



OUTLINE

QMax Milk Quality Plan

- Facilities Evaluation
- Parlor Evaluation
 - Milking System Analysis
- Data Analysis and Report

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Q-Max Milk Quality Evaluation Checklist

Dairy Name:	Date of Evaluation:
Facilities Evaluation	
Stocking density (# stalls, feet of bunk, cow numbers for all pens)	
Bunk space (<15 inches hurts repro, goal >18 inches/cow)	
Cow Comfort Quotient (correct usage divided by total usage)	
Stall design issues (general stall evaluation)	
Stall cleanliness (count number of stalls per pen with manure and note location)	
Review beds after they have been cleaned (fill level, cleanliness - note positives/negatives)	
Review bedding material quality, depth, and frequency of addition (note positives/negatives)	
Hygiene Score (pens not observed in parlor)	
Hock Lesion Scores (0 - 3)	
Observe and note any heat abatement issues	
Review airflow (fans - setting, location, tunnel ventilation)	
Review the total time cows are away from their pen for each milking (goal < 2 hours)	

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Q-Max Milk Quality Evaluation Checklist

Dairy Name:	Date of Evaluation:
Parlor Evaluation	
Review prep sequence	
Examine teat ends after prep (teat swabs)	
Dip contact time (Goal 30 sec)	
Prep-lag time (90 sec - 2 min for 3x or 60 sec for 2x milking)	
Review machine attachment and squawking	
Review multiple milkers for consistency across milkers	
Udder Hygiene Scoring (cleanliness & singed)	
Teat End Scoring (smooth to rough 1 - 4)	
Review machine cleanliness and floor wash	
General equipment evaluation (Manual setting, fall offs)	
Pre and Post dip evaluation (take pictures &/or blot test)	
Do milkers treat cows (yes/no and notes on procedure)	
General observations (water use etc...)	

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Facilities Evaluation

- Cow Comfort Quotient
- Stocking density
- Stall Measurements
- Hock Injury Scores
- Hygiene Scores
- Stall contamination rate

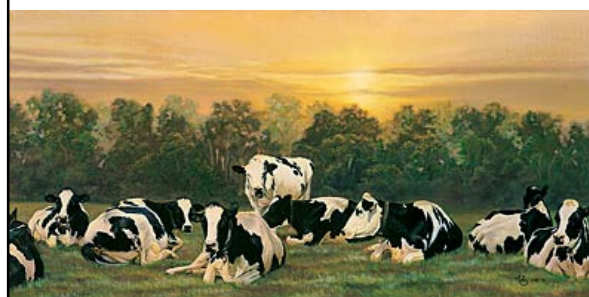


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Cow Comfort is it good enough?
– ask your cows



Environmental and Behavioral Factors

- Cow Comfort Quotient (CCQ)
- $CCQ = \frac{\text{cows lying properly}}{\text{cows "in" stalls}} \times 100$
- Goal is at least 85%
- Cows should be lying down at least 12-14 hours a day

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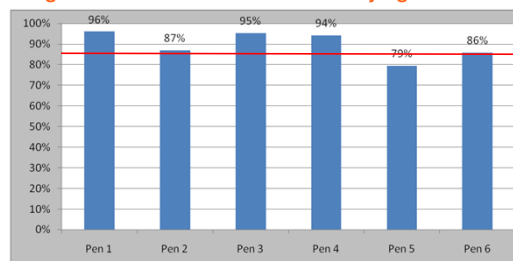
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Cow Comfort Quotient

The goal is to have $\geq 85\%$ of the cows lying down

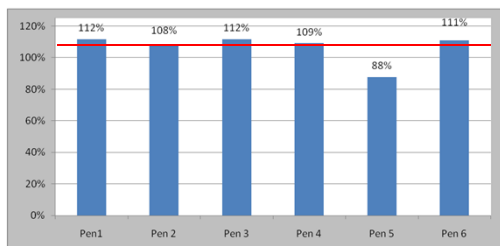


Note: Cow Comfort Quotient measures how comfortable the cows are and how well they use the stalls. It evaluates the number of cows touching a stall and how many of them are actually lying properly in the stall.

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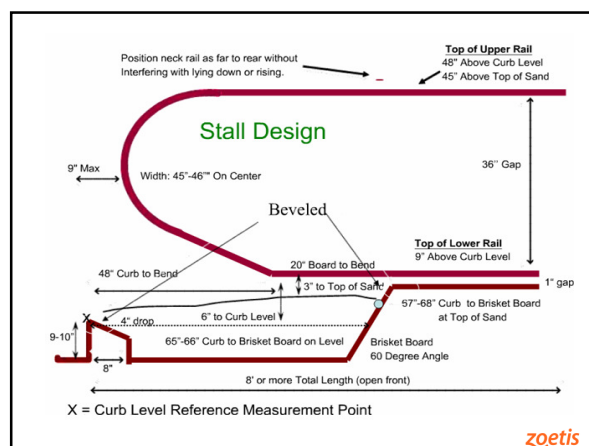
Stocking Density

The goal is to be at no more than 110%



Note: Stocking Density is comparing the number of cows in the pens to the number of freestalls available.

