

SCIENTIFIC REPORT OF EFSA

Analysis of the baseline survey on the prevalence of *Campylobacter* in broiler batches and of *Campylobacter* and *Salmonella* on broiler carcasses in the EU, 2008¹

Part A: *Campylobacter* and *Salmonella* prevalence estimates

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SUMMARY

In the European Union, campylobacteriosis and salmonellosis are the two most frequently reported food-borne illnesses in humans. Broiler meat is considered to be an important food-borne source of both these human diseases.

In order to establish baseline and comparable values for all Member States, a European Union-wide baseline survey was carried out at slaughterhouse level to determine the prevalence of *Campylobacter* in broiler batches and of *Campylobacter* and *Salmonella* on broiler carcasses. The broiler batches and carcasses were randomly selected from the broiler slaughterhouses within each Member State. This was the sixth baseline survey to be conducted in the European Community and it was the first baseline survey directly investigating foodstuffs.

Sampling took place between January and December 2008. A total of 10,132 broiler batches sampled from 561 slaughterhouses in 26 European Union Member States, plus Norway and Switzerland, were included in the survey. From each selected batch the caecal contents of 10 slaughtered broilers were collected, pooled and examined for *Campylobacter*. Furthermore, from the same batch one carcass was collected immediately after chilling and the neck skin together with the breast skin was examined for the presence of *Campylobacter* and *Salmonella*, in addition to the determination of the *Campylobacter* counts. At least one *Campylobacter* isolate was speciated from each positive sample and also at least one isolate serotyped from each *Salmonella*-positive sample.

Campylobacter was detected in pooled caecal contents of broilers and on broiler carcasses in all 26 participating Member States and the two non-Member States. At Community level the prevalence of *Campylobacter*-colonised broiler batches was 71.2% and that of *Campylobacter*-contaminated broiler carcasses was 75.8%. Member State prevalence varied from 2.0% to 100.0% and from 4.9% to 100.0%, for caecal contents and carcasses, respectively. About two-thirds of the *Campylobacter* isolates from the broiler

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batches as well as those from the broiler carcasses were identified as *Campylobacter jejuni*, while one-third was *Campylobacter coli*. Few were speciated as other *Campylobacter* species.

The counts of *Campylobacter* bacteria on broiler carcasses varied also widely between countries. In general there was a tendency for high counts in countries with high *Campylobacter* prevalence. In the European Union, almost half (47.0%) of the carcasses contained less than 10 *Campylobacter* per g (cfu/g) and 12.2% contained between 10-99 cfu/g. Higher counts were detected as follows: between 100-999 cfu/g on 19.3%, between 1,000-10,000 cfu/g on 15.8% and more than 10,000 cfu/g on 5.8% of carcasses.

Twenty-two of the 26 participating Member States and one non-Member State isolated *Salmonella* from the broiler carcass samples, with a Community prevalence of *Salmonella*-contaminated broiler carcasses of 15.7% at slaughterhouse level. The prevalence of *Salmonella*-contaminated broiler carcasses varied widely among Member States, from 0.0% to 26.6%. However, Hungary had an exceptionally high prevalence of 85.6% with the majority of isolates being *Salmonella* Infantis. Seventeen Member States isolated *Salmonella* Enteritidis or Typhimurium. This resulted in an estimated Community prevalence of *Salmonella* Enteritidis or *Salmonella* Typhimurium-contaminated broiler carcasses of 3.6%, varying from 0.0% to 9.6% within Member States.

At European Union level the four most frequently isolated *Salmonella* serovars on broiler carcasses were respectively, in decreasing order, *Salmonella* Infantis (29.2% of the *Salmonella* positive broiler carcass samples), *Salmonella* Enteritidis (13.6%), *Salmonella* Kentucky (6.2%) and *Salmonella* Typhimurium (4.4%). Out of these *Salmonella* Enteritidis and *Salmonella* Typhimurium are commonly reported in human salmonellosis cases in the European Union, whereas the *Salmonella* Infantis and *Salmonella* Kentucky generally constitute a minor proportion of human infections. Seventy-five percent of the *Salmonella* Infantis-positive samples were reported by Hungary. The serovar distribution varied among Member States, many of them having a specific distribution pattern.

The Member State and European Union level prevalence presented in the report are apparent prevalences, meaning that the prevalence estimates do not account for imperfect test characteristics.

Broiler meat is considered an important food-borne source of both human *Campylobacter* and *Salmonella* infections in the European Union. The risk for human health arises from consumption of under-cooked the meat or cross-contamination of other foods. Safe handling of raw meat, thorough cooking and strict kitchen hygiene should prevent or reduce the risk posed by *Campylobacter* and *Salmonella*-contaminated broiler meat.

The *Campylobacter* and *Salmonella* baseline figures may be used in the future to follow trends and to evaluate the impact of control and monitoring programmes. The figures also provide useful information for setting reduction and performance objectives and possibly for evaluating some potential intervention methods. However, further research on the epidemiology and surveillance methods of *Campylobacter* in the broiler meat production is recommended. In the national *Salmonella* control and surveillance programmes of broiler flocks and broiler meat, Member States may need to address serovars other than *Salmonella* Enteritidis and *Salmonella* Typhimurium.