Demonstration of persistent contamination of a cooked egg product production facility with Salmonella enterica serovar Tennessee and characterization of the persistent strain - DTU Orbit (06/01/2019)

Aims: The aim of this study was to investigate whether continuous contamination of light pasteurized egg products with Salmonella enterica serovar Tennessee (S. Tennessee) at a large European producer of industrial egg products was caused by persistent contamination of the production facility and to characterize the persistent strains. Methods and Results: Seventy-three S. Tennessee isolates collected from products over a 3-year period with intermittent contamination, and 15 control strains were compared by pulsed field gel electrophoresis (PFGE) using two enzymes. Forty-five case isolates distributed throughout the full period were shown to belong to one profile type. Isolates representing different PFGE profiles were all assigned to ST 319 by multilocus sequence typing (MLST). The case isolates did not show a higher ability to form biofilm on a plastic surface than noncase isolates. Characteristically, members of the persistent clone were weak producers of H2S in laboratory medium. S. Tennessee isolated from the case was able to grow better in pasteurized egg product compared with other serovars investigated. Conclusions: It was concluded that the contamination was caused by a persistent strain in the production facility and that this strain apparently had adapted to grow in the relevant egg product. Significance and Impact of the Study: S. Tennessee has previously been associated with persistence in hatching facilities. This is the first report of persistent contamination of an egg production facility with this serovar.

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