

**Report of the
Task Force on Zoonoses Data Collection
on the Analysis of the baseline survey on the prevalence of
Salmonella in slaughter pigs, in the EU, 2006-2007¹**

Part A: *Salmonella* prevalence estimates

(Question N° EFSA-Q-2006-042A)

**Adopted by
The Task Force on 30 May 2008**

Summary

Salmonella is an important cause of food-borne illness in humans. Farm animals and foods of animal origin form an important source of human *Salmonella* infections. Therefore, in order to reduce the incidence of human salmonellosis in the European Union, Community legislation foresees the setting of *Salmonella* reduction targets for food-animal populations including slaughter pigs. To underpin such a target, a European Union-wide baseline survey was carried out to determine, at the point of slaughter, the prevalence of pigs infected with *Salmonella*. The pigs were randomly selected from those slaughterhouses that together accounted for 80% of pigs slaughtered within each Member State. This slaughterhouse survey was the fourth baseline survey to be conducted in the European Community.

The sampling of slaughter pigs took place between October 2006 and September 2007. All participating Member States and Norway sampled ileo-caecal lymph nodes from the selected slaughtered pigs. In total 19,159 slaughter pigs were sampled and 19,071 lymph node samples collected.

Twenty-four of the 25 participating Member States isolated *Salmonella* spp. from the lymph node samples, which resulted in a Community observed prevalence of *Salmonella*-positive slaughter pigs of 10.3%. This means that in the European Union at the point of slaughter one in ten slaughter pigs were estimated to be infected with *Salmonella* in the lymph nodes. The *Salmonella* prevalence in these slaughter pigs varied widely amongst the Member States, from 0.0% to 29.0%.

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All 24 Member States reporting *Salmonella* positive findings isolated *Salmonella* Typhimurium and 20 Member States detected *Salmonella* Derby, which are two common serovars found in *Salmonella* infection cases in humans. This resulted in an estimated Community observed prevalence of 4.7% for *S. Typhimurium*, varying from 0.0% to 16.1% within the Member States, and of 2.1% for *S. Derby*, varying from 0.0% to 6.5%.

From the pigs that had already been selected for sampling of lymph nodes, 13 Member States collected carcass swabs to determine the prevalence of external contamination with *Salmonella*. Data from this group of Member States showed that the observed prevalence of carcasses contaminated with *Salmonella* spp. was 8.3% overall, meaning that one in twelve carcasses were contaminated with *Salmonella* for this group of Member States. At the Member States' level, the prevalence of contaminated carcasses ranged from 0.0% to 20.0%.

In addition, 9 Member States additionally collected either meat juice or blood samples with the aim of investigating the prevalence of slaughter pigs with antibodies against *Salmonella*, indicating past exposure of the pig to *Salmonella*. These Member States used different laboratory antibody detection test kits and a comparison study done by the Community Reference Laboratory for *Salmonella* showed that the results of these different test methods were not comparable between the Member States. Therefore no overall prevalence of slaughter pigs with antibodies against *Salmonella* could be estimated for this group of Member States. At the Member States' level the prevalence of slaughter pigs with antibodies against *Salmonella* ranged from 3.5% to 33.3%.

The diversity of isolated *Salmonella* serovars in slaughter pig lymph nodes was big and in total 87 different serovars were isolated in the European Union. The five most frequently isolated *Salmonella* serovars from lymph nodes in the European Union were respectively in decreasing order *S. Typhimurium*, *S. Derby*, *S. Rissen*, *S. 4,[5],12:i:-* and *S. Enteritidis*. All these serovars, with the exception of *S. Rissen*, are frequent causes of *Salmonella* infections in humans within the European Union. *S. Typhimurium* and *S. Derby* serovars were highly predominant in lymph nodes; *S. Typhimurium* being the most common serovar, detected in 40.0% of the *Salmonella*-positive slaughter pigs and reported by all 24 *Salmonella*-positive Member States. *S. Derby* accounted also for an important proportion of positive lymph nodes (14.6%) and was reported by 20 *Salmonella*-positive Member States.

Together 30 different serovars were reported from the surface of the slaughter pig carcasses by the 13 Member States that carried out the test. The five most frequently isolated serovars from carcasses were respectively in decreasing order *S. Typhimurium*, *S. Derby*, *S. Infantis*, *S. Bredeney* and *S. Brandenburg*. The former three serovars are frequent causes of *Salmonella* infections in humans within the European Union. *S. Typhimurium* was the most common serovar isolated on the surface of the slaughter pig carcasses and detected in 49.4% of the *Salmonella* positive carcasses. The second most common serovar was *S. Derby* (24.3% of the positive carcasses). *S. Typhimurium* and *S. Derby* were also the most commonly reported ones in terms of the number of Member States, in total 10 of the 13 participating Member States.

Salmonella infection in slaughter pigs has the potential to translate into *Salmonella* contamination of pig meat and lead to human disease. Intervention to reduce the prevalence of infection in pigs may reduce the number of human salmonellosis cases. Safe handling of raw meat and thorough

cooking are important measures to minimise human health risks from *Salmonella* contaminated pig meat.

The results of this baseline survey are suitable to be used for setting of targets for reduction of *Salmonella* in pigs. The Community legislation foresees setting of target for slaughter pigs regarding all *Salmonella* serovars with public health significance supported by a cost benefit analysis.