



Managing Dairy Manure in the Central Valley, California



Georgia Dairy Producer Conference
January 20-22, Savannah

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“As California goes, so goes the nation”



Dairy producers are

Creative

Ingenious

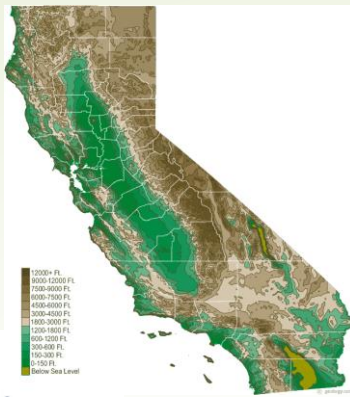
Gifted

Innovative

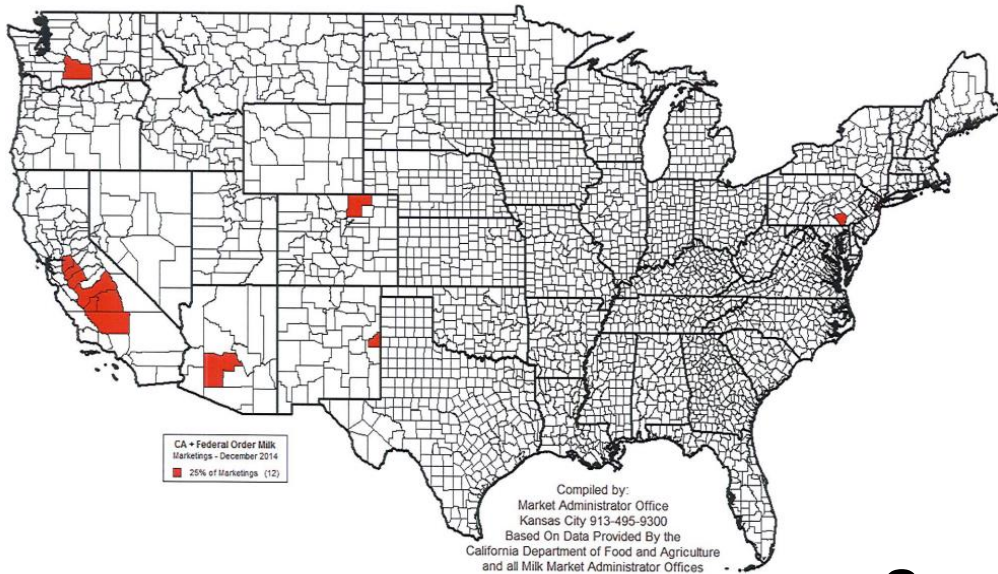
Resilient

Inventive

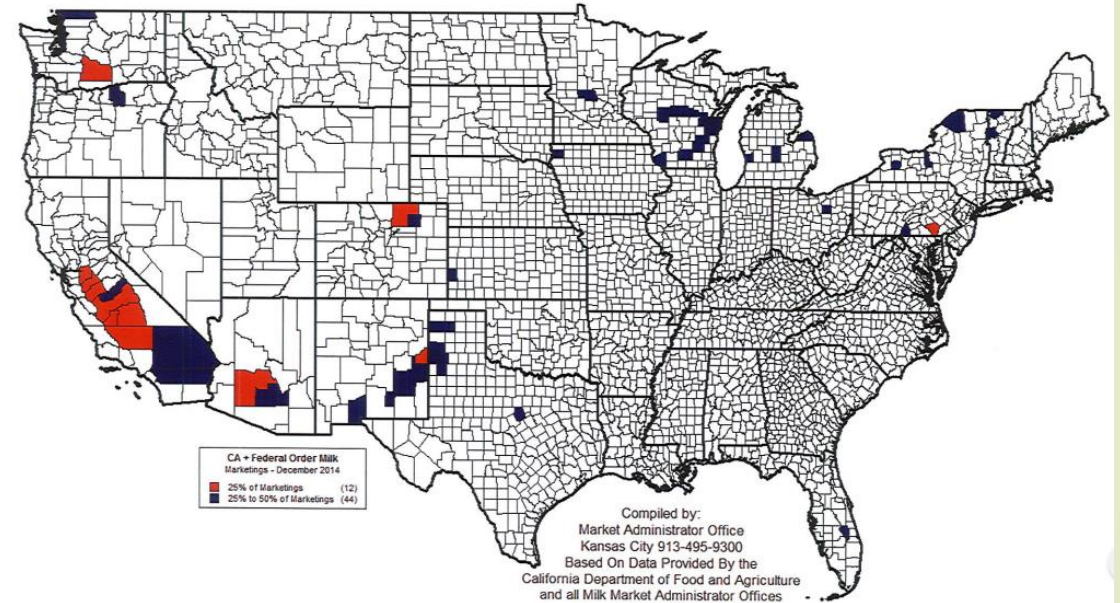
Imaginative



**12 Counties Marketed 25% Of All
CA + Federal Order Milk During December 2014**

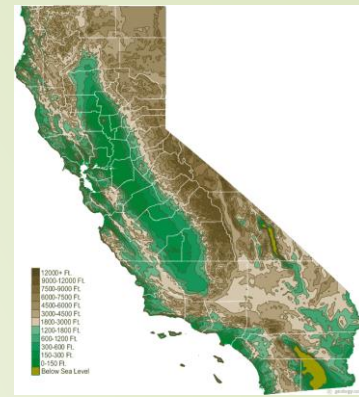


**56 Counties Marketed 50% Of All
CA + Federal Order Milk During December 2014**

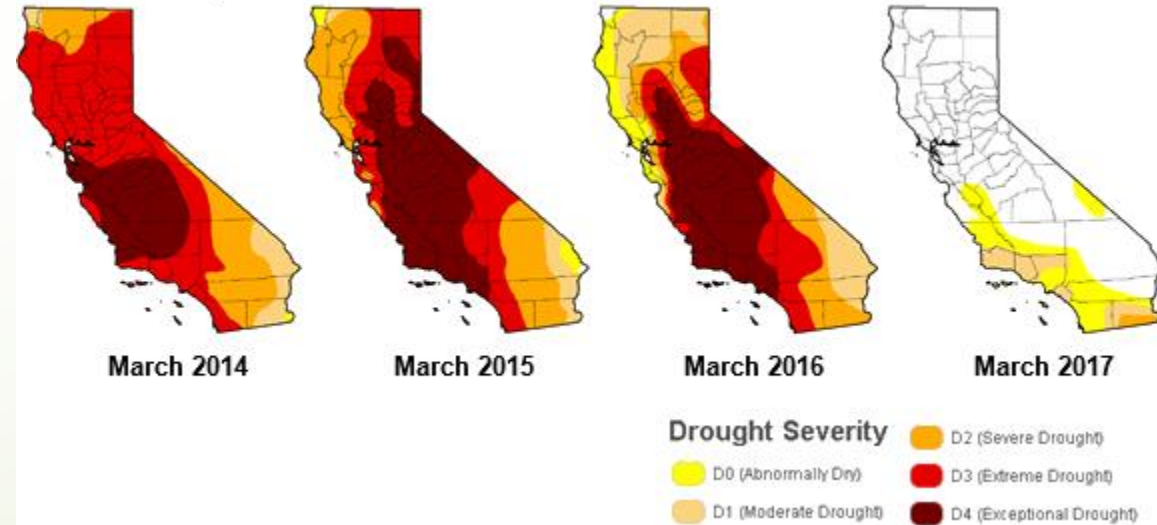


**San Joaquin Valley
8 counties
c. 1050 dairies
c. 90% CA cows**

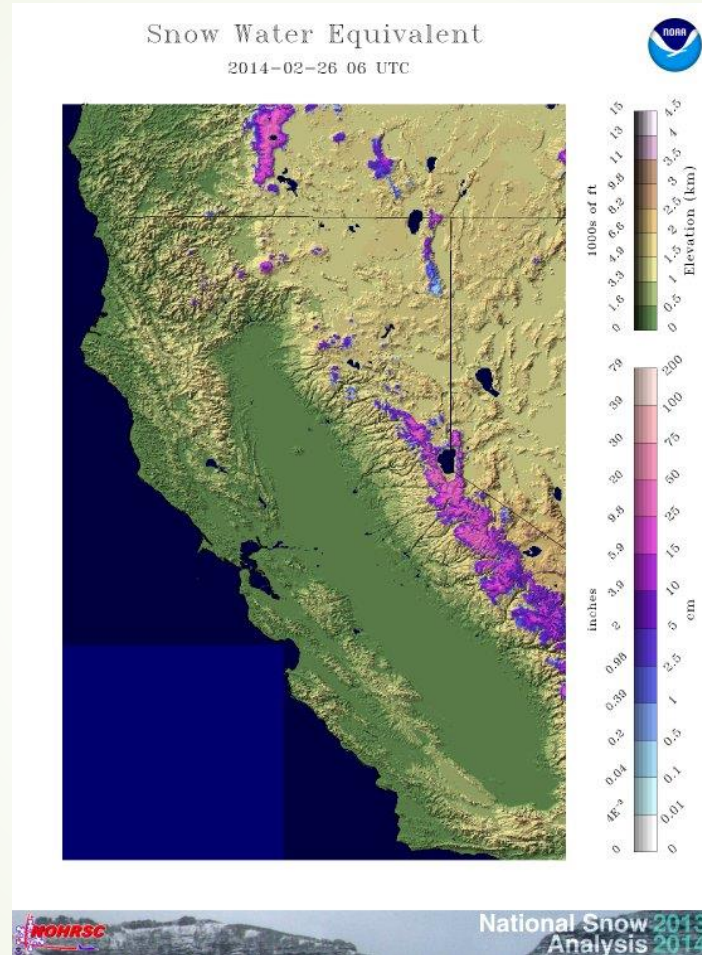
Uncertain water future



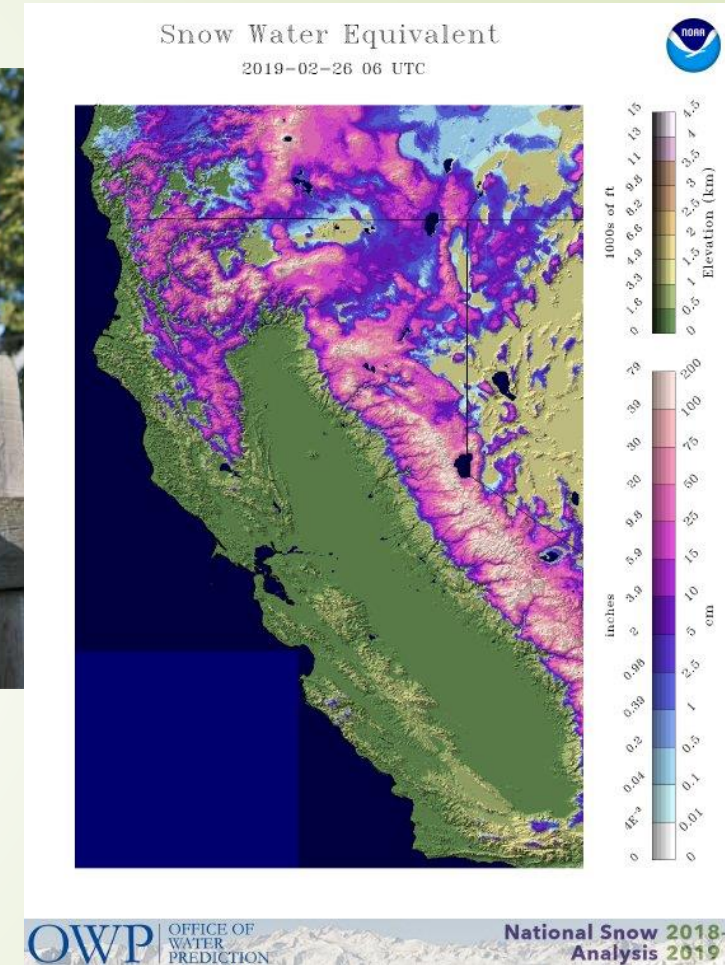
California drought status



Uncertain Rain/Snow fall



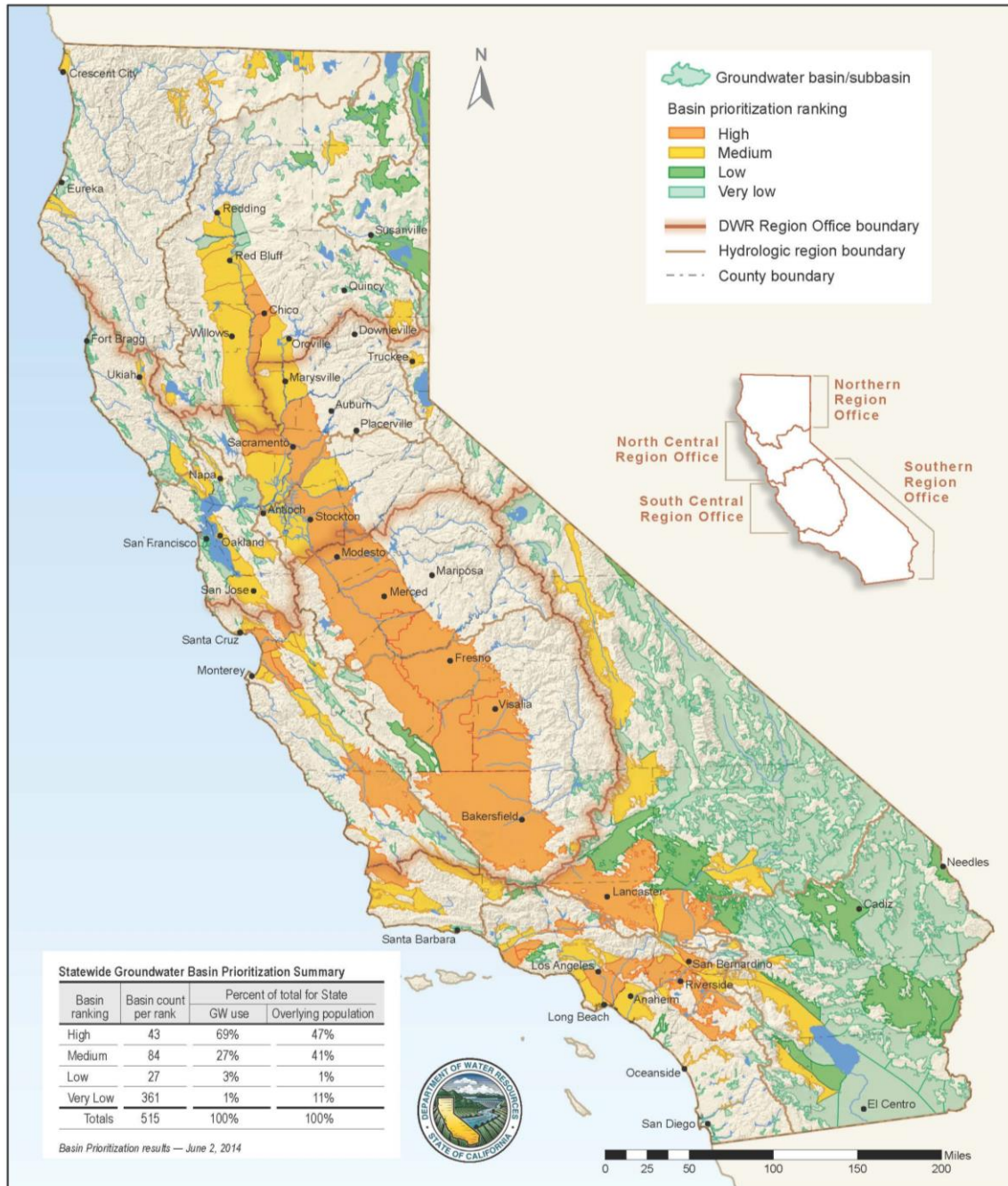
2014



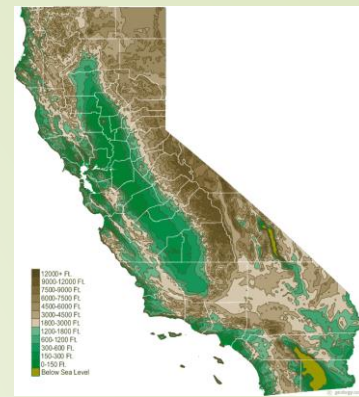
2019

<https://www.nohrsc.noaa.gov/nas>

CASGEM Groundwater Basin Prioritization



Sustainable Groundwater Management Act SGMA



Groundwater-Level Declines



Land Subsidence

Extensive groundwater withdrawals from aquifer systems have caused land subsidence in many California basins. Land subsidence can damage structures such as wells,



Groundwater-Storage Reductions

Long-term declines in groundwater levels, if predominant within a basin and not offset by rising groundwater levels,

- Medium & High priority basins-
 - ✓ Form Groundwater sustainability agency (2017)
 - ✓ Develop ('22) -- implement plan ('40)

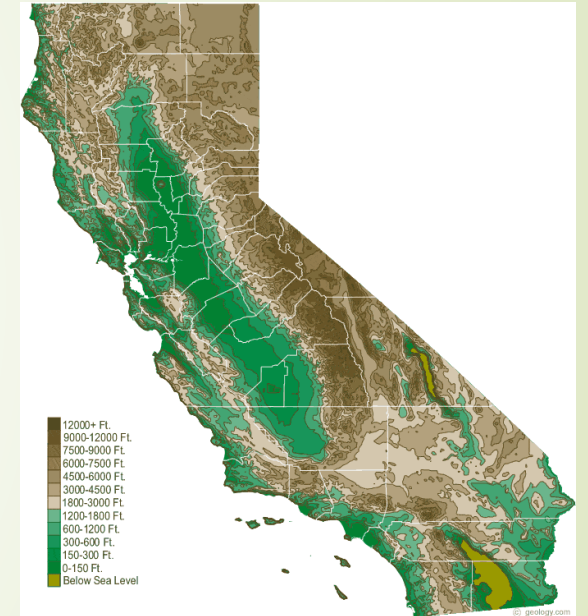


I'm thinking about
changing manure
management



Does waste
character, location,
volume or air
emissions change?

