Reducing microbial contamination of poultry transport crates by improved cleaning and disinfection systems based on better water use

Area of research interest: Foodborne pathogens
Study duration: 2002-07-01
Project code: M01023
Conducted by: Silsoe Research Institute
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Background

Studies have shown that a major source of colonisation of poultry flocks of birds is from the poultry crate, which strongly suggests that current techniques for crate washing are relatively ineffective. This project aimed to improve cleaning of poultry transport crates in order to reduce microbiological and physical contamination. The effectiveness of possible alternative methods for crate washing and disinfection was also explored.

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Research Approach

Existing methods of washing crates and crate modules were reviewed. A series of factory and laboratory based studies were undertaken investigating distinct parameters and the results used to produce a good practice document.

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Results

The most effective techniques involved:

- the use of brushes
- using hot water (60oC +) in soaking and spraying
- the use of hot water with detergents
- ultrasonics
- and the use of high concentrations of disinfecting chemicals

The total removal of the developing biofilm on crate surfaces was not essential in achieving a microbiologically clean crate. No technique used individually reduced the microbial counts on the crate surface but when several were used in combination, the microbial count was reduced. The principal output of the study was a suggested code of good practice that covered both the

improvement of existing plants and recommended features for new installations.

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Additional Info

This project contributes to our strategy to reduce significantly the levels of campylobacter in poultry.

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Published Papers

1. Allen, V.M., Burton, C.H., Wilkinson, D.J., Whyte, R.T., Harris, J.A., Howell, M., Tinker, D.B. (2008) Evaluation of the performance of different cleaning treatments in reducing microbial contamination of poultry transport crates. British Poultry Science 49 No. 3 233-240
2. Allen, V.M., Whyte, R.T., Burton, C.H., Harris, J.A., Lovell, R.D.L., Atterbury, R.J., Tinker, D.B. (2008) Effect of ultrasonic treatment during cleaning on the microbiological condition of poultry transport crates. British Poultry Science 49 No. 4 423-428

Research report

England, Northern Ireland and Wales

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