

Lifting the cloud of **PRRS** virus  
with whole herd vaccination

**Porcilis<sup>®</sup> PRRS**  
*Helps pigs protect themselves*



# An overview of PRRS protection

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- Porcine Reproductive and Respiratory Syndrome (PRRS) is a widespread problem affecting both breeding and finishing pig herds throughout the UK
- PRRS virus in breeding herds can have significant effects, causing irregular returns to service, increased abortions, premature farrowings and weak low viability pigs
- PRRS virus in growing and finishing herds weakens the pig's natural immunity making it more vulnerable to secondary infections causing increased mortality, reduced growth rate and profitability
- Control of PRRS in the whole herd is now possible through vaccination with Porcilis® PRRS - the only vaccine licensed for sows and growing pigs
- Porcilis® PRRS is a low cost way to increase the immune status, stabilising PRRS positive breeding herds, so improving reproductive efficiency
- Porcilis® PRRS use in growing and finishing herds can increase growth rate, improve FCR and reduce pig variability, giving improved profitability
- The PRRS status of your breeding or finishing herd can be assessed using the free PRRS-VetCheck service  
*see page11 for details*
- Porcilis® PRRS vaccination has been shown to be cost effective in controlling PRRS infection - *for details of a suitable vaccination program for your herd, see page11*

# The threat of PRRS virus hangs over the whole herd

PRRS virus first affected pig herds in the UK in 1991. Its ability to weaken and suppress the pigs' immune system hangs over the whole herd - exposing them to the effect of other bacterial and viral pathogens resulting in depressed performance of both breeding and finishing pigs.

Many pig producers are familiar with the reduced performance that results from PRRS infection and struggle to achieve the output of the pre-PRRS era. The long term effects of endemic PRRS infection are variable, often cyclical, ongoing and costly, especially when compounded with the effects of other viruses.

Infection with PRRS virus is widespread in breeding herds and growing/finishing units. Nationally, endemic infection ranges between 20% and 90% of herds, depending on location. Older herds and those in pig dense areas are most commonly affected, with up to 98% of pigs infected in PRRS positive herds<sup>1</sup>.

A recent PMWS survey conducted by Warwick University showed that PRRS positive herds had nearly twice the mortality rate as PRRS negative herds: PRRS vaccination resulted in reduced mortality<sup>2,3</sup>.

# The cloud of infection over breeding herds...

PRRS virus can have dramatic consequences when a new outbreak occurs in a naïve breeding herd. Incidences of PRRS infection in such herds involve premature farrowings, weak, low viability piglets, high pre-weaning mortality, increased return rates to service and reduced farrowing rates. Culminating in depressed performance and low profitability.

Similarly, in endemically infected herds, batches of sows kept in discrete groups such as yards or paddocks can be PRRS antibody negative. When mixed with sows shedding PRRS virus, these naïve sows often become clinically affected. In herds with high PRRS titres clinical signs are often not seen, but poorer reproductive performance is recorded<sup>4</sup>.

## SIGNS AND EFFECTS OF PRRS VIRUS INFECTION IN BREEDING HERDS

STAGE OF PRODUCTION	PROBLEMS PRESENTED	PRODUCTION DOWNSIDE
Maiden gilt integration	Coughing, poor-doing, difficult batch management	Lower fertility, higher culling rates, reduced output
Service area	Oestrus delayed post weaning	Increased time checking sows
Pregnancy ( <i>early-mid</i> )	Increased irregular returns Increased abortion rate	Lower farrowing rate
Pregnancy ( <i>late</i> )	Premature farrowings	Weak, low viability pigs
Parturition	Increased stillbirths and mummified pigs / litter Weak, low viability pigs Poor quality colostrum	Reduced live births / litter  Increased pre-weaning mortality, fewer pigs weaned / litter
Lactation	Inappetance, elevated body temperature, lethargy	Poor milk yield and weaning weights
Overall herd performance	Depressed performance	Low profitability



# ...and over finishing herds too

Whatever the immune status of the sow, most non-vaccinated growers lose their immunity by 5-7 weeks of age<sup>1</sup>. Depending on pig flow and the housing system used, if PRRS virus is present on a unit, infection and seroconversion usually takes place between 7-13 weeks of age; by 90 kg more than 95% of pigs are PRRS positive.