Yes, gather patience
and wallet: consult



Ground and surface waters

Ambient air quality standards (particulate matter, volatile organic compounds, ammonia)

Greenhouse gas emissions (MANURE, enteric)





Safe Drinking Water Act



May 3, 2007

modified 2011, 2013, 2021??



Protect surface water

Protect **GROUNDWATER**

Nitrogen applied:Nitrogen removed ≤ 1.4
crop N use efficiency 71%

Monitor and report all applications to fields

Applies to all dairies in Valley

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0035

WASTE DISCHARGE REQUIREMENTS GENERAL ORDER
FOR
EXISTING MILK COW DAIRIES



Each dairy:

- **Waste Management Plan (WMP)**
- **Nutrient Management Plan (NMP)**



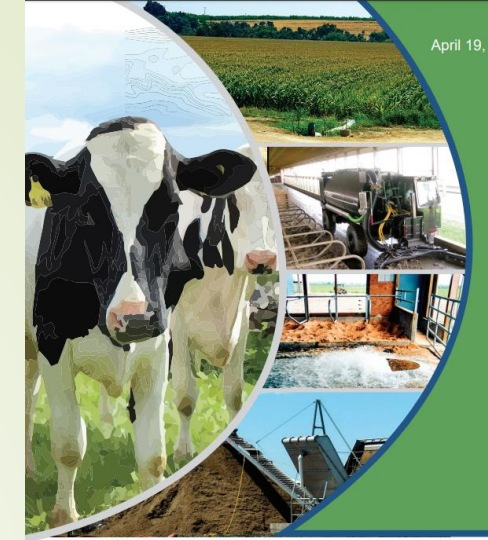
- **Do these work??**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0035

WASTE DISCHARGE REQUIREMENTS GENERAL ORDER
FOR
EXISTING MILK COW DAIRIES

Central Valley Dairy Representative Monitoring Program



Summary Representative Monitoring Report (Revised*)

Prepared and submitted to the Central Valley Regional Water Quality Control Board by the Central Valley Dairy Representative Monitoring Program.

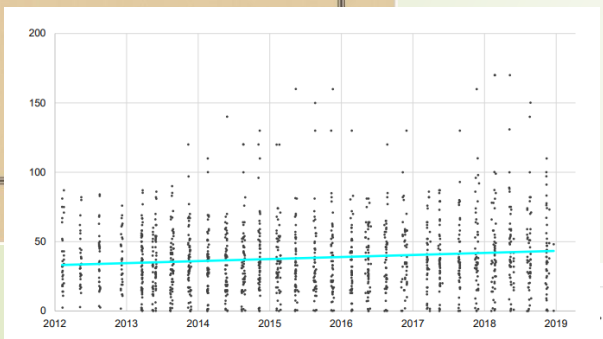


Figure 5.3.1.3k: Total nitrogen concentrations, fields (1 concentration >200 mg/L is not shown)

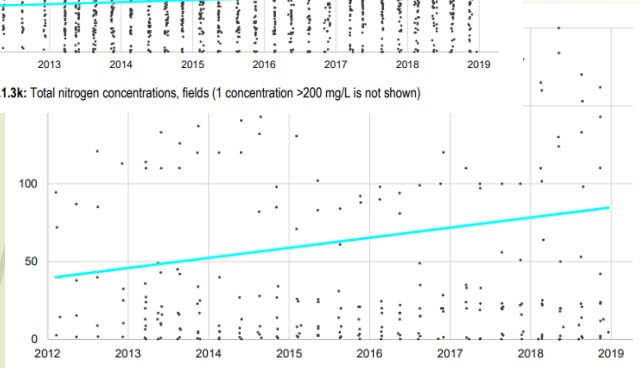


Figure 5.3.1.3n: Total nitrogen concentrations, lagoons (14 concentrations >200 mg/L are not shown)

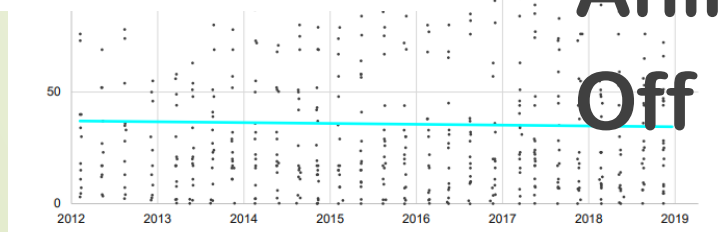


Figure 5.3.1.3m: Total nitrogen concentrations, animal housing (4 concentrations >150 mg/L are not shown)

Voluntary monitoring program

Lagoon

Fields

Animal housing

Off site

https://www.waterboards.ca.gov/centralvalley/water_issues/confined_animal_facilities/groundwater_monitoring/srmr_20190419.pdf



Source: Mosaicco.com

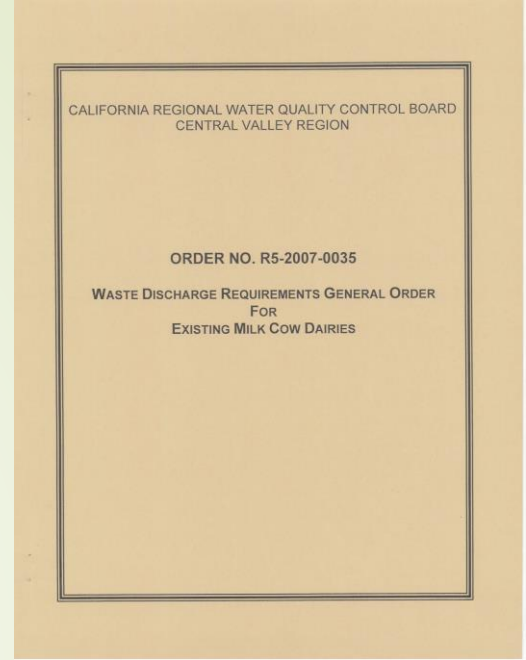
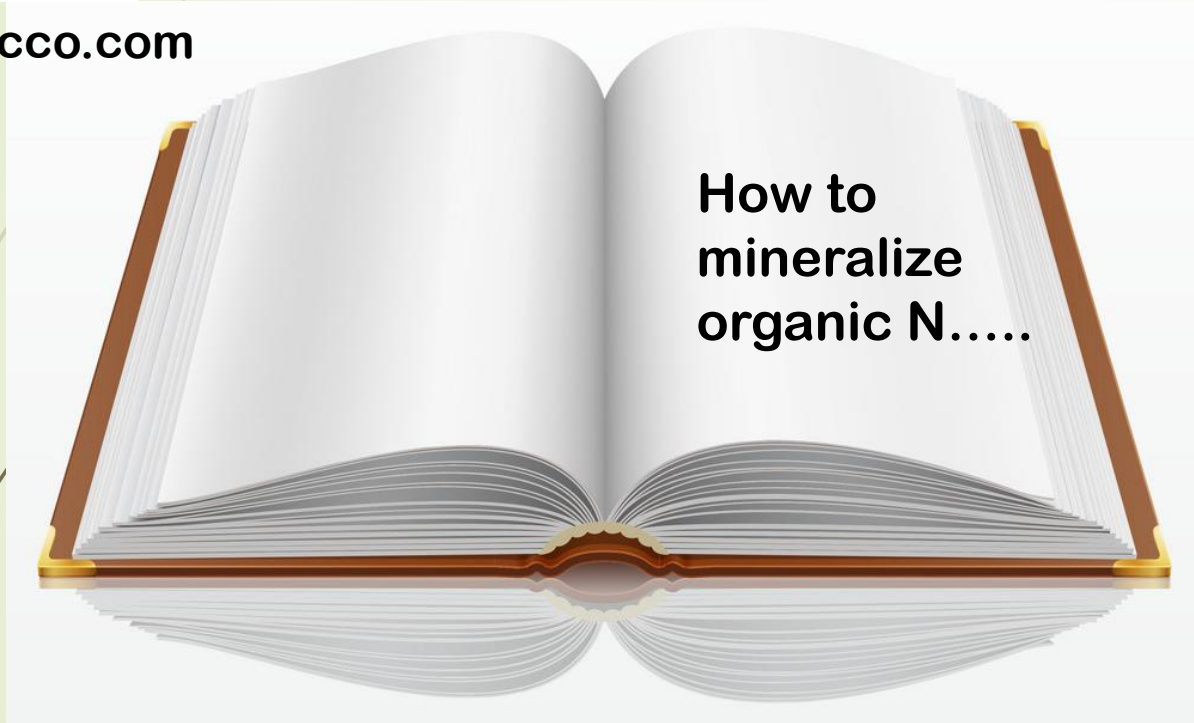


Photo: Terry Dayhard's blog

Irrigation water management critical

NEW REGULATIONS COMING - 2020

What regulated entities and individuals need to know about changes in Nitrate and Salt compliance

What regulated entities and individuals need to know about changes in nitrate and salt compliance

NITRATE COMPLIANCE

Nitrate Control Program

Join a Management Zone for Nitrate Compliance

SALT COMPLIANCE

Salt Control Program

Participate in P&O Study for Salt Compliance

SAFE WATER

Safe Drinking Water



Improved management

Irrigation uniformity and efficiency

Nitrogen

Detailed recordkeeping

Increased research to identify new practices

Improved relationship with agency staff



Ag Exemption 2004



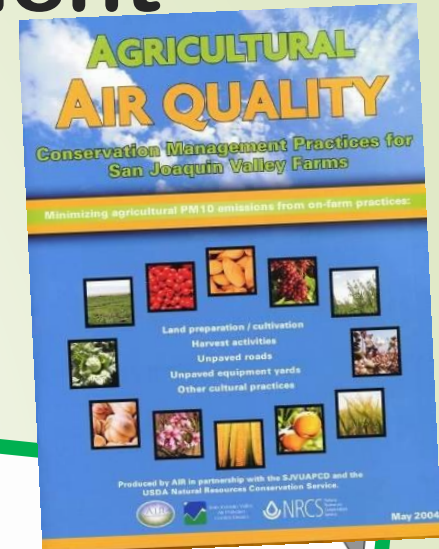
Air quality concern:

- ➔ Particulate matter: PM 10, PM fine
- ➔ Sulfate, dust, soot, ash, salts, and other pollutants
- ➔ Serious health risks



Rule 4550 - Conservation Management Practices (CMP; 12/31/2004)

- >100 acres of crops and/or >500 mature cows* (milk + dry cows)
- Feedlot & other CAFs >190* head
- Menu based approach, targeted areas around the operation
- Facilities inspected every 5 years



Conservation Management Practices: DAIRY

Farm Name: _____ CMP Plan Years: _____ to _____

Maximum Number of Milk Cows: _____ Maximum Number of Dry Cows: _____ Maximum Number of Support Stock: _____

Corral/Manure Handling

Select one of the following CMPs:

- Filtered Layer in Dairy Areas
- Fencible Fencing
- Frequent Scraping and/or Manure Removal
- Multiple CMPs in Another Category
- Pad Type Manure Harvesting Equipment
- Scraping/Harvesting (in Morning Hours)
- Shaded Areas in Open Corral
- Sprinkling of Open Corral
- Other (approved on a case-by-case basis)

Please describe the specific practice(s) chosen above: _____

Overall Management/Feeding

Select one of the following CMPs:

- Bulk Material Control
- Downwind Shelterbelt/Buffering Trees
- Feeding Youngstock Near Dials
- Multiple CMPs in Another Category
- Placing Wet Material in Paddock First
- Wet Feed During Mixing
- Other (approved on a case-by-case basis)

Please describe the specific practice(s) chosen above: _____

the "Green Sheets"

*Based on actual numbers



San Joaquin Valley
Unified Air Pollution Control District

Air quality concern:

- ➔ Ozone: smog
- ➔ Nitrogen oxides (NO_x)
- ➔ Volatile organic compounds (VOCs)
- ➔ Sunlight and heat

San Joaquin Valley
Air Pollution Control District
Air Pollution Control Officer's
Determination of VOC Emission Factors
for Dairies



To reduce VOC emissions ...

Keep wet things wet



And dry things dry and under cover

Six Permitted Sources (2006, 2011)

- Select Mitigation Measures for each source:
 - Feed
 - General
 - **Silage**
 - Milk Parlor
 - Cow Housing
 - Freestalls
 - Corrals
 - Liquid manure
 - Land application
 - Solid manure





THE OFFICE OF ENVIRONMENTAL FARMING & INNOVATION



state water efficiency and enhancement program

**Funds for irrigation pumps, feed mixers,
energy saving technologies**



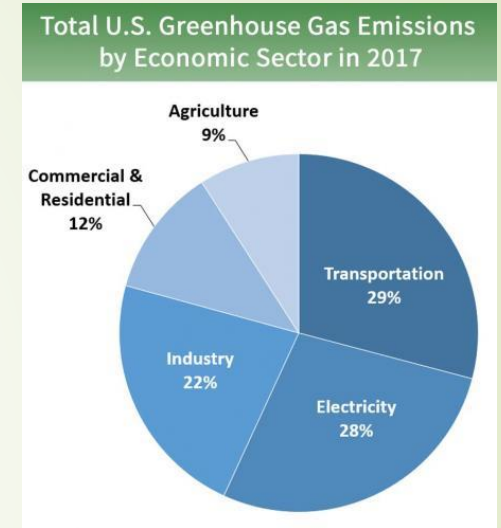
Improved silage management
Pack density
Cover management
Open face management
Reduced dust



QUIZ

Globally livestock are responsible for the largest contribution to ghg (bigger than transportation) **TRUE**

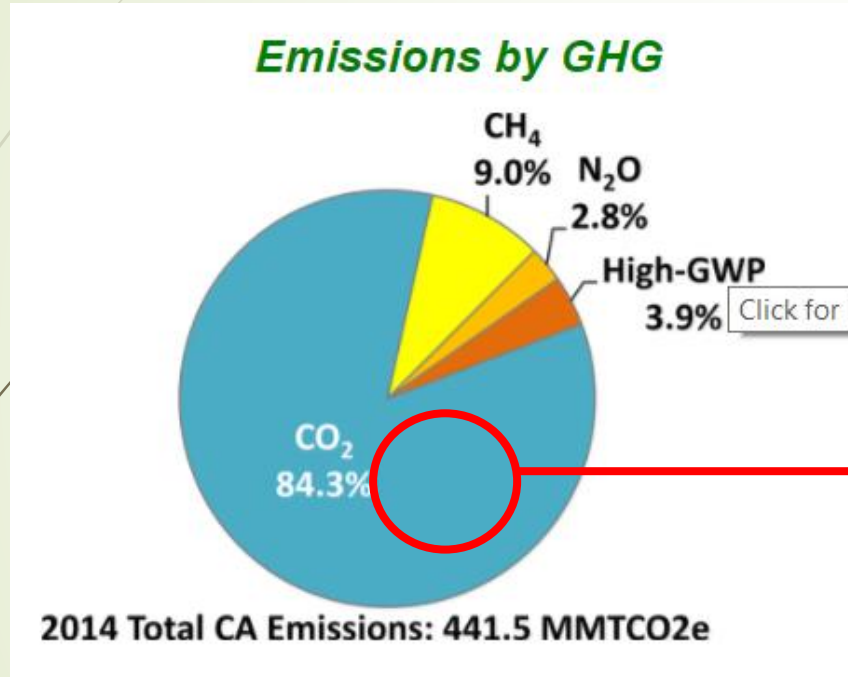
In the United States livestock are responsible for the largest contribution to ghg (bigger than transportation) **FALSE**



United States dairy sector strives to be net zero carbon by 2050 **TRUE**

California's carbon story due 2030 . . .

