

## A risk modelling approach for setting process hygiene criteria for Salmonella in pork cutting plants, based on enterococci. - DTU Orbit (08/11/2017)

### **A risk modelling approach for setting process hygiene criteria for Salmonella in pork cutting plants, based on enterococci.**

Pork is known to be a key source of foodborne salmonellosis. Processing steps from slaughter to cutting and retail contribute to the Salmonella consumer exposure. In two extensive surveys comprising a total of 5,310 pork samples, cuttings and minced meat were analysed semiquantitatively for Salmonella and quantitatively for the hygiene indicator enterococci. The samples were collected in 2001/2002 and 2010/2011 in Danish cutting plants, retail supermarkets and butcher shops. A positive correlation between prevalence of Salmonella and number of enterococci was shown (Hansen et al., 2013). As enterococci and Salmonella share a lower growth limit around 5°C, the positive correlation could imply that the meat had been exposed to temperatures above 5°C. Based on these findings, the objective of this study was to develop an approach for setting process hygiene criteria for predicting Salmonella risk in cutting plants from enterococci counts. The novel approach uses risk modelling to associate a relative consumer risk to different levels of enterococci in pork. The applied risk model was a modification of a model developed by Duarte et al. (submitted). The output is an estimate of the relative risk of acquiring salmonellosis associated to a given concentration of Salmonella. The relative risk of acquiring salmonellosis was then associated to the concentration of enterococci by using the observed positive correlation between Salmonella and enterococci as model input. From the applied model it was deduced how much the consumer risk can be reduced if enterococci is kept below a certain limit.

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