The PRRS virus attacks and kills the alveolar macrophages in the lungs and around half of all the pig's macrophages will be quickly eliminated<sup>5</sup>. Although these later regenerate, the immune system is already compromised

and the pig's natural defence mechanism against bacterial and viral pathogens is severely compromised.

This predisposes or potentiates multiple secondary infections, including Porcine Circovirus type 2, and the many agents involved in Porcine Respiratory Disease Complex, including Swine Influenza, *Mycoplasma hyopneumoniae*, *Actinobacillus pleuropneumoniae*, *Haemophilus parasuis*, *Streptococcus suis* and *Pasteurella multocida*.<sup>6,7,8</sup>

## SIGNS AND EFFECTS OF PRRS VIRUS INFECTION IN GROWER / FINISHING HERDS

(DEPENDENT UPON WHAT OTHER PATHOGENS ARE PRESENT)

PROBLEMS PRESENTED	PRODUCTION DOWNSIDE
Increased coughing and sneezing	Inappetance and reduced feed intake
Poor doing pigs - loss of condition	Reduced growth rate and poorer FCR
Compromised breathing	Ill-thrift and lethargy
Consolidated or abscessed lungs	Increased mortality, morbidity and condemnation
Reduced output, increased pig variability and medication costs	Increased cost of production and lower profitability



# How PRRS circulates within a PRRS positive herd

Maiden gilts entering a PRRS positive herd are often PRRS negative, but during integration they usually become infected with PRRS virus. In turn, their virus excretion causes any naïve sows in close proximity to become infected and the viral cycle and reproductive problems continue unchecked.

Typically a small % of sows are viraemic at anyone time<sup>9</sup>. They infect other naïve sows and also produce viraemic piglets due to transplacental virus transmission.

Viraemic pigs at weaning have the potential to infect other weaned pigs when maternally derived immunity declines.

More pigs then become viraemic in the 2nd stage housing; it is here that clinical signs of infection due to the prevalent secondary bacterial and viral pathogens are seen.

Without Porcilis PRRS vaccination and/or good age sequenced all in—all out housing, this cycle of disease is very difficult to break.



**Breeding herd** has a low % of PRRS viraemic sows producing viraemic pigs



**1st stage weaners** are PRRS naïve and become infected by viraemic pigs



**2nd stage pigs** are viraemic and infect 1st stage weaners and finishers by aerial pollution and direct contact



**In PRRS positive herds** more than 95% of finishing pigs are infected with PRRS virus

# How Porcilis® PRRS vaccination reduces PRRS virus circulation

Fortunately, it is now possible to take control of PRRS in the whole herd through vaccination. Using Porcilis PRRS, the only vaccine licensed for sows and growing pigs, there is now a great opportunity to stabilise PRRS virus circulation and so significantly improve whole herd performance.

Vaccinating all pigs (gilts, sows and growing pigs) within a herd controls PRRS infection and boosts overall performance. By reducing the number of viraemic pigs weaned from the

breeding herd, together with immune growing and finishing pigs, the amount of virus circulating in the herd is consequently reduced.

Ongoing sow vaccination with Porcilis PRRS, combined with good hygiene, age segregated pig flow and all in–all out housing regimes, can hasten and maintain the removal of PRRS virus from the whole herd – a feature already demonstrated in those herds that have undertaken partial depopulation programs<sup>10</sup>.

REDUCED  
PRRS VIRUS



**Breeding herd is**  
Porcilis PRRS vaccinated  
No PRRS viraemic sows



**1st stage weaners are**  
PRRS vaccinated  
and protected



**2nd stage pigs are also**  
now protected having been  
vaccinated at weaning



**Finishers are protected**  
against PRRS and show  
improved performance

*“We’ve used Porcilis PRRS for over two years and seen a significant increase in growth rates. Moreover, even with 55,000 pigs/per year to vaccinate, our staff feel the improvements in pig health far outweigh the hassle of vaccinating.”*

Bill Allen, DC & RJ Allen & Partners, Oxfordshire

# Porcilis<sup>®</sup> PRRS

## lifts the cloud over the sow herd

Live vaccines - such as Porcilis PRRS, stimulate cell mediated immunity which is necessary to control PRRS virus<sup>9</sup>. Using Porcilis PRRS in breeding herds is a low cost way to increase

the immune status of 'at risk' PRRS naïve sows and incoming gilts stabilises PRRS positive herds by creating a more uniform herd immune status<sup>11</sup>.

