Prevalence of Campylobacter spp. in the red meat

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Aim:

To study the prevalence and distribution of Campylobacter species in red meats compared to chicken collected from retail outlets in London

During Covid-19 pandemic year, the total UK poultry meat production was up by 5.7% at 153.2 thousand tonnes (EFRA, 2020) and there is an increasing consumer demand to control and/or reduce the level of Camplyobacter contamination in chicken meat.

Campylobacter spp. is a major cause of gastroenteritis in humans in the UK and across the world. The transmission of Campylobacteriosis is mainly through eating raw or undercooked poultry meats (e.g., chicken), unpasteurised milk and contaminated water and to a lesser extent, person to person (Costa and Iroala, 2019). Cross contamination to ready-to-eat foods, food preparation surfaces and utensils or food handlers seem to be the major contributing factors in spreading the contamination. The prevalence of Campylobacter spp. in chicken is greatly studied worldwide, however, the reports on potential cross contamination to red meat through sharing the chopping board and utensils as well as butcher's hands during preparation at local butcheries and supermarkets are rare. This study examines the potential risks of cross contamination from raw chicken to red meat on samples taken from retail. Microbial analysis will be carried out and recommendations will be made, should the level of cross contamination be alarming.

Methodology:

Chicken and meat samples from local butcheries and supermarket (~ 20) will be

examined for the presence, level of contamination and dominant species of Campylobacter in chicken and red meat as described by (Nicorici & Ghoddusi, 2016). Briefly, Brilliance CampyCount Agar (BCCA) (Oxoid) is used for the selective enumeration of Campylobacter spp. The results will be analysed according to recommended classification by the Food Standards Agency (FSA). The distribution of Campylobacter species will be examined with Polymerase Chain reaction (PCR) method using species-specific primers

Anticipated outcome:

The study is expected to provide further information on the potential contribution of meats other than chicken in campylobacteriosis infection. Recommendations on preventative measure to control or minimise the Campylobacter contamination, with specific focus on cross contamination will be made.

It is anticipated that this study could have an impact on the food policy in meat retails and tightens the cross-contamination measures currently in place.

References:

Costa,D and Iroalo,G (2019) ‘Pathogenomics of Emerging Campylobacter Species’ Clinical Microbiology Review, 32(4).

EFRA (2020) Available at: https://www.gov.uk/government/statistics/poultry-and-poultry-meat-statistics

Nicorici, G and Ghoddusi, H (2016) ‘Prevalence of Campylobacter Contamination in Raw Chicken and Chicken Liver at Retail’, Food Safety Magazine.