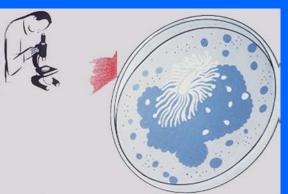
Testing of Dairy Products

1 - Standard Plate Count

2 - Lab Pasteurized Count

3 - Coliform Plate Count



Standard Plate Count (also called aerobic plate count - APC)

- Used to determine living bacteria growing under specified conditions
- Pour plate method using specified growth food (agar)
- Dilute food if count expected to be high
- Aerobic incubation at 32°c for 48 hr



Quality Control

- Sterility Checks
 - pipettes
 - petri plates
 - diluents
 - Media
- Toxicity Checks
 Diluents
- Acidity/ pH Checks
 - glassware
 - media

Quality Control

- Temperature Checks
 - samples
 - media
 - water baths
 - Incubators
- Selectivity/Productivity Checks

 Media
- Lab air quality
- Certified technicians to do "official" testing

Standard Plate Count (also called aerobic plate count - APC)

- No direct correlation between count and possible presence of pathogens – at levels encountered with today's dairy foods
- Not used with cultured products
- Used to test both raw and pasteurized products

Other Counting Methods Screening methods

Plate loop

• Dry Rehydratable film (Petrifilm[™])

Electronic methods

Laboratory Pasteurization Count (LPC)

- Simulates low temperature pasteurization
 - 62.8°C (145F) for 30 min
- Selects for thermoduric bacteria
- Pour plate method using standard method procedures
- May not recover heat-injured bacteria



Heat-Injured Bacteria

- Not dead, but have repairable injuries
- May take hours to weeks for "recover" from injury
 - Protein disruption
 - Cell wall breaks
 - Genetic injury

After repair, can grow and cause spoilage

Laboratory Pasteurization Count (LPC)

High LPC indicates long-time contaminated equipment

Coliform Testing

• Incubated at 32°C (90 F) for 24 hr

VRB agar - Coliforms

 acid production (red colonies)
 precipitation of bile salts
 colonies ≥ 0.5 mm



Alternative Methods

• Dry Rehydratable Film (Petrifilm)

• Multiple Tube Fermentation (Most Probable Number)

Standards (per gram or mL)

	APC	LPC	COLIFORM
Raw for Past.	>50,000	>750	>750
Milk and Flavored Milk	>15,000	N/A	>10
Most Cultured Products	N/A	N/A	>10
Cream: Light Lt Whipping Heavy	>20,000	N/A	>10
Ice Cream	>75,000	N/A	N/A