Greenhouse Gases

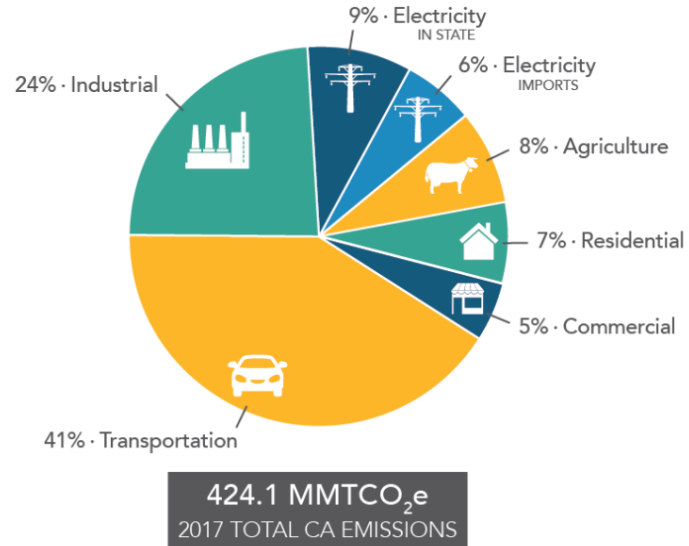


- Methane (CH₄) – 25X more global warming potential than CO₂
- 59% of CH₄ comes from Ag sources (primarily from manure + enteric fermentation)

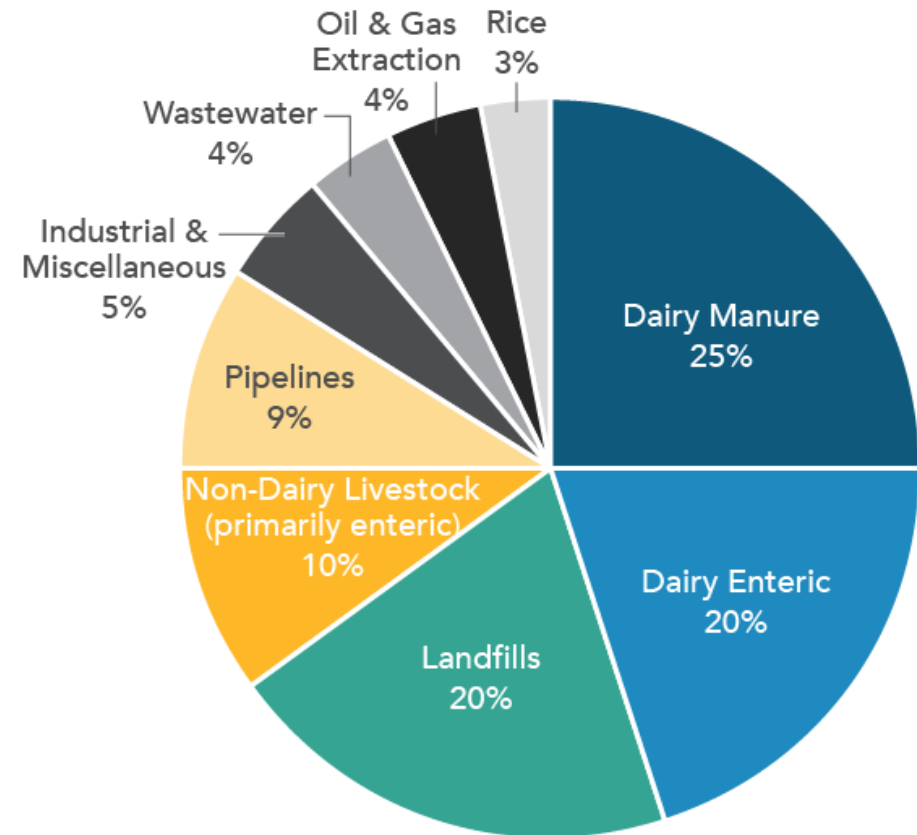
SB32 – Reduction of Green house gases (GHG 2006)
SB1383 – Short Lived Climate Pollutants (SLCP 2016)

Why focus on manure methane?

2017 GHG Emissions by Main Economic Sector



2013 Methane: 118 MMTCO₂e (20-yr GWP)



SB1383 / SLCP Reduction Strategy

Roadmap/timeline identified in legislation

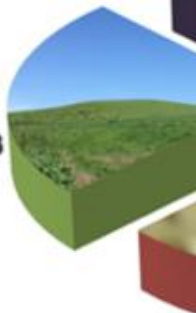
- Dairy industry, CDFA and other agencies and organizations
- Develop incentive-based development and research programs to fill-in data gaps.
- Identify and address technical, market, regulatory, and other challenges and barriers
- Develop/adopt regulations to reduce methane emissions by up to 40 percent below 2013 levels by 2030

SB1383 / SLCP Reduction Strategy



DAIRY AND LIVESTOCK GRE

Subgroup #1:
Non-Digesters



Implement regulations on or after January 1, 2024, if :

- (A) technologically feasible,
- (B) economically feasible considering milk and live cattle prices and the commitment of state, federal, and private funding, among other things, and that markets exist for the products generated ... methane emissions reduction projects, including composting, biomethane, and other products.



- **Treat manure anaerobically**
- **Make and use biogas**
- **Replace natural gas or as vehicle fuel**
- **Predominantly NOT electricity production**

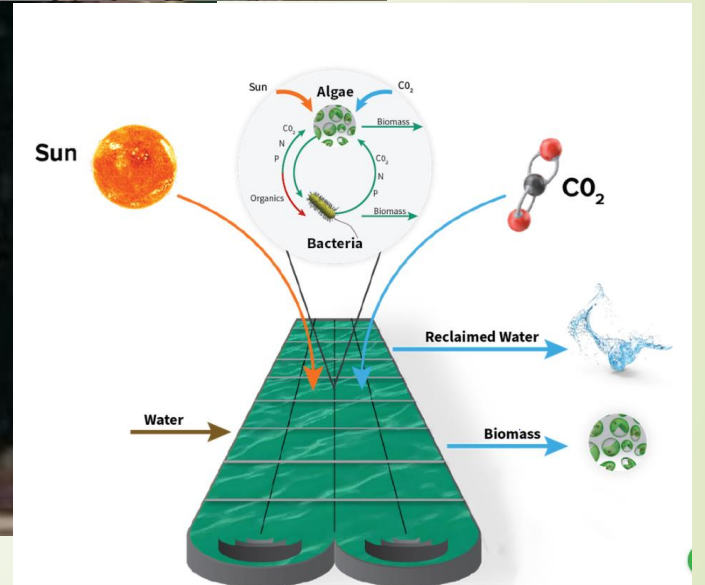
<https://www.cdfa.ca.gov/oefi/ddrdp/>

Dairy Digesters

Year	No.
2015	6
2017	16
2018	42
2019	43
	107




ENT OF





- Prevent manure solids from being in anaerobic conditions
- Need to document (verify) methane reductions achieved

<https://www.cdfa.ca.gov/oefi/AMMP/>



AMMP funded projects in CA

Year	No.
2017	18
2018	39
2019	50
	107

AMMP

- conversion from flush to scrape
- solid separation then
 - dry,
 - spread,
 - solid storage or
 - composting



AMMP

- **pasture-based management practices**
 - convert to pasture-based,**
 - increase time livestock spend at pasture, and/or**
 - construct compost bedded pack barn.**





\$250,000,000 State Cap and Trade funds
Work closely with agencies to guide research

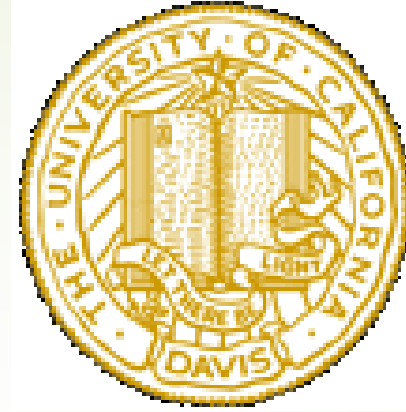




Work with -----
Producers
Regulatory agency staff
Nutrient management consultants
Engineers
Citizen groups

University of California

Agriculture and Natural Resources



Dr. Deanne Meyer
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Livestock Waste Management Specialist
Department of Animal Science, UC Davis
UC Agriculture and Natural Resources

Card by [Amy Krouse Rosenthal](#) (Author), [Tom Lichtenheld](#) (Illustrator)

Dairy producers are

Creative

Ingenious

Gifted

Innovative

Resilient

Inventive

Imaginative

HILLCREST FARMS

Home of Georgia's first
robotic farm



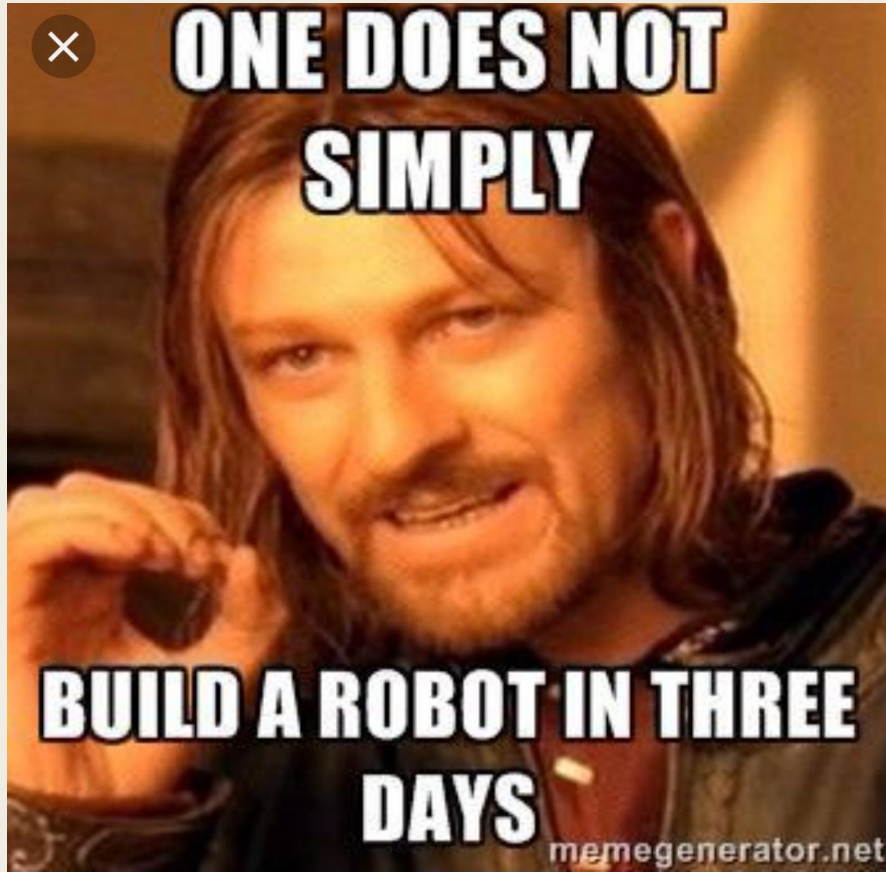


4th Generation Dairy Farm Family

- Established 1941
- Mark and daughter, Caitlin manage cows and Human Resources
- Andy and son, Josh manage crops and technology. Marlee, Josh's wife is studying to become a large animal veterinarian

A photograph of a robotic arm in a laboratory or industrial setting. The arm is silver and extends from the left side of the frame. It is positioned above a control panel that features a small screen displaying a graphical interface. The background is a solid blue color. The text "WHY ROBOTS?" is overlaid in the center of the image in a white, sans-serif font.

WHY ROBOTS?



IT ALL
STARTED ON
A NAPKIN



Why Robots?

Labor Frustration

Parlor Update Needed

DeLaval Interest in Robot with
GA's Highest Producing Herd

Future for 4th Generation

Preplanning



- Visited Other Robotic Farms
- Dairy Consultant and Financial Planner (Greg Squires)
- Further Financial Planning (Tom Anderson)
- Visited with Creditors (GA Ag Credit)

Unique Decisions



FLOW TYPE, ROBOT
NUMBER, HERD SIZE



MILKING TANKS AND
DISTANCE



RETROFIT OR NEW
FREESTALL



ACCOMMODATING
FLUSH LANES

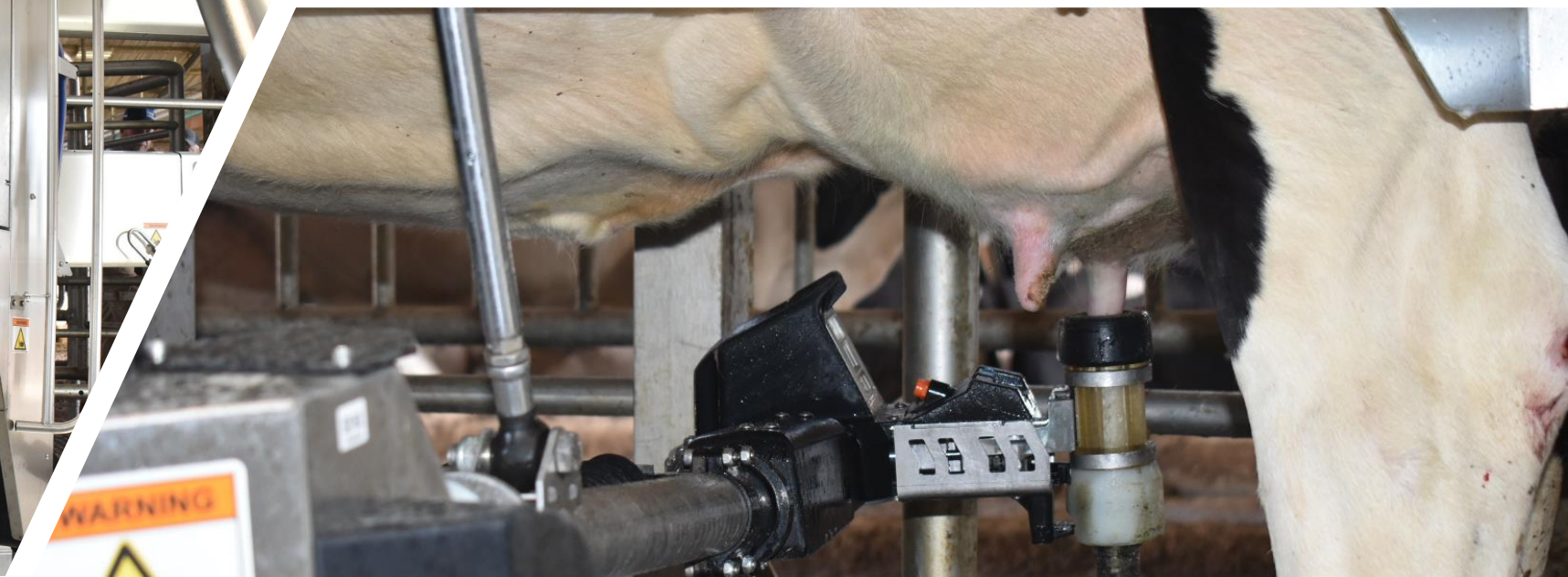
Hillcrest Happy



OUR
CREATION:

Startup

- Preplanning for turning the robots on
volunteers
robot team
- Longest days – month or your life
- Takes at least 4 weeks to settle down





