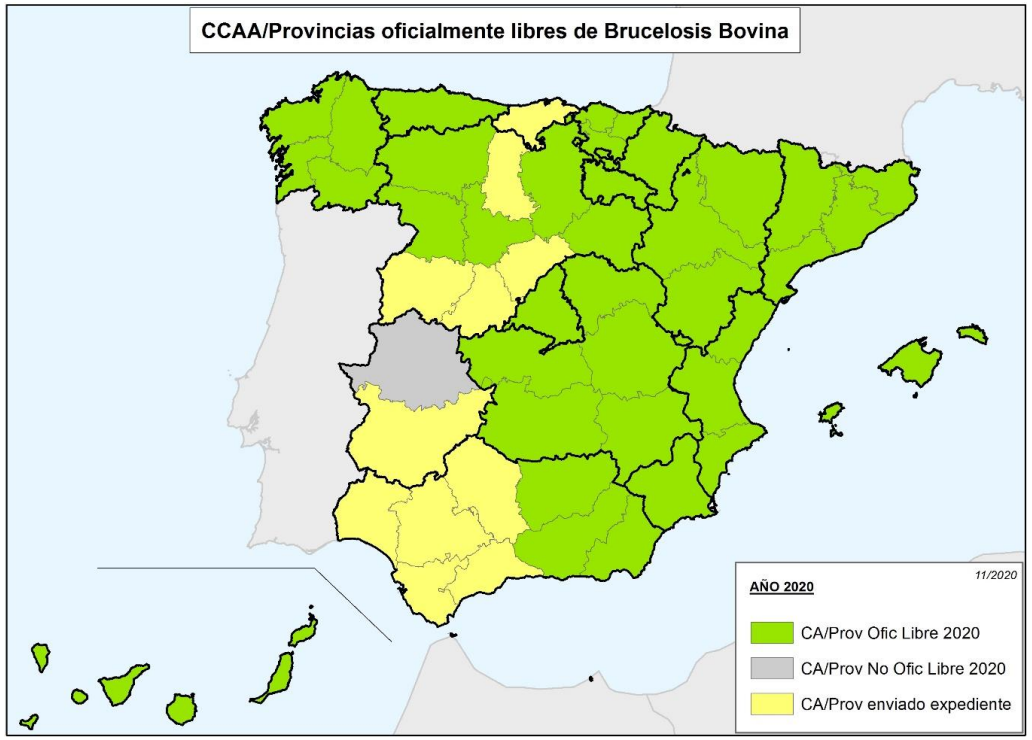
Veterinary Record (2014) doi: 10.1136/vr.101979

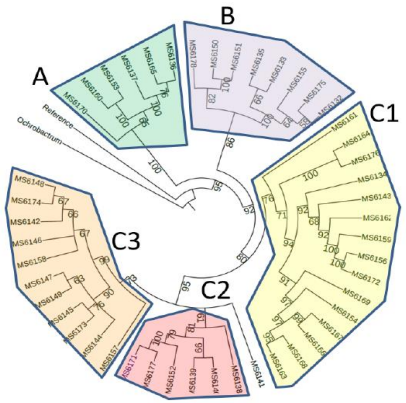
Comparison of depopulation and S19-RB51 vaccination strategies for control of bovine brucellosis in high prevalence areas

