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FACTORS FOR OPTIMISATION OF THE PROTOCOL OF CLEANSING-DISINFECTION IN PIG FARMS : IMPORTANCE OF THE SOAKING PROCEEDINGS

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Introduction

An efficient cleansing-disinfection process reduces the incidence of most pathologens and is in keeping with the new European rules: salmonella rules, Hygiene-Pack and Good Practices guidelines. IFIP has already carried out experiments in order to optimize the efficiency and the cost of cleansing-disinfection (2). The increase of the soaking phase and the use of a wetting agent still remained to be assessed.

Materials and methods

Various soaking proceedings were tested in experimental farms in farrowing, post-weaning and fattening rooms. Each process was compared to a standard. The proceedings assessed are as follows:

- Automatic and sequential soaking with water (5minutes' soaking every 15 minutes) ; the modes compared are as follows: 4 hours vs 12 hours' soaking, 6 hours vs 12 hours' soaking;
- Automatic and sequential soaking with water and with the addition of a wetting agent (Inciprop WET of Ecolab at 1‰). Three comparisons were made: a 4 hour-long soaking phase with vs without a wetting agent ; a 2 hour-long soaking phase with a wetting agent vs a 4 hour-long soaking phase without a wetting agent ; and finally a one hour-long soaking phase with a wetting agent vs a 4 hour-long soaking phase without a wetting agent.

The efficiency of the cleansing and of the disinfection was assessed by measurements of TPA and Total bacteria counts in Petri dishes (3). Extra cost is also calculated with respect to labour time, water and chemical additive consumption.

Results and Discussion

In each case, TPA and Total bacteria count values remained similar: the semi-quantitative methods used did not enable detection of very small differences in the contamination level. Besides, a shorter soaking phase is made up for by a longer work phase, resulting in an identical final decontamination.

A longer soaking phase leads (table 1), despite the large quantity of water required, both to lower working time and to less water being used later on during cleansing operations. It is also less tiring and less expensive. However, it must be pointed out that the amounts of time and money saved are small. With an equivalent soaking phase, the wetting agent will reduce the working time needed and the consumption of water, and therefore the cost and the tiring effect of the work.

table 1 : Differences in the quantity of water used, in the amount of work supplied and in the costs between the modes tested and the standard.

Soaking mode		Difference between the tested mode and the standard		
		Farrow-to-finish farms per *Sow/year* (2)		
Tested	Standard	Water (l) (1)	Time (h)	Cost (€)
12 h water	4 h water	494/ ***-285***	-0.17	-0.89
12 h water	6 h water	357/ ***-71***	-0.13	-0.86
4h wetting agent	4h water	-167/ **-167**	-0.13	-1.11
2h wetting agent	4h water	-233/ ***-57***	-0.20	-0.51
1h wetting agent	4h water	-213/ ***20***	0.02	-0.15

(1) Water for soaking phase included/ ***Water for soaking phase not included***

(2) Calculation for a 140 sow farrow-to-finish farm; results per sow /year.

A 2 hour-long soaking phase with a wetting agent, compared to a 4 hour-long soaking phase without a wetting agent, yields the same results: less cleaning-time, less water used and a smaller cost. If the time is cut to one hour, even if there is much less water used, the cleansing phase gets longer.

From an economic point of view, although the use of a wetting agent needs a longer time, the cost is made up for by less water used for the soaking phase. So, a shorter soaking phase with the use of a wetting agent will always be less costly, even if the differences observed remain very small.

References

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2. Corrégé, I. et al.(2003). Journées Rech. Porcine, 37, 427-434.

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