



DIARRHOEA, PART 1: THE FARROWING ROOM

Introduction

Diarrhoea is common in young piglets and can result in high morbidity and mortality. Piglets are particularly susceptible to diarrhoea in the first few weeks of life, in the farrowing room and at weaning. The causative agent of diarrhoea can vary as can the impact different types of diarrhoea have on piglets. Part 1 of this newsletter series deals with diarrhoea in the farrowing rooms. Part 2 will cover post-weaning diarrhoea.

Piglets are born with a sterile gastro-intestinal tract. This means their gut is susceptible to colonization by undesirable bacteria. Diarrhoea can be caused by a range of different bacteria, viruses, parasites or nutritional issues. Young piglets are particularly susceptible to diarrhoea, as they are at high risk of dehydration.

To understand why piglets experience diarrhoea, it is important to understand what happens when piglets drink milk. Under normal circumstances, piglets swallow milk and it enters the stomach where some pre-digestion occurs. Then, in the small intestine, chemical digestion and absorption of nutrients takes place. Finally, the main function of the large intestine is the resorption of water.

However, when diarrhoea occurs in young piglets, something goes wrong along the way. It can be any one or a combination of the following:

- A lack of pre-digestion in the stomach
- A lack of digestion and/or absorption in the small intestine
- Toxins causing excess fluid to flow into the small intestine
- A lack of fluid resorption in the large intestine
- A lack of content throughout the digestive system

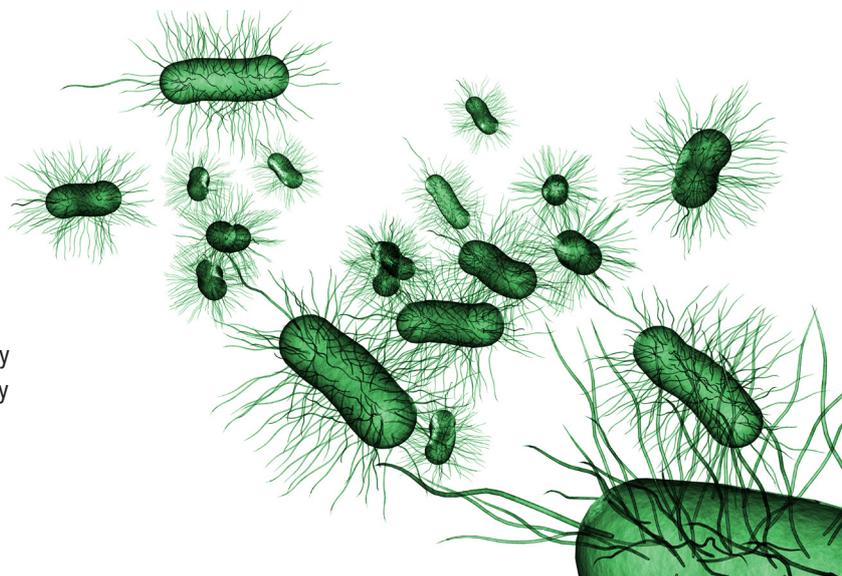
The development of the immune system is important when considering diarrhoea in young piglets. Sufficient colostrum intake is vital at birth to ensure piglets get a supply of antibodies for immunity (immunoglobulins). Antibodies (surface-acting) can then continuously be provided in the milk from the sow.

Practices such as split suckling, cross fostering and the use of nurse sows (as explained in our previous newsletters) should be implemented in a hygienic manner to ensure all piglets have sufficient access to colostrum and milk. This is particularly important on units with larger litters.

Increased colostrum volume does not always mean increased antibody production, so this can result in a dilution effect. Piglets need to drink milk often to ensure that the lining of the intestine is provided with sufficient quantities of surface-acting antibodies. This ensures that the undesirable bacteria cannot multiply and attach to the gut wall and colonise the gut.

