

# 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:  
75 Spores/Liter standard microplate  
30 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

\* patent pending

### RAPID:

Results within 48 hrs.

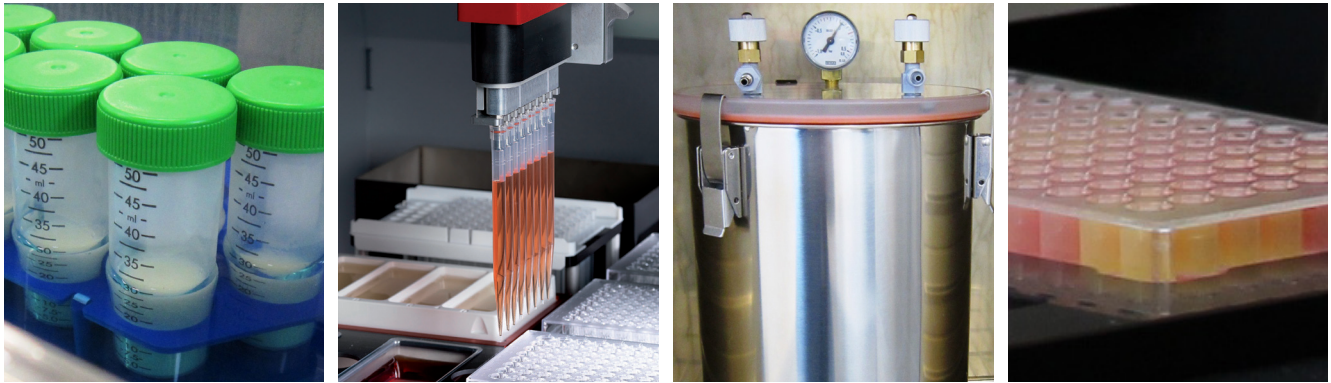
### PRECISE:

reliable and comparable  
enumerations

### SIMPLE:

automated sample preparation  
and result evaluation

## Workflow



Sample pasteurisation  
(20 min.)

Sample application and  
automated serial dilution  
(apprx. 2 min./ sample)

Anaerobic Incubation  
(48 hrs.)

Colour scan and calcu-  
lation of results (apprx.  
1 min per sample)

## Consumables for the enumeration of cheese spoiling Clostridia

### Standard protocol (Detection limit > 75 spores/liter)

- 62-166613 AmpMedia 666 box with 60 vials for 180 tests in total
- 62-505095 Sample reservoir 25 ml, sterile, pack for 180 tests
- 62-503060 Microtiter plates and lids, sterile for 60 tests
- 62-502200 Pasteurisation vial with filter, sterile 60 vials
- 62-504016 Pipette tips for AMP-6000® APS, sterile, 16 packs a 96 tips for 192 tests

### Protocol for enhanced sensitivity (Detection limit > 30 spores/liter)

- 62-166613 AmpMedia 666 box with 60 vials for 60 tests
- 62-505015 Sample reservoir 50 ml, sterile, pack für 60 tests
- 62-502110 Deepwell plates and gas permeabel seals, sterile for 100 tests
- 62-502200 Pasteurisation vial with filter, sterile 60 vials
- 62-504016 Pipette tips for AMP-6000® APS, sterile, 16 packs a 96 tips for 192 tests

### Accessories

- 60-600160 Petrisphere Gas System
- 60-600170 Anaerobic jar, stainless steel with rack für 15 microplates or 8 deepwell plates
- 60-600150 Mini-Shaker for microplates