



# PRRS - Clinical Signs and Control

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  - Transmission
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# PRRS



- PRRS virus is widespread
- Targets defence cells in the lungs
- Affects all types of herds.
- PRRS is considered to be the **most economically important** viral disease world wide



**PRRS**  
has been  
endemic for  
more than  
**20 YEARS**



# Acute PRRS - Clinical Signs in Pig Herd:



# ACUTE PRRS Clinical Signs and Health

- Pro
- Re
- Su
- Co
- Re
- Inc
- +/





# CHRONIC PRRS – Clinical Signs in Pig Herd:



- P
- In
- In
- In
- L





Herd:  
Quality piglets

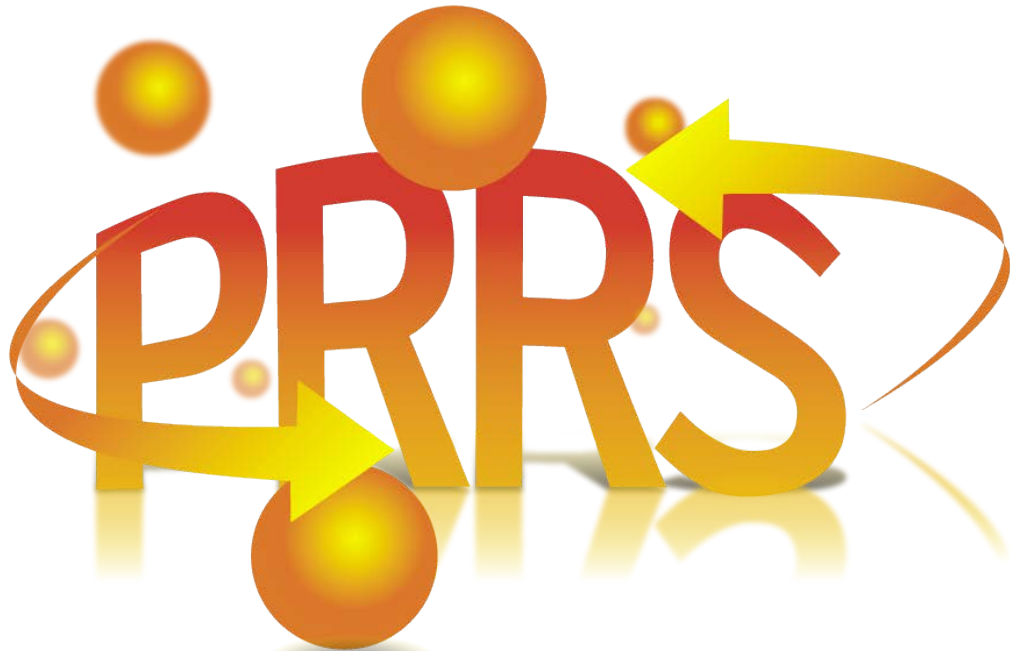


(ar)





# PRRS virus enhances...



- *M. hyopneumoniae*
- APP
- PCV2
- SIV
- *S. suis*,
- *H. parasuis*

# How Does PRRS virus get inside the pig?



Direct contact



Semen



Aerosols



Trans placental > d.70



Needles





# Different exposures = different risks

ID<sub>50</sub>, dose that infects 50 % of pigs

Parenteral, bre

Aerosols

Intranasal

Artificial insemination

Oral

3000

15.000

10<sup>4,5</sup>

10<sup>5,2</sup>

**Needles are a very important route of transmission!!**

(isolate)



# Risk factors associated with aerosol transmission:



- Neighbour's pigs are actively shedding virus
- Wind moving from neighbour's farm to yours
- Winds of low velocity with intermittent gusts
- Cool ambient temperature: -2.6 to 4.80 C
- High relative humidity: 77 to 82%
- Low sunlight levels

# Ideal Aerosol transmission conditions:



**High Risk:**  
cold, damp, dark

**Low Risk:**  
warm, dry, bright



*WHICH DO WE EXPERIENCE FOR >6 MONTHS OF THE YEAR?*

# Why is PRRS difficult to control?



- Always changing, different strains

- Evade **Naïve sub-populations**

- Ine
- Slo

- Attacks immune cells directly
- Pigs can shed for a long time
- Survives happily in Irish/UK conditions
- We keep adding fuel to the fire



# Why worry about Naïve sub-populations?:



- Large herds - higher risk of subpopulations
- Persistence
- Naïve sub-populations  
– D
- Cont
- Inadequate gilt development area
- Whole herd vaccination not practiced...

