A PRRS outbreak will not only adversely affect reproductive and rearing herd productivity, it can also suppress herd immunity, leaving pigs vulnerable to secondary infections that frequently require antibiotic treatments.

Even at subclinical levels, this virus can cause significant economic loss, and strategic vaccination is often the best means of managing the disease and protecting pig health and welfare.

A Harper Adams University (HAU) study sought to establish the value of a PRRS vaccination programme for piglets. The outcome, as expected, produced significant benefits to rearing herd performance in terms of growth and FCR, while also reducing the number of antibiotic treatments administered to finishing pigs.

HAU operates a 230-sow farrow-to-finish herd, managed by Richard Hooper. It has typical ‘commercial’ health status – Mycoplasma hyopneumoniae (EP) arrived in the Autumn 2013; PRRS came earlier, during 2012, and a successful sow vaccination programme was implemented to protect breeding herd health and productivity. But the virus persisted and health and performance deteriorated to a point where vet Guy Wade West, from the Garth Pig Practice, recommended PRRS piglet vaccination.

A series of blood samples were taken from all age groups and results indicated pigs were becoming PRRS positive at 16 weeks. The investigations, using ELISA and PCR tests, provided free to vets via MSD Animal Health’s diagnostics service, confirmed the virus was circulating in late-stage finishing – a time when pigs are most valuable.

Pig vet Ricardo Neto, MSD’s technical manager, said HAU’s experience demonstrated how using diagnostics could help fine tune disease management strategies. “These tools can provide vets with valuable clinical evidence on the disease complexes occurring in a herd and help to identify what pathogens are circulating and when pigs are most at risk,” he said.

CONCLUSIVE AND VIABLE

Although HAU’s clinical investigations were conclusive, the investment in a PRRS piglet vaccination programme had to stack up financially.

“Like any commercial pig business, we aim to remain profitable. Any intervention must bring a return, so we measured several performance indicators to assess if the PRRS piglet vaccination programme would pay for itself,” Mr Hooper said.

The reluctance many producers show towards record keeping and monitoring outcomes of key management decisions still astounds him. “Producers really must learn to evaluate the impact of any major management decisions, such as a vaccination programme, as it can have a considerable effect on profit potential and business sustainability,” he added.

Assisted by researcher Sarah Icely, Mr Hooper set up a comparative trial to analyse the performance statistics of 247 PRRS-vaccinated finishers against equivalent production data recorded from 3076 non-vaccinated pigs that HAU had produced in previous batches.

Weight at entry and at the end of the finishing period (when pigs reached 137 days of age) were recorded. The average daily weight gain (ADG), FCR and the amount of medication used was also monitored.

“The impact vaccination had on the pigs’ health and performance was clear to see,” Ms Icely said. “We saw a marked improvement in growth rate and feed conversion in the vaccinated pigs, and as FCR is probably the most important factor influencing profitability on a farm, we felt this was highly significant.”

GROWTH UP, TREATMENTS DOWN

The results showed that vaccinating pigs at weaning improved FCR by 0.15 to 2.24, which, at the time, represented a saving of over 10kg of feed per pig.

Vaccinated pigs finished at 103.3kg (lwt) and were at least 5kg heavier than the non-vaccinates.
The pigs vaccinated with Porcilis PRRS were also one week younger when they entered the comparative study – a situation that usually precludes fast growth and better FCR. But, in spite of being younger at the start, the PRRS-vaccinated pigs were significantly heavier at finishing than the non-vaccinates. Data showed that vaccinated weaners grew 967.4g/day, whereas pigs in the non-vaccinated batches achieved 941.1g/day – 26.3g less.

Equally interesting was the significant reduction of antimicrobial treatments administered to finishing pigs once the PRRS piglet vaccination programme was introduced. The vaccinated pigs appeared to be healthier, as only 0.7% of finishers required any therapeutic treatment during the production period. Data from the previous batches, where pigs had not been vaccinated against PRRS, showed more than 8% had required antibiotic treatment.

These observations show how PRRS virus can be implicated in other disease syndromes, such as Glassers and actinobacillus pleuropneumoniae (APP), and how controlling it effectively can also improve rearing herd health and performance.

Mr Hooper said PRRS control should be a priority. "This ubiquitous virus triggers so many other diseases that often require antimicrobial treatment, so producers should consider this within their antibiotic reduction strategies," he said.

The business is also exploring the use of novel nutritional products, such as lauric acid (coconut oil), for their gut and intestinal health properties.

Wayland Farms, a division of Cranswick PLC, has a 10,000-sow breed-to-finish operation. It has seen antibiotic consumption fall by a 66% since 2015 – the outcome of a strategic health plan managed through staff training and skills development, on-going veterinary support from Oakwood Veterinary Group and Integra Veterinary Services and knowledge exchange between industry organisations and producer groups. The company has also been involved in a PhD study on AMR at Queen's University, Belfast.

It has restructured its outdoor-based breeding pyramid to create a secure, closed breeding programme that reduces the risk of diseases entering its breeding population. It has also introduced a rigid, two-site, all-in, all-out rearing system throughout its rearing/finishing operation – a strategy that is bringing health benefits.

All piglets are vaccinated against viral diseases at weaning and then batch reared in 'field nurseries' to 35kg liveweight. All housing (tents) and equipment is cleaned, disinfected and rested for five days between batches. Routine disease surveillance is standard, with regular blood samples taken from young pigs to monitor diseases like PCV2, EP, PRRS and APP. No in-feed medication is used, with treatment administered when groups require it strategically via drinking water using controlled dosing devices.

Wayland is part of a regional PRRS control strategy, spearheading a vaccination-based initiative with other East Anglian pig businesses since 2016. The ‘PRRS: Preventing Recirculation, Regional Strategy’ programme has benefited piglet birth weights, weaner quality and sow fertility and helped tackle PRRS-related immunosuppression issues, which often manifest as secondary bacterial infections that require antibiotic treatment.

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