

NADIS disease bulletins are written specifically for farmers, to increase awareness of prevalent conditions and promote disease prevention and control, in order to benefit animal health and welfare. Farmers are advised to discuss their individual farm circumstances with their veterinary surgeon.

Porcine Parvovirus

Porcine Parvovirus (PPV) has been recognised as a cause of pig infertility and reproductive disease for more than 30 years. Prior to its identification, the disease syndrome it caused was referred to as SMEDI – stillbirth, mummification, embryonic death and infertility – and, until the mid 1980's, it was a common presentation on pig farms. The disease has been well controlled in the last 20 years, following introduction of effective vaccines. However, as a result of some research in the USA, Porcine Parvovirus has been implicated in PMWS and the whole issue of Porcine Parvovirus has re-emerged.

Clinical Presentation

In the vast majority of cases, Porcine Parvovirus is an explosive disease, either affecting the whole herd or persistently affecting naïve incoming gilts sequentially. In both cases, the range of signs are typical:-

- 1) Returns to service occur both at 3 weeks and at abnormal intervals.
- 2) Later piglets will be born dead and mummification rates increase, with variable sized mummies present in litters.
- 3) Some sows may fail to farrow – as the whole litter is mummified.
- 4) A drop in total litter size can occur after the mummification episode.

Porcine Parvovirus will typically produce litters containing large numbers of mummified pigs – litters containing the odd mummy are unlikely to be due to Porcine Parvovirus. Abortion is not a feature of Porcine Parvovirus disease.

An outbreak affecting the whole herd will tend to pass in 2-3 months, although the overall effect can be to lose 2-3 pigs weaned per sow per year on a herd basis. Where the problem is restricted to gilts, litters may be affected over a long period of time as naïve gilts enter the herd and are infected at some stage during pregnancy. The non-pregnant animal is unaffected by infection and will be left immune to disease for life.

There are vague and unsubstantiated reports that chronic low grade disease can occur in a breeding herd, limiting litter size, but this is by no means widespread.

The role of Porcine Parvovirus in PMWS needs consideration. Porcine Parvovirus was first implicated in this disease as a result of contamination of laboratory challenge samples of Porcine Circovirus in the USA. However, it is well established that maternal immunity derived from colostrum can persist for up to 7 months in the young pig; excess use of Porcine Parvovirus vaccine in both sows and young pigs has consistently failed to control PMWS and there is no logical explanation as to why Porcine Parvovirus – of which there is only one recognised strain – should have changed worldwide in the late 1990's. In practical terms, the role of Porcine Parvovirus in PMWS seems to be minor.

Control

The aim of a Porcine Parvovirus control programme is to ensure that breeding animals (gilts) are solidly immune to disease prior to breeding. This can be achieved in one of two ways:-

- 1) Natural challenge. Porcine Parvovirus is a resilient virus that will persist in the environment. It may be excreted in faeces of weaners at 8-12 weeks of age. Therefore, if the gilt is exposed to field challenge, particularly once maternal antibodies are declining, natural immunity will occur. This can be measured on an individual or group basis by routine serology.
- 2) If natural challenge is not achieved, or if it is desired that chances will not be taken, commercial vaccines can be applied.

The programme needed for vaccination will vary with the product used but a consistent feature of all available vaccines is that they induce persistent immunity and, at worst, only require annual boosters.

There is much evidence from the field that vaccinated animals are immune for life, either as a direct result of the vaccine or due to field virus top up. This can be verified serologically.

There has been a move in the last year or so to doubt the effectiveness of Porcine Parvovirus vaccines and increase frequency of vaccination. This is, so far, without any foundation or evidence of a positive response. With some small animal vaccines there has been suggestions that excessive vaccination can itself be harmful. This does not directly apply to Porcine Parvovirus vaccines but over-use is certainly of dubious economic value.

Porcine Parvovirus vaccines have shown their worth over 20 years. They are highly effective at controlling the specific disease caused by Porcine Parvovirus but are not "cure alls". Used correctly in a controlled manner, matched to the herd's requirement, they are highly cost effective. Misused, they are wasteful and, ultimately, their value will fall as they may then be perceived as ineffective.

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