

Cleanliness is the First Law of Health

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Exert from U of Guelph paper written by Tokach, Goodband, DeRouchey, Dritz and Nelssen. To read whole paper [CLICK HERE](#). This section is on page 42.

The management style of All-In, All-Out greatly improves pig performance by decreasing horizontal transfer of disease from one group of pigs to the next. The main tool to stop the transfer of disease is cleaning with the primary of lowering the dose of infectious pathogens that can be transmitted from one group of pigs to the next. Environmental contamination is an important contributor to bacterial and viral infections. For Example, Davies (1999) found that 27% of samples obtained from a fully slatted finishing floor just prior to placement of pigs were found to be positive for salmonella. Cargill and Banhaze (1998) found that cleaning barns between groups of pigs was the most important component of all-in, all-out production.

It has been well documented that animal performance is increased in 'clean vs dirty' environments. Pigs reared in a dirty environment had a 10% reduction in average daily gain and 18% reduction in feed intake. as compared with pigs reared in a clean environment.

Removal of visible organic matters removes 90% of the bacteria from the environment. Another 6 – 7% of the bacteria can be removed by disinfectants and fumigation an additional 1-2%. Drying is also an important part of the process. For example, PRRS can survive in water for up to 11 days but when dried, it dies quickly. (Pirtle and Beran, 1996)

The table below shows the influence of cleaning properly between batches of pigs and also a continuous flow facility. This study does not show Feed Conversion. F:C is much better with healthy pigs since the pig uses significant amount of energy fighting infections



	All-in, All-out Cleaned	All-in, All-out Not Cleaned	Continuous Flow
Average Daily Gain, grams	658	619	610
Airborne Dust, mg/m ³	1.80	2.31	2.51
Respirable Particles, mg/m ³	0.201	0.265	0.29
Viable Bacteria, CFU x 10 ³ /m ³	132	177	201
Gram positive Bacteria, CFU x 10 ³ /m ³	82	109	122

Note: CFU= Colony Forming Units

Targets of a clean room:

To reduce the disease challenge to the herd

To improve animal health, welfare and pork safety

To increase the growth and efficiency of the herd

Besides having a good power washer, there are several other steps to facilitate this washing process. (To read whole article [CLICK HERE](#))

- **Soaking** — *Soaking surfaces before washing will cut down on the amount of time needed to do a more complete job. Soaking can be achieved by placing a sprinkler system in the rooms to be washed. When soaking a trailer, you may want to just wet the entire trailer first with a moderate amount of water, then start thorough washing at one end while other surfaces have more time to soak.*
- **Detergents** — *Another excellent way to maximize cleaning and minimize time spent on the chore is to use special detergents to help break down manure and other organic matter. This is the equivalent of using soap to wash your hands. You can wash your hands with plain water, but it is much quicker to use soap.*

Detergents are products used to reduce surface tension and suspend particles to facilitate cleaning. They can be acidic (good for protein removal) or alkaline (good for fats). Some commercial products contain both types.

Many operations forget the value of detergents, mainly because of the added expense. In reality, most products are worth the investment not only because they cut down on labor, but also because they maximize the cleaning process and can break down bacterial biofilms (slime), which can harbor bacteria.

- **Hot water** — *Hot water can also speed up the washing process. The one disadvantage of hot water is that it can produce steam and hamper visibility, particularly in winter. The goal is to have the water hot enough to facilitate cleaning without putting employees at risk. You will not be able to have the water hot enough to kill bacteria or viruses, as these high temperatures would cause skin burns. Studies have shown that the money used to heat the water will be saved in reduced labor.*

Drying time. *One of the challenges with most cleaning and disinfection programs is allowing ample time for extended drying. The purpose of this downtime/drying time is so that all moisture can evaporate from the building and all its surfaces.*

Water is critical for the survival of all living organisms, including viruses and bacteria. Research in the poultry industry has shown that a 48-hour downtime can dramatically reduce the clostridial environmental contamination compared to 24 hours.

Ideally, downtime in the farrowing room would be 48 to 72 hours after cleaning and disinfection. Often, that's impossible due to pig flow and limited space. To maximize drying time, consider these options:

- *Allow farrowing rooms to dry overnight before moving sows into the room. Turn on the room heaters to maximize drying.*
- *If overnight is not possible, then try to use scrapers to remove all puddles of water as a means to speed up the drying process before moving sows into the room.*
- *Two or three times a year, plan enough time for the rooms to completely dry in order to break disease cycles before moving animals in. This is especially helpful when dealing with significant health problems in the farrowing house.*
- *Remember, this is not an all-or-none effect. Small intervention steps add up to a more productive system.*

Drying is especially critical for livestock trailers, which have been implicated as a major risk for disease transmission. This is usually not the fault of the driver, but rather due to the high-risk areas these vehicles travel to and from.

