

PRRS in Spain

Albert Finestra Uriol



PRRS IN SPAIN: ROSALIA, a practitioner point of view

➤ Who I am?

➤ Origin of the strain ?

➤ Current situation

➤ Impact:

- ✓ Health
- ✓ Moral (farmers, vets)
- ✓ Economic

➤ How do you diagnose it and how do you manage it ?



Curriculum vitae

- DVM UAB (1987-1992)
- Oct 1992 worked for Leridana de Piensos (60000 sows)
- MSc in UAB (1993-1995)
- Jan 1996 - Vall Companys (>170,000 sows)
 - 1996-1999: Field vet of sow farms unit .
 - 1999-2001: Chief of sow farms unit.
 - 2001-2003: Commercial director of Mevet
- In 2003 founded my own consultant company: Finestra Veterinarian Advisers



Finestra Veterinarians Advisers S.L.

- 3 vets and 1 agronomist
- Specialists in pig production and nutrition.
- Main activities:
 - Advising farmers about production efficiency.
 - Advising big groups as a second opinion.
 - Advising pharmaceutical companies.
 - Advising nutrition companies.
 - Advising Government about disease eradication programs.



Advising small customers

- Small companies without own vets
- Producing its own feed.
- Company size: 400-3000 sows.
- Visit every 3 weeks or emergency visits.
- Relationships with authorities (Official vet of the farm)
- Advising about management, health and efficiency.



Advising big groups as a 2nd opinion

- Under company request
- Company size: 10.000-170.000 sows
- Consulting doubts about:
 - Genetics.
 - Technical Support to vets of the farms of the company.
 - Training of farmers



Advising of the government

- External field advising veterinary for the ADV National eradication program in Spain and control of swine diseases.
- As a member of National Swine Association, participating in different consulting panels of Swine industry policies.



Introduction:

- Field vision based:
 - In my experience, 1992-?
 - In science, CRESA and University of Minnesota
 - In the experiences shared with veterinarians from all over the world.
- Aujeszky eradication in Spain and two outbreaks of CSF
- My idea is to share doubts and possible solutions.



Introduction

High genetic variability continuously expanding

Mutation

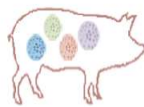
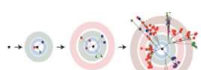
RNA-polimerasa (RNA-pol) RNA depending

- Mistake every 10^3 - 10^4 nucleotides
- No ability to correct mistakes

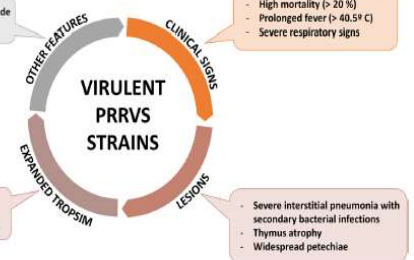
Recombination

> 2 different variants must be presents in the same pig

Replication → ↑ Mutations → ↑ Diversity



Hepzibar Cliverd, Jornadas de Porcino UAB, Junio 2022



I. Ruedas-Torres et al. Veterinary Microbiology 260 (2021)

History of atypical strains of PRRS



I. Ruedas-Torres et al. Veterinary Microbiology 260 (2021)

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➤ How do you diagnose it and how do you manage it ?

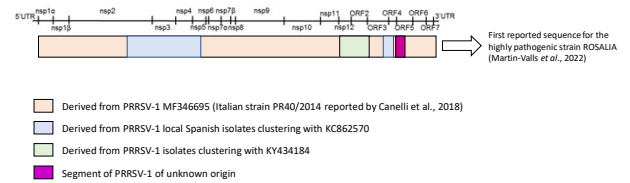


Origin of Rosalia

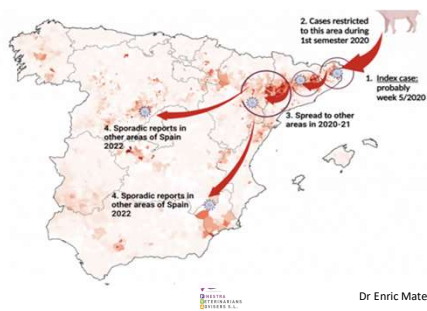
- Is a combination of different strains .
- Most of its genome derives from the Italian variant PR40 described in 2014.
- Surprisingly, a small fraction of a Korean variant was also found.
- PR40 is a highly pathogenic strain and produces clinical signs similar those Rosalia.
- Up to four different variants of the Rosalia strain are known in Spain.