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Stall Dimension (inches)	Body Weight Estimate (lbs)				
	1000	1200	1400	1600	1800
Total stall length facing a wall	96 (8')	96	108	120	120
Head-to-head platform length	192 (16')	192	204	216	216
Distance from rear curb to brisket locator	64	66	68	70	72
Center-to-center stall divider placement (Stall width)	44	46	48	50	54
Height of brisket locator above stall surface	3	3	4	4	4
Height of upper edge of bottom divider rail above stall surface	11	11	12	12	12
Height below neck rail	44	46	48	50	52
Horizontal distance between rear edge of neck rail and rear curb	64	66	68	70	72
Rear curb height	8	8	8	8	8
Rear curb width (loose bedded stalls)	6	6	6	6	6

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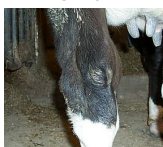
Hock Injury Score Definitions



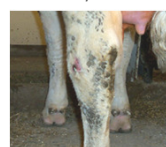
Score 1
Normal



Score 2
hair loss, no swelling



Score 3
swelling, no hair loss



Score 3
swelling, hair loss

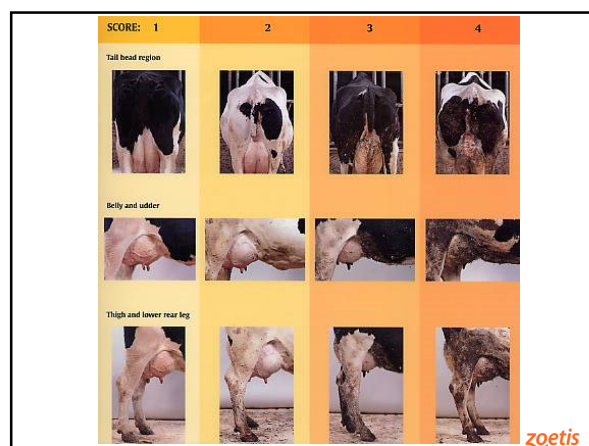
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Hock Lesion Scores

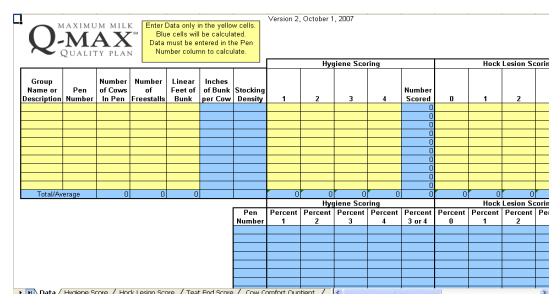
- Score 80 cows or 20% of herd whichever is the largest number. In small herds, score all cows.
- Percent cows with hock lesions
– Scores 1 + 2 + 3 / cows scored
- Goal >95% with score = 1



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- Reneau et al JAVMA 2005



Pen Type	Percentage
Pen 1	17%
Pen 2	24%
Pen 3	26%
Pen 4	21%
Pen 5	23%
Pen 6	9%

- Milking routine
- Prep-lag time
- Teat end swab scoring
- Teat end scoring
- Strip yields
- Milk sock test
- Milking system evaluation



The GOALS of MILKING MANAGEMENT

"Milkability & COWsistency"

- Faster Milking
- More Milk Production
- Better Quality Milk

Attach to a:

- Clean
- Dry
- Well-Stimulated Teat



MILKING PROCEDURES

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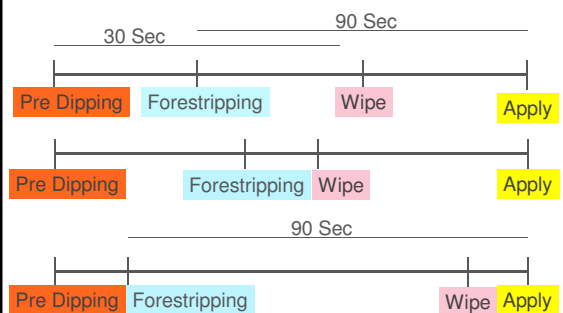
Perfect Milking Routine

Milking cows with clean, dry and well stimulated teats!!!!

