

**P1591 Detection of *Salmonella* serotypes adapted to diverse stresses in poultry meat at the processing level in Portugal**

Sofia Ribeiro<sup>1</sup>, Joana Vanessa Cordeiro Melro Mourão<sup>1</sup>, Andreia Rebelo<sup>1</sup>, Carla Novais<sup>1</sup>, Luisa Maria Vieira Peixe<sup>1</sup>, Patricia Antunes\*<sup>1,2</sup>

<sup>1</sup> UCIBIO/REQUIMTE. Laboratório de Microbiologia, Faculdade de Farmácia, Universidade do Porto, Porto, Portugal, <sup>2</sup> Faculdade de Ciências da Nutrição e Alimentação, Universidade do Porto., Porto, Portugal

**Background:** Non-typhoidal *Salmonella* causes frequently foodborne infections mainly associated with the consumption of eggs/poultry products. A decreasing trend in human salmonellosis, particularly of *S. Enteritidis*, has been observed in EU due to successful control programs at the avian production level. Nevertheless, expansion of less frequent serotypes and/or certain well-adapted clones has been reported. The effectiveness of control practices (e.g. organic acids in feed/biocides) on the elimination of *Salmonella*, and particularly of EU targeted serotypes, in poultry has been scarcely explored. Here, we investigated the presence of *Salmonella*, using conventional and molecular approaches, and characterize their clinically-relevant serotypes, among fresh chicken-meat samples at poultry processing level in Portugal.

**Materials/methods:** Pooled chicken-meat samples (n=53; each sample=neck skin from 10 carcasses of the same batch) obtained after slaughter and chilling, corresponding to 29 Portuguese producers, were collected in 2018 spring/summer periods. Samples (25g) were pre-enriched (37°C/16-18h) in Buffered-Peptone-Water and processed following ISO-6579-1:2017 standard. A PCR targeting *Salmonella invA* gene was applied directly in the pre-enrichment and enrichments broths. Search of EU targeted serotypes (*Enteritidis*/*Typhimurium*/4,5,12:i:-) and their antibiotic/metal resistance markers were performed by PCR. Ability to survive/grow at acidic pH (2;2.5;3;3.5;4;4.5;5;5.5;6;6.5) was evaluated by broth-microdilution.

**Results:** *Salmonella* was detected in two samples of fresh chicken-meat (4%) obtained from different poultry-farms in both seasons, by cultural and molecular (only PCR-assay in the enrichments) approaches. The isolates belonged to a non-H<sub>2</sub>S-producing serotype *S. 4,5,12:i:-* (n=6 isolates/spring sample), with the typical antibiotic (*bla*<sub>TEM</sub>+*strA-strB+sul2±tetB*) and metal (*pcoD+silA+arsB1±merA*) resistance features of clones currently circulating in Europe, or *S. Enteritidis* (n=3 isolates/summer sample). All isolates grew at minimal pH=4 and survived until pH=3.5.

**Conclusions:** A low occurrence of *Salmonella* in chicken carcasses was observed, although with detection of two serotypes of public health significance with ability to grow under diverse stresses. Despite the successful control practices in avian production, our results alert for the need to evaluate current biosafety measures to prevent the spread of these pathogens in the poultry production through the final consumer. Molecular detection methods as PCR could be alternative to laborious and slower conventional approaches, with the possibility for further improvements in sensitivity at pre-enrichment step.

