

A microbiological survey of campylobacter contamination in fresh whole UK-produced chilled chickens at retail sale (Y6)

Area of research interest: [Antimicrobial resistance](#)

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Project status: Completed

Project code: FS102121

Conducted by: Public Health England (PHE)

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Background

Campylobacter spp. are the most common bacterial cause of foodborne illness in the UK, with chicken considered to be the most important vehicle for this organism. The FSA agreed with industry to reduce campylobacter spp. contamination in raw chicken and issued a target to reduce the prevalence of the most contaminated chickens (those with more than 1000 cfu per gram chicken neck skin) to below 10% at the end of the slaughter process, initially by 2016.

To help monitor progress, a series of UK-wide surveys were undertaken to determine the levels of campylobacter spp. on whole UK-produced, fresh chicken at retail sale in the UK. The data obtained for the first five years was reported in FSA projects FS241044 – year 1 (2014/15) and FS102121- year 2 to 5 (2015 to 2019). This new survey represents year 6 of sampling, carried out from August 2019 to October 2020.

Research approach

A UK-wide survey was undertaken to determine the levels of campylobacter spp. on whole fresh retail chickens from non-major retailer stores in a sixth survey year from 2019 to 2020. In line with previous practise, samples were collected from stores distributed throughout the UK (in proportion to the population size of each country). Testing was performed by Public Health England Food, Water and Environmental Microbiology Service Laboratories and the Agri-Food & Biosciences Institute, Belfast

Enumeration of campylobacter spp. was performed using the ISO 10272-2 standard enumeration method applied with a detection limit of 10 colony forming units (cfu) per gram (g) of neck skin. Antimicrobial resistance (AMR) to selected antimicrobials in accordance with those advised in the EU harmonised monitoring protocol was predicted from genome sequence data in campylobacter jejuni and campylobacter coli isolates.

Results

A total of 1008 whole fresh raw chickens from non-major retailer stores were collected from August 2019 to October 2020. Campylobacter spp. were detected in 59.6% of the chicken skin samples obtained from non-major retailer shops, and 12.8% of the samples had counts above 1000 cfu per g chicken skin. Comparison among production plant approval codes showed significant differences of the percentages of chicken samples with more than 1000 cfu per g,

ranging from 0% to 34.9%.

The percentage of samples with less than 10 cfu per g was significantly lower for samples collected in the months of June, July and August compared to the other calendar months. The percentage of highly contaminated samples was significantly higher in samples taken from larger chicken (those weighing more than 1750g) compared to smaller ones.

There were no statistical differences in the percentage of highly contaminated samples between those obtained from free-range and organically reared birds and those reared under a standard regime (these have no access to range) but the small sample size for organic and to a lesser extent free-range chickens, may have limited the ability to detect important differences should they exist.

Overall, the percentages of isolates with genetic AMR determinants found in this study were similar to those reported in the previous survey years. It is recommended that trends in AMR in campylobacter spp. isolates from retail chickens continue to be monitored to realise any increasing resistance of concern.

Research report

Year 6

PDF

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EXCEL

[View Year 6 retail survey raw data as Excel\(Open in a new window\)](#) (365.57 KB)

WORD

[View Retail survey protocol Y6 as Word\(Open in a new window\)](#) (15.83 KB)

Previous research reports

Year 5

PDF

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EXCEL

[View Campylobacter Year 5 retail survey raw data as Excel\(Open in a new window\)](#) (233.67 KB)

Year 4

PDF

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Year 3

PDF

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England, Northern Ireland and Wales

PDF

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Year 2

England, Northern Ireland and Wales

PDF

[View Report on survey of campylobacter contamination in fresh whole UK-produced chilled chickens at retail: July - September 2015 as PDF\(Open in a new window\)](#) (446.79 KB)

England, Northern Ireland and Wales

PDF

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England, Northern Ireland and Wales

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