**Persistence OF THE Virus**

# REPLACEMENT GILTS:



what they have not bee





**BREEDING HERD  
STABILITY???**



# A PRRS STABLE BREEDING HERD?



- **Farrowing virus negative piglets**

**Weaned pigs have no detectable virus**

- **Weaning virus negative piglets**

# A PRRS UNSTABLE BREEDING HERD?



- Farrowing virus negative or positive pigs

**Weaned pigs have detectable virus**

- Weaning virus positive piglets

# Boehringer Ingelheim's unique approach to PRRS Control:



- Based on 20 years fighting with PRRS virus
- Limited success by reliance only on vaccines
- Whole herd approach
- Epidemiological approach
- Trying to be smarter than the virus....





# A full supportive programme



A systematic Platform for maximising control of PRRSv



## Step 1: Identify desired goals:

I want to control the PRRS virus

I want to minimise the risk of transmission from sows to piglets

I want to eliminate the virus

I want to reduce the economic impact of PRRS in my farm



## Step 2: Determine current PRRS status



# Shedding

Virus

Bloods from RTW  
piglets or nursery pigs

# Exposure

Antibodies

Bloods from grower herd



# Step 3: Understand current constraints



**COMMON CONSTRAINTS**

CO-MINGLING OF PIGS FROM MULTIPLE SOWS  
PIG FLOW MANAGEMENT PROCESS  
BIOSECURITY  
GILT ACCLIMATION PROCESS  
PRESENCE OF OTHER DISEASES  
FARM LOCATION  
PRESENCE OF OTHER DISEASES  
GILT ACCLIMATION PROCESS  
RISK OF OUTSIDE INFECTION  
PRODUCTION SYSTEM  
CO-MINGLING OF PIGS FROM MULTIPLE SOWS  
BIOSECURITY

# Step 4: Develop solution options



# Step 5: Implement and monitor the preferred solutions:



IMPLEMENTATION OF THE PRRS PROGRAMME



THE SUCCES OF THE PRRS PROGRAMME.



## 10 management rules – developed to optimise the success of whole herd PRRS control



The following rules – based on pig flow management and handling techniques – can complement and reinforce any whole herd PRRS control programme.



**Rule 1** When cross-fostering, move piglets only when necessary

**Rule 2** No cross-fostering later than 48 hours after birth

**Rule 3** Keep piglets in the pen and handle only when strictly necessary

**Rule 4** Change needles and disinfect equipment between litters

**Rule 5** Do not move sick piglets to other litters

**Rule 6** Wean all piglets from each week's batch at the same time and never hold weaned piglets back in the farrowing unit

**Rule 7** Strict batch production (all in/ all out)

**Rule 8** No contact between different age groups

**Rule 9** No contact between weaned piglets up to 6 months of age and adult pigs

**Rule 10** Always acclimatise home-produced gilts and incoming gilts (after quarantine). Include PRRSv vaccination 2-5 weeks prior to service

Rule

1

**When cross-fostering,  
move piglets only when  
really necessary**





Rule

2

**No cross-fostering  
later than 48 hours  
after birth**





Rule

3

**Keep piglets in their own pen and avoid handling**



Rule

4

**Change needles  
between litters and  
inject poor pigs last**





Rule

5

**Don't move sick piglets**





Rule

6

**NO weaned piglets in  
the farrowing room**



Rule

7

**Strict batch  
production  
(pigs, utensils,  
equipment)**





Rule

8

**No contact  
between different  
age groups of pigs  
(direct or indirect)**





Rule

9

**No contact between piglets up to 6 months of age and sows**



Rule

10

**Always introduce  
incoming and  
home-produced  
gilts via quarantine**







# Why vaccinate piglets?

## DIRECT BENEFITS:

REDUCE % VIRAEMIC PIGS  
AND AMOUNT OF VIRUS

REDUCE RESPIRATORY CLINICAL SIGNS

REDUCE THE NEGATIVE IMPACT OF  
PRRS VIRUS ON ADWG/MORTALITY

REDUCE IMPACT OF SECONDARY  
RESPIRATORY INFECTIONS







## INDIRECT BENEFITS:

Nursery/grower/finisher pigs  
number >12:1 adults on site

Younger pigs more susceptible to PRRS  
virus infection than adults

Vaccination reduces the %  
viraemic, viral load and viral  
shedding from these pigs



Why  
vaccinate?  
piglets ●

**Vaccination of piglets protects the whole herd**

# Summary:



- Vaccination
- **If you change nothing then nothing will change...**
- PRRS is more complex than you thought
- Focus on internal and external biosecurity



Thanks for your attention