

# EFFICIENCY AND COST COMPARISON OF DIFFERENT CLEANING AND DISINFECTING PROCESSES FOR PIG FARMS

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The aim of this study is to propose an optimised scheme of cleaning and disinfection for barns based on scientifically established data.

## Material and methods

Various methods, at each principal stage of cleaning and disinfection of the buildings were compared in farrowing, post-weaning and fattening units. For each test carried out, the method to be tested was compared with a beforehand-defined standard program of cleaning and disinfection. This comparison was made either in the two halves of the same room, or in two identical rooms having contained the same batch.

- Efficiency of cleaning was approached by measurement of TPA (URL) and quality of disinfection by aerobic colony counts, on 15 sites.
- Labour times and water and product consumptions were recorded for each test

## Results and Discussion

- Automatic soaking system (i.e. ramp of steeping with timer) in comparison with manual steeping (flat jet) doesn't lead to any improvement of cleaning and disinfection. Nevertheless, it reduces considerably costs thanks to a saving of labour time of 30 hours per year for 100 sows.
- Using detergent before pressure wash reduces time necessary to this operation, of 1,5 hours in farrowing units, 6,5 hours in post-weaning and 15 hours in fattening (per year for 100 sows).
- Disinfection is significantly improved when the detergent is applied after pressure wash.
- The draining and the washing of the slurry pits improve decontamination of the rooms.
- Disinfecting with pulverization in comparison with foam leads to similar results in term of disinfecting efficiency. The recommended quantities of disinfecting solution by m<sup>2</sup> of surface (0.3 l/m<sup>2</sup>) were scrupulously followed, required a very large quantity of disinfecting solution (120 litres / 100 m<sup>2</sup>). So time needed for pulverization is definitely higher than for foam (annual total over cost of 18.5 € per sow).
- A second disinfection, either by foam or by thermonebulisation, results in a reduction of the contamination. In addition, the cost of a second disinfection by thermonebulisation is lower than by foam.
- The heating of the room by "thermobile" at the end of disinfection process allows a faster drying of the buildings. In the second day after disinfection, the majority of the heated rooms presents a contamination lower than the not heated ones.
- The use of a clean downtime of 6 days doesn't seem to be a good alternative to heating: indeed, average bacterial counts on day 6 is significantly higher than on day 2 (both in heated and not heated rooms). These results let suppose that a fast drying of the buildings (immediately after disinfection), during 48 hours at least, is more efficient than a long clean downtime.

Table : Annual cost price in euro for 100 productive sows

Methods		Labour		Other costs (1)	Total cost
		Hours	Cost		
Soaking	Automatic	0	0	143	143
	Manual	23,6	288	14	302
Detergent		9,3	114	213	327
Disinfection	Foam	9,7	118	877	995
	Pulverisation	88,0	1080	873	1953
2 <sup>ème</sup> Disinfection	Thermonebulisation	9,5	116	553	669
	Foam	9,7	118	11	1000
Heating	Thermobile	0	0	615	615

(1)water, electricity, fuel, products, investment depreciation

The most adequate program regarding efficiency of decontamination is the use of a detergent after pressure wash, the draining and the pressure wash of the pits, a double disinfection by thermonebulisation and finally the heating of the room after disinfection. In addition, the installation of an automatic soaking system, the use of a detergent before pressure wash and a foam disinfection reduce clearly the cost of the operations of cleaning and disinfection