EVOLVING TECHNOLOGY

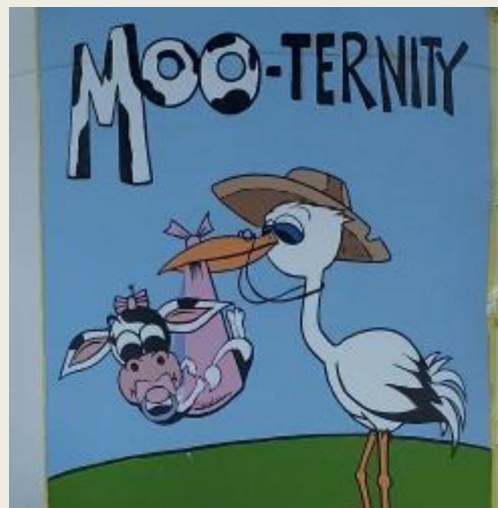
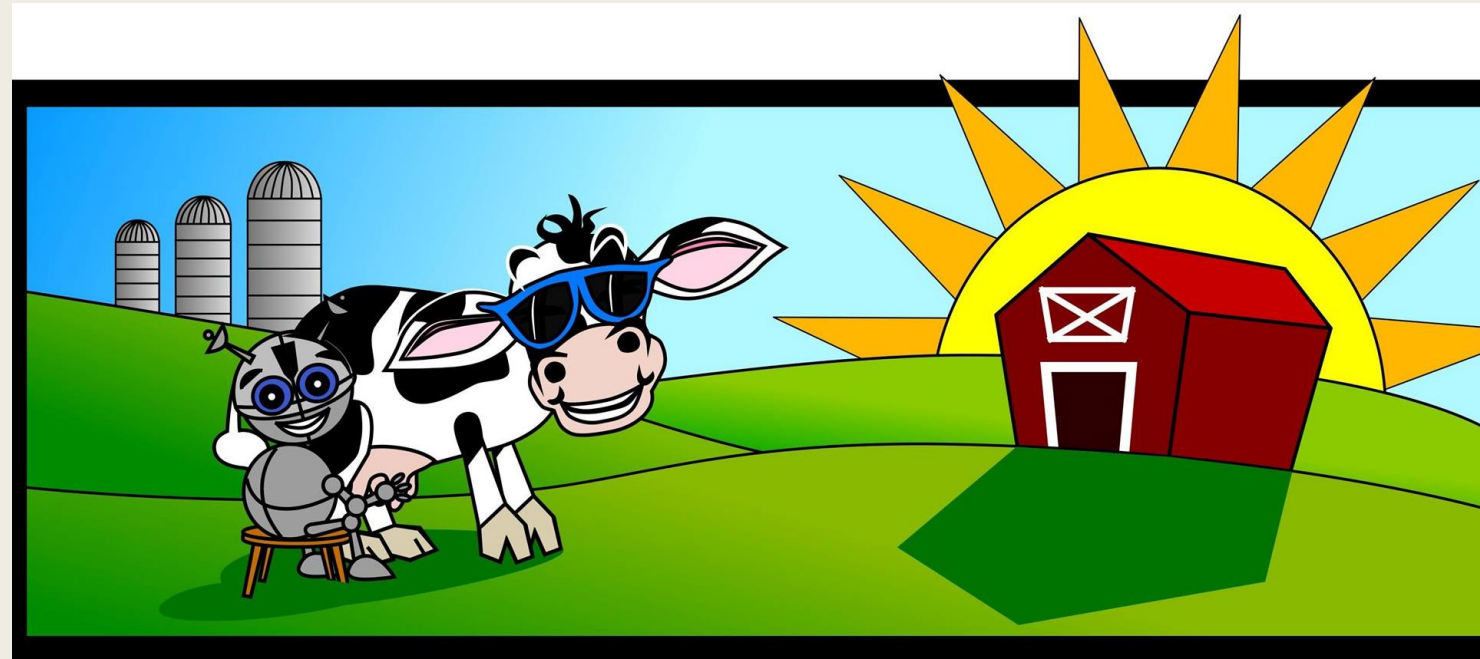


TANK ROOM

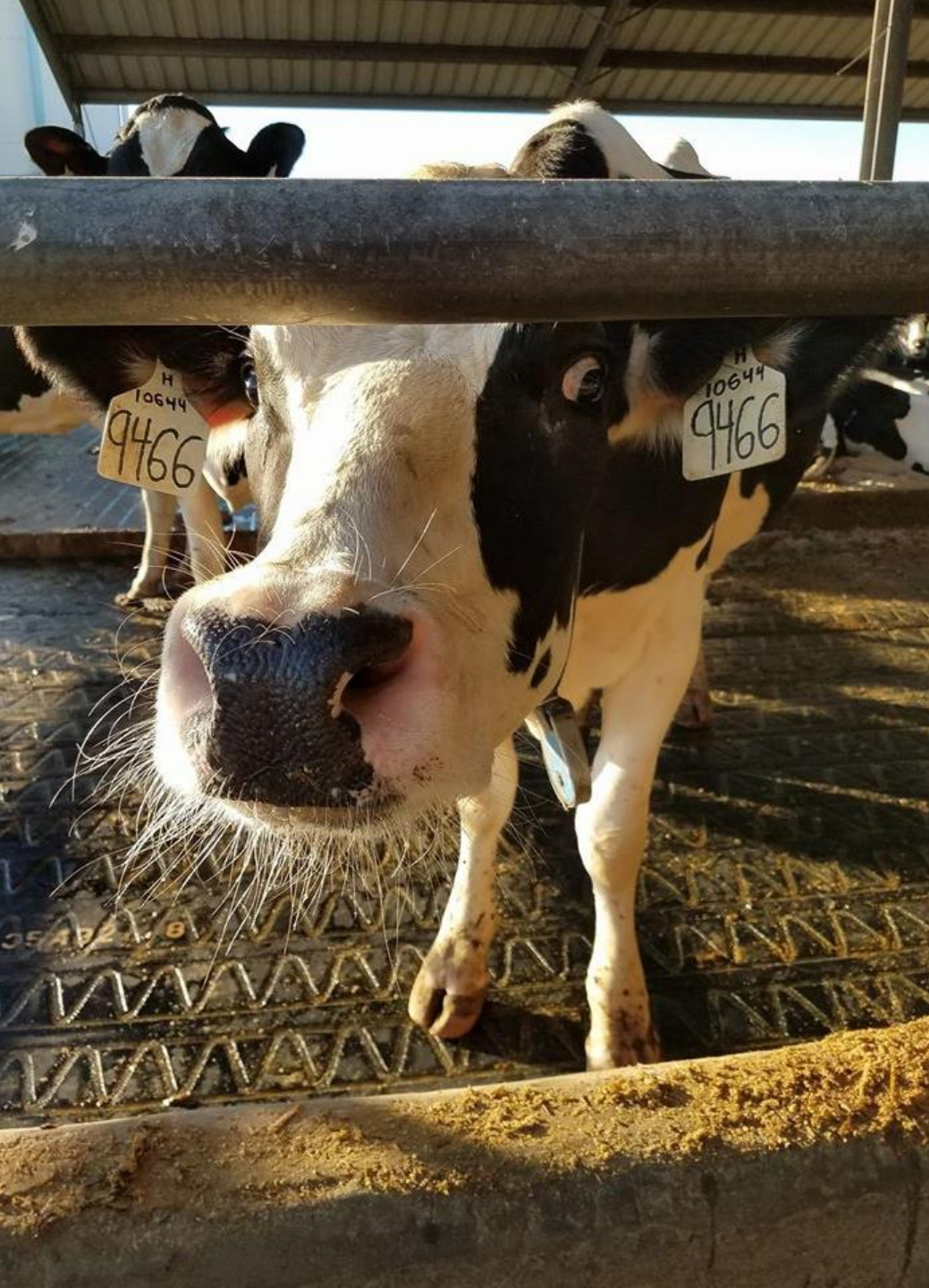


Herd Expectations

- Rule of 3
- 2x vs 3x Herd
- Fetching Cows



OTHER CHANGES:



QUESTIONS?

Parlor Performance and Evaluation

David A. Reid, DVM

Rocky Ridge Dairy Consulting, LLC

Hazel Green, WI

dreiddvm@gmail.com

612-963-1457

Education is what you get when
you read the fine print.

Experience is what you get
when you don't

DAD, WHAT'S THE SUPERBOWL?



DAD, WHAT'S THE SUPERBOWL?



I DON'T KNOW SON, WE'RE BEARS.

Dairy Profitability Key Factors

Milk as many cows as you can in your parlor

Maximize milk quality

Achieve the highest milk yield while minimizing input costs.

Interesting Observation

Low SCC herds typically have more consistent udder preparation & more relaxed cows in the barn or parlor

Consistency between technicians & milking to milking

Milking 1 Monday am

	PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur
	1	6443	847	39	167	21	7:36	8:17	15:54	8.3	4.7
No ID		6713	885	25	266	35	7:35	8:17	15:53	7.1	3.4
	2	3050	3812	23	131	163	0:48	8:59	9:48	6.5	3.6
	3	4900	6837	26	185	258	0:43	9:47	10:31	7.2	3.7
	4	5611	7481	30	187	249	0:45	10:28	11:13	7.3	4.0
	5	4575	5718	25	185	231	0:48	11:12	12:01	6.8	3.6
	6	4828	4598	27	178	169	1:03	12:00	13:03	7.1	3.8
	7	4608	2684	27	173	100	1:43	12:57	14:40	7.4	3.6
	9	5157	6726	30	174	226	0:46	13:00	13:47	8.1	3.7
	8	5583	5153	35	161	148	1:05	14:26	15:31	8.3	4.2
	1	1808	4520	32	57	142	0:24	15:29	15:54	8.0	4.1
	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total		53276	7010	29	1864	245	7:36	8:17	15:54	7.4	3.8

Description	Pen	1	0	2	3	4	5	6
% Units were attached	31	3	3	19	31	33	27	21
Milk / stall / hour	140	16	17	75	133	149	113	91
Cows / stall / hour	4.8	0.4	0.7	3.2	5.0	4.9	4.5	3.3
"Peak" Flowrate	10.4	12.8	1.2	9.5	11.5	12.2	10.8	11.7

Sunday am

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur
*****	*****	****	****	****	****	*****	*****	*****	***	***
Total	54839	6756	30	1928	237	8:07	7:50	15:58	6.8	4.1

Description	Pen	1	0	2	3	4	5	6
-----	-----	-----	-----	-----	-----	-----	-----	-----
% Units were attached	32	2	3	5	27	31	28	31
Milk / stall / hour	135	13	13	18	110	136	110	120
Cows / stall / hour	4.7	0.3	0.5	0.7	4.2	4.8	4.1	4.1
"Peak" Flowrate	9.5	11.6	1.1	7.8	10.1	10.8	10.3	11.0

Monday am

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur
*****	*****	****	****	****	****	*****	*****	*****	***	***
Total	53276	7010	29	1864	245	7:36	8:17	15:54	7.4	3.8

Description	Pen	1	0	2	3	4	5	6
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"Peak" Flowrate	10.4	12.8	1.2	9.5	11.5	12.2	10.8	11.7

Interesting Observation

- Many producers want to improve parlor performance with equipment adjustments and/or purchase of new equipment.
- Much easier and less stressful than training people.

Goals

1. Healthy Cows Are Profitable
2. Control Inputs
3. No Management Belief Is Beyond Questioning
4. Make No Changes Without First Establishing How Their Effect will Be Measured.

Paradigm Lockdown

"That's when you have a good way of doing something so you lock down on it as being the best way, rather than considering it a good way and that there might be a better way that you need to find."

Burke Teichert 2011

Put another way, thinking whatever you are doing is the **best way**, prevents you from looking for a **better way** to perform a given task.

QUOTE OF THE DAY:

"DON'T CLING TO A MISTAKE JUST
BECAUSE YOU SPENT A LOT OF
TIME MAKING IT."

- UNKNOWN

Principles of Milk Quality

- Keep cows clean, dry, & comfortable
- Milk clean, dry, stimulated teats
- Use a quality post dip on every cow
- Properly maintain & analyze milking equipment on a schedule
- Promptly treat clinical mastitis
 - Maintain records of treated cows/qtrs
- Cull Chronic cows

Principles of Milk Quality

- Most of you here today have a good working knowledge of these Principles
- Many of you will violate as many as possible & still want milk quality!



Quote from Rick Lundquist, PhD

Dairy Today article entitled walk around management

- What I mean by "walk around" management is simply walking around the dairy and observing what's going on. Whether you're a dairy owner/manager or a consultant, you can't truly get the feel for what's really going on from a computer in an air conditioned office or even riding around in the truck. You've got to "get out in it" too.

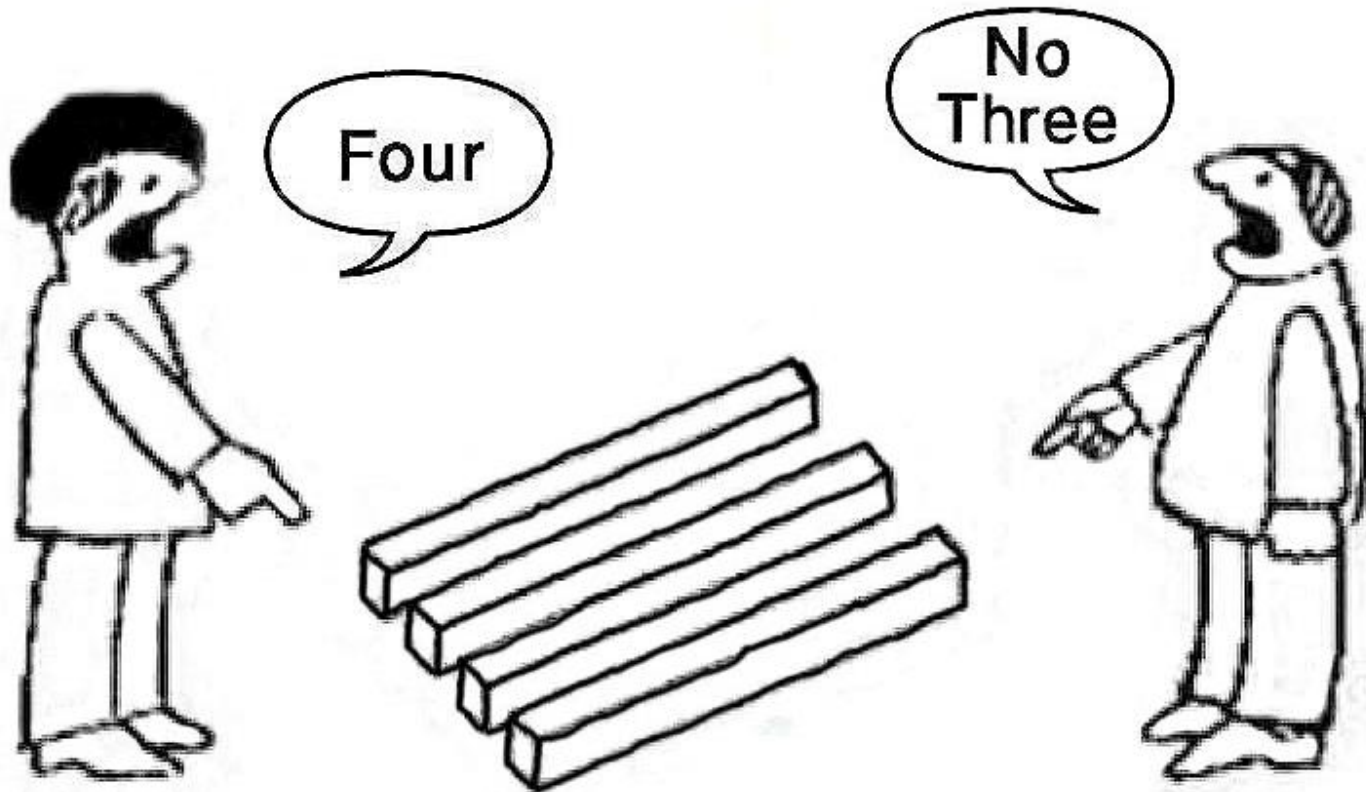
How many of you make a practice of "walking" your dairies on a scheduled basis with someone on your outside team? (vet, nutritionist or maybe the owner)

How many make the walk thru with either other key management personnel or employees?

How do You "See" on Your Dairies? Is it "Simply" or "Fully"



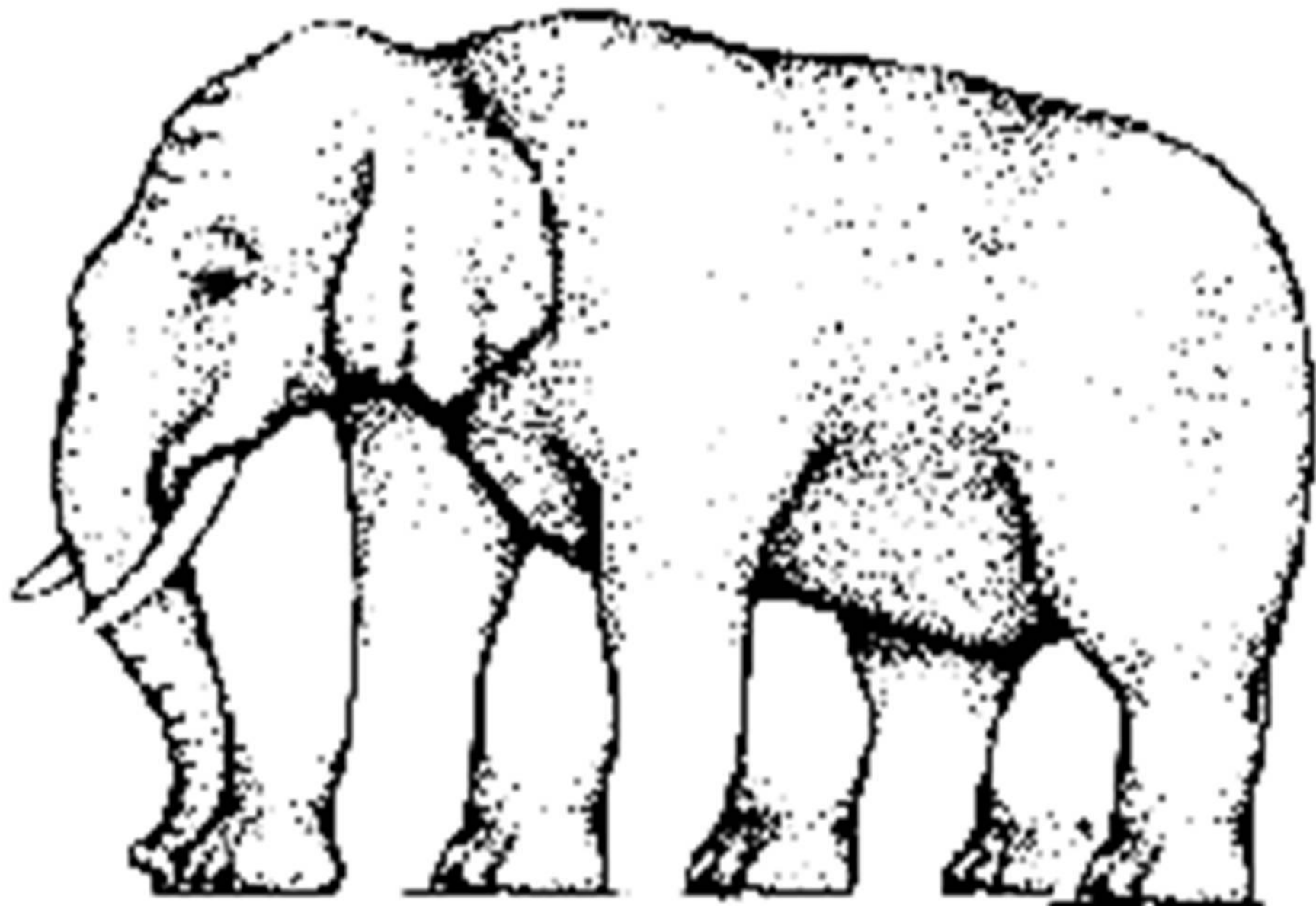
Reality can be so complex that equally valid observations from differing perspectives can appear to be contradictory.



