

distance between pig buildings by even 10 metres.

Housing is probably the most important single factor in the severity and control of EP. Stale air will lead to a build up of damaging gases (eg ammonia) and infectious agents, including *M.hyo*, while a draughty building may lead to chilling, so the aim is to have an effectively insulated building (beware vermin damage to insulation) with well controlled airflow.

The optimal airflow will vary according to outside air temperature, humidity and other factors, but as working rule of thumb, 0.2m³/hour/kg liveweight is acceptable in most conditions. In UK summer conditions, this might need to increase five or 10-fold eg to around 1.8m³/hour/kg.

In the yard situation airflow is usually naturally adequate, and chilling can be prevented with adequate straw and possibly kennel areas. Improving housing in this way is usually money well spent, as it will help to optimise the performance of healthy pigs as well as reducing disease levels.

Table 1 lists some of the main risk factors for infection with *M.hyo* and increased severity of EP, along with potential management solutions, not all of which will necessarily be realistic.

Short of selling up and moving to a small, isolated farm near the Mediterranean, the last four risk factors are likely to provide insurmountable obstacles.

If you are fortunate enough not to have pigs or pig movements nearby but still have a major EP problem, then a depopulation of the unit and replenishment with EP-free stock is likely to be effective, but it is plainly very expensive, and the cost of the disease versus the cost of the temporary loss of production, washing down and re-population would have to be carefully considered. A partial depopulation, involving the removal of all the young susceptible stock on the farm, and intensive

medication of the remainder, may be effective at eliminating *M.hyo*, but again needs to be carefully considered.

The other main category of control of EP is the pharmaceutical approach, which itself can be divided into two branches, vaccination and medication. Although *M.hyo*, is not a bacteria, it is susceptible to some antibiotics, and much of the in-feed medication used in pigs in the UK is aimed at controlling PRDC in which, as discussed earlier, *M.hyo*, is a major player.

Water medication is also useful in certain situations, although generally more expensive, and while injectables are effective, they are not always particularly useful in practice due to the highly infectious nature of the disease and, therefore, the high numbers of animals usually involved.

Some of the more common in-feed antibiotic agents are listed in table 2.

On the basis that most farms cannot be re-designed or re-located, and that prevention is better than cure, the main strategy against *M.hyo*, in the UK since 1996, when it first became available, has been vaccination. This has proved to be highly effective in terms of cost-benefit and pig welfare. Initially available only as two shot vaccines (two injections a few weeks apart), one shot vaccines are now available, which although roughly equivalent in price per pig to the two shot variety, obviously reduce the time and handling stress by half. There is, however, some debate about whether they are as effective.

The general consensus is that if your risk factors are high the two shot vaccines are likely to be more effective and worth the extra labour, whereas on a low risk farm the labour savings from using just a single injection will be more significant.

Current UK licensed vaccines against *M.hyo*, are listed in table 3.

To give an indication of preferences, current figures

from our practice suggest that roughly twice as many pigs are receiving one shot vaccines compared with the two shot variety.

RECENT DEVELOPMENTS

The big complicating factor in recent years has been PMWS, and it now seems that the causative virus PCV2 is closely linked to PRDC and *M.hyo*. The classic lesions of *M.hyo*, seen on the lungs of slaughter pigs, before the advent of PMWS, gradually became more variable and less distinct from the mid-late 1990s. The respiratory disease picture was changing, but the exact cause was unknown (see figs 2 and 3). It now appears that PCV2 was largely responsible, as vaccination against this has seen something of a return to the old-fashioned type of

EP-affected lungs. Also, in much the same way as concurrent disease should be controlled to reduce the effects of EP, *M.hyo*, needs to be controlled to reduce the effects of PCV2 and PMWS.

In terms of future developments, we can expect to see more combination vaccines, such as a joint *M.hyo*, and PCV2 vaccine, fairly soon, but there appears to be little else on the horizon. There have been no changes seen in resistance patterns or strains of *M.hyo*, and recent research efforts have been largely geared towards the battle with PCV2.

In summary, *M.hyo*, is a significant disease in its own right and is still a major factor in PRDC. Leaving it unchecked is likely to prevent satisfactory control of other PRDC components such as PCV2. Management strategies

that will be useful in the control of *M.hyo*, are likely to be useful in reducing overall levels of disease so should always be considered.

Although expensive in the short term, the long-term benefits of improved housing and ventilation, in terms of better performance and reduced medication costs, are likely to make this the most cost-effective option overall. In many situations, however, vaccination has proved to be the most workable strategy and can give a quicker economic gain. It is important to work as a team with your vet and other professionals to assess the impact of EP, and to work out the best solution for your farm.

For more information, you can contact the Pig Team at Garth Partnership on T 012624 88323.



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