

**INCREASING YOU DAIRY'S PROFITS  
WITH A PROPER MILKING ROUTINE**

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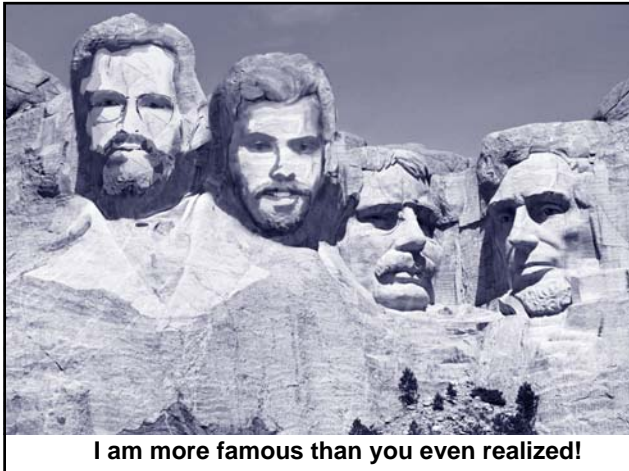
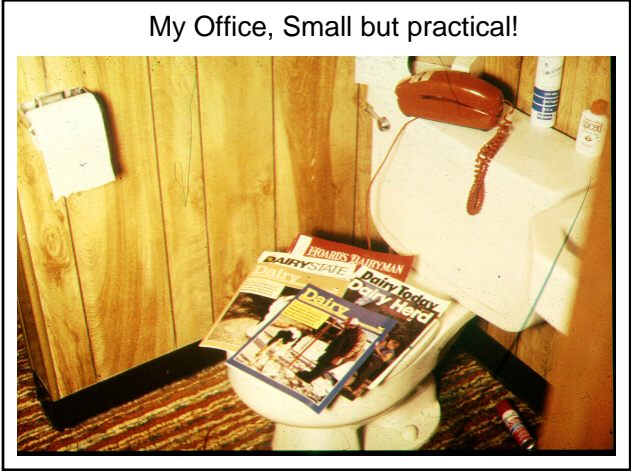
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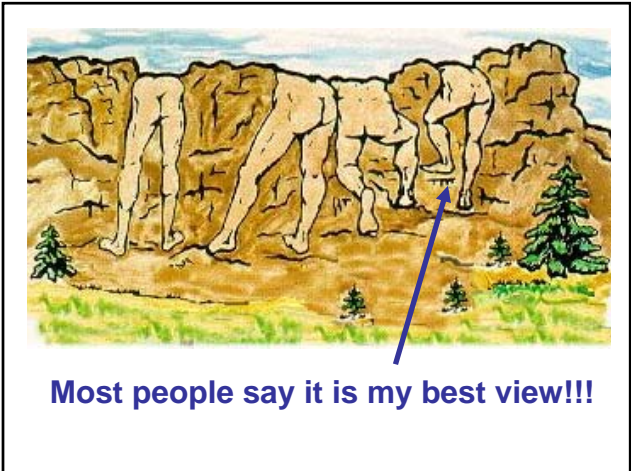
**The Udder Doctor**

**Work on milk quality  
in 26 countries and 45 states**

**Work on herds ranging from  
20 cows to over 22,000 cows**

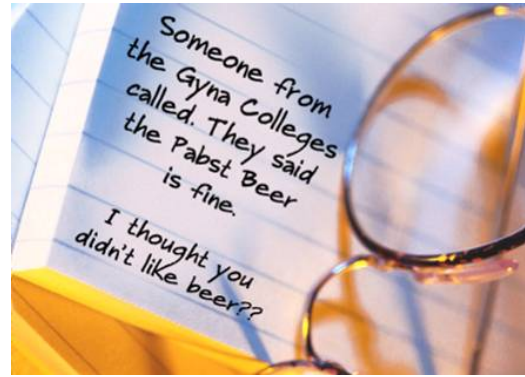


I am more famous than you even realized!

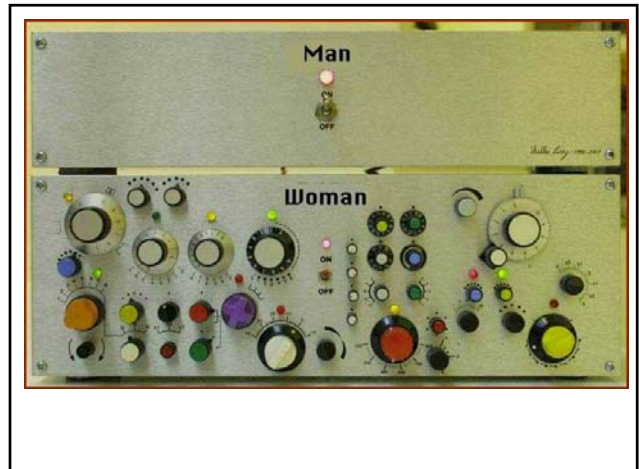


Most people say it is my best view!!!

Why Men Should  
**NEVER**  
Take Messages  
for Their Wives!!



