

GRAM NEGATIVE BACTERIA IN DAIRY PRODUCTS

IMPLICATIONS, SOURCES, AND DETECTION

VULNERABLE TO HEAT

Typically do not survive heat treatment, such as pasteurization

MOST COMMON GRAM NEGATIVE BACTERIA IN THE DAIRY INDUSTRY

Pseudomonas

Enterobacteriaceae

Coliforms

Introduced via
**POST-PROCESSING
CONTAMINATION,**
through the formation of
biofilms in
processing equipment
or
environmental contamination

Can grow quickly at
low temperatures
Produces enzymes that **break
down** lipids, proteins, and
lactose in dairy products
Results in **sensory defects**
in flavor, odor, color,
and texture

DETECTION

TESTING FOR GRAM NEGATIVE BACTERIA

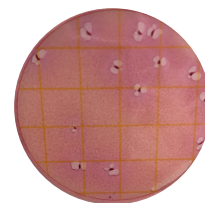
**CRYSTAL VIOLET
TETRAZOLIUM AGAR**
Selective and differential

Incubation at 21°C for 48 hours
Enumerate red colonies



COLIFORM PETRIFILM
Selective and differential

Incubation at 32°C for 48 hours
Enumerate all colonies regardless of
gas production



Want more information on Gram negative bacteria? Contact Nicole Martin (nicole.martin@cornell.edu) in the Milk Quality Improvement Program or visit our website <https://foodsafety.foodscience.cornell.edu/mqip/>