



SWEDISH
VETERINARY
AGENCY

CEN/TC 463/WG 3 'Campylobacter'

A literature and laboratory study on Campylobacter enrichment broths

EURL-Campylobacter workshop 2024
Hanna Skarin EURL-Campylobacter, 22
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Photo: Linda Svensson, SVA

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01 Ongoing work in CEN/TC 463/WG 3

ISO 10272-1 Detection

- Explore if the method can be improved by changing enrichment broth
- If yes, full revision of this part and validate five food categories after CD approval
- If not (and we confirm the latest version of ISO 10272-1), perform an ILS for the 5th missing food category (fresh produce and fruits)

Standard validated for scope 'Broad range of foods' means laboratories can add additional categories for analysis without specific validation.

ISO 10272-2 Enumeration

- Call for data in ISO/TC 34/SC9 on matrices routinely analysed with EN ISO 10272-2 from 23/12/2023 to 15/02/2024
- Plan to organise validation as part of EURL-*Campylobacter* PT in 2026 and put validation data in a second amendment

Data received from 15 laboratories. Large variation of categories analysed (total of 13 categories reported).

02 Literature study

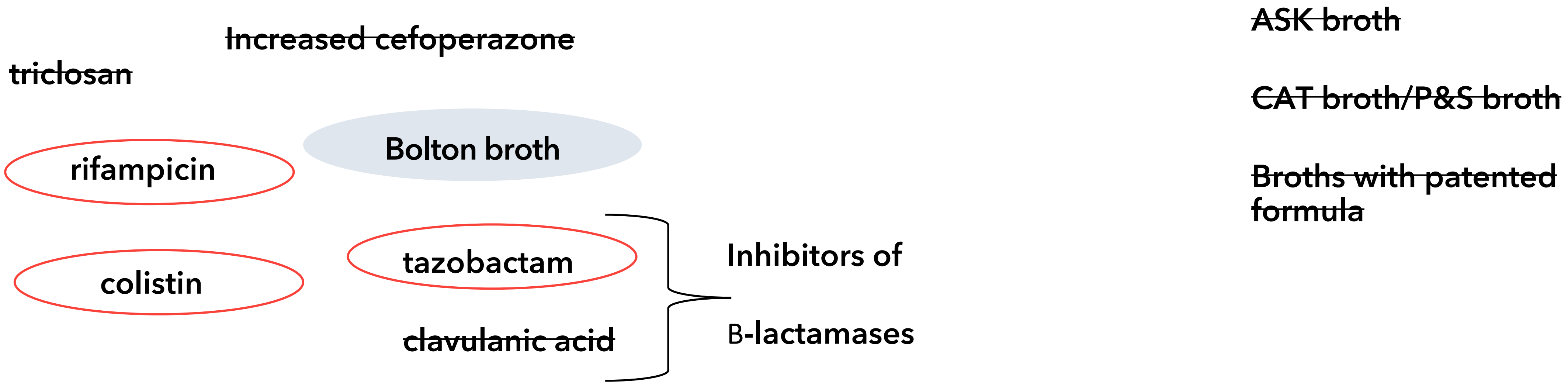
- Performed by EURL-*Campylobacter* 2023
- The literature search included: Web of science, Scopus, Biosys, BioRxiv, MedRxiv, Base and Dimension
 - Search words: enrichment, campylobacter
 - From 2010 and until November 2023
- 1270 hits after removing duplications
- Aim: A broth selective for *Campylobacter* that is also good at keeping down background flora (similar function to Preston)
- Initial sorting by reading abstracts (sometimes full articles)
- Read full articles of possible candidates, narrowed down the list of potential candidates and summarised information
- Discussed all possible candidates within CEN/TC 463/WG 3

Is it possible to replace Bolton and Preston broth with ONE enrichment broth?



Candidates from literature study

Name medium	Cephalosporins (mg/L)	Trimetoprim (mg/L)	Polymyxin B (IU/L)	Vancomycin (mg/L)	Rifampicin (mg/L)	Amphotericin B (mg/L)	Other agents/methods	Comments
Effect	Gram pos bacteria	Gram-neg bacteria (inc. Proteus)	Gram-neg bacteria (except some Proteus)	Gram-pos bacteria	Gram-pos and neg bacteria	Yests and moulds		
Preston		10	5000		10	10	Blood, FBP	
Bolton	20 cefoperazone	20		20		10	Blood, hemin, a-ketoglutarate, BP	
Exeter	10 cefoperazone	10	2500		5	2	Produced from BB base, FPB	



03 Enrichment broth study

- The study will be carried out within laboratories of CEN/TC 463/WG 3 *Campylobacter*.
- Aim is to define the composition of the enrichment broth candidates and simultaneously get a first indication of the potential of the candidates.
- If one or several of the candidates show promising results in comparison with PB and BB, we may continue with a follow-up study to combine selective substances.
- (Eventually organise a real-life study according to ISO 17468 within ISO/TC 34/SC 9.)

