



## Bethany Swine Health Services

# COMPETITIVE PORK PRODUCTION

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## Fighting Back on Nursery Scours

No, PRRS isn't the only thing we have to deal with on our farms. There are many other bugs and profit robbers waiting to pounce. Recently, many producers have been battling scours or diarrhea in nursery age pigs. Here, we'll examine the more common types of diarrhea-causing agents, and what to do to prevent or limit their severity.

### **Rotavirus**

Rotavirus typically affects younger piglets, such as those that are just placed into the nursery. Symptoms include a dark, loose stool, and pigs that either fall back, or show a general failure to thrive. Rotavirus attacks the villi in the small intestine, blunting them, and causing them to fuse together. Therefore, the villi are not able to work to absorb nutrients from the gut, causing diarrhea. Sanitation of facilities aids in prevention of Rotavirus. Unfortunately, once you have Rotavirus in your facilities, it is nearly impossible to rid the farm of it without a complete depopulation. To decrease its severity, we recommend:

- Applying a drying agent (ex. Disrupt®) to rooms before loading, and during the nursery phase.
- Run facilities all-in/all-out (AIAO), and allow as much drying and downtime as possible.
- Injectable medications of choice include Baytril® and Gentamycin®. They do not attack the Rotavirus itself (remember this is a virus, and just like the flu or PRRS can't be killed); however, work well to keep secondary infections at bay.

- Utilize citric acid in the water. Acidification of water creates an environment in the gut non-conducive to allow diarrhea-causing bacteria to bind to intestinal walls.

### **E.coli**

E.coli, or more specifically, hemolytic E.coli, is also a cause of nursery diarrhea. In fact, the Iowa State University Diagnostic Lab sites it as the most common cause of nursery diarrhea, with almost 50% of the cases submitted being positive for E.coli. There are several different strains that produce different toxins; the most prevalent ones are K88 & F18. Symptoms include pigs that are slightly lethargic, and have wet rear ends with a clear, watery scour. Many times you will find what look like good pigs, dead. Upon necropsy, the intestines are red and inflamed. Diagnostics are needed to determine which strain is present. Typically, K88 strains tend to affect pigs shortly after weaning and are less virulent, while F18 strains affect older nursery pigs, and are more virulent with high mortalities in a short period of time. These strains bind to the intestinal walls, producing toxin, which is what makes the pig sick. Previous infection with other diarrheal agents (i.e. Rotavirus) can make E.coli infections worse because the villi are already damaged. Vaccines are available, but are not useful after an E.coli infection has already manifested itself in a group. However, they can be useful for the next group of pigs. The vaccine is an oral vaccine containing non-toxigenic E.coli. These non-toxigenic E.coli work to reduce the severity of the disease in two ways: 1. Exclusion – they bind to the

sites in the guts, so there aren't any sites left for the toxin-producing E.coli to bind to, and 2. Competition – they actively compete for sites at the time of infection. Sanitation is again a key prevention tool. Acidification of water via citric acid is also useful. Different water and injectable medications may help treat other concurrent problems, and decrease the severity when a group is infected.

### **Salmonella**

Salmonella can affect pigs in the nursery through the finisher, but most cases appear in the nursery. *Salmonella typhimurium* is the most common species of salmonella seen with diarrhea. Salmonella infects the large intestine, and symptoms include lethargic pigs that show a yellow-colored, loose stool. Salmonella is an organism of opportunity, meaning that it tends to strike when pigs are already stressed due to either other co-infections or environmental stressors. Treatments include:

- Vaccination of both sows and piglets
- Feed medications (Mecadox® @ 50g/ton)

As usual, sanitation is the best solution for preventing the problem.

### **Finishing Pigs**

While diarrhea is typically thought of as a “nursery problem”, it can establish itself in the finisher as well. While Rotavirus and E.coli have typically run their course by arrival to the finisher unit, other potential problems include: *Lawsonia intracellularis* and *Brachyspira pilosicoli*, commonly referred to as ileitis and spirochetes, respectively.

#### ***Lawsonia Intracellularis***

We've been dealing with *Lawsonia intracellularis* for years in swine finishing units. With nearly 75% of the herds testing positive for this organism (Can Vet J. 2007), chances are you've dealt with it in some form. Whether it is in early finishing as a chronic infection, sapping gain and conversion from pigs, or in late finishing, showing up as acute deaths, you may need a Lawsonia intervention plan. Lawsonia strips the lower small intestine (ileum) of its absorption capacity, leading to diarrhea, and a

gradual wasting and loss of condition. Treatments include:

- Vaccination with Enterisol® in the nursery phase. This normally provides coverage through marketing.
- Feed medication – Tylan® (tylosin), Denagard® (tiamulin), and Lincomycin® are most commonly used. In acute outbreaks, or for faster route of delivery, these drugs can also be given via water.

#### ***Brachyspira pilosicoli***

*Brachyspira pilosicoli* is the organism responsible for what many producers have seen on their sites in the last year, commonly referred to as spirochetes. While Lawsonia affects the small intestine, Brachyspira affects the large intestine. Spirochete symptoms include a “puddly” stool, sometimes seen with blood. This makes it difficult to distinguish via the naked eye from ileitis. Upon further visual examination, you will also find a mucous-like substance in the feces. This is caused by the sloughing off of cells from the large intestine. Treatments include

- Neomycin as a water medication
- Denagard® as a feed or water medication

### **Conclusion**

Diarrheal agents in both the nursery and finishing phases of production are robbing performance from our systems. Through prevention and appropriate treatment measures, it is possible to manage these diseases effectively. Sanitation of facilities, including proper washing, disinfection, and drying are the best (and cheapest) tools available to producers to combat these problems. Consult your herd veterinarian with questions on what pathogens your farm is facing, and the appropriate measures to take to combat them.

### **Upcoming Events**

February 23 – Annual Production Meeting  
March 15 – Annual Wean to Finish Meeting

“Develop success from failures.  
Discouragement and failure are two of the  
surest stepping stones to success.”

-Dale Carnegie