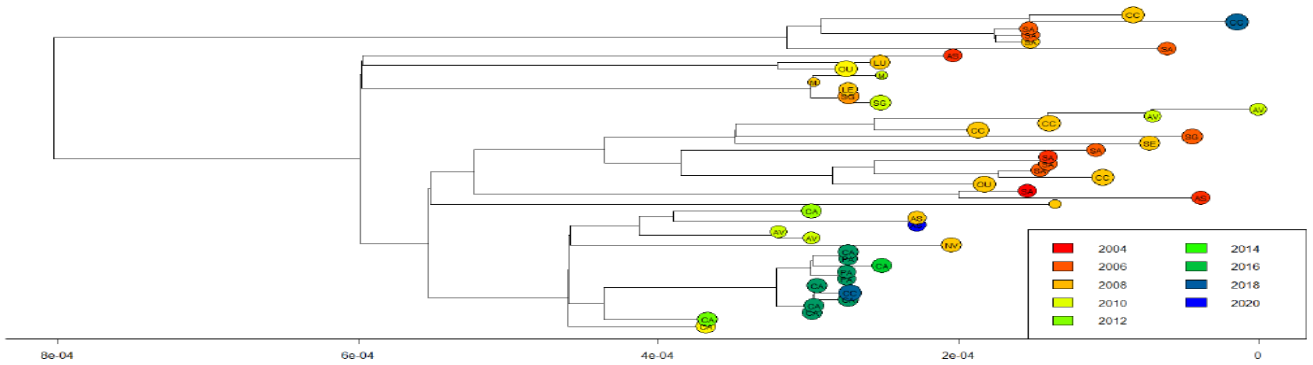
J. L. Saez, C. Sanz, M. Durán, P. García, F. Fernandez, O. Minguez, L. Carbajo, F. Mardones, A. Perez, S. Gonzalez, L. Dominguez, J. Alvarez

2 infected herds by *B. suis biovar 2 (León and Ávila)*

1 infected herd by *B. abortus in Asturias (OBF región, latent animal from 2009)*







GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACIÓN

SPAIN: STRATEGY OF FIGHTING AGAINST BOC (PHASES)

1976

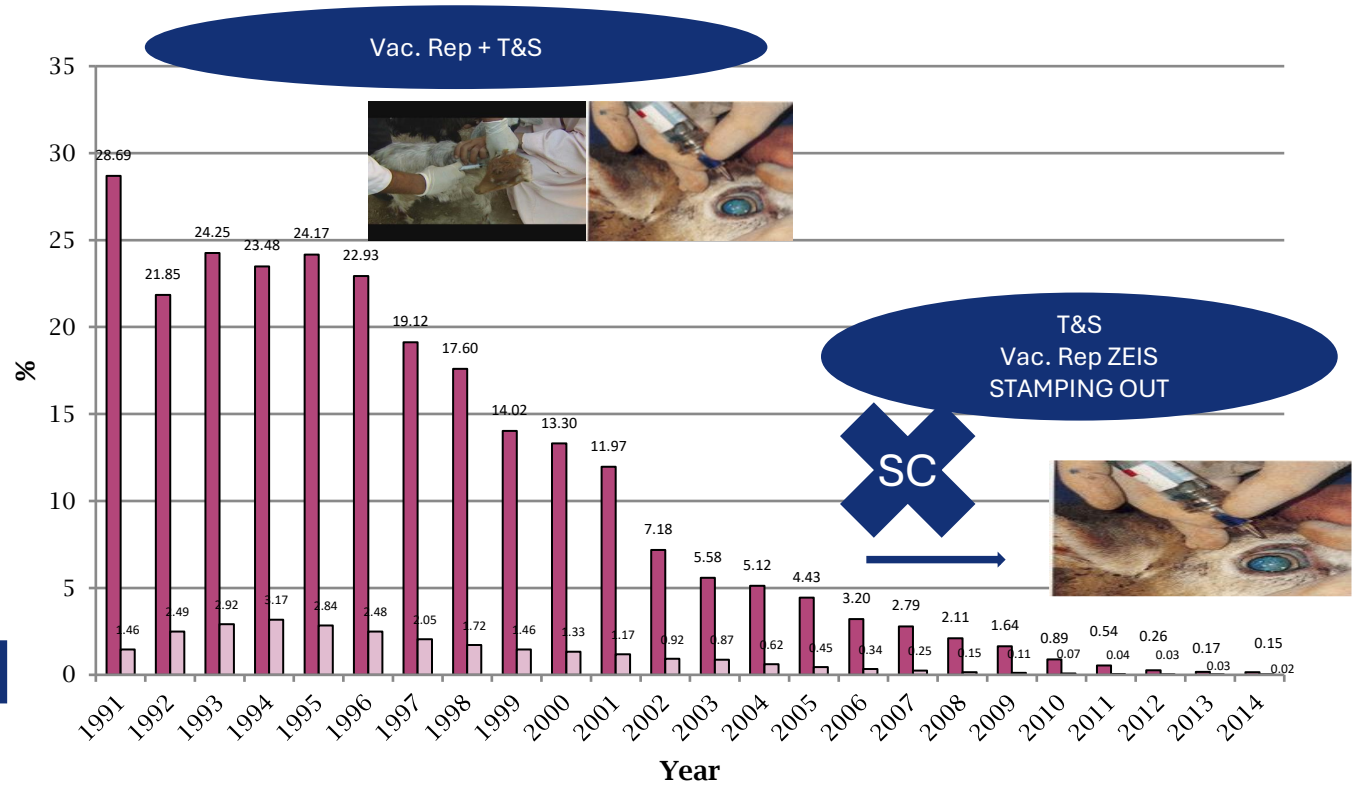
Rev 1 rep?