A photograph of a white wall in a gallery space. The wall features a quote in large, dark blue, sans-serif capital letters. The quote is split across two walls by a corner. The text reads: "EVERYTHING WE SEE IS A PERSPECTIVE NOT THE TRUTH." The background shows a modern gallery interior with a grey floor and exposed ceiling infrastructure.

**EVERYTHING
WE SEE IS A
PERSPECTIVE
NOT THE TRUTH.**









GOOD



Do some things get in the way of the big picture?









Series of 3 pictures from an
Advertisement for a new
toothpaste "What do you
See"







So "what did Really
you see"







Don't over look the
obvious!

What do you See?

- It is very difficult to train yourself to really see!
- You must get past the “obvious” to truly see, don't let **the abnormal become the normal!**
- Simple observations can allow **focus** to be properly brought to critical areas on your dairy!

Why is Parlor Performance Important?

The key factor for healthy high producing cows; Let them be cows!

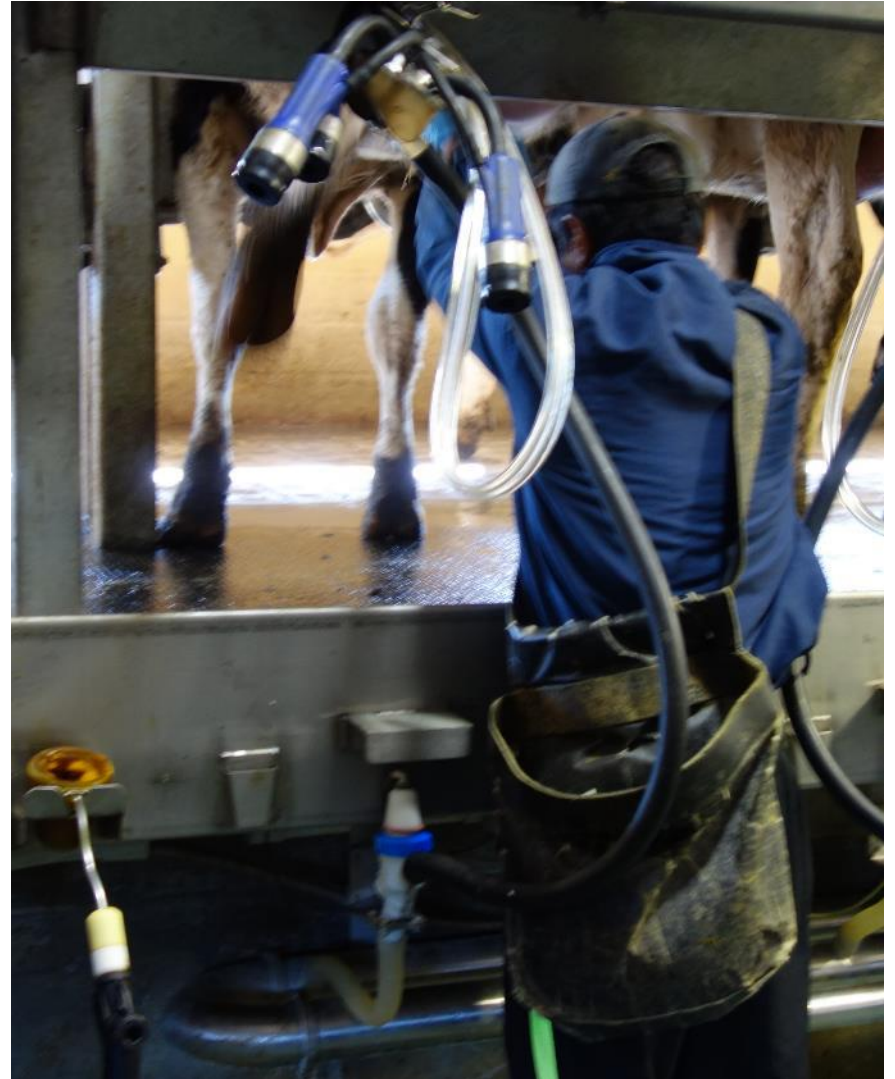
- Minimize time away from feed, beds, water and social interaction with other cows
- Reduce "management interventions" that take away time from cows to be cows!

Cow's Don't Lie!!

- What is the normal routine for your cows?
- What interactions do they have with your employees?
- What is normal behavior in the parlor?



Is this normal in your herd?



More Observations

- Low SCC and low Clinical mastitis levels only mean you are milking clean cows!
- Many producers are reluctant to change parlor settings, because “we have always done it this way!”

Parlor Performance

How long does it take cows to move from the entry gate to the first stall?

How long before a technician begins to prep the 1st cow after she reaches the 1st stall?

Are the technicians following the routine?

Do they go back to the first cow if in a group routine?

What is wrong with this picture?













Once cows start into the parlor, DO NOT STOP THEM!





Effective Shielding


















Parlor Performance:
greatly influenced by the
attitude of the Milk Harvest
Technicians!

What can you do to make it easier for
technicians to do their job?





2007 1 3



The right tools help Milk Harvest Technicians follow the Protocols



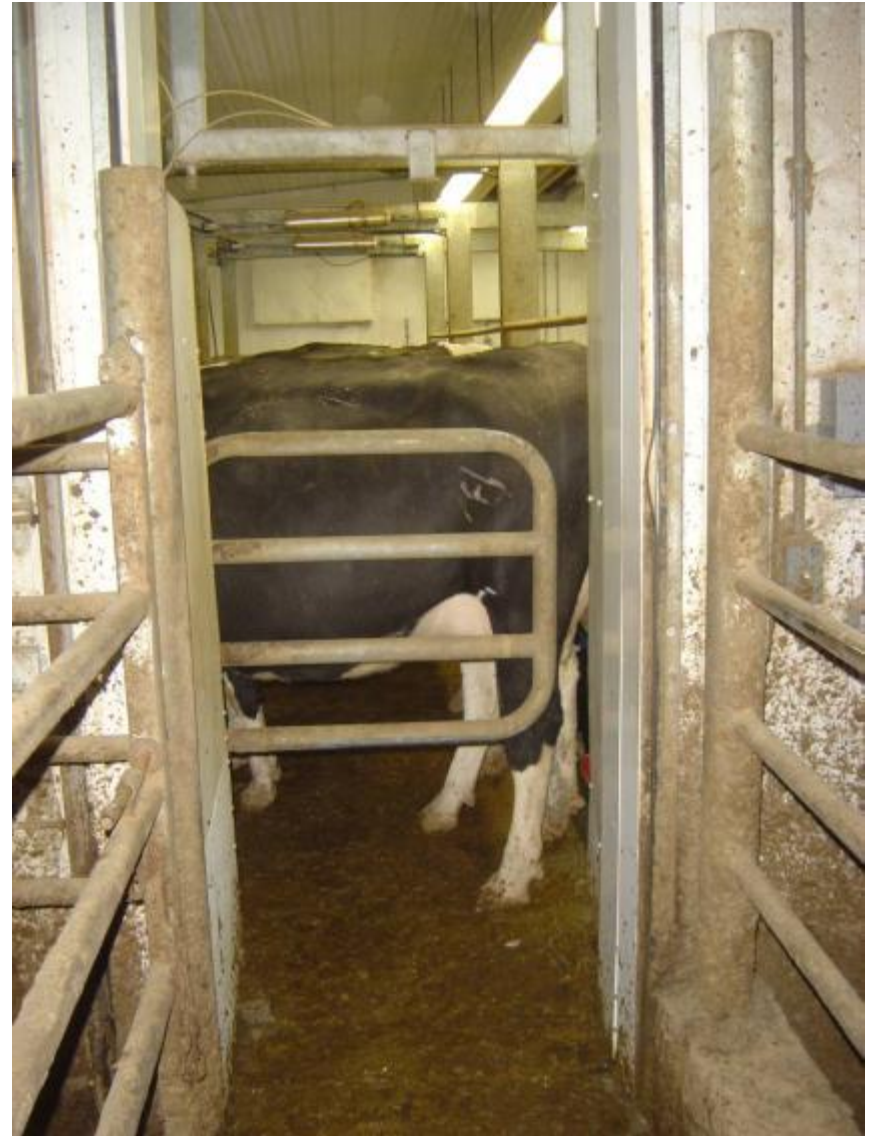








Evaluate What the Cows See!





Parlor Performance

- Consider utilizing maximum unit on time if your system has this option
- Don't be afraid to have technicians remove the last 1 or 2 units if the side is being held up; manually remove and post dip!

Parlor Summary Data

Most dairies are drowning in information
and starving for knowledge

Data Rich and Information Poor!

Successful monitoring requires evaluating the data and making it meaningful for the dairy employees

Do you put parlor performance data in front of the milk harvest technicians every day?

Use data to "Keep Score" and to
"Motivate Change"
(for both management & employees)

Parlor Performance Monitors

These Guidelines are only Guidelines!

What are the numbers on the dairy today
& what happens to the numbers as either
milking management or equipment setting
changes are made

Parlor Performance Monitors

Treichler/Reid NMC 2013, 47 herds 3x,
Conclusions:

"ave flow rate, ave milking duration, 2-min milk yield, % of time units were attached & either cows/stall/hr or milk/stall/hr offer the most potential for dairies to monitor their performance & for the industry to evaluate that performance achievement".

Typical Monitor's

Controlled by Milk Harvest Technicians:

- Average flow
- Average duration
- Turns/hour or effective speed on rotary
- Milk in the first two minutes
- Time in low flow
- Manual detaches
- Effective speed on rotary parlors

Average Milk Flow Rate Goals

- 2X Herds > 8.5# (4.8kg)
- 3X Herds > 6.5# (3kg)

Milking Duration Goals

The 1st 25#s/milking (11.5 Kg) = 3.6 min or less

- Each additional 10# (4.5Kg) = .5 min or less

Milking Duration

Milk per cow

Expected Time
duration

25 pounds 11.5 kg

3.6 minutes

30 pounds 13.6kg

3.9 minutes

35 pounds 15.9kg

4.2 minutes

40 pounds 18.2kg

4.6 minutes

2 minute milk

2x herds 18.5 pounds (8.4 Kg)

3X herds 14.5 pounds (6.6 Kg)

These are minimal levels - the higher
the better!

% units are attached

Driven by the number of technicians, the size of the parlor, & the procedures and routines being followed.

Goal is to have consistency between all milkings and all technician groups

Cows/stall/ hour or Milk/stall/hour

Cows/stall/hour 4.5 to 4.7 for 3x herds
4.0 to 4.25 for 2x herds
6.5+ for larger Rotaries
(60 or more stalls)

Milk/stall/hour 115# (52Kg) 3X herds
150# (68Kg) 2X herds

Peak Milk Flow Rate

Between 1 -2 minutes after units attached
(with metes at least 8# or 3.6L @ 1 min)

2X herds over 10.5# (4.75 L/min)

3x herds over 9# (4.0L/min)

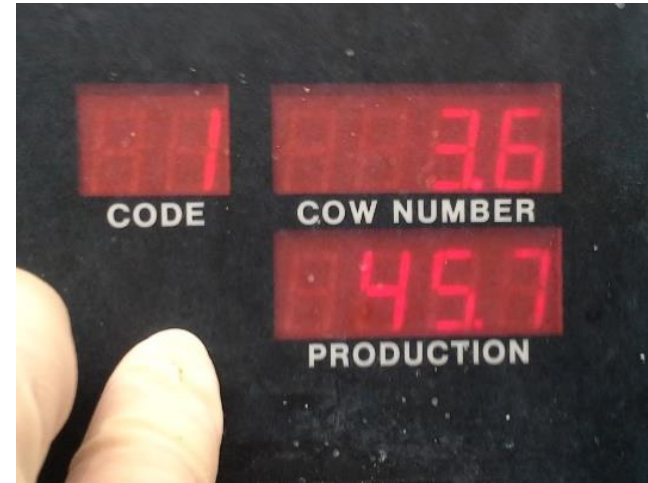
4X herds over 7.5# (3.5L/min)



Remember; the higher the better!



Same cow, 1.3 min for last
6.1# or 2.8L



12.7#/min or 6.3L/min



12.1#/min or 5.5L/min

Stripping Milk Testing

- Hand strip into 500 ml measuring cup
- Strip immediately after unit removed
- Examine teat color, swelling, ringing
- Note resistance to stripping and volume of stripping milk
- Do test uneven or 3 quarter cows!

Stripping Milk Testing

100 to 250 ml from all 4 quarters with some higher. (.5# - 225ml)

Less than 1# (454mL) is considered milked out & will not impact the next milking's yield.

Fast milking, high production cows will always have minimal stripping milk!



