Results from *Salmonella* National Control Programme in chicken laying flocks in GB: 2008 – 2010

J.R. Lawes[1], T. Cheney[1], D. Mueller-Doblies[2] & R. Davies[2]
1. Epidemiology & Risk Analysis, Animal Health and Veterinary Laboratories Agency, Woodham Lane, New Haw, Addlestone, Surrey, UK KT15 3NB
2. Department of Bacteriology and Food Safety, Animal Health and Veterinary Laboratories Agency, Woodham Lane, New Haw, Addlestone, Surrey, UK KT15 3NB
Contact: Joanna.Lawes@ahvla.gsi.gov.uk

AHVLA Animal Health and Veterinary Laboratories Agency

INTRODUCTION

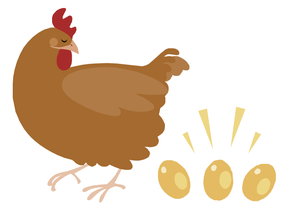
Salmonella is a zoonotic pathogen of public health and economic significance[1]. Human salmonellosis cases are often associated with the consumption of contaminated eggs or egg products, particularly for cases of *S.* Enteritidis[1]. In 2003, EU legislation[2] was implemented that aimed to reduce the prevalence of certain zoonoses at the primary production level by establishing the baseline level in the EC and setting targets for reduction. *Salmonella* in poultry was the initial focus. To achieve the targets, all EU Member States must implement National Control Programmes (NCPs), which set out enhanced monitoring and control requirements for primary producers.

Following a baseline survey in 2005, a target was set to annually reduce the number of adult commercial layer flocks infected with *S.* Enteritidis and/or *S*. Typhimurium ("regulated serovars") by ≥ 10% relative to the previous year, starting from 2008[2]. The baseline prevalence was 8.0%. From 1st January 2009, eggs from flocks with unknown health status or from flocks infected with *S.* Enteritidis or *S.* Typhimurium can only be used for human consumption if they are heat treated[3].

NCP inclusion/exclusion criteria[4]:

1. All layer flocks of ≥ 350 birds are included.
2. Producers supplying small quantities direct to the final consumer are excluded.
3. Producers with <350 birds that are not exempted by (2) are included.

This poster presents the results of the *Salmonella* monitoring in the first three years (2008-2010) of the NCP for flocks of laying hens.



METHODS

Sampling requirements[2]

Age of flock	Operator sampling	Official sampling (by Competent Authority)
Immature 	▪ Day old chicks: chick box liners or hatchery tray liners and dead-on-arrival chicks. ▪ Two weeks before coming into lay: two pairs of boot swabs (free range/ barn flocks) or two composite faeces samples (caged flocks).	N/A
Adult 	▪ Two pairs of boot swabs (or equivalent faeces samples) from all flocks starting at 22-26 weeks of age and then at 15-week intervals.	Two pairs of boot swabs (or equivalent faeces samples), and a dust sample: ▪ Once/year from one flock on each holding with >1000 birds. ▪ Following a *S*. Enteritidis/*S.* Typhimurium positive flock: ○ From the follow-on flock at 22-26 weeks of age. ○ From all other flocks on site.

Source of data

Salmonella is a statutory organism[5] so AHVLA receives reports of all *Salmonella* isolates from laying flocks in Great Britain. The data are stored on the AHVLA Farmfile *Salmonella* database. The annual datasets were retrieved in March 2009, 2010 and 2011, respectively. The data extracts included information on name & address of sampled premises, reason for submission, date of sampling, age of birds sampled, sample type, serovar & phage type and flock ID (in order to uniquely identify the positive flock)

Data validation

Data were cleansed and validated using Microsoft Excel 2003. Missing data were followed up by contacting the submitting laboratory.

Inclusion criteria

Only *Salmonella* field strains (i.e. vaccine strains were excluded). Only isolates cultured from sample types specified in the NCP (e.g. non-specific environmental samples excluded).

'Flock' = all poultry of the same health status kept on the same premises or in the same enclosure and constituting a single epidemiological unit; for housed poultry this includes all birds sharing the same airspace.

