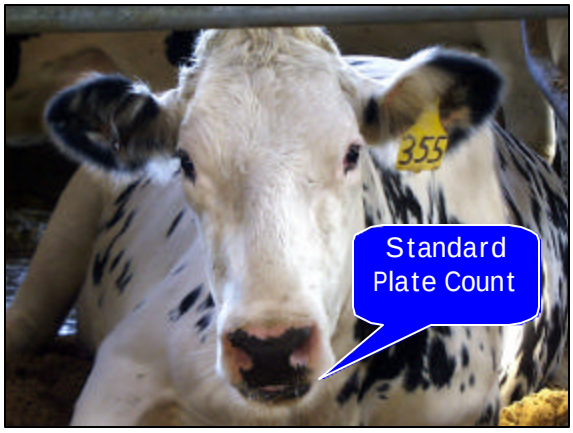

- Standard Plate Count

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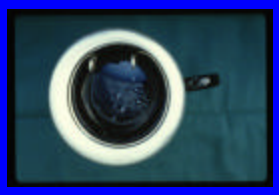
Standard Plate Count

- A measure of the number of bacteria in milk
- Target < 5000 / ml
- Three sources: udder
  environment
  machine

Udder Pathogens influencing SPC

- *Strep agalactiae* (100 x 10^6 orgs/ml)
- *Strep uberis*
- *Prototheca*



- Not *Staph aureus* !

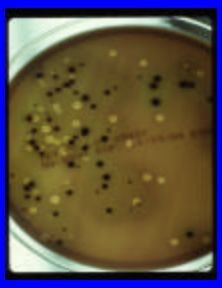
- Teat surface
  - Environmental contaminants
    - Coliforms
    - *Bacillus*
  - Minor pathogens:
    - CNS
    - *Corynebacterium*

- Rubber-ware hygiene
- Pipeline deposits

- Plant incubation
  - Line slope
  - milk filter
  - plate cooler
- Poor refrigeration

Bulk Tank Culture

- Screen herds for contagious pathogens
- Monitor hygiene



Concentrations of Bacteria

Type of Bacteria	Low	Moderate	High	Very High
Strep ag	0-50	50-200	200-400	>400
Staph aureus	<50	50-150	150-250	>250
Env Streps	500-700	700-1200	1200-2000	>2000
Coliforms	<100	100-400	400-700	>700
CNS	<300	300-500	500-750	>750

Farnsworth (1992)

Interpretation

Strep ag	Staph aureus	Env Streps	Coliforms	CNS
Udder	Udder	Teat skin commensal & contaminants & udder	Teat skin contaminant	Teat skin commensal
Cows	Cows	Cows, Teat skin lesions, Straw bedding	Environment	Teat skin lesions, Dipping

Gram-Negative Bacteria in Bulk Milk

- One third coliforms, two thirds non-coliforms
- Coliforms mainly *Enterobacter* & *Klebsiella*, less commonly *E.coli*
- ***Pseudomonas fluorescens*** 30% of all Gram neg isolates
  - psychrotrophic & adhesive = biofilms !
  - not an udder pathogen !

Jayarao & Wang 1999