



Microbiological state of the art of Walloon farm raw milk butter (2006-2009)

T. Godrie*, S. Di Tanna*, M. Helleputte*, C. Belleflamme*, M. Sindic*



*Unité de Technologie des IAA – FUSAGx

Passage des déportés, 2 – 5030 Gembloux - 081/62.24.95

INTRODUCTION

For several years, Walloon Region has been supporting financially a project to help farmers: la Cellule Qualité Produits Fermiers (CQPF). This project aims to accompany farmers in their diversification activities. In this context, Agricultural University of Gembloux, Department of Food Technology and “Centre d’Expertise pour la Qualité” have ensured and are ensuring autocontrol system implementation based on the HACCP principles, together with the application of good hygiene practice. In this context, microbiological analyses on farm raw milk butter have been performed. Results collected during the period from September 2006 to April 2009 are presented below.

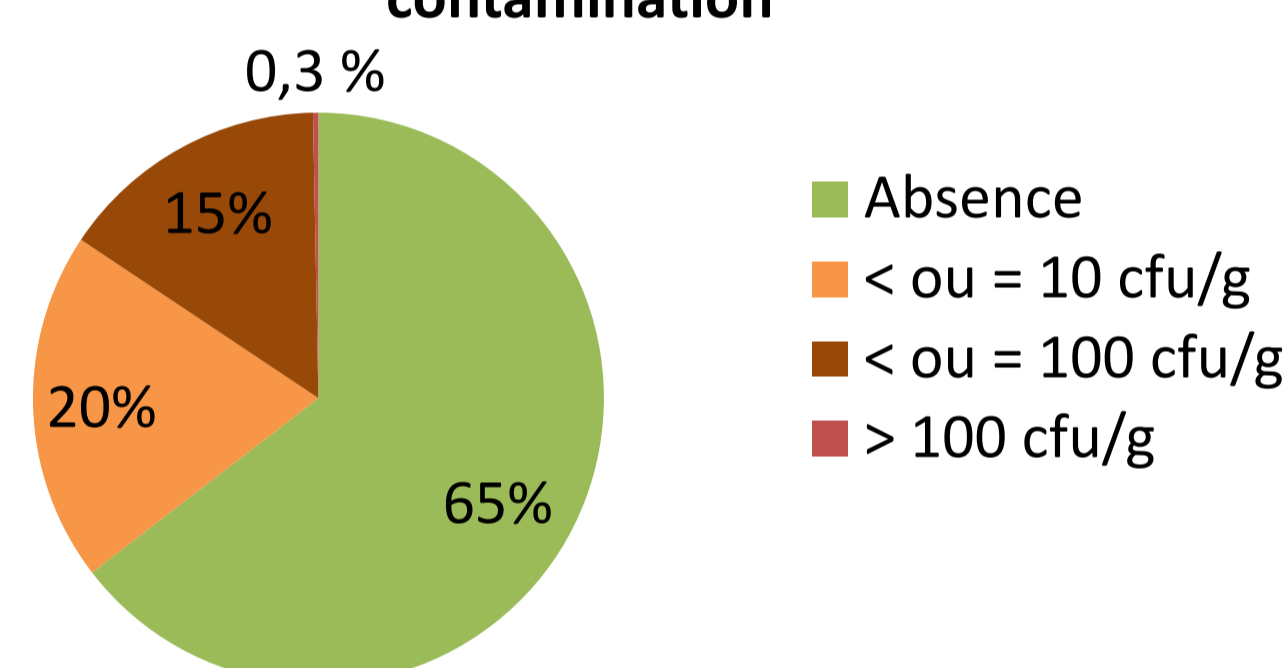
MATERIAL AND METHODS

- Raw milk butter samples taken from 105 different farms (not to be considered as random sampling)
- Microbiological analyses realized in 2 different laboratories (accredited)