Stripping Milk Testing

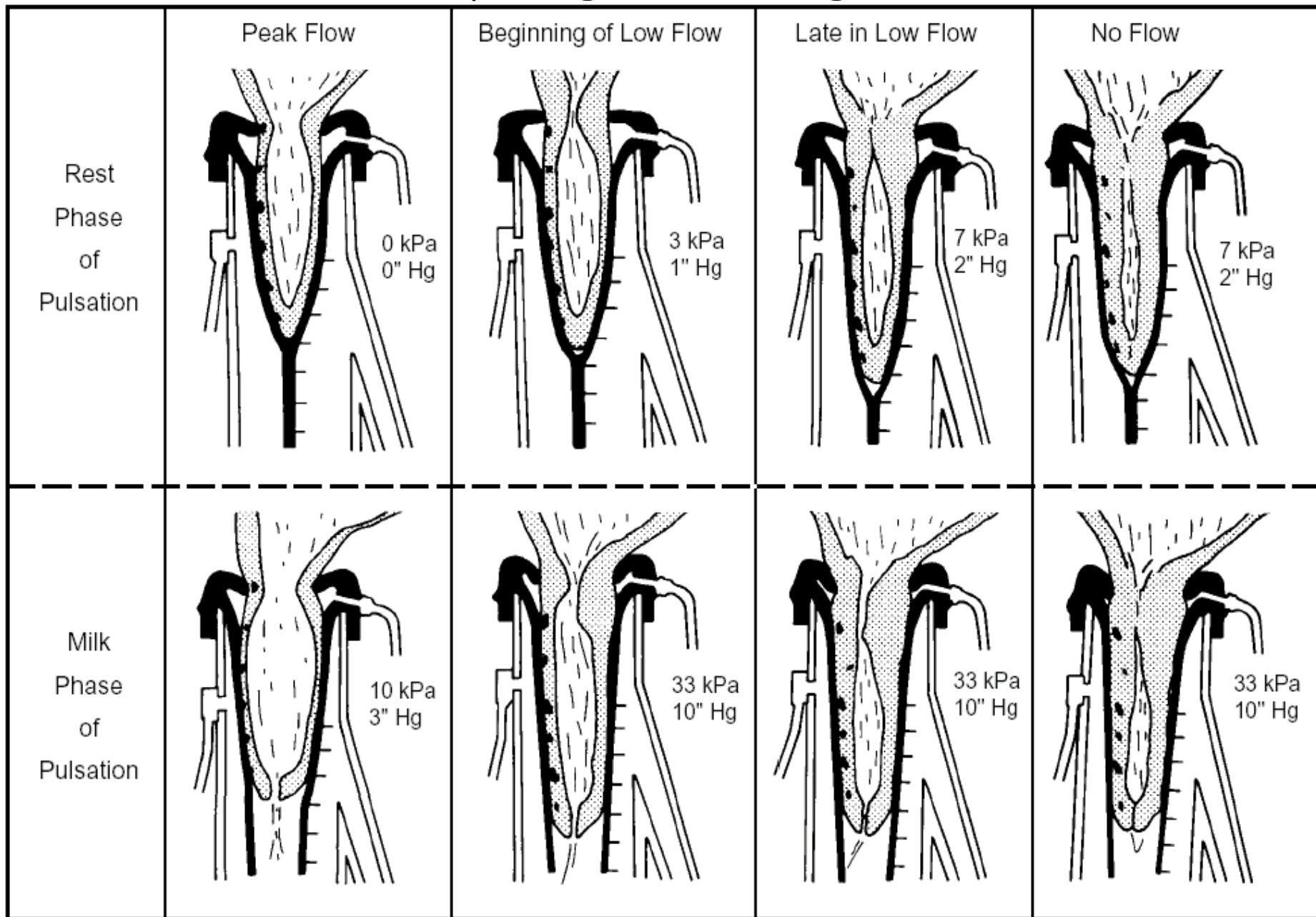


Monitor volume and resistance of the cows to hand stripping



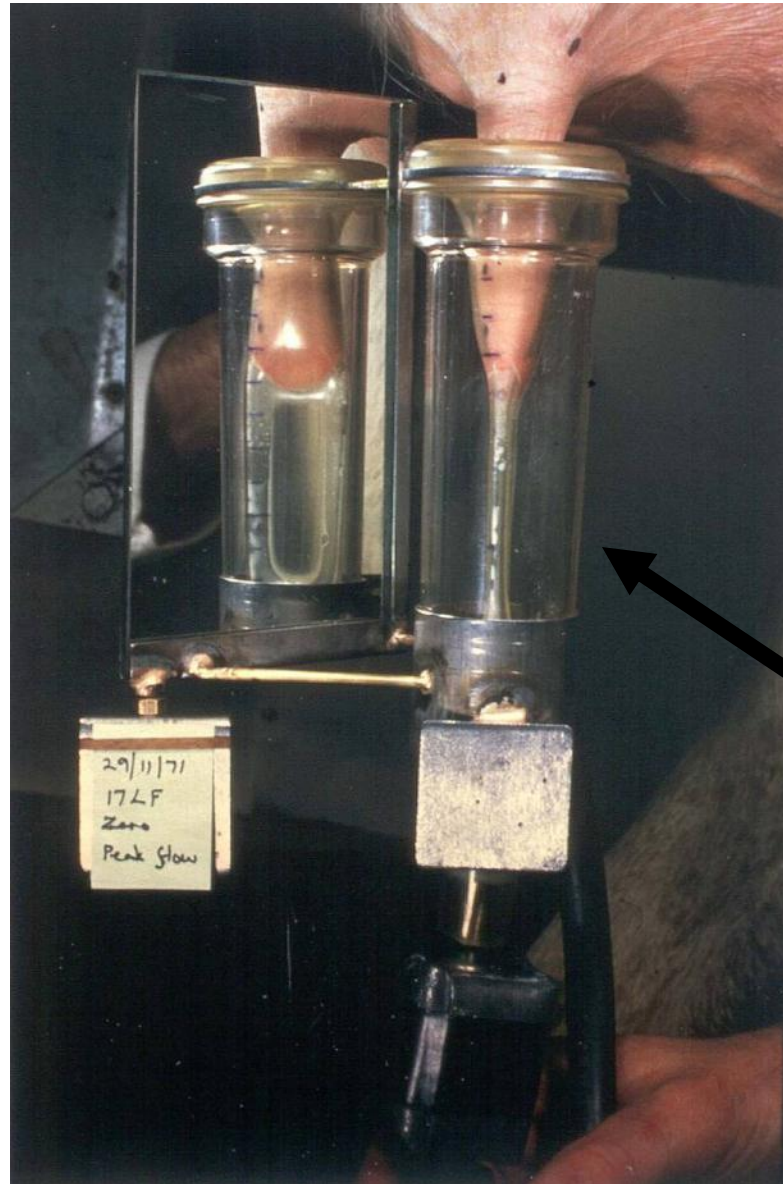
Liner Open
Peak Flow

Action of Opening and Closing Inflations



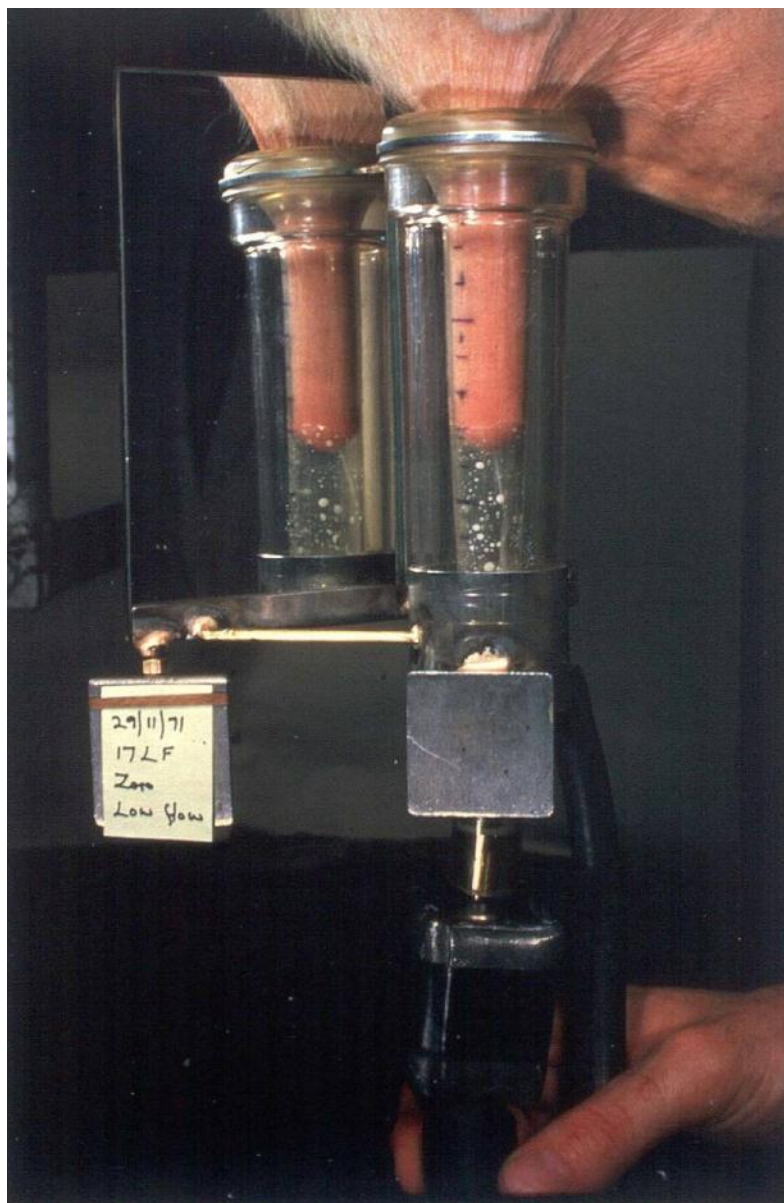


Liner Open
Peak Flow



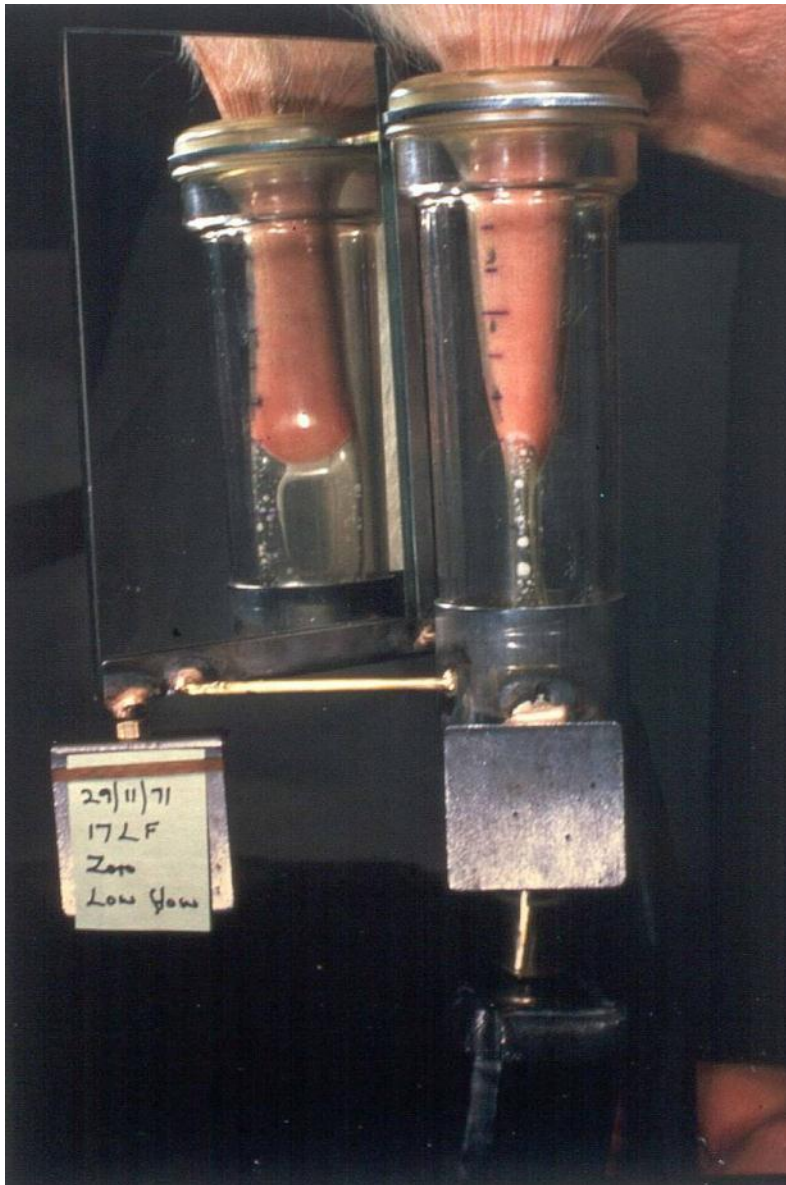
**Liner Closed
Peak Flow**

*The liner only collapses
around the teat end not
the full teat barrel*



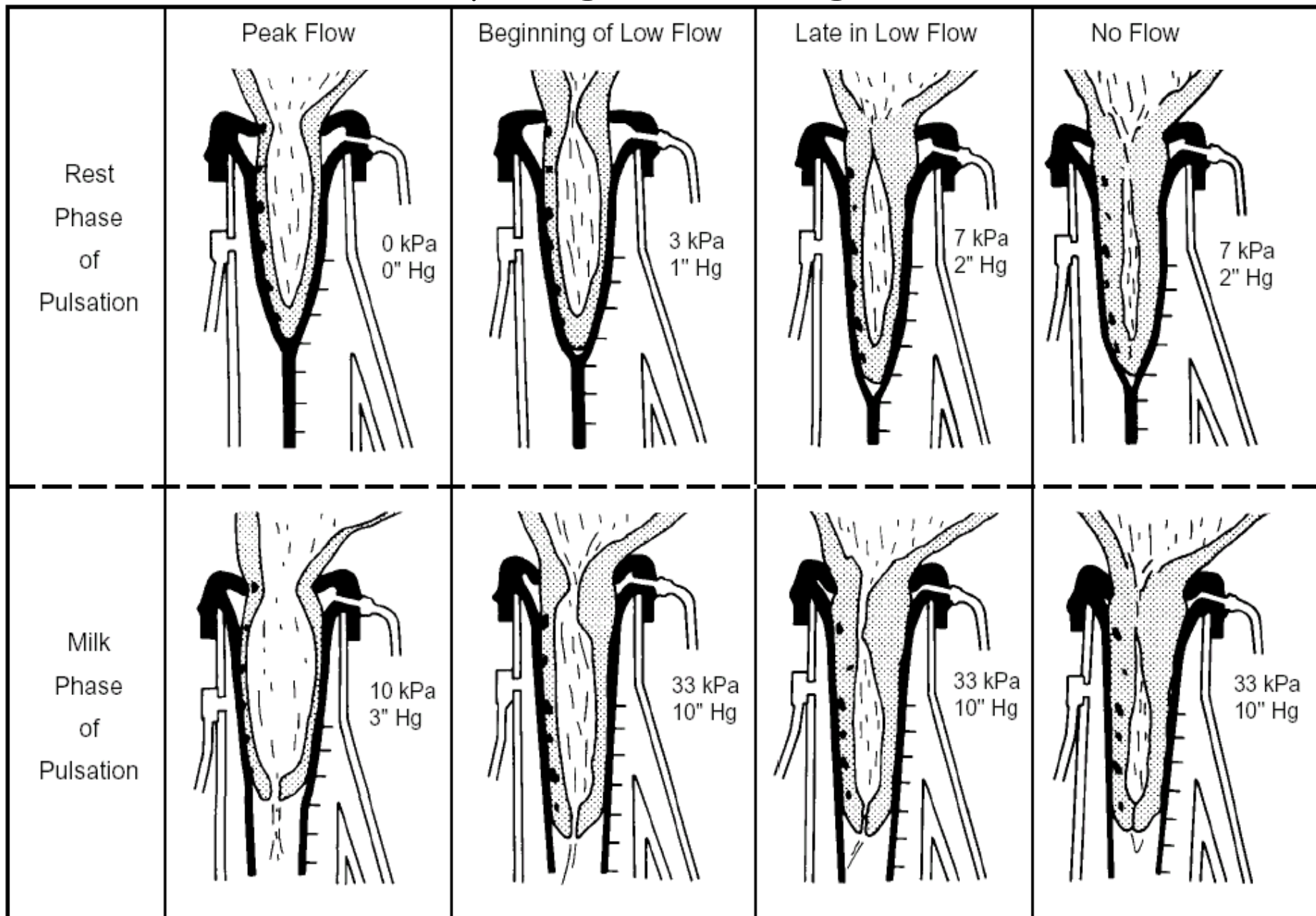
Liner Open Low Flow

*During low flow the teat
sucks further into the liner.
If the liner barrel is not long
enough the teat end cannot
be massaged*



Liner Closed
Low Flow

Action of Opening and Closing Inflations



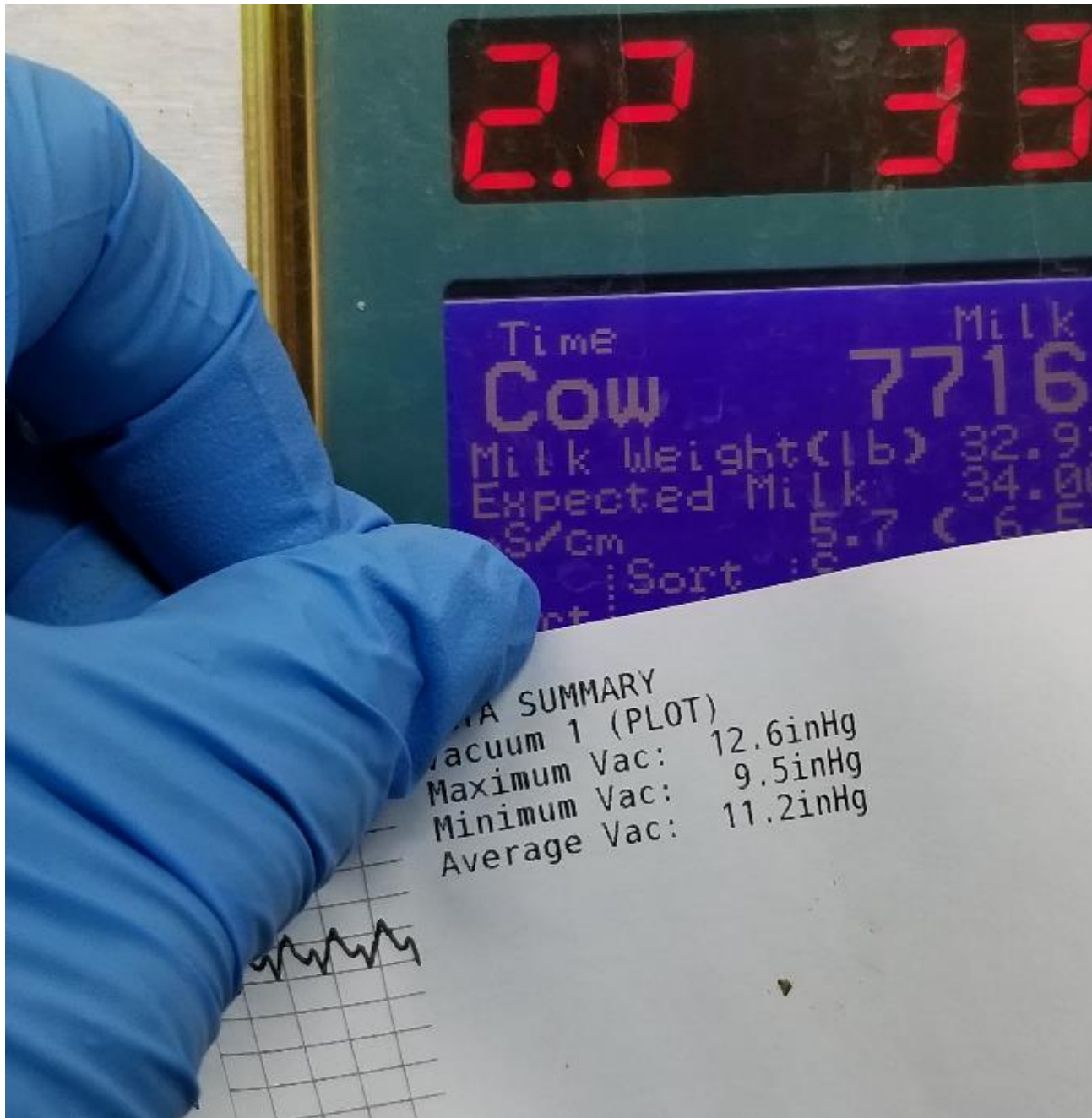




Ave Flow 12.4#/min or 5.7L/min



Still poor test end condition
What could b the Issue?