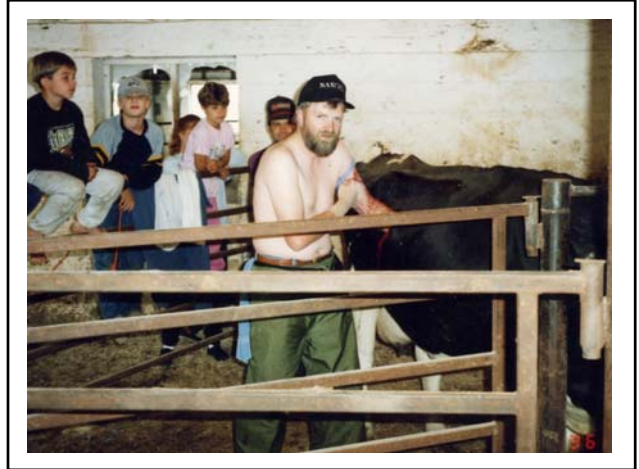
The Difference  
Between  
Men and Women



**Dr. Gordy Jones**

**You heard his great  
success story**

**Let me tell the  
“rest” of the story**



**The Dairy Industry  
Is Changing Rapidly**

**You Need to Change to  
Stay Competitive**

**Those with quality milk  
will be competitive!**



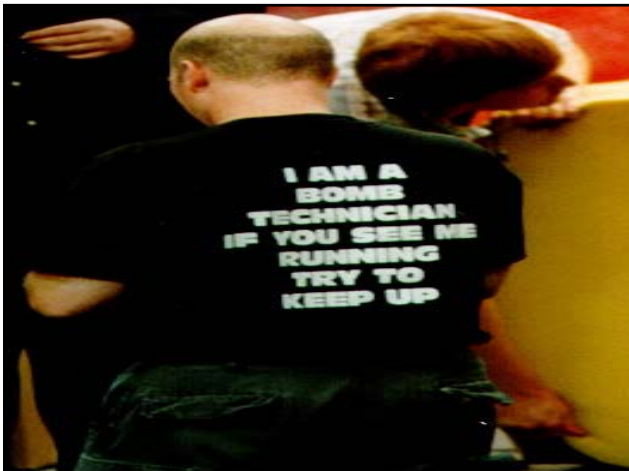
## DAIRY FARMING:

Where else can you work  
20 hours a day, 7 days a  
week, 365 days a year and  
still not make money

Milking cows can be  
extremely stressful.



...AND YOU THINK YOU HAVE STRESS..

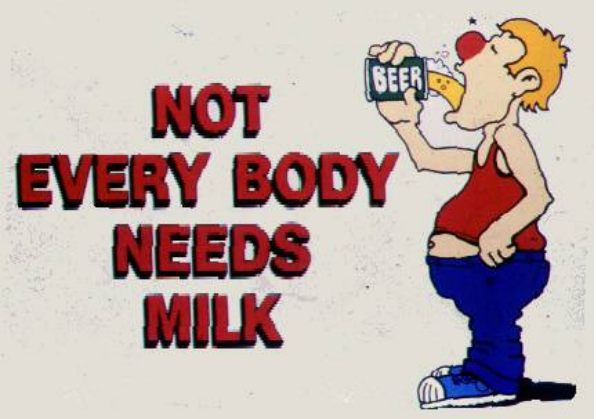


## The Quality of Milk is Determined at the Dairy





Why Low SCC Is So Important!!



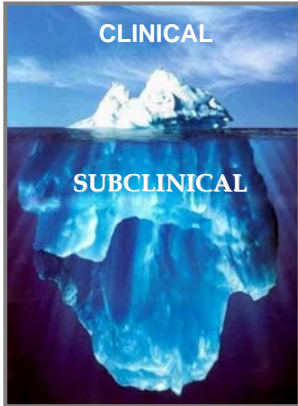
“The dairy industry will either have to keep up with the changing definition of **QUALITY** and ultimately get ahead of it, or get stomped by the stampede of public opinion.”



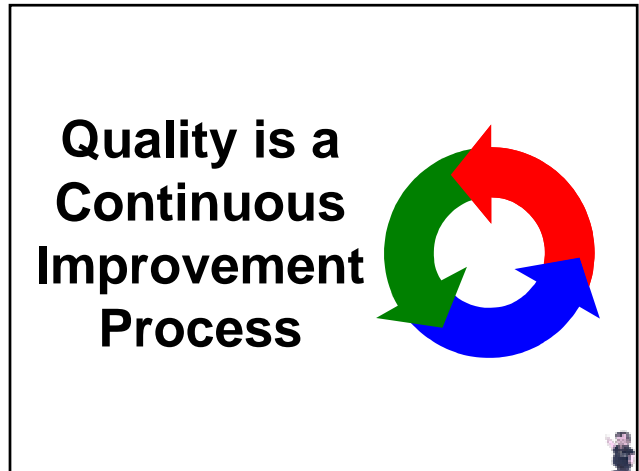
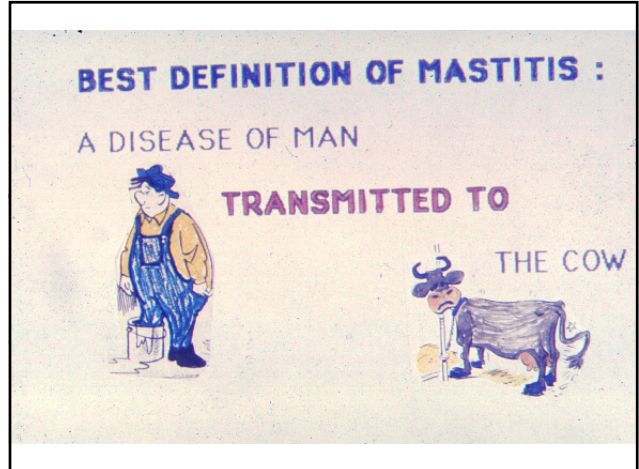
Dr. Rick Bennett  
University of California