THE VIRUS



Dissemination of Rosalia

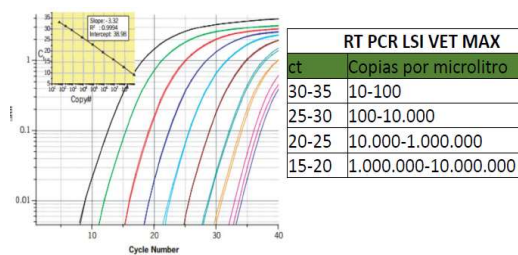


Factors in the dissemination of highly virulent strains.

1. Very high viral load.
2. Longer excretion time.
3. National movements of piglets.
4. Import of live pigs.

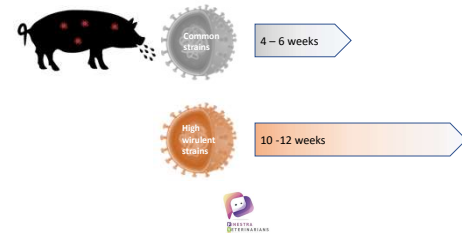


PCR in blood



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Factors in the dissemination of highly virulent strains

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Conditioning factors in the dissemination of highly virulent strains

4. Import of live pigs

Origen	Partidas analizadas	% partidas víricas
Bélgica	11	72,7%
Dinamarca	47	53,2%
Holanda	76	77,6%

92 PRRS positives batches from 134
70% of live pigs are positives

Cepas	Número de secuencias ORF5
A	1
B	7
C	1
D	3
E	2
F	3
G	1
H	1
I	1
S10	1

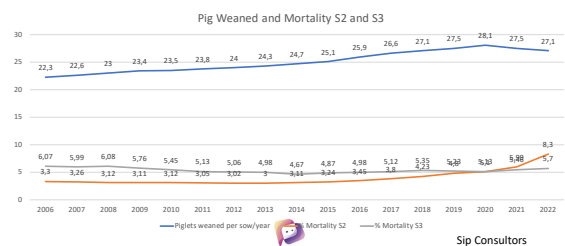
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Health impact



Health effects in side one

- Increasing abortions: 2,5 % before Rosalia 4,2 % after.
- Increasing mortality in farrowing crates: 13,5 % vs 15,5 %
- Increasing stillborn: 1,3 vs 1,6
- Increasing mummies: 0,4 vs 0,8
- On average, we need 20 weeks recover to pre outbreak production data.



Moral

- The outcome for farmers is related to their income. There are farms that earn more money than others and Rosalia causes and increase in those differences.
- In other way as the pig sector is still Spain is too strong and it has grow in these period.
- For vets it's a new opportunity to learn and for our clients to trust us. We have learned a lot about how to manage it.





Economic impact of health problems

Impact degree	Feed prize	
	Low: 275 €/tn	High: 450 €/tn
Low: 1 pigs	2,3 €	2,7 €
Medium: 1,8 pigs	4,0 €	4,8 €
High: 2,5 pigs	5,7€	6,8 €



Sip Consultants

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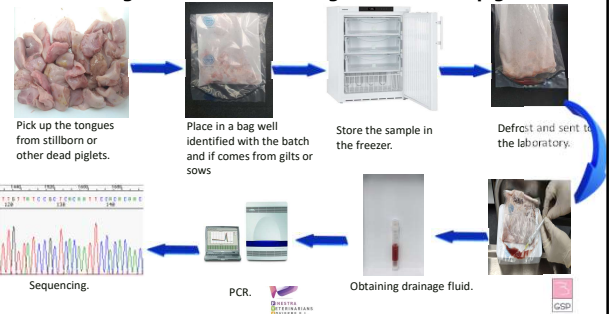
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Diagram of work with tongues from dead piglets

