Rotavirus plagues young pigs in farrowing crate, nursery

- Rotavirus continues to be a health challenge.
- Rotavirus increasingly associated with respiratory illness.
- Prevention relies on building herd immunity.

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SCOURING that occurs prior to weaning and respiratory disease in the nursery are two very frustrating health challenges swine producers face.

Farms that battle scours have an increased preweaning mortality, see decreased weaning weights and often succumb to poorer nursery performance. Respiratory infections early in the nursery period lead to a slower start on feed, along with increased fallout and elevated nursery mortality.

Porcine rotavirus has always been associated with piglet scours but is increasingly implicated as a part of nursery respiratory disease as well.

As an example, a 2,500-head breed-to-wean facility has experienced an increase in neonatal scours over the last four weeks. Routinely, the farm manager has described a yellowish, runny diarrhea present within several litters in the first 12-48 hours after birth. In the days following the onset of scours, pigs in affected litters tend to become dehydrated and gaunt, behave as though they are chilled and are fairly inactive.

Scouring litters occur among sows of all parities, although there seems to be a tendency toward a higher prevalence among those litters born to gilts.

During this same time frame, the farm manager also recognizes a cough late in lactation that affects 5-10% of litters in the days just prior to weaning. The cough is light, and no other respiratory signs are observed. Coughing becomes progressively worse after weaning, with 15-20% of the nursery affected. Pigs do not start on feed very well postweaning, and the nursery manager describes a higher frequency of "poor doers" and fallouts.

Several samples submitted for diagnostic testing reveal the cause of scouring to be rotavirus. Interestingly, rotavirus is also detected among several samples from pigs that were coughing or falling out within the nursery.

Discussion

Although the connection between rotaviral scours and early nursery pneumonia may not be straightforward, we have observed this scenario on a number of occasions in the last year.
Porcine rotavirus is a virus that is present in most, if not all, pig populations, with type A being the most common. Types B and C have been found with less frequency in pigs but currently are just as common as type A infections.

Historically, rotavirus has been associated with enteric infections in young pigs that cause varying degrees of scouring.

More recently, these scouring episodes have become severe among neonatal pigs and, in several cases, have coincided with early nursery respiratory disease in these herds.

It is possible that the emergence of increasingly virulent rotaviruses has occurred within swine herds, which may explain the change in the severity of scouring and the greater frequency of rotavirus involvement in respiratory disease.

Studies measuring the shedding pattern of rotavirus from pigs following a challenge showed that rotavirus isolates classified as having increased virulence were able to infect the respiratory tract of pigs (Azevedo and Yuan, 2004).

**Practical steps**

Preventing rotavirus infection is the first step in reducing the effect this virus has on preweaning and postweaning pig health (Table). Because it is a virus, successful prevention relies on building strong herd immunity so sows are able to provide their piglets with passive protection shortly after birth.

Two common practices include the use of vaccines and routine exposure of gestating animals to on-farm pathogens through the use of feedback protocols. These processes elicit an immune response in the sow, and protection is granted to pigs through colostrum.

Feedback practices ensure that immunity is being generated against the pathogens specific to a particular farm. This is especially important because research regarding the cross-protection generated by rotavirus vaccines across multiple rotavirus types is limited.

Several considerations need to be made when developing a herd exposure plan. The biological materials used for such an exposure need to be fresh; so, a morning collection for afternoon use is reasonable. Herd exposure should occur with enough frequency to ensure an adequate immune response. Up to a half-dozen separate exposures prior to farrowing should be provided.

Timing is also a key in that sows exposed to pathogens too close to the time of farrowing (fewer than three weeks) will shed those pathogens into the farrowing crate environment at a much higher quantity.

Gilts tend to have the least amount of immunity to on-farm pathogens within the herd. Develop an immune management/acclimation program that provides gilt immunization prior to breeding as well as during gestation with the rest of the herd.

The second key to reducing the effects of rotavirus in young pigs is ensuring adequate colostrum intake shortly after birth. A lot of effort is put into eliciting colostrum with the highest level of immunity, but reducing the incidence of disease can only be achieved when colostral intake is the focus of a thorough day-one pig care plan.

Practices including the warming and drying of shivering piglets as well as split-nursing are all important ways to ensure adequate intake by newborn pigs. Taking rectal temperatures of pigs six to eight hours after birth is a good indicator of how well pigs are regulating body temperature. Piglet temperatures should be in the 101–102 degrees F range; temperatures less than that indicate chilling after birth.
The final key to reducing the effects of rotavirus is to provide piglets with a sanitary crate environment. An audit of the washing and disinfection process used in farrowing rooms is an important step in measuring the success of eliminating environmental contamination.

Another important step to day-one pig care includes crate sanitation; crates should be scraped daily pre-farrow until two or three days post-farrowing.

**Summary**

Our observations indicate that rotavirus is challenging pig health with increasing severity both as scours following birth and as part of a respiratory disease complex in the nursery. This virus has a tendency to interfere with getting pigs off to a good start in each of these phases of production.

Prevention of disease relies on the generation of herd immunity, management of pigs shortly after birth and a reduction of environmental contamination. All are practical procedures that will reduce the incidence of rotavirus in young pigs.

**Reference**


<table>
<thead>
<tr>
<th>Areas producers should review within a herd to decrease the effects of rotavirus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Increase herd immunity</strong></td>
</tr>
<tr>
<td>(a) Feedback process</td>
</tr>
<tr>
<td>(b) Vaccination program</td>
</tr>
<tr>
<td>(c) Acclimation of gilts</td>
</tr>
<tr>
<td><strong>2. Reduce environmental contamination</strong></td>
</tr>
<tr>
<td>(a) Sanitation process</td>
</tr>
<tr>
<td>(b) Disinfection selection</td>
</tr>
<tr>
<td>(c) Farrowing crate hygiene</td>
</tr>
<tr>
<td><strong>3. Management of young pigs</strong></td>
</tr>
<tr>
<td>(a) Promote early colostrum intake</td>
</tr>
<tr>
<td>(b) Create draft-free zones</td>
</tr>
<tr>
<td>(c) Maintain body temperature</td>
</tr>
</tbody>
</table>