## Clinical Mastitis

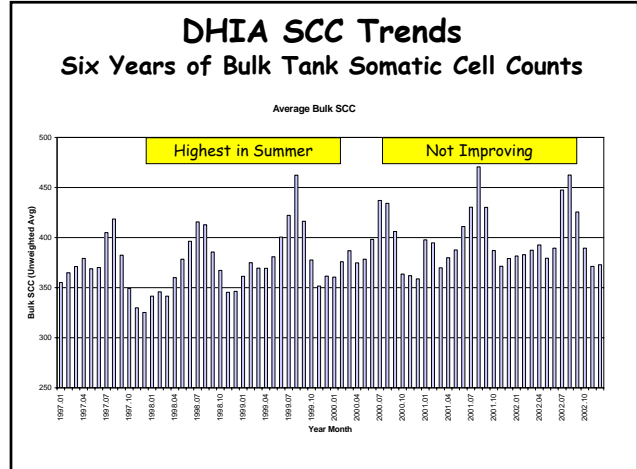




It is the subclinical mastitis that robs you blind!



**QUALITY MILK  
IS IMPORTANT  
TO ALL FARMS  
REGARDLESS OF  
HERD SIZE!**



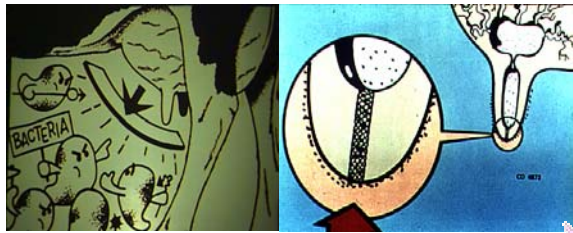
**Utilize Dairy Comp 305  
SCC Records To Make  
Proper Decisions**

		PRVLG 4.0			
	NEW	110	81	191	CHRONICS
		11%	8%	19%	
LGSCC: 4.0	UNINFECTED	692	84	776	CURES
		72%	9%	81%	
=====		802	165	967	
		83%	17%	100%	

## Somatic Cell Counts

- ☞ Certainly the higher the Somatic Cell Count is the lower the expected milk production from the cow (herd)
- ☞ Somatic Cell Counts are a response to damage in the udder (most often caused by bacteria)
- ☞ High S.C.C. follow infection
  - i.e. after the cause
- ☞ More enlighten discussions of mastitis control include cause of infection

**The probability of mastitis increases with increasing germ loads on the teat ends**



**Somatic Cell Counts are not Overemphasized!**

**Specific bacterial identification and epidemiology are underemphasized!!!**

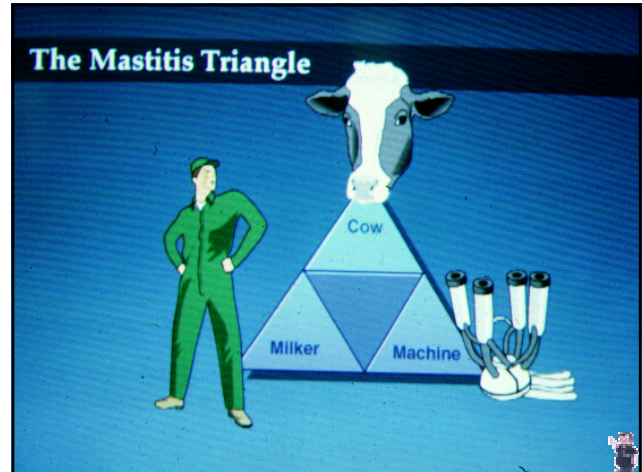
*SOURCES OF MICROORGANISMS*



**So where is the best place to start to improve milk quality?**

## Implement the Mastitis Triangle

- ∞ Great Milking Procedures
- ∞ Clean, Dry, and Comfortable
- ∞ Proper Functioning Equipment



You Have Heard All Of This  
Information Before

This is not repetition  
**JUST CLARIFICATION**

SO PAY ATTENTION!!

This Presentation Covers  
The Milking Routine,  
**HOWEVER**

**TO PRODUCE QUALITY MILK  
DON'T FORGET YOU**

MUST HAVE A PROPER FUNCTIONING MILKING MACHINE

AND

MUST KEEP COWS IN A CLEAN AND DRY ENVIRONMENT

## Biggest Challenge in Mastitis Control

### Fine Tune Milking Practices



## Milking Procedures

- ⌘ Must be consistent between every milker at every milking
- ⌘ Must understand why the procedure is being done
- ⌘ Procedure should be posted to promote consistency among all employees

## Properly Train New Employees

Make sure they clearly understand what your dairy's milking routine is!

**EXPLAIN**  
**SHOW**  
**PRACTICE**

## Employees

Too many dairies are held hostage by their milkers

There are no consequences to poor performance

The Excuse: "At **least** they show up!!"

## Milking Routines:

Important to:

Tie Stall/Stanchion Barns  
Parlors  
Flat Barn Parlors

## Consistent Milking Routine (Stanchion/Tie Stall)

### ☞ Step One

–Strip and Predip next cow to be milked, leave

### ☞ Step Two

–Return with unit, then dry and apply unit to cow

**TIMING BIGGEST ISSUE!!**

## Consistent Milking Routine (Stanchion/Tie Stall)

### ☞ Timing too long

–Most common  
–Prep next cow after unit attachment of previous cow

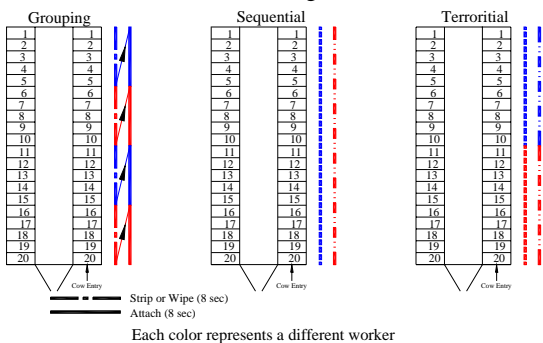
### ☞ Proper timing

–When cow milking almost done, then strip and predip next cow.