RESULTS

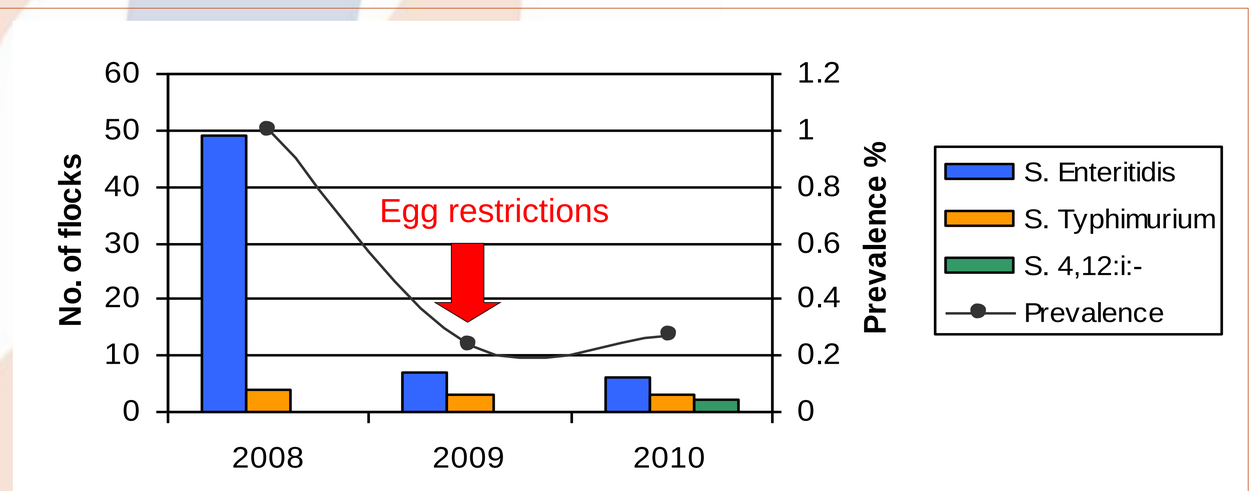


Figure 1: Prevalence of regulated serovars* in chicken laying flocks in GB 2008-2010

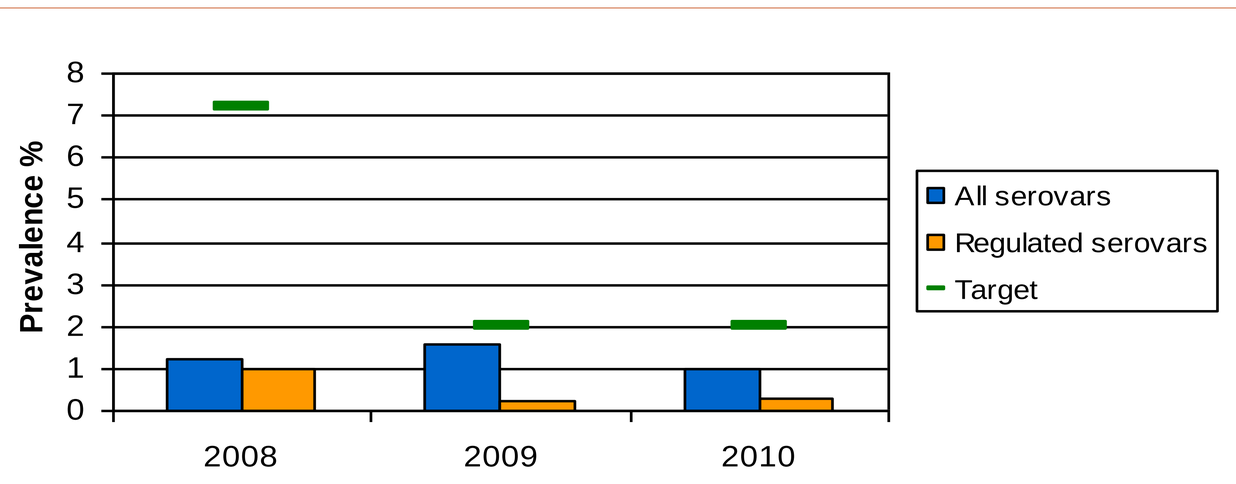


Figure 2: Prevalence of regulated serovars* and all serovars in chicken flocks in GB in relation to the EU target

* In 2008 and 2009, "regulated serovars" only included *S*. Enteritidis and *S*. Typhimurium. For 2010, any reporting of monophasic *S*. Typhimurium was counted as a target serovar[6].