Enrichment broth candidates

Name of enrichment broth	Description	To be defined from the study	Explanation for chosen concentrations
BBr	BB + rifampicin (5 and 12.5 mg/L)	Performance (sensitivity and specificity) in comparison with BB and PB. Concentration of rifampicin	Concentrations based on literature
BBco	BB + colistin (5000 and 10 000 IU/L)	Performance (sensitivity and specificity) in comparison with BB and PB. Concentration of colistin	10 000 IU/L: Concentration of colistin used in Butzler media
BBtaz	BB + tazobactam (1.5 and 4 mg/L)	Performance (sensitivity and specificity) in comparison with BB and PB. Concentration of tazobactam	Concentrations based on literature
Exeter broth	As in Williams et al. 2012 Basic broth as BB + commercially available selective vials + FBP	Performance (sensitivity and specificity) in comparison with BB and PB	-

Outline of the study

- Use a variety of *Campylobacter* strains of *C. jejuni*, *C. coli* and *C. lari*
 - All participants will test one of reference strains WDCM 0004 or 0005 and at least two field strains
- Samples will include chicken meat and a chicken caecal background flora suspension supplemented with ESBL strains
 - All participants will include one common ESBL strain and own field strains
- Each participant will produce their own media following the same protocol
- The incubation temperature will be 41.5 °C - but one BB sample will be incubated according to ISO 10272 (37 °C 4 hours, 41.5 °C 44 hours) for comparison
- Detection and Enumeration will be performed after 24 hours and after 48 hours