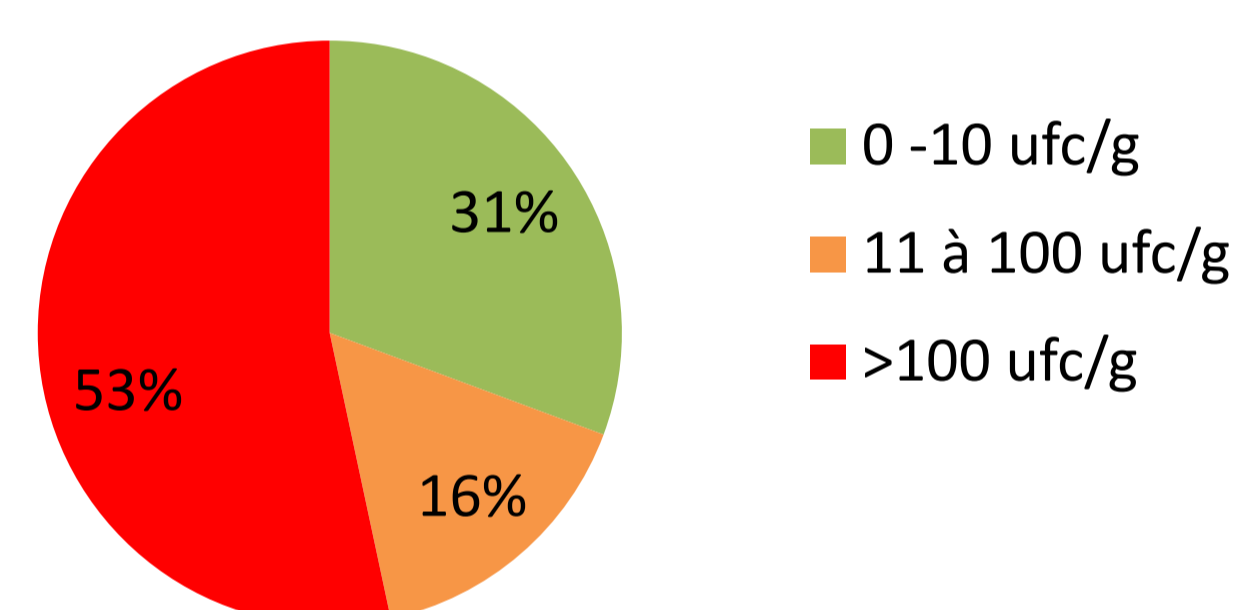
Analyzed microorganism	Number of samples	Analytical method	Used criteria
<i>Escherichia coli</i>	313	AFNOR BRD 07/1-07/93	m = 10 cfu/g M = 100 cfu/g (EC Regulation 2073/2005)
Coagulase-positive <i>Staphylococci</i>	263	ISO 6888/2 NF V08-057-2	< 1000 cfu/g
<i>Salmonella spp</i>	310	VIDAS SLM/Afnor BIO 12/10-09/02 NF-V-08-052, 1997	m = M = Absence / 25 g (EC Regulation 2073/2005)
<i>Listeria monocytogenes</i>	313	Vidas LMO 02, Biomérieux AFNOR BIO12/11-03/04	m = M = Absence / 25 g m = M = 100 cfu/g (EC Regulation 2073/2005)