## *Parlor Milking Routines:*

1. **Territorial:** each milker performs all procedures within his/her territory.
2. **Sequential:** each milker performs one procedure(s) on all cows.
3. **Group:** Territorial with one milker working in two or more territories.

### Different Milking Routines



## SEQUENTIAL ROUTINE

Each person has their own task to do on each side of parlor

- Usually see at least two people in the parlor
- Very Difficult to control timing



Sequential At It's BEST!!

## Consistent Milking Routine (Parlor)

- Territorial
  - Most Consistent Timing
  - Fastest Milking
  - Best Quality

## Consistent Milking Routine (Parlor)

### ☞ Step One

- Strip and Predip  
group of 3-8 cows

### ☞ Step Two

- Dry and Apply  
group of 3-8 cows



## Parlor Performance Goal

The goal is to have all units  
attached to all cows within  
4 to 5 minutes after the  
entrance gate opens.

## Consistent Milking Routine (Flat Barn Parlor)

### ☞ Step One

- Predip cow and strip  
5 squirts per teat

### ☞ Step Two

- Dry each teat for 5  
seconds, then gently  
apply unit



## Consistent Milking Routine (Rotary Parlor)

### ☞ First Person

- Strip teats and Predip

### ☞ Second Person

- Dry teats and apply unit

### ☞ Third Person

- Monitor units and post dip



## Rotary Parlors



Define people positions

## Routines Change

The longer the employees are  
working at the dairy,

The faster they become.

Making proper adjustments for  
their experience is important

## Dairy with Mastitis Problem Take A Good History

- ☞ Do you strip teats                      yes
- ☞ Do you predip                            yes
- ☞ Do you dry teats                        yes
- ☞ Do you teat dip                         yes
- ☞ Do you dry cow treat                 yes

Farm doing everything they should,  
so why do they have a mastitis problem??

## Biggest Challenge for Success

To know the difference  
between  
normal and abnormal.

## Goals of Milking: “Milk Cows”

- \* Quickly as Possible
- \* Completely as Possible
- \* Gently as Possible

## Milking Practices Results in:

- Faster Milking
- More Milk Production
- Better Milk Quality

## Poor Advice

Is as worthless as a parachute  
that opens on the second  
bounce!

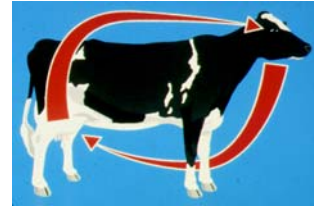
## “Milkability”

The Goal is to Attach a  
Machine to a Clean,  
Dry, Well Stimulated  
Teat!

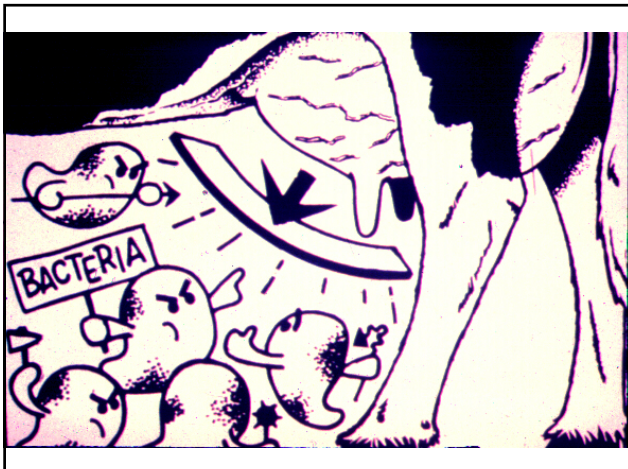
## Milking Management Number 1 Goal

- \* Reduce bacteria numbers on every cow's teat

## Milking Management



Maximize oxytocin release by employing procedures that give clean, dry, and stimulated teats



## Gloves Decrease Risk



All milkers **MUST** wear gloves

## Gloves

I Tried Them And Saw No Results



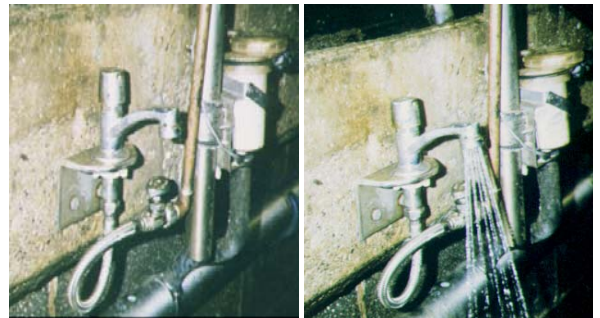
## Cleaning Gloves



## Cleaning Gloves



## Spring Automatic Faucets



## Proper Lag Time

The single biggest factor to rapid and complete milk outs.

**GOAL = 90+ SECONDS**

(Fore Strip to Unit Attachment)



## Proper Lag Time

60 seconds was considered the “Old” gold standard!

