

# AMP-6000<sup>®</sup>

Enumeration of  
Cheese Spoiling  
Clostridia\*



## SY-LAB – THE NEW STANDARD FOR A SAFER CHEESE PRODUCTION

Butyric acid producing Clostridia are undesired contaminants in cheese production due to their ability to cause late-blowing, a severe quality defect in long ripened hard and semi-hard cheese.

Contaminated raw milk is the major source of Clostridia. Less than 100 spores per liter of raw milk may result in severe cheese deficiencies like irregular eye formation, slits and cracks or unpleasant off-flavors and therefore cause severe economic losses.

The 4 most common species isolated from milk and cheese are *Clostridium tyrobutyricum*, *Clostridium butyricum*, *Clostridium sporogenes* and *Clostridium beijerinckii*. *Clostridium tyrobutyricum* has been described as the major source of late blowing.

Clostridia represent strictly anaerobic gram-positive rods capable to form extreme resistant endospores. Clostridial spores can withstand very high and/or low temperatures and can't be inactivated neither by extreme pH-values nor by irradiation. They are able to colonise many different habitats with strong seasonal variations. They can ideally replicate in silage and are able to passage the ruminant intestine without any damage. Raw milk is contaminated via the fecal route. Clostridia enumeration is therefore a valuable parameter to control hygienic conditions in stables of dairy cows. Additionally it can be used as an indicator for the type of roughage used to feed the cows.

The AMP-6000<sup>®</sup> microbiological platform enables precise enumeration of cheese spoiling Clostridia by a new miniaturised and semi-automated MPN- technology.

### Sensitivity:

Limit of Quantification:  
44 Spores/Liter standard microplate  
14 Spores/ Liter deepwell plate

### Specificity:

highly specific detection of  
*Clostridium tyrobutyricum*,  
*Cl. butyricum*, *Cl. sporogenes* and  
*Cl. beijerinckii*.

efficient suppression of competing  
microflora compared to conventional  
reference methods.

### Matrix:

Milk and Cheese

\* patented technology

### RAPID:

Results within 48 hrs.

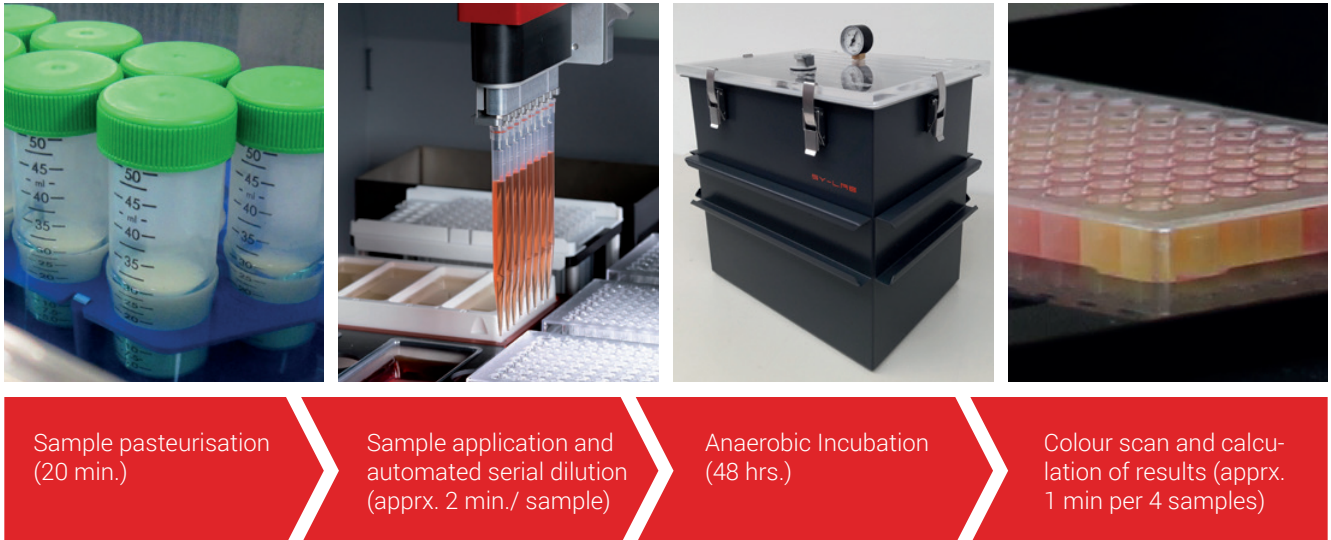
### PRECISE:

reliable and comparable  
enumerations

### SIMPLE:

automated sample preparation  
and result evaluation

## Workflow



## CONSUMABLES FOR THE ENUMERATION OF CHEESE SPOILING CLOSTRIDIA:

### Standard protocol (Detection limit > 44 spores/litre)

- 62-166600 AmpMedia 666, 15 bottles à 250 ml, 600 tests
- 62-166601 AmpMedia 666, 2 bottles à 250 ml, 80 tests
- 62-505512 Sample reservoir 30 ml, 4 positions, sterile, 240 indiv. tests
- 62-505560 Sample reservoir 30 ml, 4 positions, sterile, 1200 indiv. tests
- 62-502050+ 96 well microplates, sterile, single, 50 pcs.
- 62-503050+ Microplate lids sterile, single, 50 pcs.
- 62-502051 96 well microplates, sterile, 10 x 5 pcs.
- 62-503051 Microplate lids, sterile, 10 x 5 pcs.
- 62-502200+ Pasteurisation vials with mesh, 50 ml, sterile, 60 pcs
- 62-504018 1 ml Filter Tips for AMP 6000® APS, sterile, 24 pkg. à 96 tips, total 288 tests

### Reday to use vials for Xanthus robotic system

- 62-166606 AmpMedia 666 vials à 5 ml, 64 Tests

### Tests for enhanced sensitivity (Detection limit > 14 spores/litre)

- 62-505015 Sample reservoir 50 ml, 4 pos., sterile, 15 pcs, 60 Tests
- 62-502110 Deepwell-Microplates und breathable seals, sterile, 100 tests

### Micro Tube System (SBS Formate, manual method)

- 62-166602 AmpMedia 666, 2 bottles à 250 ml and breathable seals, 120 Tests micro tube format
- 62-502360 Micro tube rack, 12 strips à 8 tubes 1,2 ml, sterile, 10 racks
- 62-502460 Micro tube strips refill pack (8 tubes per strip), 120 individual strips

### Reference spores *Clostridium tyrobutyricum*

- 62-166636 Spore pellets with *Cl. tyrobutyricum* spores for production of reference material with 500–1000 spores/litre, 36 vials with freeze dried spores

### Accessories for anaerobic incubation

- 60-600160 Petrisphere anaerobic gas generation system for anaerobic jars
- 60-300100 nox-18 anaerobic jar, rectangular version for 2 x 32 standard microplates
- 60-300220 Rack für 32 microplates für nox-18
- 60-600175 Palladium low temperature catalyst for nox-18 anaerobic jar