RESULTS

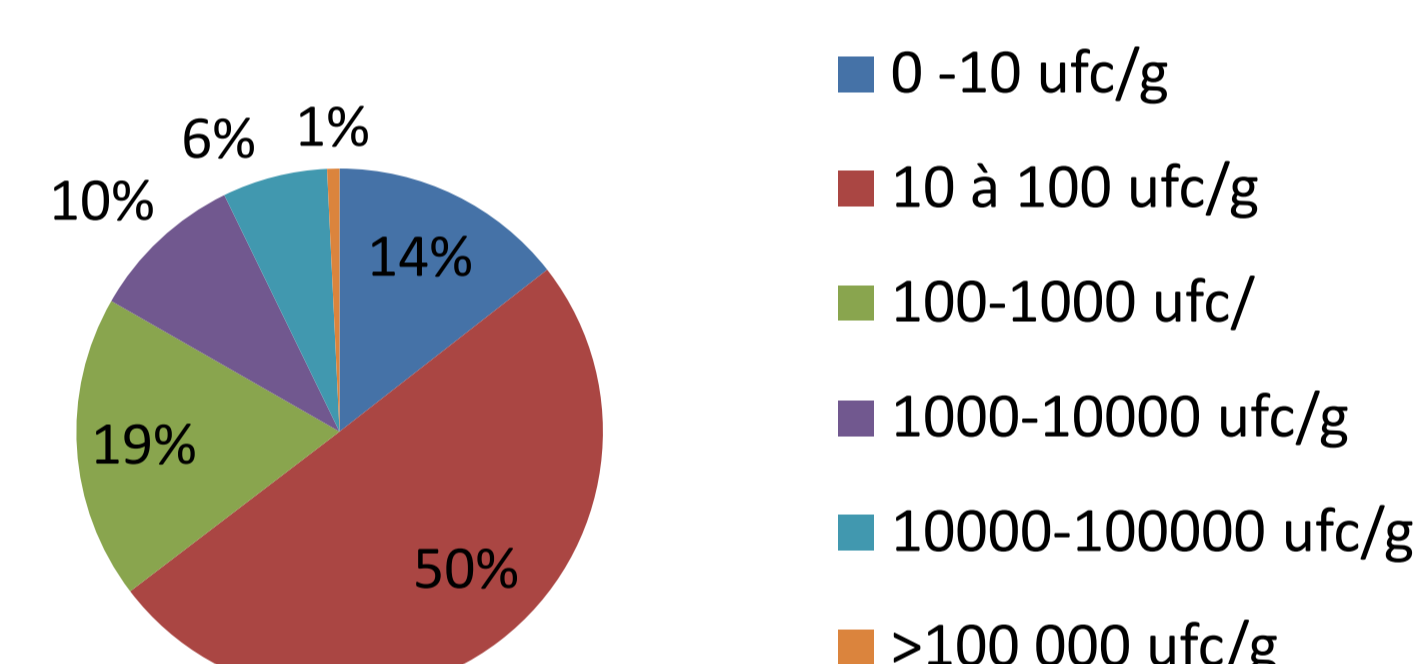
Distribution of butter samples containing *Listeria* according to the extent of contamination



