Effect of application of a chlorine based disinfectant in scalding water on the contamination levels of water and broilers

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Abstract

Contamination of broilers with pathogens like Salmonella and Campylobacter continue to be an important issue in the Netherlands and other western countries. Efforts to minimise contamination of broilers with these pathogens in the Netherlands have concentrated on the farm level in the last decade, e.g. ‘attack plans’ of the Product Board (PVE).

Another level to tackle the problem is in the slaughter houses, not only by introduction of a decontamination step but primarily by the optimisation of hygiene in the slaughter process. Scalding is a step in the process often suggested to play a role in the contamination level of the product and to facilitate cross contamination of pathogens. The development of multistage scalding equipment is a result of this insight.

In this work the use of a disinfectant (active substance acidified chlorine) in a two stage scalding tank was studied to test the hypothesis that a reduction of the contamination level in the scalding water should lead to a reduction of the contamination of the carcass. The lay out of the slaughter plant chosen for the experiments allowed direct comparison between modified and unmodified process on two parallel lines fed with birds from one common supply. Effects on total viable count and Enterobacteriaceae counts were measured during the day in both scalding tanks and on the breast-skin of broilers immediately after defeathering. Results showed a clear effect on the contamination levels in the water of both scalding tanks. In the second tank, which has a lower organic load the effect was greater than in the first tank. Also the effect on Enterobacteriaceae was greater than that on total viable count. Finally it was clear that there was no effect on the contamination level of the skin after defeathering.