DETECTION OF *YERSINIA ENTEROCOLITICA* IN EWE'S MILK: COMPARISON OF THREE DIFFERENT METHODS

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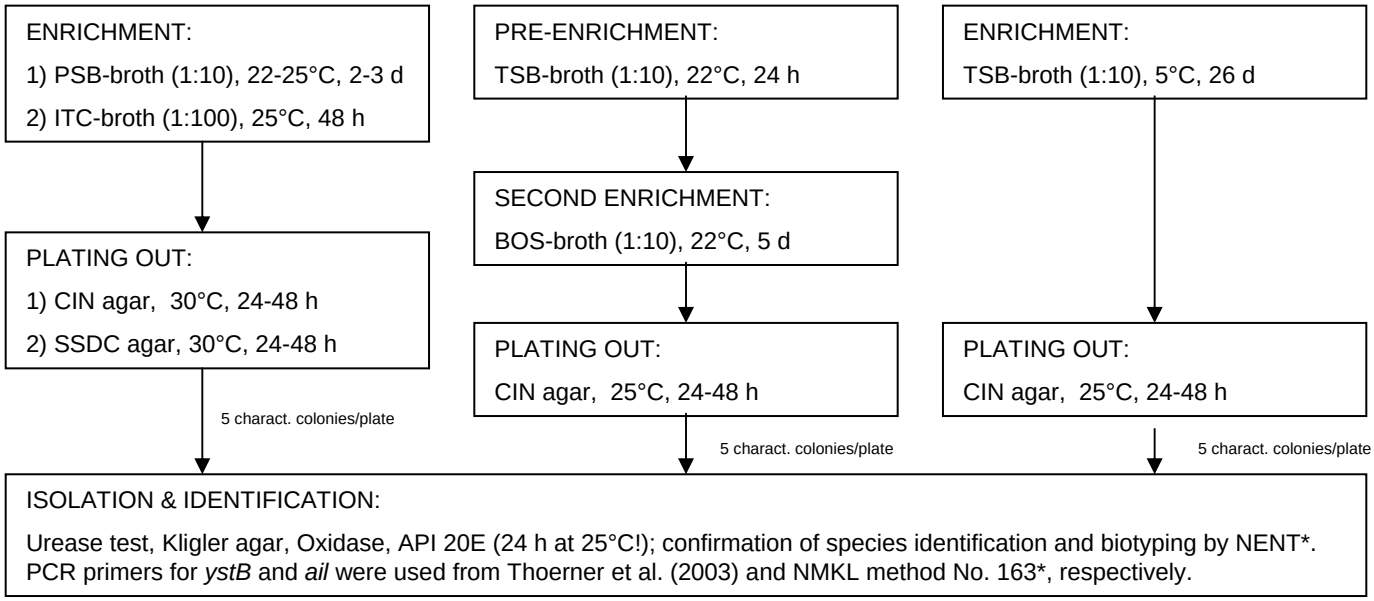
Yersinia enterocolitica can cause food associated gastroenteritis in humans. Pigs are known to be the main reservoir, but also milk has been described as a common vehicle food. *Y. enterocolitica* is able to grow in milk at 4°C. In this work, three different detection methods were compared to each other, using 111 samples of raw ewe's milk, starting with 25 ml test portion for each method.

LEFT: The horizontal standard ISO 10273:2003 suitable for all foodstuffs; MIDDLE: The vertical method optimized for raw milk after Walker and Gilmour (1986); RIGHT: The cold enrichment procedure.



No *Yersinia* detected

PCR:

PCR can help to screen samples for the presence of pathogenic strains. The genetic marker *ail* is known to be present only in pathogenic strains, whereas *ystB* is found in the non-pathogenic biovar 1A.

All PCR reactions with 10 *Y. enterocolitica* isolates tested were in agreement with the results of biotyping. Both PCR reactions were negative for *Y. frederiksenii* / *Y. intermedia*. In addition, when PCR was performed on colonies derived directly from CIN plates, same results were obtained.

This PCR could therefore be used as a rapid tool for identification and genotyping.

Walker & Gilmour (1986)		+	-	Σ
Cold enrichment	+	7	1	8
	-	2	69	71
	Σ	9	70	79 = n

79 samples with presumptive *Yersinia* colonies, 10 samples being positive for *Y. enterocolitica,* which all belonged to the non-pathogenic biotype 1A. Five further samples contained *Y. frederiksenii* or *Y. intermedia*. A strong concordance between these two methods was observed (Kappa = 0.80; after SAS guide No. 328).

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The method after Walker & Gilmour (1986) gives comparable results to the cold enrichment procedure (but is much faster) and is clearly superior to the ISO 10273:2003 standard for the detection of *Yersinia enterocolitica* in ewe's milk. This study underlines the importance to validate vertical against horizontal methods when dealing with only one specific food matrix. And PCR can facilitate the screening for pathogenic strains.

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