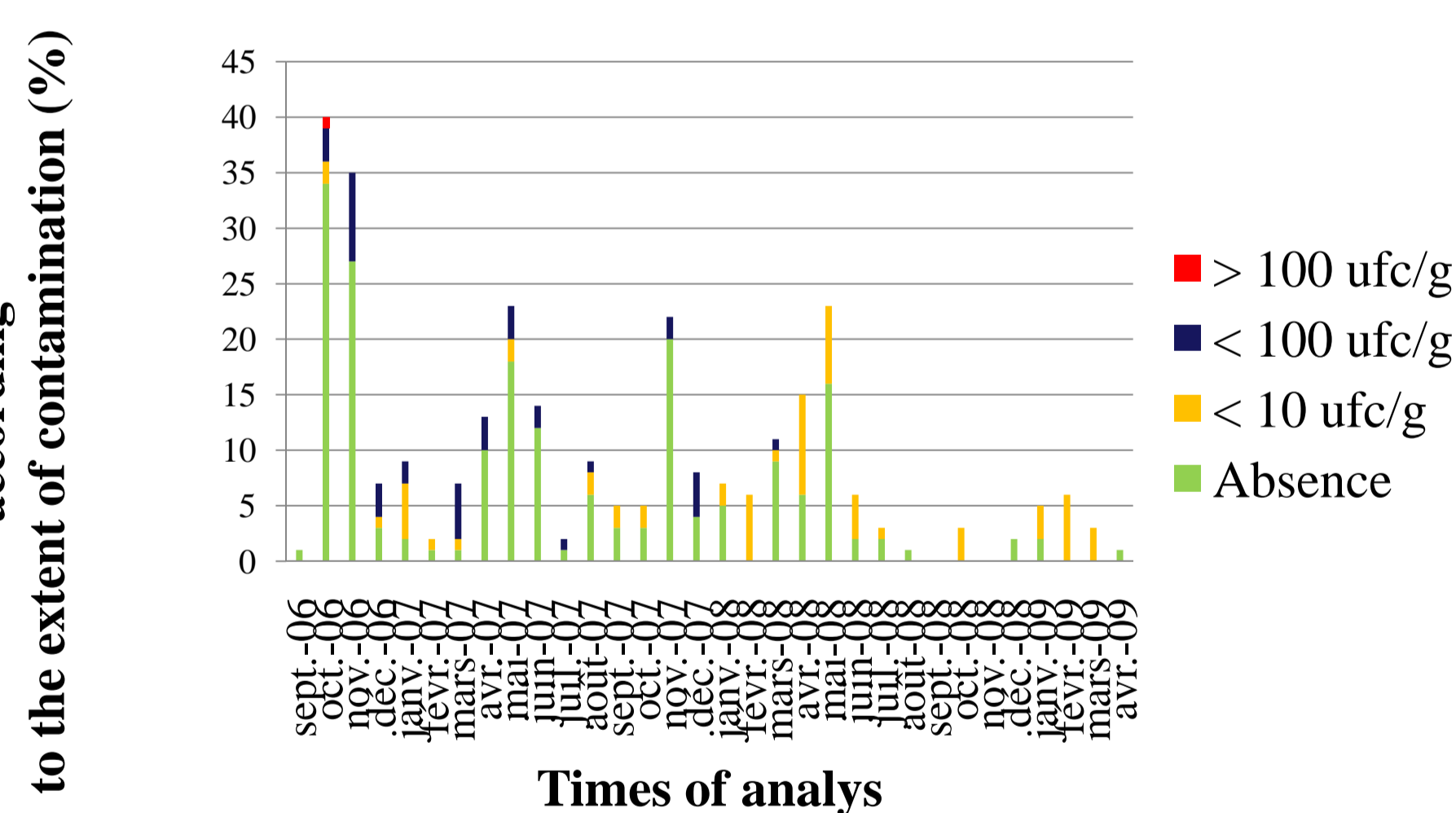
Distribution of butter samples containing *E. coli* according to the extent of contamination