### AREAS OF USE FOR PORCILIS PRRS VACCINATION IN BREEDING HERDS

<b>STABILISATION</b>	To reduce clinical signs of the disease by preventing the transmission of PRRS virus from sow to piglets, and from sow to sow
<b>INSURANCE</b>	To safeguard the health status of PRRS negative herds in a PRRS positive region ( <i>important in newly established or re-populated herds</i> )
<b>CONTAINMENT</b>	To minimise the spread and effects of PRRS virus when a herd initially becomes PRRS infected
<b>ELIMINATION</b>	To produce PRRS free growing pigs following a partial depopulation programme, or intensive Porcilis PRRS vaccination

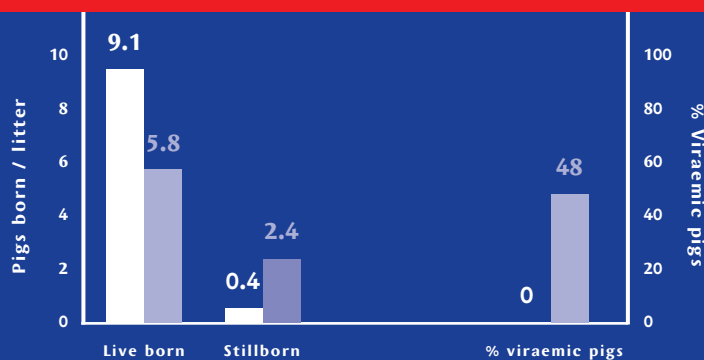


# Porcilis<sup>®</sup> PRRS protects sows, gilts and their pigs

Trials using Porcilis PRRS demonstrated reduced transplacental virus transmission and increased numbers of pigs born alive per litter. Two groups of PRRS negative gilts were selected. One group was vaccinated with Porcilis PRRS 2 weeks prior to mating and the other group was unvaccinated as a control<sup>12</sup>.

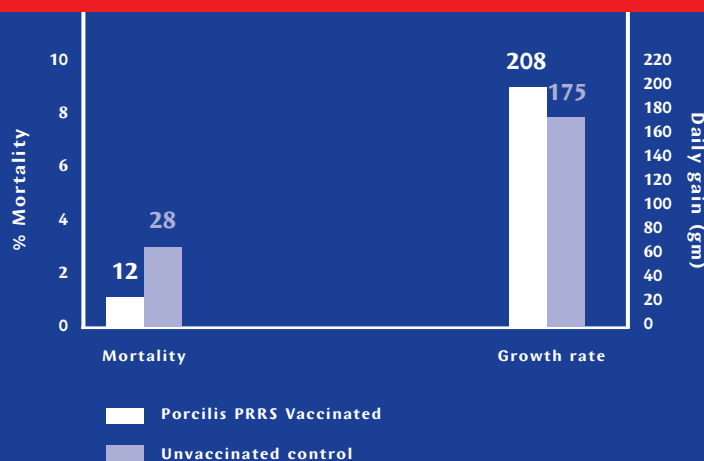
Both groups of gilts were then challenged with PRRS virus at 88 days of pregnancy. Reproductive performance was monitored together with the viraemic status and growth rates of the piglets. Porcilis PRRS produced significant benefits in the vaccinated group, as the graphs opposite show.

## THE EFFECTS OF PORCILIS PRRS VACCINATION ON LITTER SIZE & PIGLET VIRAEMIA IN PRRS CHALLENGED GILTS



- **More live born and fewer stillborn pigs from vaccinated gilts**
- **No viraemic pigs produced - whereas in unvaccinated gilts 48% of the piglets were viraemic**

## THE EFFECT OF PORCILIS PRRS VACCINATION ON MORTALITY & GROWTH RATE TO 14 DAYS OF AGE IN THE PROGENY OF PRRS CHALLENGED GILTS



PRRS virus could not be isolated in any of the pigs from vaccinated gilts, whereas virus could be isolated in 48% of the pigs from unvaccinated gilts. This shows that Porcilis PRRS vaccination prevents transplacental virus transmission and the production of viraemic pigs - the start of whole herd PRRS control.