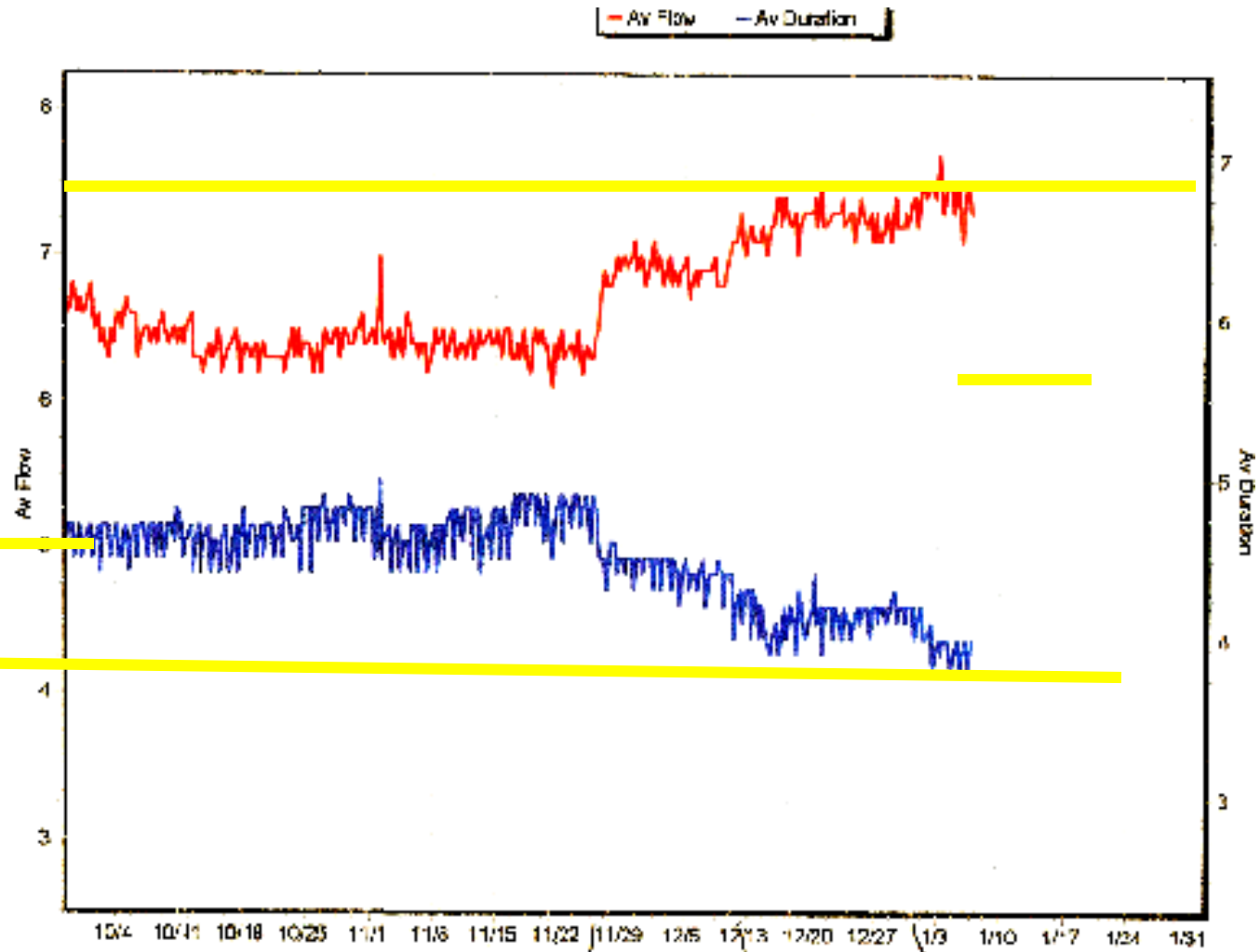


DATA SUMMARY
Vacuum 1 (PLOT)
Maximum Vac: 12.6inHg
Minimum Vac: 9.5inHg
Average Vac: 11.2inHg

Frequency of Unit Falloffs & Adjustments

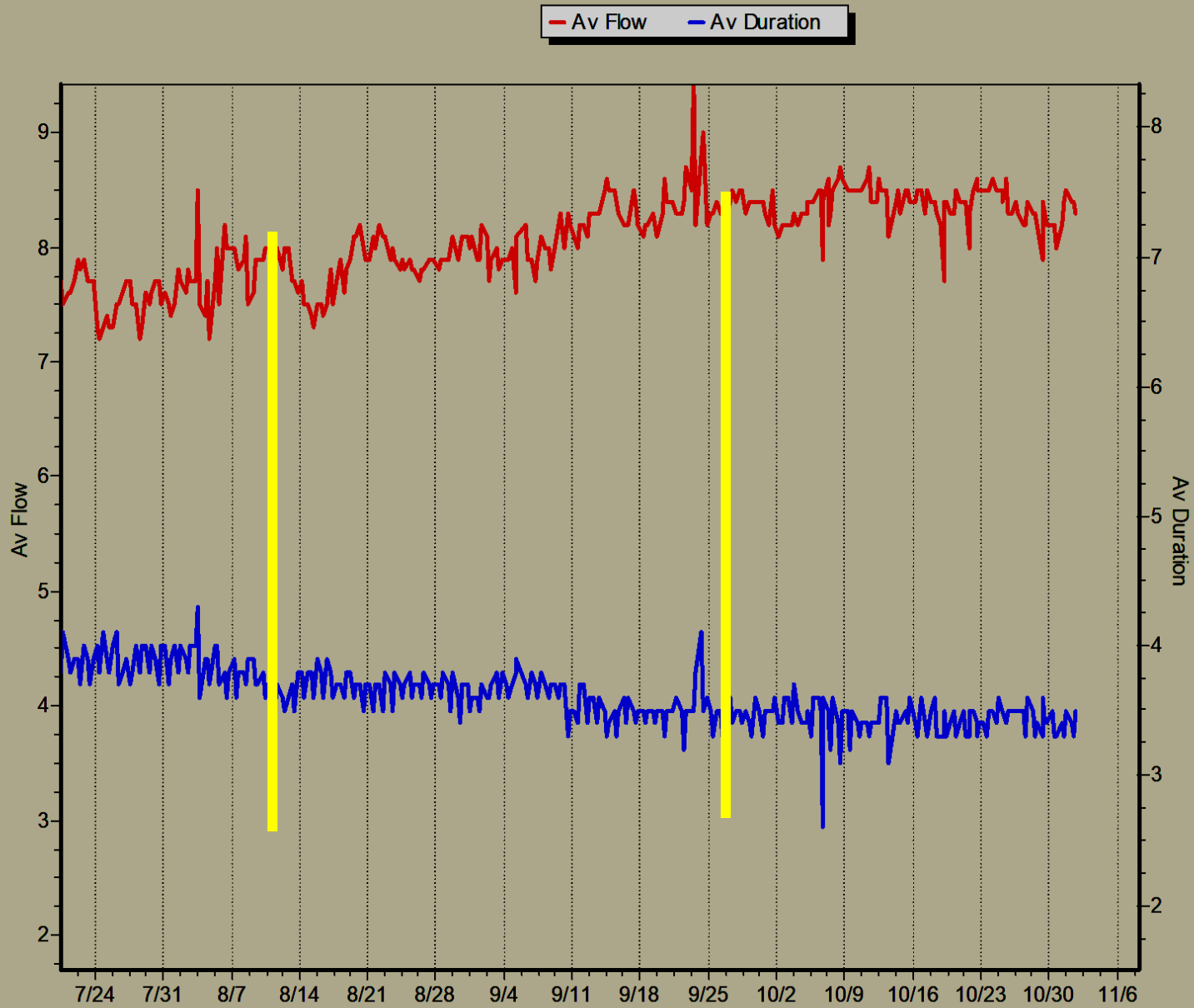
- Less than 5 per 100 cow milkings
 - early-may indicate low vacuum level or poor udder prep/timing
 - late-unit alignment, poor liner condition, overmilking

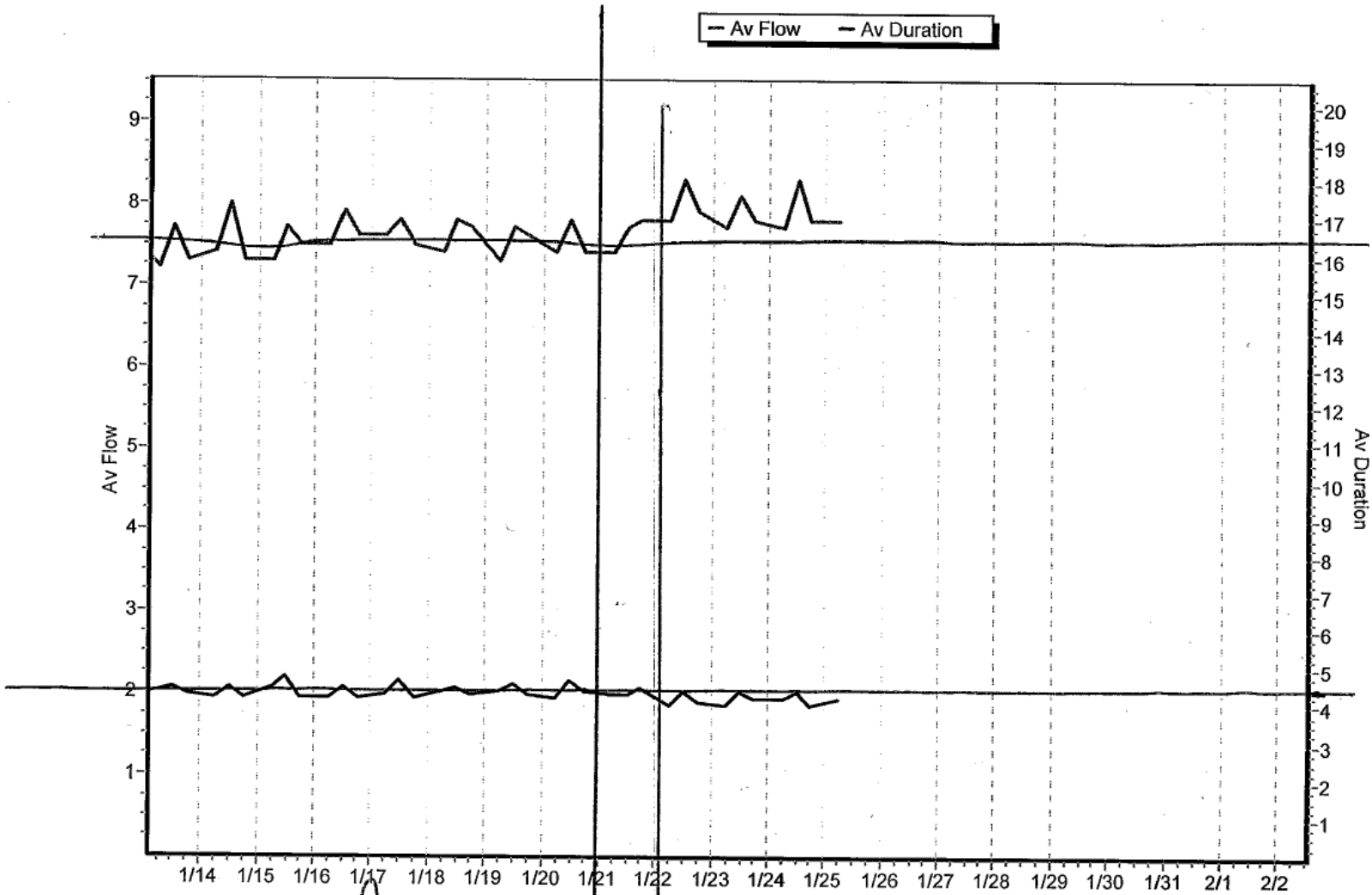
Almost
1 min.



1#/min
.45 kg/m

Changed hoses and B2S to 1
Changed B2S from 10 to 8
B2S to 7





Switched
Pulsator to
65:35 &
55:45 →

Pulsator
fault →

04/17/19 Ripps Dairy Valley



- No ID
- PEN = 3
- PEN = 4
- PEN = 2
- PEN = 1
- PEN = 8
- PEN = 9
- PEN = 5
- PEN = 6



The People

Do the milk harvest technicians “think clean” during udder preparation?

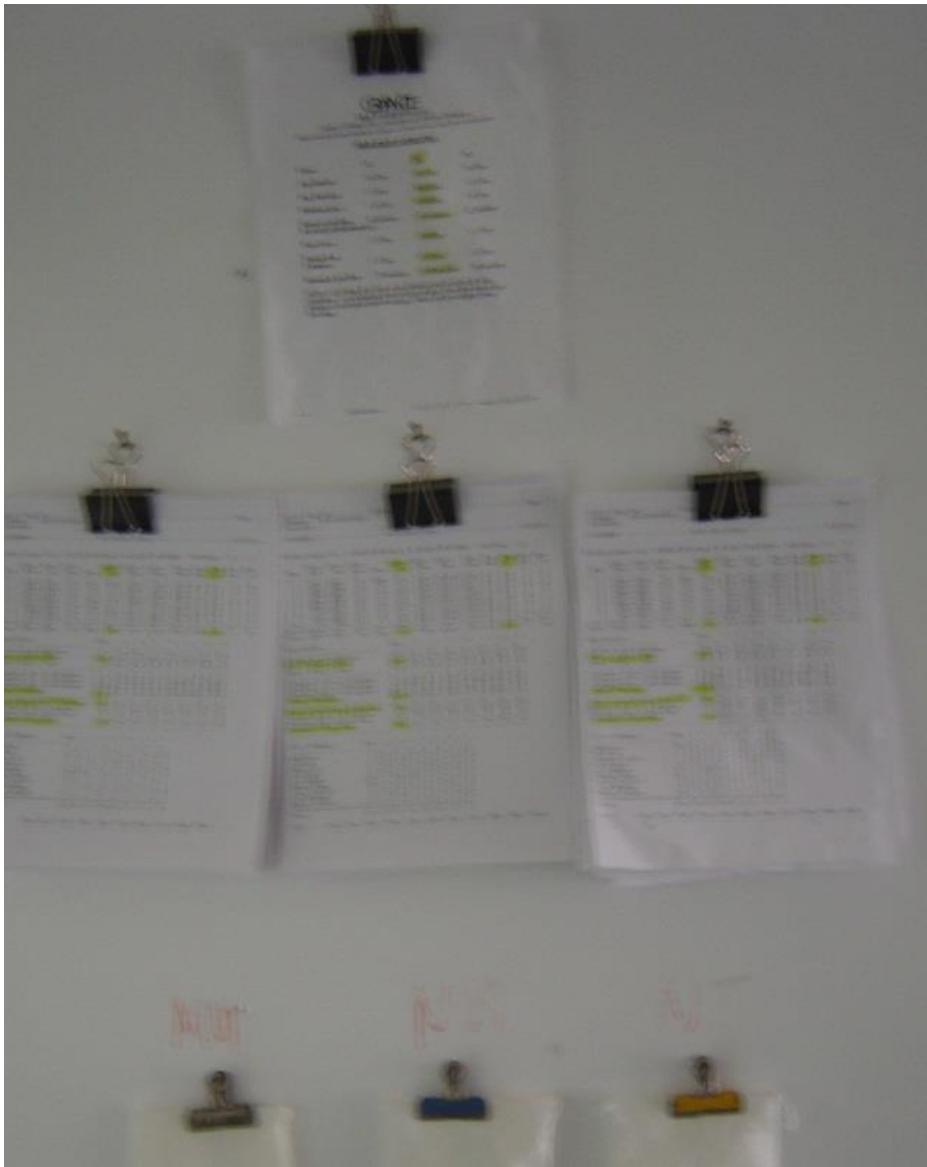
Do they have the right tools?

Do the harvest technicians always wear gloves?

Do the technicians use drop hoses to clean units when necessary?