Latest data shows longer is much better than too short



## Benefits Of Proper Lag Time

**REMEMBER, REGARDLESS OF YOUR HERD SIZE**

**PROPER LAG TIME YIELDS AN EXTRA \$90 TO \$150 PER COW PER YEAR OF ACTUAL PROFIT!!**



## Properly foremilked cows will have consistent milk letdown



- ☞ Teats will “plump up”
- ☞ Good milk flow after machine attachment
- ☞ 90 secs



## Fore-Stripping

- \* Strongest Signal to Let Down Milk
- \* Remove Worst Quality Milk
- \* Earlier Mastitis Detection
- \* Faster Milking
- \* More Milk Production
- \* Decrease New Infections

## NEW STUDY SHOWS STRIPPING HELPS!

- \* Cows not stripped:  
Flow rate average 2.3 kg/min  
Average milk time 5.6 minutes
- \* Cows stripped:  
Flow rate average 2.6 kg/min  
Average milk time 4.6 minutes

## FORE STRIPPING

Define the number of strips on each teat!

Minimum of 2 actual squirts of milk, NOT just the motion of stripping!

## FORE STRIPPING

Either Strip then predip

OR

Predip then Strip

The Choice Is Yours!

## FORE STRIPPING

If teats are stripped first, more organic matter is removed.

If teats are stripped after predip, too much predip may be removed so less bacteria killed.



## Pre-Dipping

Reduces bacteria on teats

Requires contact time

Must be wiped off



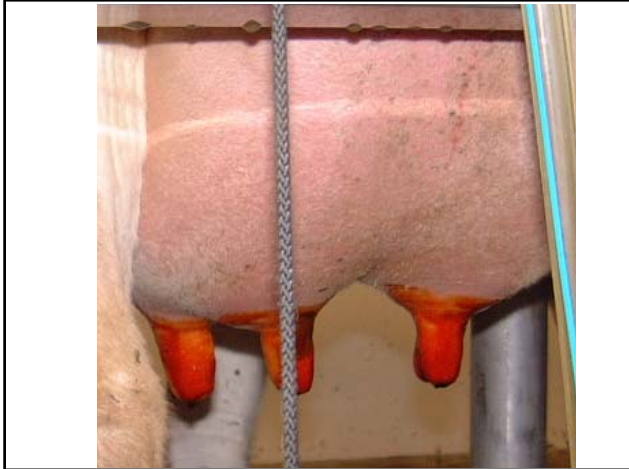
Pre-dip is the best way to remove bacteria from teats



## Milking Procedure Successful Predipping

- \* Complete coverage
- \* 20 to 30 seconds contact time





## Alternative Pre-Dipping Teat Foamers

- \* Excellent Cleaning
- \* Great Stimulation
- \* See Cleaner Milk Filters immediately

## Alternative Pre-dippers Teat Foamers



## Alternative Pre-dippers Power Scrubbers



### Best Ways to Reduce Bacteria on Teats Compared to No Udder Prep

Dry Towel Only	-4%
Wet Towel Only	-40%
Wet Towel + Udder Sanitizer	-40%
Wet Towel and Manual Dry	-77%
Wet Towel, Udder Sanitizer, and Manual Dry	-80%
Predip and Manual Dry	-85%

Source: Cornell University

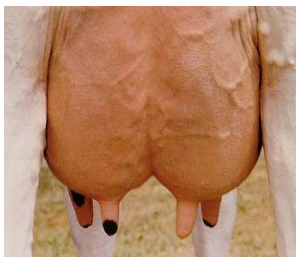
**Udder Prep  
Best You Can Do Is  
Reduce Bacteria By  
85%**

1,000,000 Bacteria At Start

100,000 Bacteria At Start



150,000 After Cleaning



15,000 After Cleaning

### Toweling

#### Proper

- removes water
- removes soil

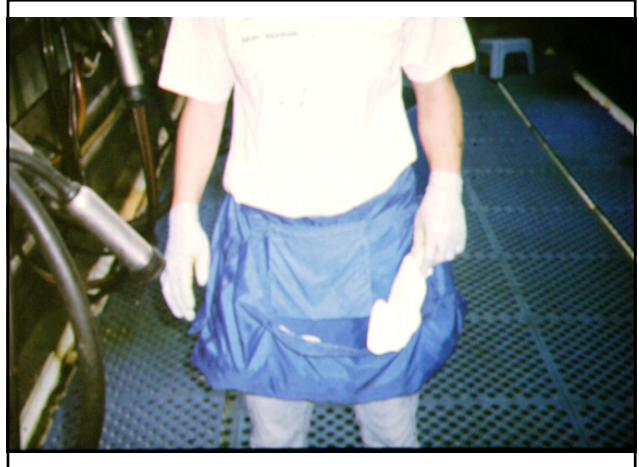


#### Improper

- redistributes filth
- can spread pathogens



## Proper use of towels + or $\approx$ one towel per cow



## Drying Teats

- \* Every Drop of Water That Goes on the Udder Must Come Off
- \* Bacteria Can't Walk, but They Can Swim
- \* Once Teats are Wiped Dry, Keep Your Hands Off!
- \* Number One Step for Reducing Bacteria Numbers on Teats

## Drying Teats

- ☞ IT IS EXTREMELY DIFFICULT TO GET A TEAT DRY WITH A DAMP CLOTH
- ☞ REMEMBER, THE DRYING CLOTH WILL REMOVE THE MOST BACTERIA FROM THE TEAT

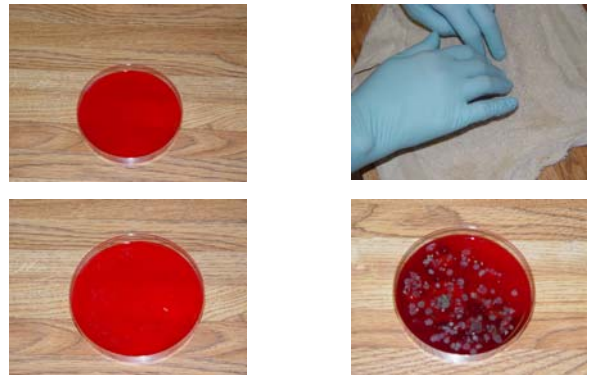


Teats must be this dry!!!