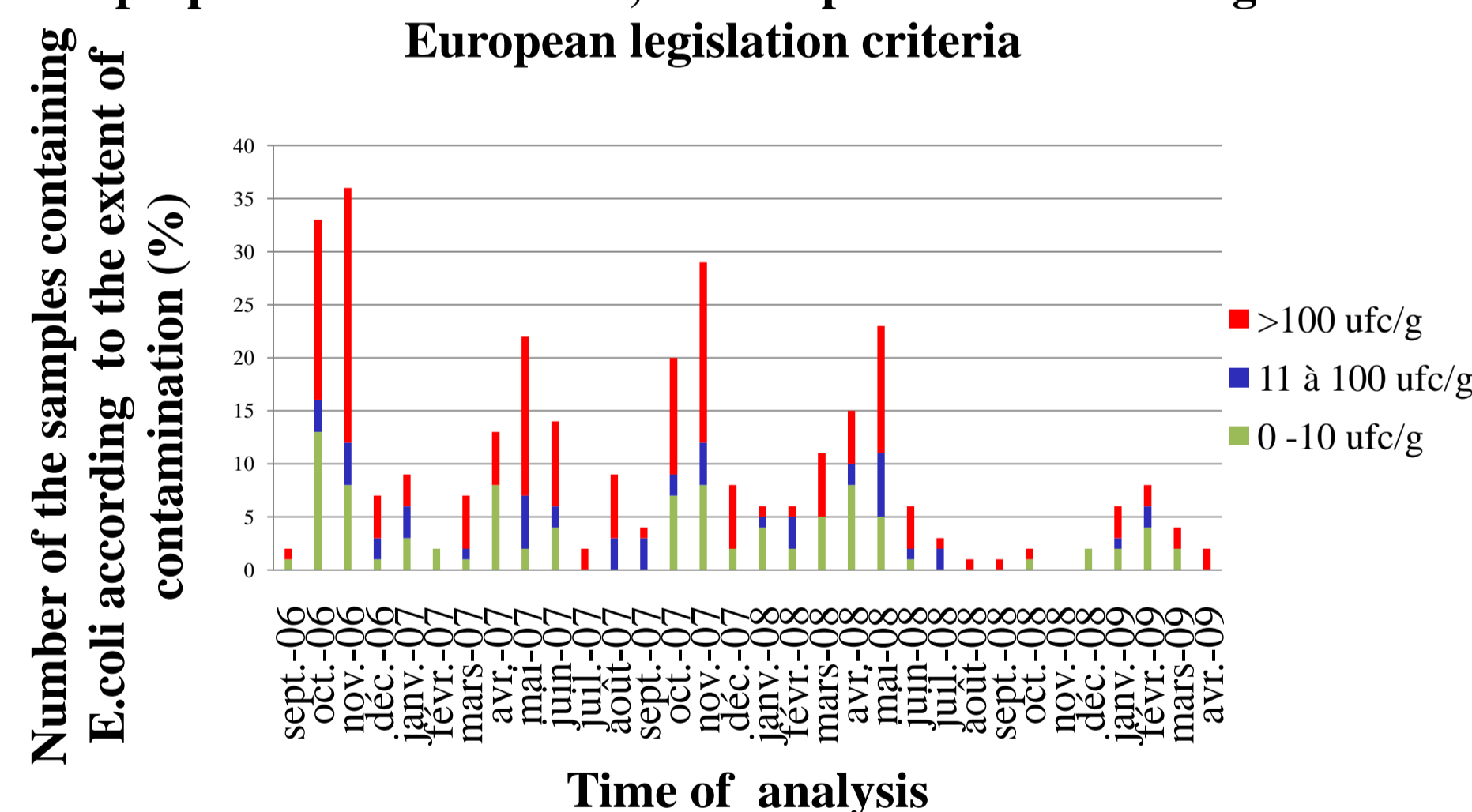
Distribution of butter samples containing coagulase-positive staphylococci according to the extent of contamination



