Decrease in human salmonellosis in the European Union and reduction of the *Salmonella* prevalence in poultry populations

V. Rizzi¹, F. Boelaert¹, P. Mäkelä¹, J. Takkinen¹, A. Ammon²
1. Zoonoses Data Collection Unit, European Food Safety Authority, Parma, Italy
2. European Centre for Disease Prevention and Control, Stockholm, Sweden

**Background**

Directive 2003/99/EC obligates the European Union (EU) Member States (MSs) to collect data on zoonoses and zoonotic agents, and requests the European Food Safety Authority (EFSA) to analyse these data and publish a Community Summary Report. Human data are analysed and provided by the European Centre for Disease Prevention and Control (ECDC).

According to Directive 2003/99/EC the EU MSs are obliged to implement *Salmonella* control programmes in poultry populations. 2008 was the first year of implementation of the intensified *Salmonella* control programmes in laying hen flocks and the second year of implementation of such programmes in breeding flocks of *Gallus gallus*.

To evaluate descriptively the impact of *Salmonella* control programmes on public health, the trends in the notification rate of human salmonellosis and *Salmonella* prevalence in poultry were compared.

**Methods**

A five-year EU trend in human salmonellosis cases was analysed using Poisson regression while adjusting for potential clustering. The proportional change in reported human *S. Enteritidis* cases was calculated.

Achievement of the EU *Salmonella* reduction target in breeding flocks of *Gallus gallus* of 1 % of the flocks positive to one of the five targeted serovars (*S. Enteritidis*, *S. Typhimurium*, *S. Hadar*, *S. Infantis*, and *S. Virchow*) was investigated, even though the target was only to be met by the end of 2009.

Additionally the achievement of the reduction target in laying hen flocks was assessed; this was defined as the MS-specific percentage of adult flocks remaining positive to *S. Enteritidis* and/or *S. Typhimurium*, proportionate to the prevalence assessed in the framework of the EU-wide baseline survey in laying hen flocks carried out in 2004-2005.

**Results**

In 2008, the statistically significant decreasing trend in the notification rate of human salmonellosis continued in the EU for the fifth consecutive year (Figure 1). *S. Enteritidis* human cases decreased by 10 % and 14 % in 2007 and 2008 respectively.

![Figure 1](http://www.efsa.europa.eu/en/scdocs/scdoc/1496.htm)

In 2008, 20 MSs reported a *Salmonella* prevalence in breeding flocks of *Gallus gallus* lower than or equal to the reduction target of 1 % of flocks infected with the five targeted serovars. Five MSs reported a prevalence above the target, however at low levels (Figure 2).

![Figure 2](http://www.efsa.europa.eu/en/scdocs/scdoc/1496.htm)

A noteworthy decline in the prevalence of *S. Enteritidis* and *S. Typhimurium* in laying hens was observed in 2008 compared to the baseline survey carried out in 2004-2005 and in total 21 MSs met their relative *Salmonella* reduction target in 2008 (Figure 3).

![Figure 3](http://www.efsa.europa.eu/en/scdocs/scdoc/1496.htm)

**Conclusions**

- The data for 2008 suggest that the intensified *Salmonella* control programmes in poultry have had a positive impact on public health by reducing the number of human salmonellosis cases.
- Particularly, the improved situation in laying hen flocks may have been reflected in the decrease of *S. Enteritidis* cases reported in humans between the years 2007 and 2008, since eggs are an important source of these infections.
- The results from the *Salmonella* control programmes in breeding and laying hen flocks are promising and encourage broadening the intensified control efforts further to other animal populations.

**References**


For more information, please contact contact: Valentina Rizzi
valentina.rizzi@efs.a.europa.eu
www.efsa.europa.eu

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