Symptoms of diarrhoea, which are well known to pig producers include:

- Watery faeces
- Dehydration
- Wasting
- Shivering
- Staining on piglets
- Increased hair growth due to coldness
- Obvious evidence of diarrhoea in pens
- Piglets dying or piglets lacking vigour



DIFFERENT TYPES OF DIARRHOEA

	Days			
	0-3	3-7	7-14	15-21
Agalactia	✓	✓	✓	✓
Clostridia	✓	✓	✓	
Coccidiosis		✓	✓	✓
E. Coli	✓	✓	✓	✓
PED	✓	✓	✓	✓
PRRS	✓	✓	✓	✓
Rotavirus		✓	✓	✓
TGE	✓	✓	✓	✓
Milk Diarrhoea			✓	
Environmental	✓	✓	✓	✓

As previously mentioned, diarrhoea can be caused by a range of different bacteria or other microbes. The resident microflora on each individual farm can often influence the extent to which piglets are affected by different diarrhoeas. Working in consultation with your vet can help to determine the causative agent of diarrhoea on your farm. The information in the table above should be used only as a guide and a professional opinion should always be sought to ensure the correct sanitation, prevention & treatment protocols are in place. Identifying the age at which piglets are affected by diarrhoea on your farm can help to identify the causative agent.

1. Milk diarrhoea: Stronger piglets on front teats can end up gorging on milk. This can cause a diarrhoea often referred to as 'milk diarrhoea' or 'nutritional diarrhoea' and generally occurs around 7 - 14 days of age.

2. Bacterial diarrhoea: These are extremely common on Irish pig farms and are often caused by E. coli, Clostridia or Campylobacter, but are not limited to these bacteria. Undesirable bacteria get into the piglet's sterile gut shortly after birth and attach themselves to the cells that line the intestinal wall. The bacteria then secrete an enterotoxin that results in an out-pouring of fluid into the gut,

causing diarrhoea. Many E. coli diarrhoeas occur within the first week of life (around day 3), but can occur up to and after weaning. Sows shed more E. coli in the lead-up to farrowing, so she sheds into the environment the piglets will be born into. Piglets could also pick up the bacteria from the sow herself or littermates who are carrying it around the pen. Diarrhoea caused by E. coli is generally watery in nature and often, the entire litter are affected. This diarrhoea can easily spread within a house, particularly a house of piglets of the same age.

3. Viral diarrhoea: Viruses such as rotavirus, reovirus, swine fever, transmissible gastroenteritis, porcine epidemic virus, transmissible gastroenteritis and PRRS can cause diarrhoea. Generally, but not always, if viruses are involved in diarrhoea, they invade after bacteria have already started the process.

4. Parasitic diarrhoea: The main parasitic cause of diarrhoea in piglets is coccidia. Diarrhoea caused by coccidiosis is generally caused by the Isospora suis parasite. This parasite uses the pig as a host in a direct life cycle. This means the infected piglet sheds oocysts which then mature in the environment (a temperature-dependent process) and are picked up orally by a healthy piglet.



The role of the environment

Inappropriate environmental conditions for piglets can trigger the onset of diarrhoea. Each farm also has its own resident microflora. This means that a diarrhoea on one unit could be caused by a specific bacterial species that is not present and therefore will not cause an issue on another unit. Biosecurity and ensuring visitors are 'clean' for a number of days prior to arriving at your farm are hugely important in controlling diarrhoea.

Another cause of diarrhoea can be the piglet's response to a reduction in body temperature. Young piglets are sensitive to temperature and if they get too cold, their automatic response is to restrict blood flow to organs that are not vital for life so that blood keeps flowing to organs such as the heart and the brain. This can result in the piglet's gut being shut down and undigested feed material passing through the small intestine. This results in a build-up of undigested feed in the large intestine, where the undesirable bacteria feed on the undigested material, resulting in an over-growth of undesirable bacteria and ultimately, diarrhoea. Temperature, drafts and wet lying conditions should all be addressed as appropriate. Pneumonia and anemia can also predispose piglets to diarrhoea.

Solutions & Prevention

Identify the causative agent

Work in consultation with your vet to ensure you are treating the diarrhoea on your farm appropriately. Confirm whether you are dealing with a bacterial or viral diarrhoea for example, as treatment protocols can differ significantly.

It can be useful to determine if you have a specific problem with a certain strain of bacteria. This is important, particularly at the moment with the huge emphasis on reducing antibiotic usage. By identifying which bacteria is causing the diarrhoea, it may be possible to eradicate or reduce the impact with an appropriate nutritional treatment and therefore, reduce antibiotic usage. Such treatments include, but are not limited to feed additives such as organic acids, medium chain fatty acids and essential oils. Specific blends of these may target different types of bacteria so it is advantageous to know which bacteria is causing your issue.