- How?
 - Same routine each milking
 - It should be designed with people, cows, facilities, size, etc. in mind.
- Check all steps of the process:
 - Pre-dip coverage
 - Contact time
 - Wiping technique
 - Prep Lag time 90 to 120 seconds
 - Unit alignment
 - ATO settings

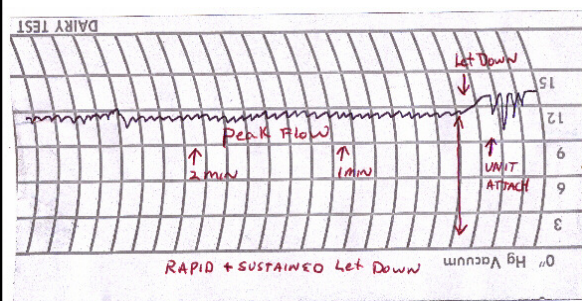
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Various Routines can accomplish the same results



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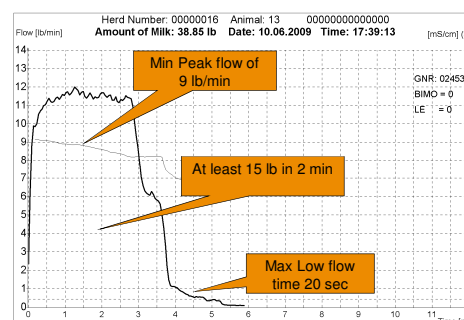
The People



Good Prep Equals Faster Milking

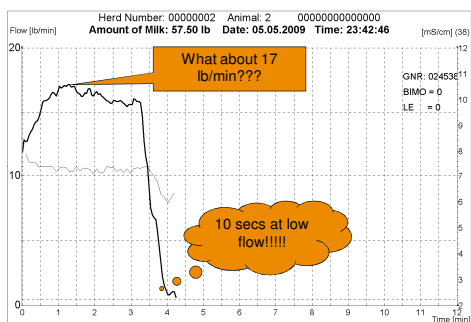
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Good stimulation, good flow



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Good stimulation, Excellent Flow



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Proper Lag Time

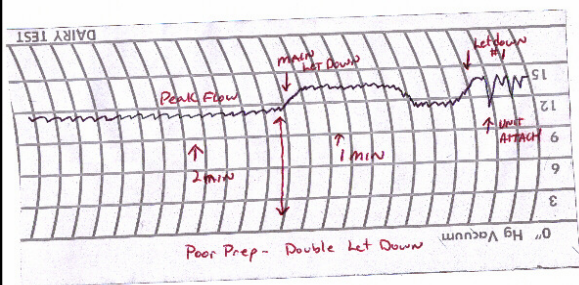
The single biggest factor to rapid and complete milk outs.

GOAL = 90 - 120 SECONDS

(Fore Strip to Unit Attachment)

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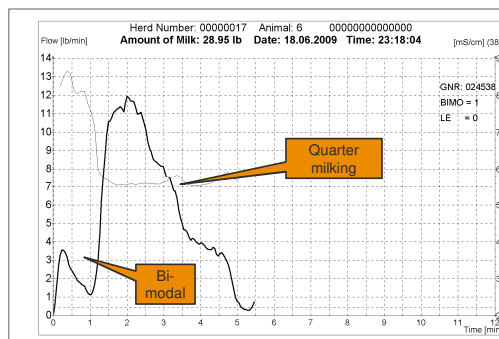
The People



Over Milking Is Not Just at the End of Milking

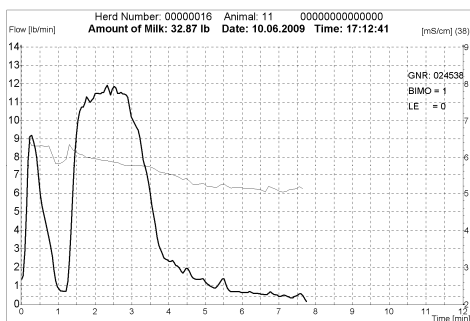
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Short stimulation, bimodal flow



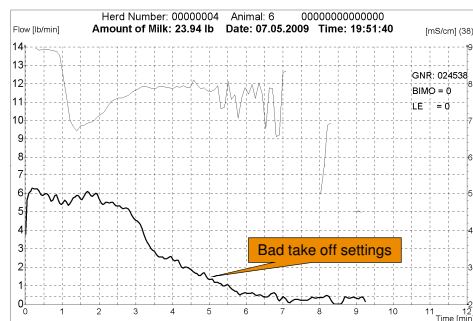
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Short Stimulation, bimodal flow