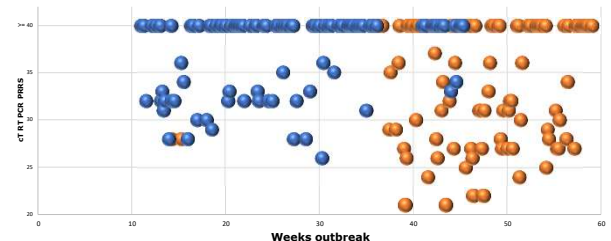


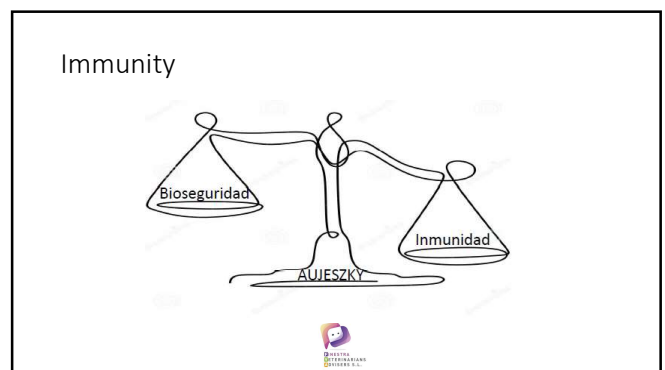
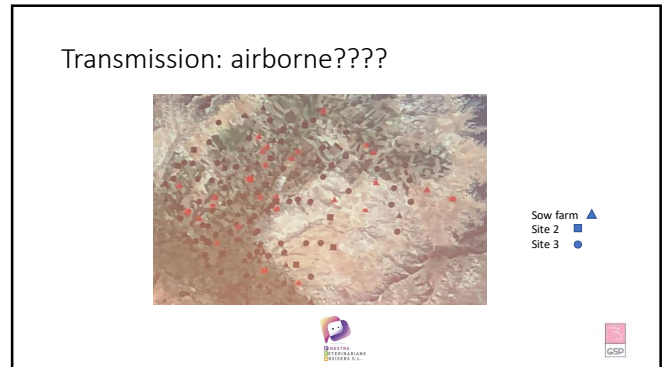
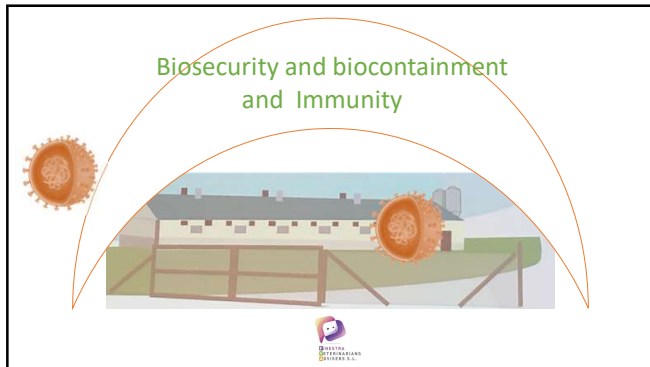
Diagnoses

- Every batch we take tongues and perform PCR against PRRS
- Organize in pools, for example: gilts vs sows
- The cost for every PCR is 25 €
- If the PCR is positive, then we order sequencing ORF5
- The cost is 200 € per sequence.

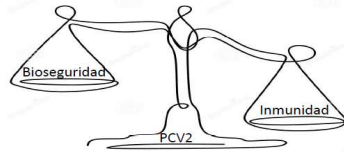


PRRSV in processing fluids vs tongues from after an outbreak in sow farm (Farm 1)

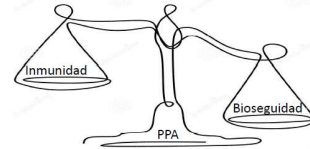




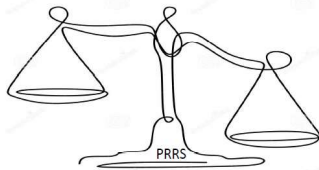
Immunity



Immunity



Immunity



Control the outbreak

- Try to stop recirculation of virus as soon as possible
- Stop vaccination during the outbreak,
- Stop introducing gilts during the outbreak.
- Introduce Mc Rebel techniques as strict as possible.
- Using diagnoses try to know when the farm stop shedding.



OPTIONS: 3/2w BM or 2,5 BM

3/2 BM or 2,5 BM

2 BATCHES
FARROWING

1 BATCH NURSERY

2 BATCH NURSERY

3 BATCH NURSERY

Small piglets

Optimal size!
Usual nursery
space**Benefits:** Solves 5w BM challenges**Challenges:** Lower "health power" than 5w BM

HIGH "SANITARY POWER" when nursery facilities are segregated



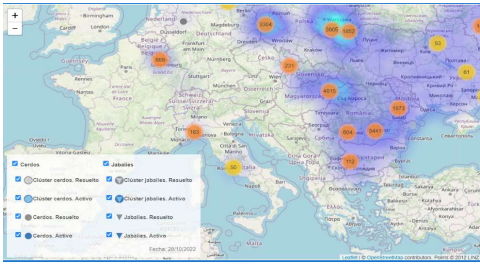
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Field conclusions

- The incidence of highly virulent strains of PRRS has increased in recent years.
- The damage of these strains are greater.
- We have determinate different risk factors.
- Even so, the strain is controllable with strict efforts of high biosecurity.



Our concern



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