## Cloth Towels

- \* Should be one towel per cow
- \* Always wipe teat with clean surface of towel (Hard to clean a teat with a dirty towel)
  - \* Wipe all four teats, then flip towel and wipe again
  - \* Wipe two teats, flip towel and wipe other 2 teats
  - \* Wipe farthest two teats first, then wipe closet two teats last.
  - \* Keep moving towel so each teat is wiped with a clean part of the towel
- \* Evaluate Towel "Health" Routinely

## Towel Monitoring



## Drying Teats

☞ Making the physical pass across the teat ends has the biggest influence on milking speed and quality milk.

The drying removes the most bacteria from the cows teats.

## The Secret is the Teat Ends



## Clean Teat End



## Improper Teat Drying



What About The Teat End??

## Proper Teat Drying



Twist Method Gets The Teat End Clean!!

## Teat Cleanliness Scoring System

### Scoring System

- 1 No visible dirt or dip
- 2 Visible dip stain
- 3 Small amount of dirt or manure
- 4 Large amount of dirt or manure



## Milking Routine Makes A BIG Difference

Bacteria	Normal Routine No Teat Ends	Normal Routine Clean Teat Ends
<b>CONTAGIOUS</b> Staph Aureus	2,400	1,650
<b>ENVIRONMENTALS</b> Strep Species	2,450	25
Coliforms	22,500	5

Utilize your bulk tank cultures because they are a source of information on how good your cow's teats are being cleaned. Bulk tank cultures definitely show inconsistency!

## On Farm Milker Monitoring

- ☞ Set up line sampler
- ☞ Sampled after each shift
- ☞ Incubated and counted colonies –
- ☞ goal: <1000 colonies for non-ag streps  
<100 coliforms

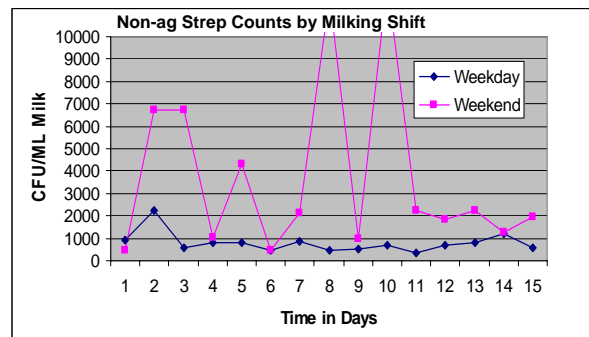
### Environmental Bacteria Counts in Milk Line Samples

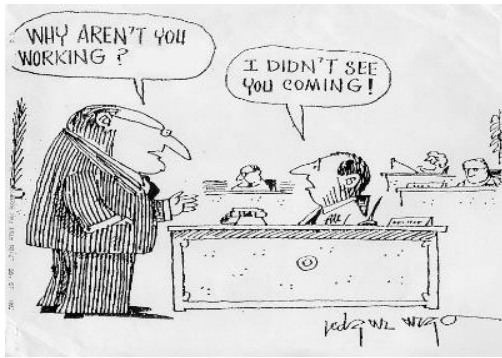
Date/Shift	Non-ag Streps cfu/ml	Coliforms cfu/ml
<b>10/11/02</b>		
Shift 1	1,340	860
Shift 2	600	140
Shift 3	550	250
<b>10/12/02</b>		
Shift 1	2,880	810
Shift 2	800	310
Shift 3	3,200	430
<b>10/13/02</b>		
Shift 1	1,668	450
Shift 2	850	153
Shift 3	960	235

### Environmental Bacteria Counts in Milk Line Samples

Date/Shift	Non-ag Streps cfu/ml	Coliforms cfu/ml
<b>10/14/02</b>		
Shift 1	2,540	560
Shift 2	600	140
Shift 3	550	250
<b>10/15/02</b>		
Shift 1	880	420
Shift 2	650	150
Shift 3	520	130
<b>10/16/02</b>		
Shift 1	3,668	650
Shift 2	880	122
Shift 3	460	45

## Environmental Bacteria in Bulk Tank Milk





## Udder Prep **SUMMER SECRET**

\* DRY WIPE TEATS  
BEFORE PREDIPPING

GREATLY REDUCES  
ORGANIC LOAD



Organic load reduces predip efficacy

## UNIT ATTACHMENT

- ⌘ Minimal air leakage
  - ⌘ Decrease environmental mastitis
  - ⌘ Better let down
- MUCH MORE IMPORTANT THAN  
MOST PEOPLE REALIZE!**