80s

Rev1 mas/D R

1990-91

Serology surveys



2012

REG OBmF (8)

2015

12 REG P=0

2017

P<0.1%

2021

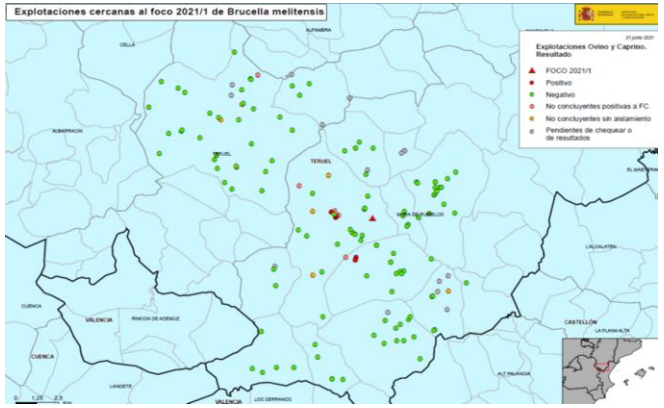
SPAIN OBmF !!!!

Active Surveillance programme 2021:

May 2021: confirmed *B. melitensis biovar 1* in the region of Aragón (Bm oficially Free since 2018, last cases in 2011(biotype 1).

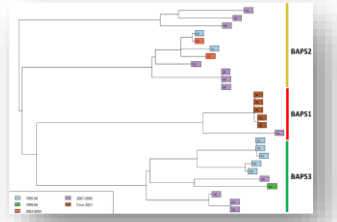
Autochtone breed (Rasa aragonesa).

In April 2021: Spain Bm Oficially Free (whole country), but……



Testing (and retesting) all herds of neighbouring and 15km radius (46.000 animals). 6 confirmed (secondary cases) depopulated.

WGS and comparison with former isolates.



Most probable cause: reactivation of a latent animal from the infection of 2011.

Meetings and awareness campaigns (notification of abortions).

Conclusions

- VERY GOOD EVOLUTION IN ALL REGIONS AFTER SIAs DECLARATION

- STAMPING OUT OF ALL CONFIRMED HERDS IN FINAL STAGES.

- LAST PHASES ALWAYS DIFFICULT.

  Rejection of FARMERS to stamping out in herds with very few infected animals.
  Reinforcing the notification of suspect cases of abortions (false sense of security.

- TREAT CAREFULLY LAST OUTBREAKS (latent carriers, wildlife if *B. suis* and wild boar).

- OFFSPRING OF INFECTED FEMALES SHALL BE TRACED AND SLAUGHTERED (in Spain compulsory sinc 2010 in bovines and since 2012 in small ruminants)

- Surveillance and monitoring on wildlife (*B. suis biovar 2* mainly in wild boar, sporadically spill-over to cervids and to domestic animals) **and passive surveillance (abortions).**

Thank you