The dynamics of Salmonella occurrence in commercial laying hen flocks throughout a laying period - DTU Orbit (14/04/2019)

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Contaminated eggs and egg products have been recognized for many years as an important source of Salmonella infections in humans in the European Union and in the United States. Longitudinal studies can help to increase our knowledge about the dynamics of the occurrence of Salmonella in the course of a laying period. The total of 41 laying hen flocks*18 in Belgium, six in Denmark and 17 in Germany*were followed during an entire laying period. Samples taken from the empty cleaned and disinfected poultry houses were all negative for Salmonella. After hens arrived on the farms, five pooled faecal samples, one pooled dust sample and 40 cloacal swabs (Belgium and Germany) or 40 swabs from fresh droppings (Denmark) were taken four times from 18 flocks, three times from 21 flocks and two times from two flocks in the course of the laying period. Ten flocks (two Belgian and eight German flocks) tested up to three times positive for Salmonella. Forty-three out of 50 positive samples contained Salmonella Enteritidis phage type 4 (29 isolates) or phage type 8 (14 isolates). The probability of subsequent Salmonella-positive findings increased significantly in Salmonella-positive flocks (PB0.05, odds ratio6.4). However, the probability of finding Salmonella did not depend on the time of sampling in the laying period or the season.

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