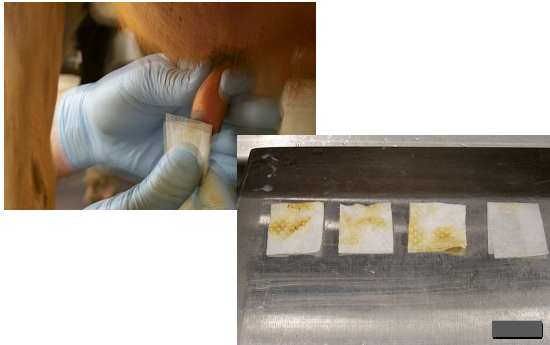
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Slow milker, bad take off settings



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Teat End Swab Test



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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

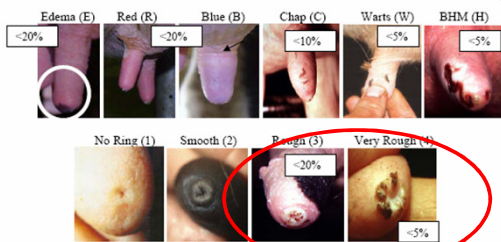


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TEAT END SCORING

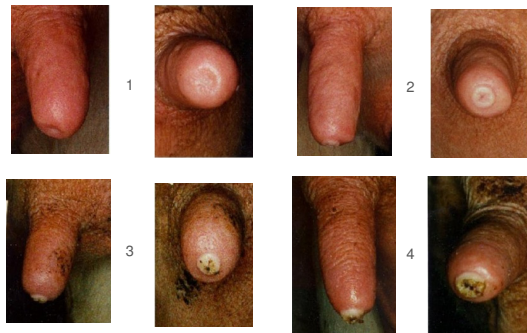
TEAT END SCORING (Score 20% cows in each pen)

Score: Color: R (Red) B (Blue) Black (Bl) and Mouthpiece mark at teat base (M) ↑



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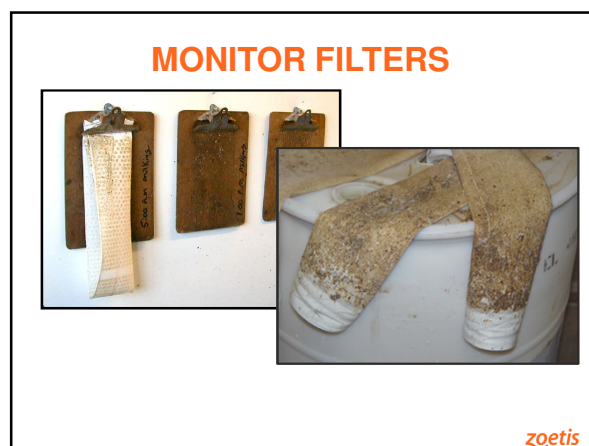
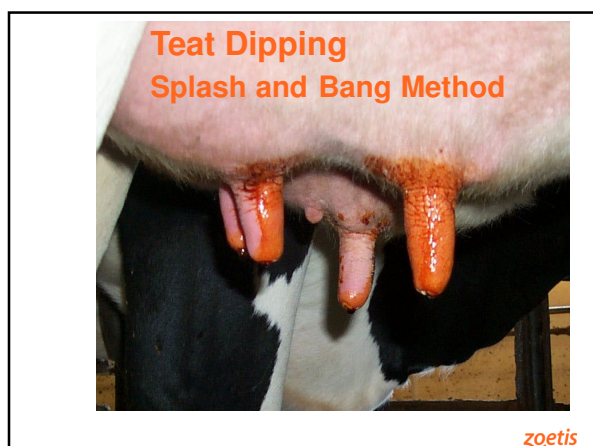
Teat End Lesions



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MONITORING PRIMARY PARAMETERS FOR MILK QUALITY

- BMSCC over time (set goals and action points)
Influenced by:
 - New infections (*driver of SCC dynamics*)
 - Chronic infections
 - Fresh cow/heifer with high SCC
- Treatment of treatable infections.
- Manage the untreatable.

	New	Chronic	Fresh
Top	≤5%	≤5%	≤10%
Ok	~8%	~8%	~15%
Not ok	10+%	10+%	20+%

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Dairy Wellness Plan
Q-MAX



Development of Treatment Decisions

What is YOUR Treatment Plan?

THERAPY: YOU MUST DEFINE SUCCESS

- Clinical cure – normal milk/udder
- Reduction in SCC - <200,000
- Microbiologic cure – elimination of pretreatment pathogen/no growth
- Relapse rate
- When is this assessed? 14-21 days after treatment
- Records, Records, Records

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Developing a Complete Milk Quality Program

1. The cows and their environment
2. The milking procedures
3. The milking equipment
4. The monitoring & treatment Program



 **Quality Milk**

Q-MAX
Dairy Wellness Plan

Working Together for Success!



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