Use appropriate hygiene practices and vermin control all around the farm, but particularly in the farrowing house. Improve immunity of stock where possible. Vaccinations against certain causative agents are available. Consult your vet for advice.

Clean Housing & Biosecurity:

Ensure farrowing houses are power-washed, disinfected and most importantly, left to dry between batches of sows. Often, the importance of drying is underestimated. Bacteria thrive in moist, warm conditions, so the room must be allowed to totally dry before the next batch of sows are moved in. There are arguments for and against washing sows on their way into the farrowing rooms. Care should be taken to ensure a disinfectant is used so that bacteria are actually killed.

Contamination of the teats with undesirable bacteria: The sow is lying in the crate for up to a week prior to farrowing which means she can carry undesirable bacteria on her teats. This is also linked to the importance of environmental hygiene as the sow should always be lying on a clean floor. Remove faeces from behind the sow prior to farrowing so that piglets are not born into a dirty environment. Sows can shed bacteria that is harmful to piglets.

Warm Environment:

Piglets should be provided with a warm, clean environment. Cold piglets suffer from lower resistance to disease, so ensuring they are kept warm is vital. Using canopies, infrared lamps and ensuring heat pads are at the correct temperature are all important to keep piglets warm.

Careful Fostering:

Minimize fostering of piglets where there is a rampant spread of infection.

Hygiene Control:

Hygiene control between pens is vital. Ensure wellies are clean if staff are climbing in and out of different pens. During episodes of diarrhoea, assign one pair of boot covers per farrowing pen and hang them on the gate of the pen to avoid cross-contamination between litters. Only wear boot covers assigned to each particular pen inside the pen to minimise spreading disease from one litter to another.



Spread disinfectant powder on the solid floor between pens. Also, place a container of disinfectant powder at the entrance to each farrowing room, so that staff can dip boots in the powder before walking around the house.

Clean Clothes:

If, when cutting teeth and tails the piglet diarrhoea on you, change your clothes before holding another 100 or 200 piglets against those same clothes. Disposable aprons are useful for this purpose. If the instruments you are using have diarrhoea on them, they should not be used in the next pen without thorough cleaning.

Clean Trays:

If trays are used to provide electrolytes, porridge or supplementary water, ensure these are removed from the pens at least daily and thoroughly cleaned and dried before being placed back into the pens. If needed, use colour-coding e.g. red drinkers for pens that are not sick, green drinkers for pens that have diarrhoea. Alternatively, number the drinkers to match the valve the sow is eating from, so that the same tray is always with the same piglets.

Batch movements:

Ensure you wean out one entire room and wash the whole room – or at least as close as is possible.

In summary, if you want to curb the spread of the bacteria, you need to put a break in the chain somewhere. All of these practices will contribute to reducing the likelihood of spreading bacteria around the farrowing house even if they seem like ‘overkill’ on a commercial pig unit.

Dealing with Diarrhoea

Follow veterinary advice for treating diarrhoea on your farm. Vaccinate where possible and ensure sows are adequately fed prior to and after farrowing.



It is vital that piglets are re-hydrated quickly following an episode of diarrhoea. Start Aid Electrolyte can be used to ensure the salt-fluid balance and the consistency of piglet’s faeces return to normal.

Ensure extra clean water is provided in pens for piglets that is easily accessible e.g. use a cube drinker or turkey drinker. For badly affected piglets, it may be necessary to use a syringe to give them water back their throat.

Many pig producers need to reduce their antimicrobial usage in the next 12 months. Piglet Booster is a tonic specially formulated by Mervue Laboratories for young piglets.

Piglet Booster is formulated to:

- Boost activity
- Increase appetite
- Boost suckling and energy levels
- Support the immune system and gut health
- Improve growth rates
- Reduce diarrhoea risk in young piglets

Piglet Booster contains C-guard, a unique natural blend of essential oils which boosts the immune system in the gut and stimulates appetite in new-born piglets. Piglet Booster also contains prebiotic, chelated Iron, antioxidants, trace elements, vitamins, threonine, omega 3 and seaweed extract.