- **Vaccinated gilts progeny had lower mortality and better growth rates than unvaccinated gilts.**

*“An effective vaccination regime using Porcilis PRRS can minimise the effects of PRRS in the breeding herd and can prevent transmission of viraemic pigs into the rearing herd.”*

# Porcilis<sup>®</sup> PRRS

## gives growing units a brighter future

The effects of the PRRS virus can significantly depress pig performance and profitability in growing and finishing units. For pigs from weaning to 95 kg, it is calculated that:

- **2% reduction in mortality is worth £1/pig**
- **0.1 improvement in FCR is worth £1.15/pig**
- **50g/day increase in growth rate is worth £2.90/pig**

Detailed trials have shown that a 5:1 payback can result from the use of Porcilis PRRS. This is confirmed by trial results involving almost 20,000 growing pigs<sup>13</sup>. Significant improvements were recorded in respect of daily gain, feed conversion rate, mortality and profitability of the vaccinated pigs.

WOULD AN INVESTMENT OF £1/PIG VACCINATED TO GIVE A RETURN OF UP TO £9/PIG BE OF INTEREST TO YOU?

	VACCINATED PIGS	CONTROL PIGS	BENEFIT OF VACCINATION
Number of pigs	9940	9962	
Start weight	6.5kg	6.5kg	–
Daily gain	645g*	602g	–
F.C.R.	2.43*	2.66	£2.65
Mortality (%)	3.4*	7.5	£2.05
Age at sale	162 days	162 days	–
Weight at sale	94.9kg	89.0kg	£4.43
Total benefit	–	–	£9.13g
Vaccination cost	£1	–	(£1)
Extra profit/pig	–	–	£8.13

\* statistically significant (p<0.05)

*“Since starting to use the vaccine, we’ve seen real benefits in terms of respiratory disease control. Pigs now grow at around 800g per day from 30kg and with greater uniformity. There’s no doubt in my mind that Porcilis PRRS has significantly improved our performance.”* Steve Hart, Norfolk Free Range Pigs



# Using Porcilis® PRRS in your herd

## FREE BLOOD TESTS

If breeding and finishing herd performance is sub-optimal and variable, and the PRRS status of the herd is not known, the presence of PRRS virus in your herd can be identified using the PRRS-VetCheck service. This free diagnostic blood test for growing pigs and sows is available to any farmer via their vet.

The results are available within 48 hours of a sample being received, and will give a clear

picture of the PRRS status of your herd and when infection is occurring. This will indicate if and when vaccination with Porcilis PRRS would be appropriate.

*For further details contact your vet, or call John Richardson on **01908 685390**, or Intervet Veterinary Support Group on **01908 685685**.*

## BASIC VACCINATION REGIME

Herds with specific health problems may require an individual vaccination program as advised by their vet. A basic vaccination program to ensure a uniform level of immunity would be as follows:

- **Vaccinate maiden gilts once, intramuscularly with 2 ml Porcilis PRRS within 1 week of introduction to the breeding herd and preferably 4 weeks prior to mating.**
- **Vaccinate sows intramuscularly with 2 ml Porcilis PRRS during week 2 of lactation and at each successive parity to maintain a homogenous immune status.**

- **Vaccinate healthy growing pigs intramuscularly with 2 ml Porcilis PRRS preferably at, or within +/- 1 week of weaning, or as advised by your vet; this will give immunity through to slaughter weight.**

Trials have shown Porcilis PRRS to be both safe and effective in breeding and grower-finishing herds. The vaccine can be used in PRRS positive and PRRS negative herds dependent on the vaccination objective. Sows may only be vaccinated during pregnancy if they are known to be PRRS positive as a result of previous PRRS vaccination or exposure to European strains of PRRS virus.



**ALWAYS  
CONSULT  
YOUR VET  
BEFORE  
STARTING ANY  
VACCINATION  
PROGRAM**

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Porcilis PRRS is a live vaccine containing at least 10<sup>4</sup> TCID<sub>50</sub> of attenuated PRRS virus strain DV per dose. For the active immunisation of healthy weaners and finishing pigs from 6 weeks of age onwards, using a single dose. Breeding pigs For gilts a (re)vaccination 2-4 weeks before mating is recommended. Gilts from PRRS negative herds and naive gilts should be vaccinated prior to pregnancy. To maintain a high and homogenous level of immunity, revaccination at regular intervals is recommended, either before each gestation or at random 4 monthly intervals. Pregnant sows should only be vaccinated after previous exposure to European PRRS. Contra-indications and warnings: see data sheet. Withdrawal period: 0 day. Further information is available on request. ©Registered trademark. Intervet UK Ltd, Walton Manor, Walton, Milton Keynes, MK7 7AJ. Porcilis PRRS can only be prescribed by your veterinary surgeon, whose advice should be sought. Legal category: **POM**

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