

- ♦ Microbiol./chemical analyses
- ♦ Trouble shooting
- ♦ Expert services for the dairy industry

- ♦ BactoScan Milk Standards
- ♦ Cell count Control Milk
- ♦ Colony count reference material

## Laboratory

Wangen March 2012

## Technical sheet – microbiological reference material Hufner

### Specification resp. information to the reference milk samples

#### Orientately:

- the corresponding bacterial count levels of the ref. milks
- advised dilutions

Nr.	Reference material parameter	amount	count level cfU/ml	advised dilutions
1	<b>Total (viable) count</b>	2 different samples á 6 bottles (40ml)	Ref.A: 10 <sup>4</sup> -10 <sup>5</sup> Ref.B 10 <sup>5</sup> -10 <sup>6</sup>	Ref.A: -2/-3 Ref.B -3/-4
2	<b>Enterobacteriaceae, coliforms, E.coli</b>	2 different samples á 3 bottles (40ml)	Ref.A: 10 <sup>3</sup> -10 <sup>5</sup> Ref.B 10 <sup>4</sup> -10 <sup>6</sup>	Ref.A: -1/-2/-3 Ref.B -2/-3/-4
3	<b>coagulasepositiv Staphylococci (Staph. Aureus)</b>	2 different samples á 3 bottles (40ml)	Ref.A: 10 <sup>3</sup> -10 <sup>4</sup> Ref.B 10 <sup>4</sup> -10 <sup>6</sup>	Ref.A: -2/-3 Ref.B -3/-4
4	<b>Enterococci</b>	2 different samples á 3 bottles (40ml)	Ref.A: 10 <sup>3</sup> -10 <sup>5</sup> Ref.B 10 <sup>4</sup> -10 <sup>6</sup>	Ref.A: -2/-3 Ref.B -3/-4
5	<b>yeasts (incl. Geotrichum)</b>	2 different samples á 3 bottles (40ml)	Ref.A: 10 <sup>3</sup> -10 <sup>5</sup> Ref.B 10 <sup>4</sup> -10 <sup>6</sup>	Ref.A: -2/-3 Ref.B -3/-4

## Handling

shipment	<ul style="list-style-type: none"><li>• The material were shipped frozen. If the samples are a little thawed, this wouldn't be of any great influence on the measuring level.</li></ul>
Storage	<ul style="list-style-type: none"><li>• at -18°C to – 35°C.</li></ul>
investigation	<ul style="list-style-type: none"><li>• Thawing in water (20-30°C), sometimes shaking the bottles. The milk should be completely thawed.</li><li>• Investigation with the methods you normally practise in the laboratory..</li><li>• <u>incubation</u> : at the advised temperatures and times of the methods you are applying.</li><li>• It would be of advantage, if each person analyse the samples twofold. It would be possible that different persons analyse the ref.samples with different methods etc.</li><li>• <u>Results – information:</u> furthermore: dilutions, your Mail-address</li></ul>
Anaylses statistics	<ul style="list-style-type: none"><li>• <b>certifcate</b></li><li>• <b>method depend evaluations</b><ul style="list-style-type: none"><li>- „precision“ (repeatability, reproducibility)</li><li>- „correctness“ (=difference to ref-mean, Z-score).</li><li>- According „ISO/TS 19036 – 2006 – Guidelines for the estimation for measurement uncertainty for quantitative determinations“ the standard deviation and the measurement uncertainty were calculatet.</li><li>- .</li></ul></li></ul>

Wangen/Hergatz March 2012

Dr. Josef Hüfner