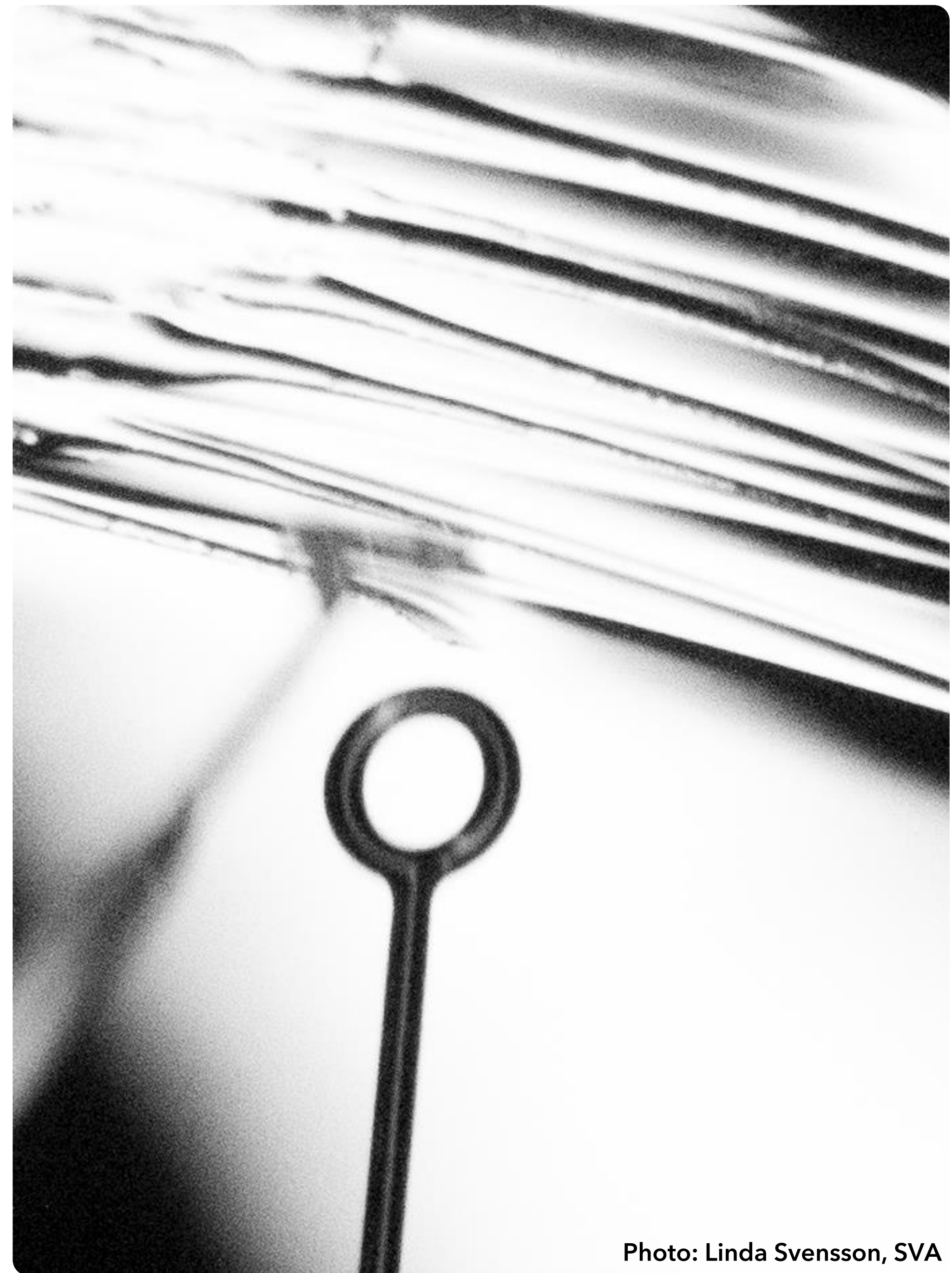
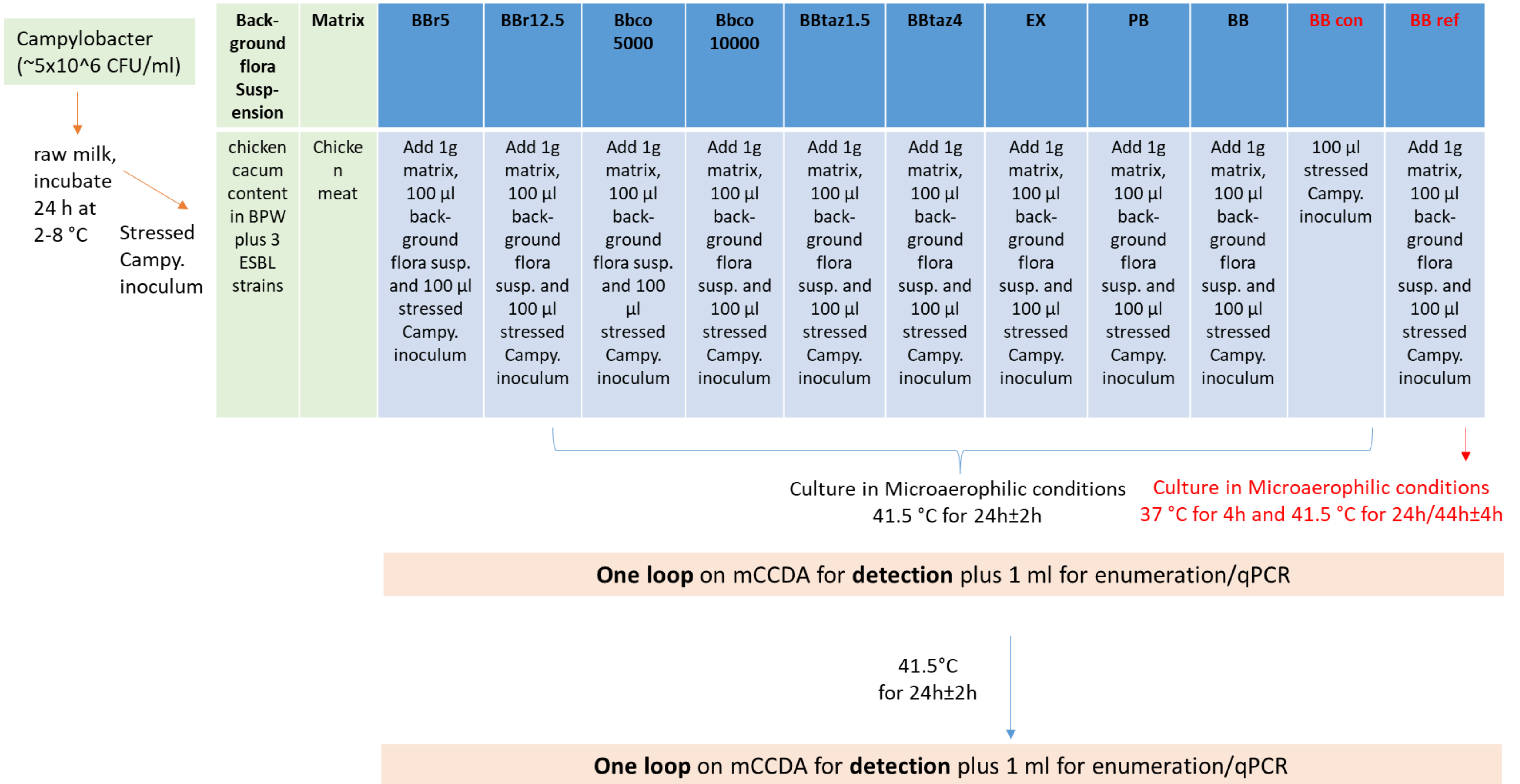


Photo: Linda Svensson, SVA



Study timeline

- Pilot study performed by BfR and SVA in the autumn 2024.
- Next CEN/TC 463/WG 3 *Campylobacter* meeting will be 27 November, 2024.
- Participants of CEN/TC 463/WG 3 *Campylobacter* will be able to register to participate in the study.
- The EURL-*Campylobacter* will send out material (27 January?).
- Results will be collected until 15 May 2024.