## Adjust Milking Unit Properly



Adjust Unit So It Hangs Squarely  
With a Slight Forward Pull



## Good Parlor Alignment



Better Approach To Unit Alignment – Vertical and Horizontal



Better Approach To Unit Alignment – Vertical and Horizontal

## PROPER HOSE ALIGNMENT



Keeping hoses together allows for better alignment

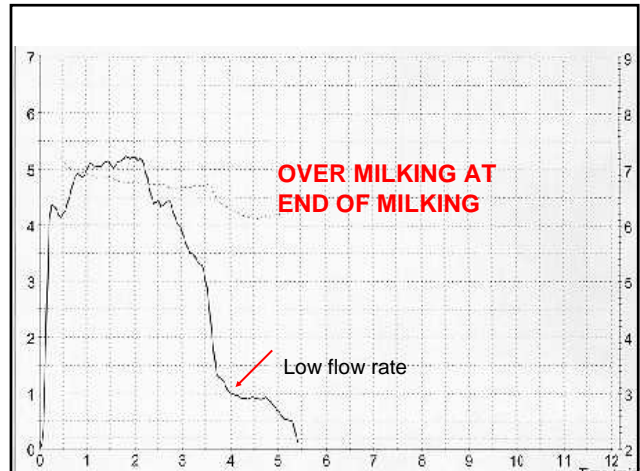
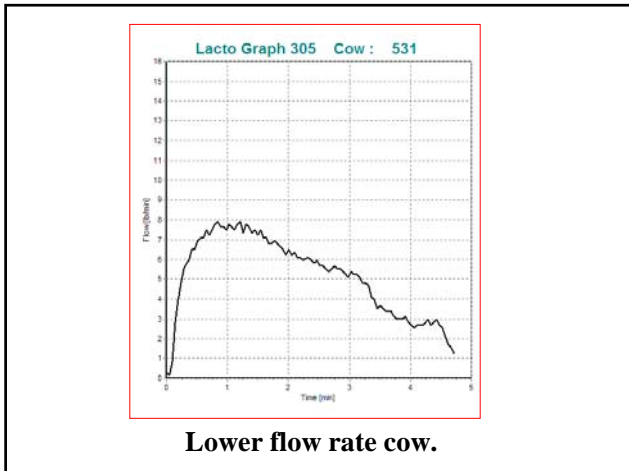
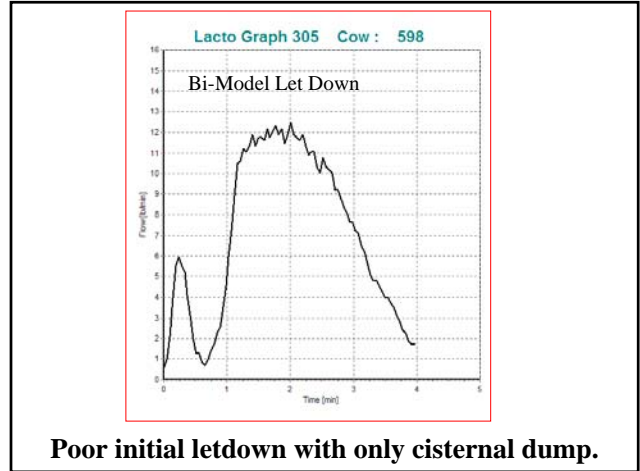
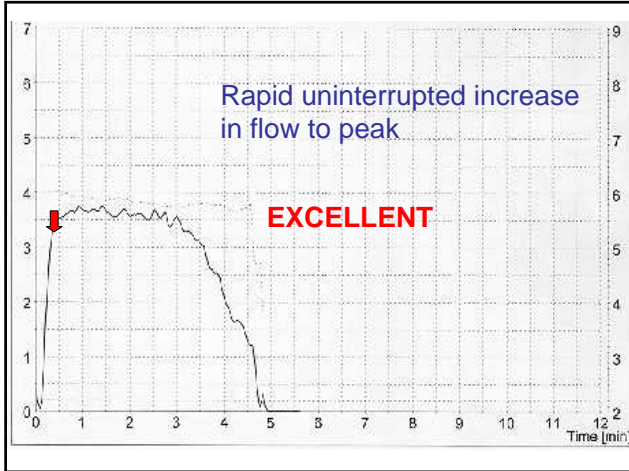
## PROPERLY STIMULATED COWS

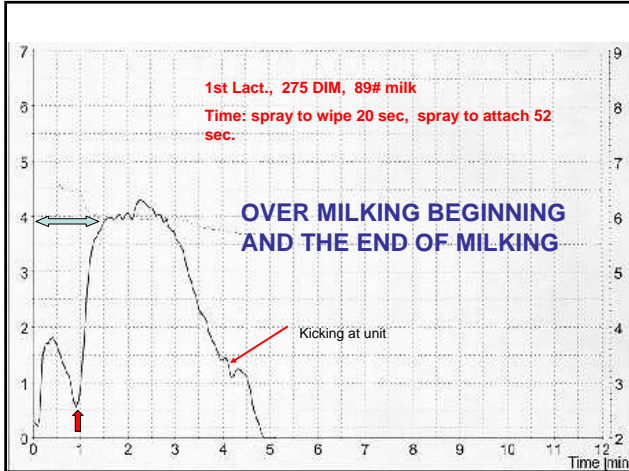


Excellent Let Down

## Lactocorder







## Lactocorder

It surprised many people to learn Than milking routine changes were Almost immediate to the cow's flow Rates. There is not a time to Adjust as we expected.

A great teaching tool.

## Three Types of Dipping

- ☛ Predipping
- ☛ Postdipping
- ☛ Shitdipping

Ito/Japan

## SHIT DIPPING



Is Not Effective!