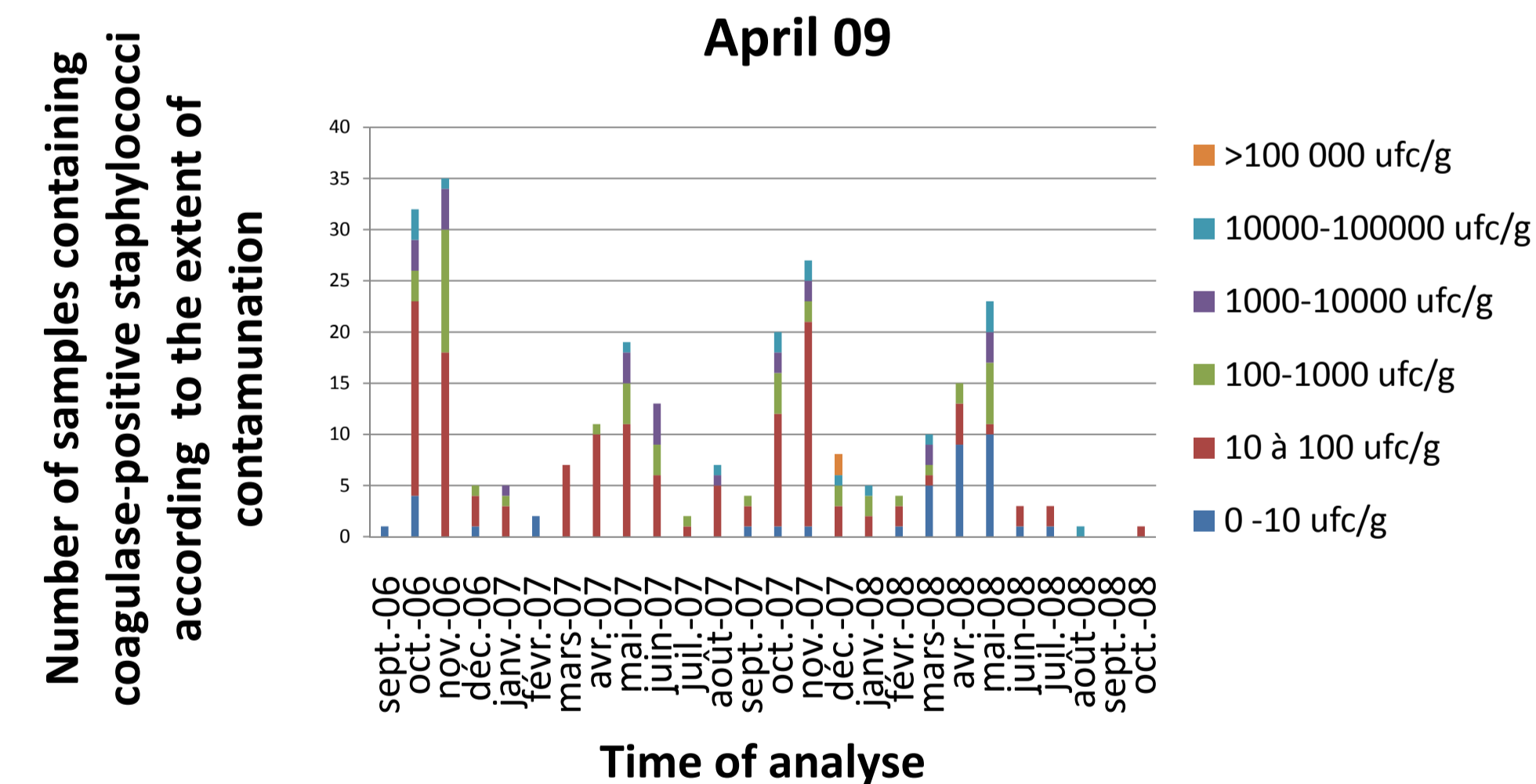
Listeria monocytogenes counting results in farm butter prepared with raw milk obtained between September 06 and April 09



Results obtained for *E. coli* counting in farm butter prepared with raw milk, results presented according to European legislation criteria



Coagulase-positive staphylococci counting results in farm butter obtained between September 06 and April 09



Listeria monocytogenes

- Absence of *L.* in 65 % cases
- 20 % of samples contain 10 or less than 10 cfu/g
- 15% of samples contain 100 or less than 100 cfu/g
- 0,3% of sample contains 200 cfu/g

Escherichia coli

- 31 % of samples contain 10 or less than 10 cfu/g
- 16% of results belong to the 11-100 cfu/g range
- 53% of samples contain more than 100 cfu/g

Coagulase-positive staphylococci

- 83,3 % of samples contain 1000 or less than 1000 cfu/g

Considering *Salmonella spp*, 100 % of analysed samples were *Salmonella* free

CONCLUSION

Salmonella spp and *Listeria monocytogenes* are considered as food safety criteria. For these criteria, results presented above are satisfying legal limits defined in the European Regulation 2073/2005 on microbiological criteria for foodstuffs. When considering *Listeria monocytogenes*, only 1 sample on 313 is exceeding 100 cfu/g. The evolution of legal level of acceptance from absence to 100cfu/g has allowed avoiding inappropriate forbidding from raw milk farm butter selling.

Compared to European Regulation 2073/2005 on microbiological criteria for *E. coli*, as process hygiene criterion, 53.4 % of results obtained are out of defined limits. Despite of this, there is no direct impact observed on food safety criteria *Salmonella spp* and *Listeria monocytogenes* for these samples.

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