



Vlaamse overheid



## Report Proficiency Study 2014

### Screening of Enterotoxins of *Staphylococcus aureus* in milk

14 July 2014

**Institute for Agricultural and Fisheries Research (ILVO)**

**Technology and Food Science Unit**

National Reference Laboratory for Milk and Milk Products (NRL-MMP)

Brusselsesteenweg 370

9090 Melle

Belgium

Phone +32 9 272 30 00

Fax +32 9 272 30 01

[www.ilvo.vlaanderen.be](http://www.ilvo.vlaanderen.be)

## CONTENTS

CONTENTS	2
1. Introduction	3
2. Time-table	3
3. Sample preparation	3
4. Results	4
5. Conclusions	4
6. Methods of analysis	4
7. Remarks from participants	4
8. List of participants	4

## 1. INTRODUCTION

This proficiency study concerned the investigation of the detection of enterotoxins of *Staphylococcus aureus* in milk. To get an impression of the performance of the qualitative detection of enterotoxins of *Staphylococcus aureus* in milk, laboratories were invited to join this proficiency study. Three laboratories participated to the study.

The proficiency study was organized in collaboration with the Federal Agency of the Safety of the Food Chain (FASFC) from Belgium in the framework of the tasks as NRL-MMP's.

## 2. TIME-TABLE

Sample preparation	3-7 June 2014
Sample distribution	17 June 2014
Deadline for sample analysis	5 July 2014
Deadline for reporting results	10 July 2014
Final report	16 July 2014

## 3. SAMPLE PREPARATION

### Spiked samples

#### *Stock solution*

Staphylococcal enterotoxin B from *Staphylococcus aureus* (SIGMA S4881 – Lotnr 098K4138) was used to prepare a stock solution of 1mg/l in water, the purity of the SIGMA product was taken into account. The stock solution was further diluted to obtain the below mentioned concentrations in the spiked samples. The milk used for the sample preparation was whole UHT milk.

*0,5 ng/ml milk samples (Sample 1 and 6)*

*0,1 ng/ml milk samples (Sample 2 and 4)*

### Blanc samples (Sample 3 and 5)

The milk was directly used to prepare the samples.

### Further sample preparation

After thoroughly homogenization in a measuring flask, sub-samples of ca. 40ml were prepared in sterilized plastic containers.

For each participating lab, two blind duplicates of each type of sample (blank, 0,1 ng/ml and 0,5 ng/ml) were taken, and the samples were stored in a freezer at -20°C until and during shipment. Sample shipment was accomplished with help of the Melle dispatching center of the Belgian Food Safety Authority. The Belgian labs picked up their samples at this dispatching centre. The samples for the foreign lab were shipped by DHL.

The participants were also instructed to keep the samples frozen until analysis.

The participants were asked to use 25ml for analysis.

## 4. RESULTS

The results of the laboratories are presented in table I.

**Table I: Results proficiency study 20013, enterotoxins of *Staphylococcus aureus* in milk**

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6
Sample conc. (ng/ml)	0,5	0,1	0	0,1	0	0,5
Lab 1	+	+	-	+	-	+
Lab 2	+	+	-	+	-	+
Lab 3	+	+	-	+	-	+

- + Means enterotoxins of *Staphylococcus aureus* were detected
- Means no enterotoxins of *Staphylococcus aureus* were detected

## 5. CONCLUSIONS

### Sample 3 and 5

- The results of laboratories 1,2 and 3 correspond with the sample preparation, because no enterotoxins of *Staphylococcus aureus* were detected in these samples.

### Sample 1, 2,4 and 6

- The results of laboratories 1, 2 and 3 correspond with the sample preparation, because enterotoxins of *Staphylococcus aureus* were detected in these samples.

## 6. METHODS OF ANALYSIS

**Lab 1,2 and 3** VIDAS SET 2 + sample preparation with dialysis

## 7. REMARKS FROM PARTICIPANTS

Lab 2: Begin of analysis 07/07/2014 (due date was set on 05/07/2014)

## 8. LIST OF PARTICIPANTS

ILVO – T&V, Melle, Belgium

WIV, Brussels, Belgium

nieuwe Voedsel en Waren Autoriteit, The Netherlands