## Teat Dipping Rules

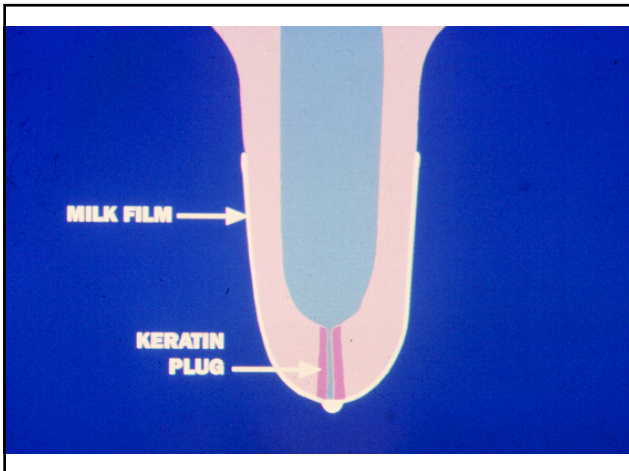
- 1 - Dip Teats, Don't Spray
- 2 - Clean Dipper and Fresh Dip
- 3 - Cover 90% of the Entire Teat
- 4 - Use an Approved Teat Dip





## Teat Dipping

Primary Reason to Teat Dip is to Remove the Milk Film Left on the Teat After Milking With a Layer of Germicide



## Post Dipping

Which is the proper way to teat dip ?



5.5% of dairies do no post milking disinfection

**Teat Dipping  
Splash Method**



**Teat Dipping  
Splash and Splash Method**



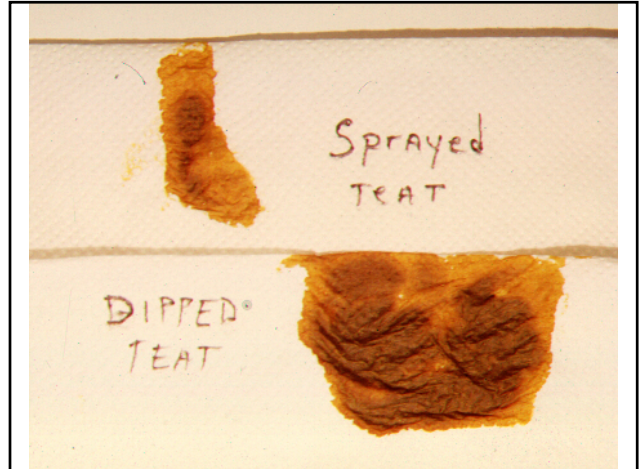
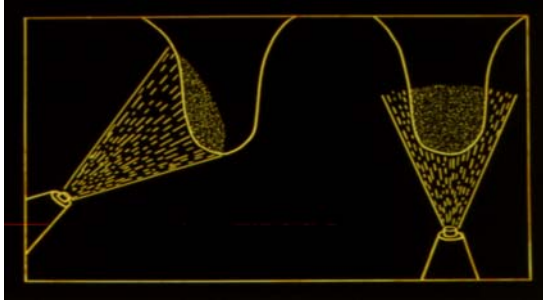
**Teat Dipping  
Squeeze Method**



**Teat dipping is superior over  
teat spraying**

**Dipping reduces usage &  
results in better coverage of  
teats.**

**Proper teat dip application  
does not include spraying!**



**Economics of  
Dipping vs Spraying**



**If you dip teats, you can afford to  
buy a quality teat dip on the savings  
of dip use over spraying!**

**New Sprayer System**



## Monitor the Results of Good Udder Prep



## Milk Filter Scoring

Best results when done after each milking by the people actually milking the cows

1. Clean as new
2. Light brown, no garget
3. Medium brown, some garget
4. Medium brown, lot garget
5. Dark brown, lot garget



Might be some issues with teat cleaning??

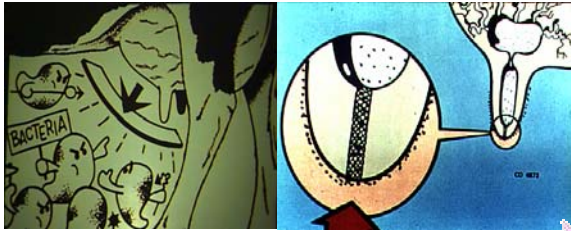
## Milk Filter Scoring

Poor milk filter scores tells us:

1. Milkers not properly cleaning the cow's teat/teat ends.
2. Milkers not properly detecting abnormal milk.

**The probability of mastitis increases with increasing germ loads on the teat ends**

**Full hygiene decreases the probability**



## Keep Exterior Of Units Clean

- ☞ Use drop hose with detergent/sanitizer
- ☞ After each pen of cows MINIMUM
- ☞ Preferably after each side of parlor
- ☞ Reduces risk of new infections
  - Environmentals and Mycoplasma

**CLEAN STILL MEANS QUALITY**

## Keep Exterior Of Units Clean



## The Machine

**System Cleaning does not only apply to the internal surface of a milking system, It also applies to the external surfaces as well. Both surfaces play a major role in bacteria counts and the level of environmental mastitis.**



**Front View Of Unit on Jetters**



**Back Side of Units on Jetters**



## **Unit Cleaning**



**Reduces clean up time and water use by 25%**

## Basic Steps to Producing Quality Milk

- 1) Strip 2-3 squirts of milk from each teat with a gloved hand
- 2) Predip each teat covering at least 90% and leaving it on for a minimum of 30 seconds
- 3) Wipe teats dry making certain teat wall and teat ends are properly cleaned
- 4) Attach machine 90 seconds after stripping
- 5) Post dip every teat with an approved product and cover at least 90% of each teat



## The Most Successful Milk Quality and Udder Health Programs

- 1) Keep cows clean, dry, and comfortable
- 2) Utilize full hygiene programs
- 3) Use both somatic cell testing and culturing as monitors
- 4) Know the pathogens they are dealing with
- 5) Know the epidemiologic control methods for the pathogens they find



## Herd SCC

Every herd is capable of producing milk with an SCC in the bulk tank less than 150,000

Size doesn't matter, **ATTITUDE** does!!



**If you always do what  
You have always done**

**You always get what  
you always got!**

