



Cleaning and disinfection

A consistently high standard of cleaning and disinfection (C&D) is an effective way to break the on-farm cycle of re-infection with infectious diseases. This should be readily achievable but standards are often allowed to slip and bad habits creep in. A C&D plan should form a major part of your veterinary health plan and should be carried out conscientiously.



To reduce the disease challenge to the herd

To improve animal health and welfare

To increase the growth and efficiency of the herd

Producers have known for a long time that buildings can become 'pig sick' and continued use can bring about a steady decline in health and performance. When pigs are met with a high level of infection they react with an immune response. This response causes growth checks - reducing growth rates and increasing days to slaughter.

Management guidelines

The 5 basic steps of cleaning and disinfection

- 1 Remove organic matter
- 2 Use a detergent
- 3 Clean
- 4 Disinfect
- 5 Dry

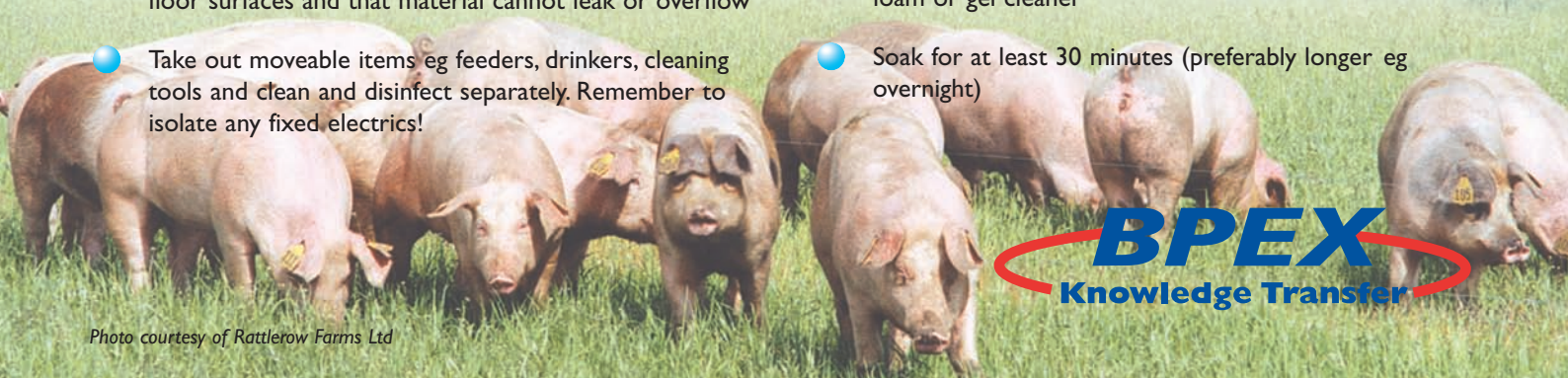
Remove

- Remove organic waste eg bedding, muck, feed residue and dust
- Resist the temptation to keep back any 'clean' straw for reuse - it is a reservoir for infection
- Material below the slats should also be removed; if this is not possible, ensure levels remain at least 30 cm below floor surfaces and that material cannot leak or overflow
- Take out moveable items eg feeders, drinkers, cleaning tools and clean and disinfect separately. Remember to isolate any fixed electrics!

- Clean and disinfect the water system (including the header tank and filters) using a recommended product

Detergent

- It is important not to miss this stage out - a wide range of common pathogens show poor response to disinfectants under high organic load as the organic matter deactivates the disinfectant
- Even a thorough hot pressure wash is not enough to break down the oily biofilm that can protect bacteria from disinfectants, only a detergent can do this
- The detergent will improve the efficiency of the washing/cleaning and reduce the time needed for pressure washing
- Soak all surfaces (ceiling, walls, floors and any fixed equipment) with cold water and apply a farm-specific detergent under low pressure, alternatively use a foam or gel cleaner
- Soak for at least 30 minutes (preferably longer eg overnight)



Clean

- Work from top to bottom (ceiling → walls → floors) when cleaning to avoid splashing previously cleaned areas with dirty water. Pay particular attention to out of sight and hard to reach spots eg fan and ventilation ducts, on top of pipes, light fittings etc
- Pressure wash with hot (70°C +) clean water; if your pressure washer does not have the option of using hot water, consider buying one that does
- Ensure all surfaces and equipment are visibly clean
- Make sure dirty water drains away freely without contaminating other areas and if possible allow rooms to dry before applying disinfectant
- Repair or replace corroded fixtures, surfaces and flooring as these can harbour germs
- Any equipment that cannot be pressure washed eg creep lamps, must be cleaned by hand

Disinfect

- Choose a disinfectant that is suitable for the range of diseases present on your unit; discuss this with your veterinarian
- A list of DEFRA approved disinfectants can be found at: http://www.defra.gov.uk/animalh/diseases/control/testing_disinfectants.htm
- Make sure you and your staff understand the safety information and take appropriate steps for safe use and disposal of disinfectant. Ensure that all the necessary protective clothing is worn
- Make up fresh quantities of disinfectant solution daily and check staff know how to make up the correct concentrations. Be aware that dilution rates can vary with ambient temperature
- Ensure that the disinfectant chosen is compatible with the detergent as well as the micro-organisms that you are targeting. Also check that it is appropriate for use, one for the pens/building may not be suitable for the water system
- Disinfectant is usually best applied evenly, under low pressure (eg with knapsack sprayer) until all surfaces are saturated
- Move methodically through the room/building, paying particular attention to corners, out of sight and hard to reach areas

Dry

- Bacteria and viruses can persist in wet conditions - allow surfaces to dry completely before re-stocking



Photo courtesy of Dupont Animal Health Solutions

- 5-7 days drying can reduce the bacterial load 10-fold; if this is not practical allow to dry for as long as possible (min. 24 hours), consider using a portable blow heater to reduce drying times and/or using water-repellent surfaces in pens

Recontamination

- Plan the C&D so that there is no need to re-enter the cleaned building/pen before re-stocking. It takes time and effort to clean and disinfect properly, make sure you don't undo all your good work!
- Place newly replenished foot dips and brushes outside the clean rooms/buildings. Ensure dips are regularly replenished with suitable disinfectant
- Regularly clean/replace the boot brushes/washers as they can become heavily contaminated
- Wash and disinfect all equipment (eg brushes, shovels, scrapers) between batches, this is frequently overlooked but crucial to prevent recontamination
- Launder overalls and clean boots frequently; never enter cleaned and disinfected facilities wearing dirty protective wear

The efficacy of disinfectants depends on several factors including:

- **Cleaning/removal of organic matter:**
Organic matter deactivates disinfectants
- **Ambient temperature:**
Proper C&D techniques are especially important in cold temperatures, for examples the PRRS virus can survive and remain infectious for over a week at 4°C
- **Contact time:**
A longer contact time can, in some cases, enhance the efficacy of disinfectants
- **Pathogen:**
Use pathogen-specific disinfectants where possible. Some pathogens are more susceptible to some disinfectants than others