Poster Abstracts

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GROWTH KINETICS OF CAMPYLOBACTER JEJUNI AND ESBLS IN ENRICHMENT PROCEDURES

W. C. Hazeleger [1,*], M. I. Lanzl [1], W. F. Jacobs-Reitsma [2], H. M. W. Den Besten [1]

[1]Laboratory of Food Microbiology, Wageningen University, Wageningen, [2]Z&O, National Institute for Public Health and the Environment, Bilthoven, Netherlands

Abstract Content: The presence of extended-spectrum β-lactamase (ESBL)-producing *Enterobacteriaceae* in food has become important factors that interfere with the isolation of *Campylobacter*, resulting in false-negative detection tests.

The ISO-protocol for detection of thermotolerant *Campylobacter* spp. in food and animal feeding stuffs (ISO 10272-1, 2006) describes the use of Bolton broth (BB) which is mixed 10:1 with the food sample including a pre-enrichment step at 37°C to resuscitate sublethally damaged cells. Currently, the ISO-protocol is revised ((ISO 10272-1, 2016) and a distinction is made between different food samples, where the more selective Preston Broth (PB) is advised for samples in which high background flora such as ESBLs is suspected. However, detailed growth dynamics of *Campylobacter* and its competitors during enrichment remain unclear, while these would provide a solid base for further improvement of the enrichment procedure of *Campylobacter*.

Therefore, growth kinetics were studied in detail using several strains of *C. jejuni* and ESBLs combined and separately in BB, PB and BB supplemented with clavulanic acid (BBc). Also, growth dynamics of *Campylobacter* and ESBLs in naturally contaminated chicken samples were evaluated with and without pre-enrichment step of 4-6 h at 37°C.

No significant differences in growth kinetics were found using a pre-enrichment step of 4 h at 37°C compared to immediate enrichment at 41.5°C, even in food samples with sublethally damaged cells. Furthermore, the yields and often the growth rates of *Campylobacter* in co-cultures with ESBLs were lower than in pure cultures, indicating severe suppression of *Campylobacter* by ESBLs, causing false-negative detection results. PB and BBc, however, successfully inhibited growth of ESBLs and are therefore a better choice as enrichment media for potentially ESBL-contaminated samples.

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