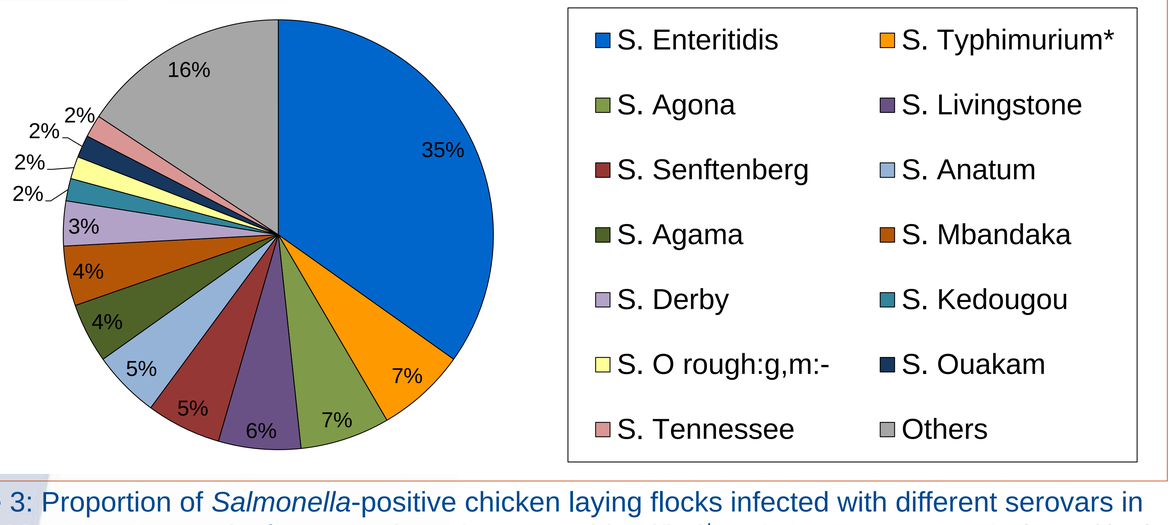


Figure 3: Proportion of *Salmonella*-positive chicken laying flocks infected with different serovars in GB 2008-2010. Due to the large number of serovars identified†, only those responsible for ≥2% of positive flocks are displayed. **S*. Typhimurium includes monophasic *S.* Typhimurium.

† 2008: 13 serovars; 2009: 24 serovars; 2010: 22 serovars; total 2008-2010: 36 serovars

CONCLUSIONS

- The estimated prevalence of *Salmonella* Enteritidis and/or *S.* Typhimurium in adult egg laying flocks in Great Britain has been well below the target in each of the first three years of the NCP.
- The considerable reduction in *Salmonella* prevalence since the EU baseline survey indicates the progress that continues to be made in controlling *Salmonella* in the UK egg industry.
- *S*. Enteritidis was still the most common serovar in both 2008 and 2010 as well as overall for 2008-2010 combined, which indicates the continuing public health risk and the scope for further improvement – e.g. total eradication of *S*. Enteritidis.
- The emerging monophasic strains of *S*. Typhimurium were first detected by the NCP in 2010. They appear to be at a low prevalence and in free-range flocks only. They are now included as "regulated" serovars so should also be strictly controlled.

REFERENCES

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6 Scientific Opinion on monitoring and assessment of the public health risk of "*Salmonella* Typhimurium-like strains" http://www.efsa.europa.eu/en/efsajournal/pub/1826.htm

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