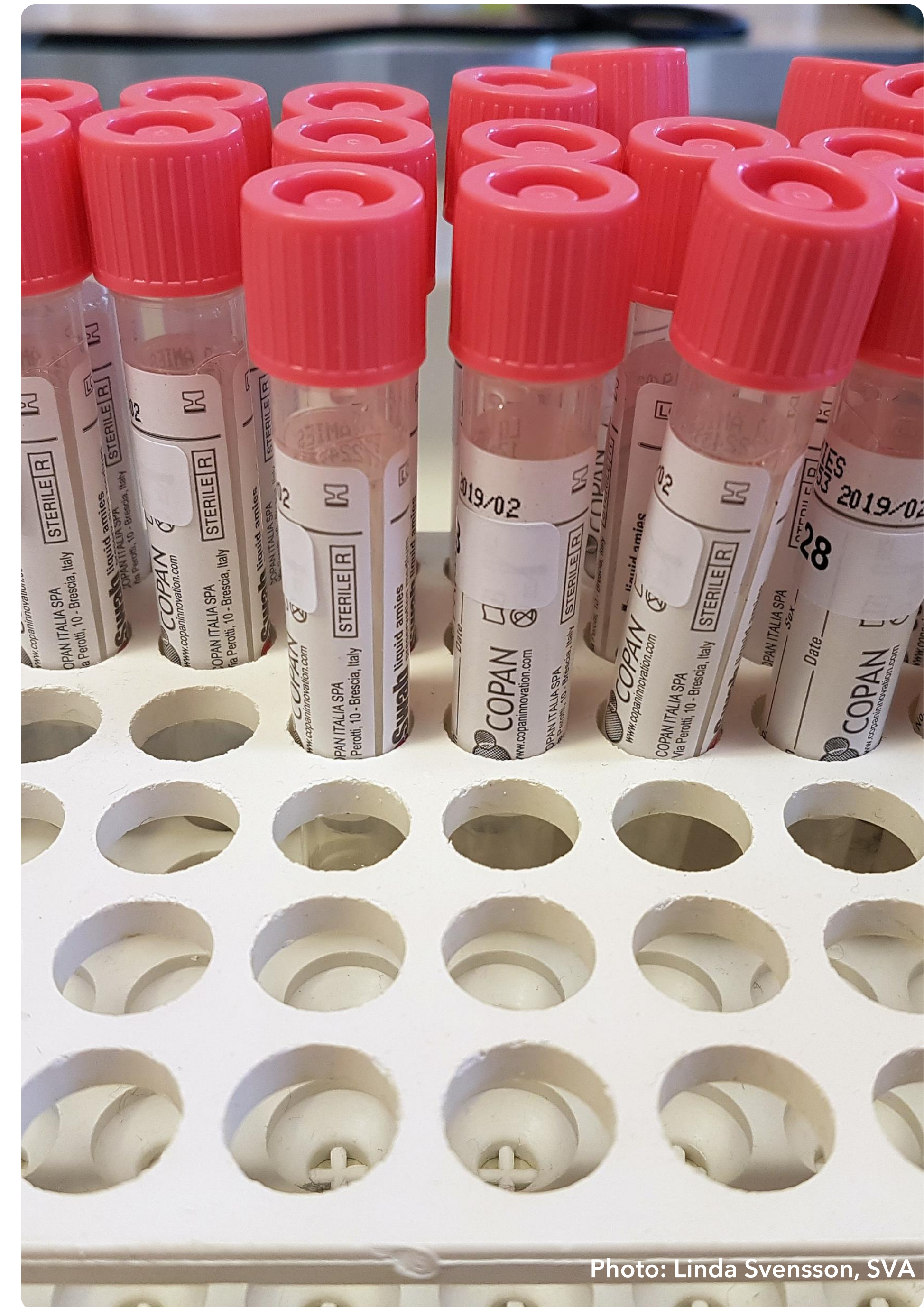


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Thank you!

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- Especially to Kerstin Stingl, BfR and Martine Denis, ANSES

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