Do the technicians follow the procedures for cleaning the parlor? At the right time & according to the protocol

"If you want to motivate
change, find a way to keep
score"



Milking report for 4/21/10 Milking 1 at 10:15 AM P50P3 Settings: 23

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Av De
1	3146	2359	35	91	68	1:20	2:28	3:49	8.5	4.3	-
2	2196	2058	29	76	71	1:04	3:54	4:58	7.4	4.1	-
3	1791	1761	24	75	73	1:01	5:06	6:08	6.7	3.6	-
4	2792	2463	35	80	70	1:08	6:16	7:25	7.6	4.9	6
5	3981	3102	46	86	67	1:17	7:33	8:50	9.1	5.4	1
6	808	2851	34	24	84	0:17	8:51	9:09	8.8	4.0	3
7	427	1220	33	13	37	0:21	9:30	9:51	8.1	4.3	6
Total	15141	2050	34	445	60	7:23	2:28	9:51	8.0	4.4	-2

Description	Pen	1	2	3	4	5	6	7
% Units were attached	27	30	30	27	35	37	33	16
Milk / stall / hour	128	147	127	108	151	192	168	76
Cows / stall / hour	3.7	4.2	4.4	4.5	4.3	4.1	5.0	2.3
Flowrate 0 to 15 seconds	3.2	3.6	3.1	3.4	2.7	3.3	3.0	3.7
Flowrate 15 to 30 seconds	9.2	9.8	8.8	8.2	7.8	10.4	11.2	10.8
Flowrate 30 to 60 seconds	10.0	10.4	9.5	8.8	8.9	11.4	11.9	10.9
"Peak" Flowrate	10.1	11.1	9.5	8.0	9.4	12.0	10.9	9.0
Milk in the first 2 minutes	18	20	17	15	17	21	20	18
Percent milk in 2 minutes	54	57	60	64	47	46	61	55
Seconds in low flow	7	8	8	8	7	7	7	7

Milking report for 4/20/10 Milking 2 at 06:23 PM P50P3 Settings: 23:

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev
1	3915	1849	39	100	47	2:07	10:54	13:02	9.7	4.3	1
2	2403	2288	31	77	73	1:03	12:13	13:17	8.5	3.9	1
3	1950	1887	25	79	76	1:02	13:23	14:25	7.5	3.4	0
4	2486	2330	32	77	72	1:04	14:35	15:40	7.9	4.3	1
5	3656	2776	42	87	66	1:19	15:47	17:06	9.1	5.0	0
6	727	2565	32	23	81	0:17	17:13	17:30	8.8	3.7	6
7	315	1350	29	11	47	0:14	17:40	17:54	6.8	4.2	1
82	25	500	25	1	20	0:03	17:49	17:53	6.7	3.7	0
====	====	====	====	====	====	====	====	====	====	====	====
Total	15477	2211	34	455	65	7:00	10:54	17:54	8.6	4.2	1

Description	Pen	1	2	3	4	5	6	7
% Units were attached	28	20	29	26	32	33	31	20
Milk / stall / hour	138	114	141	116	143	171	158	82
Cows / stall / hour	4.0	2.9	4.5	4.7	4.4	4.0	5.0	2.8
Flowrate 0 to 15 seconds	3.5	3.8	3.5	3.6	3.2	3.5	4.0	2.5
Flowrate 15 to 30 seconds	9.7	10.8	9.7	9.0	7.9	10.4	10.6	9.8
Flowrate 30 to 60 seconds	10.7	11.7	11.0	9.8	9.3	11.6	11.2	9.6
"Peak" Flowrate	10.8	12.5	10.7	8.8	9.7	11.9	10.9	8.3
Milk in the first 2 minutes	19	22	19	17	17	21	20	16
Percent milk in 2 minutes	57	56	62	68	53	50	64	57
Percent time in low flow								

Milking report for 4/20/10 Milking 3 at 02:32 AM P50P3 Settings: 23:

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev
1	3583	3208	35	101	90	1:07	18:57	20:04	9.0	4.1	0
2	2047	2193	28	73	78	0:56	20:06	21:03	7.8	3.7	-1
3	1605	1851	21	77	88	0:52	21:09	22:01	6.5	3.3	-3
4	2377	2228	31	76	71	1:04	22:10	23:15	7.4	4.5	-2
5	3640	3120	42	87	74	1:10	23:22	0:33	8.7	5.1	-3
6	658	2193	30	22	73	0:18	0:35	0:53	8.4	3.8	-3
7	302	2013	25	12	80	0:09	1:05	1:14	6.8	3.6	-1
====	====	====	====	====	====	====	====	====	====	====	====
Total	14212	2261	32	448	71	6:17	18:57	1:14	8.0	4.1	-2

Description	Pen	1	2	3	4	5	6	7
% Units were attached	30	38	29	30	32	38	28	29
Milk / stall / hour	141	199	134	115	137	193	136	123
Cows / stall / hour	4.4	5.6	4.8	5.5	4.3	4.6	4.5	4.9
Flowrate 0 to 15 seconds	3.5	3.8	3.2	3.3	3.2	3.7	4.0	3.0
Flowrate 15 to 30 seconds	9.3	10.6	9.1	7.6	7.5	10.6	10.9	9.3
Flowrate 30 to 60 seconds	10.0	11.2	9.8	8.3	8.6	11.3	11.1	9.0
"Peak" Flowrate	9.9	11.6	9.5	7.5	9.1	11.4	10.0	7.8
Milk in the first 2 minutes	18	21	18	14	16	21	19	15
Percent milk in 2 minutes	57	59	62	69	51	49	64	61

Milking report for 8/24/09 Milking 2 at 11:49 PM 20081110 10 25 0

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev
7	211	2532	21	10	120	0:05	16:37	16:43	8.8	2.6	0
8	135	1157	15	9	77	0:07	16:43	16:50	6.2	2.2	0
1	1937	3320	29	66	113	0:35	16:57	17:32	9.3	3.2	-1
2	3009	3167	23	129	135	0:57	17:50	18:47	9.0	2.7	-3
3	4079	3652	32	129	115	1:07	19:02	20:09	9.4	3.5	-3
4	3311	2091	25	132	83	1:35	20:04	21:39	9.0	2.9	-5
5	2347	2427	20	116	120	0:58	21:55	22:53	7.7	2.6	-4
Total	15029	2398	25	591	94	6:16	16:37	22:53	8.8	2.9	-3

Description	Pen	7	8	1	2	3	4	5
% Units were attached	23	25	12	30	30	33	19	25
Milk / stall / hour	119	122	53	165	156	182	103	119
Cows / stall / hour	4.7	5.8	3.5	5.6	6.7	5.7	4.1	5.9
Flowrate 0 to 15 seconds	3.5	2.4	1.8	3.5	3.7	3.6	3.4	3.4
Flowrate 15 to 30 seconds	9.1	10.0	5.8	10.2	9.8	9.5	8.1	8.3
Flowrate 30 to 60 seconds	10.9	11.8	7.1	11.7	10.9	11.6	11.1	9.5
"Peak" Flowrate	9.7	8.1	5.3	10.4	8.4	12.2	9.8	8.0
Milk in the first 2 minutes	18	17	11	20	17	21	18	16
Percent milk in 2 minutes	72	81	72	67	74	67	73	78
Percent time in low flow	11	23	24	8	11	9	10	16
Seconds in low flow	20	37	32	17	18	18	17	25

Error Summary:	Pen	7	8	1	2	3	4	5
No Milk	10	0	0	0	2	2	3	3
No Letdown	189	5	2	20	53	31	34	44
Manual Mode	31	1	0	1	8	8	3	10
Manual Detach	36	8	8	4	5	3	6	2
Total	266	14	10	25	68	44	46	59

Stall	Cows	Dev	Milk	Time	Flow	Cond	Peak	Mode	MDet	Wash
7	29									85
15	28								6	
17	26							6		
Average	30	-3	25	2.9	8.8	6.4	9	2	2	52
Tolerance	8	6	10	1.0	2.0	1.6	4	2	2	30

Side	Cows	Dev	Milk	Time	Flow	Cond	Peak	Mode	MDet
1	308	-3	27	2.8	8.6	6.1	9	11	15
2	286	-3	25	2.8	8.3	6.2	9	20	21
Average	306	-3	26	2.8	8.4	6.2	9	16	18

Milking report for 8/24/09 milking 2 at 11:49 PM 20081110 10 25 0

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev
7	211	2532	21	10	120	0:05	16:37	16:43	8.8	2.6	0
8	135	1157	15	9	77	0:07	16:43	16:50	6.2	2.2	0
1	1937	3320	29	66	113	0:35	16:57	17:32	9.3	3.2	-1
2	3009	3167	23	129	135	0:57	17:50	18:47	9.0	2.7	-3
3	4079	3652	32	129	115	1:07	19:02	20:09	9.4	3.5	-3
4	3311	2091	25	132	83	1:35	20:04	21:39	9.0	2.9	-5
5	2347	2427	20	116	120	0:58	21:55	22:53	7.7	2.6	-4
====	====	====	====	====	====	====	====	====	====	====	====
Total	15029	2398	25	591	94	6:16	16:37	22:53	8.8	2.9	-3

Description	Pen	7	8	1	2	3	4	5
% Units were attached	23	25	12	30	30	33	19	25
Milk / stall / hour	119	122	53	165	156	182	103	119
Cows / stall / hour	4.7	5.8	3.5	5.6	6.7	5.7	4.1	5.9
Flowrate 0 to 15 seconds	3.5	2.4	1.8	3.5	3.7	3.6	3.4	3.4
Flowrate 15 to 30 seconds	9.1	10.0	5.8	10.2	9.8	9.5	8.1	8.3
Flowrate 30 to 60 seconds	10.9	11.8	7.1	11.7	10.9	11.6	11.1	9.5
"Peak" Flowrate	9.7	8.1	5.3	10.4	8.4	12.2	9.8	8.0
Milk in the first 2 minutes	18	17	11	20	17	21	18	16
Percent milk in 2 minutes	72	81	72	67	74	67	73	78
Percent time in low flow	11	23	24	8	11	9	10	16
Seconds in low flow	20	37	32	17	18	18	17	25

Error Summary:	Pen	7	8	1	2	3	4	5
No Milk	10	0	0	0	2	2	3	3
No Letdown	189	5	2	20	53	31	34	44
Manual Mode	31	1	0	1	8	8	3	10
Manual Detach	36	8	8	4	5	3	6	2
===== Total	266	14	10	25	68	44	46	59

Stall	Cows	Dev	Milk	Time	Flow	Cond	Peak	Mode	MDet	Wash
7	29									85
15	28								6	
17	26							6		
Average	30	-3	25	2.9	8.8	6.4	9	2	2	52
Tolerance	8	6	10	1.0	2.0	1.6	4	2	2	30
Side	Cows	Dev	Milk	Time	Flow	Cond	Peak	Mode	MDet	
1	308	-3	27	2.8	8.6	6.1	9	11	15	
2	286	-3	25	2.8	8.3	6.2	9	20	21	
Average	306	-3	26	2.8	8.4	6.2	9	16	18	

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
21	7728	17173	29	270	600	0:27	22:40	23:07	7.0	3.9	-2	10
26	11009	2428	29	383	84	4:32	22:42	3:14	7.2	3.9	-1	48
51	2399	4361	19	127	230	0:33	22:43	23:17	6.1	3.1	-1	57
22	10251	10251	25	406	406	1:00	23:16	0:17	6.5	3.9	-4	44
24	9463	2988	23	413	130	3:10	23:24	2:34	6.3	3.6	-2	25
23	10245	13363	26	397	517	0:46	0:55	1:42	6.9	3.8	-2	50
25	7847	8407	18	428	458	0:56	2:36	3:32	5.0	3.6	-4	29
27	13912	18549	33	417	556	0:45	3:32	4:18	7.3	4.6	-1	39
28	12954	8636	31	417	278	1:30	3:35	5:06	7.4	4.3	-3	48
29	12289	14746	29	423	507	0:50	5:03	5:53	7.1	4.1	-2	30
30	10045	11817	23	429	504	0:51	5:49	6:40	6.3	3.7	-2	47
=====												
Total	108142	13517	26	4110	513	8:00	22:40	6:40	6.7	3.9	-2	443

Description	Pen	21	26	51	22	24	23	25	27	28	29	30
% Units were attached	21	25	3	7	17	5	21	17	27	12	22	20
Milk / stall / hour	88	109	15	27	66	19	85	54	118	56	96	76
Cows / stall / hour	3.3	3.8	0.5	1.4	2.6	0.8	3.3	2.9	3.5	1.8	3.3	3.2

Flowrate 0 to 15 seconds	2.4	2.0	2.8	2.8	2.5	2.5	2.4	1.7	2.2	2.5	2.5	2.3
Flowrate 15 to 30 seconds	6.9	6.9	8.3	7.2	6.6	6.4	7.0	5.0	7.1	7.7	7.3	7.2
Flowrate 30 to 60 seconds	6.3	6.4	7.8	5.8	5.7	5.5	6.4	4.3	7.2	7.2	6.6	6.7
"Peak" Flowrate	7.2	8.6	8.0	7.3	6.9	6.8	7.3	4.7	7.5	7.9	7.5	6.9

Milk in the first 2 minutes	13	14	15	13	12	12	13	8	13	14	13	13
Percent milk in 2 minutes	48	49	51	67	48	51	50	46	40	45	45	54
Percent time in low flow	13	13	12	17	12	14	12	18	11	11	12	13
Seconds in low flow	30	30	28	32	30	30	28	40	30	28	30	29

Error Summary:	Pen	21	26	51	22	24	23	25	27	28	29	30
Reattach	62	3	6	1	5	10	4	4	6	7	11	5
No Milk	26	1	3	1	3	3	3	4	0	2	3	3
Entered Twice	1	0	0	0	0	0	1	0	0	0	0	0
No Attach	1	0	1	0	0	0	0	0	0	0	0	0
No Letdown	767	40	68	31	86	63	80	94	73	81	65	86
Manual Mode	97	13	8	4	12	5	2	13	15	11	6	8
Early Falloff	7	0	1	1	1	1	0	0	0	0	1	2
Late Rehang	72	7	2	7	4	2	3	9	10	6	9	13
Manual Detach	270	37	32	8	24	14	6	35	45	24	29	16
=====												
Total	1303	101	121	53	135	98	99	159	149	131	124	133

What do you Really "See"

Milking report for 1/ 7/19 Pit 2 Milking 3 at 08:09 AM 20120524 77 37 10

====	=====	====	====	====	====	=====	=====	=====	====	====	====	====		
Total	108142	13517	26	4110	513	8:00	22:40	6:40	6.7	3.9	-2	443		
Description			Pen	21	26	51	22	24	23	25	27	28	29	30
% Units were attached			21	25	3	7	17	5	21	17	27	12	22	20
Milk / stall / hour			88	109	15	27	66	19	85	54	118	56	96	76
Cows / stall / hour			3.3	3.8	0.5	1.4	2.6	0.8	3.3	2.9	3.5	1.8	3.3	3.2
Flowrate 0 to 15 seconds			2.4	2.0	2.8	2.8	2.5	2.5	2.4	1.7	2.2	2.5	2.5	2.3
Flowrate 15 to 30 seconds			6.9	6.9	8.3	7.2	6.6	6.4	7.0	5.0	7.1	7.7	7.3	7.2
Flowrate 30 to 60 seconds			6.3	6.4	7.8	5.8	5.7	5.5	6.4	4.3	7.2	7.2	6.6	6.7
"Peak" Flowrate			7.2	8.6	8.0	7.3	6.9	6.8	7.3	4.7	7.5	7.9	7.5	6.9
Milk in the first 2 minutes			13	14	15	13	12	12	13	8	13	14	13	13
Percent milk in 2 minutes			48	49	51	67	48	51	50	46	40	45	45	54
Percent time in low flow			13	13	12	17	12	14	12	18	11	11	12	13
Seconds in low flow			30	30	28	32	30	30	28	40	30	28	30	29

4110 cows Milked

Error Summary:	Pen	21	26	51	22	24	23	25	27	28	29	30
Reattach	62	3	6	1	5	10	4	4	6	7	11	5
No Milk	26	1	3	1	3	3	3	4	0	2	3	3
Entered Twice	1	0	0	0	0	0	1	0	0	0	0	0
No Attach	1	0	1	0	0	0	0	0	0	0	0	0
No Letdown	767	40	68	31	86	63	80	94	73	81	65	86
Manual Mode	97	13	8	4	12	5	2	13	15	11	6	8
Early Falloff	7	0	1	1	1	1	0	0	0	0	1	2
Late Rehang	72	7	2	7	4	2	3	9	10	6	9	13
Manual Detach	270	37	32	8	24	14	6	35	45	24	29	16
Total	1303	101	121	53	135	98	99	159	149	131	124	133

2 X 12 Parallel Parlor

Milking report for 1/ 8/19 Milking 1 at 08:46 PM 71NE! 12 33 0

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
8	1762	2782	32	55	86	0:38	5:03	5:41	5.7	5.9	1	8
9	480	70	28	17	2	6:50	5:18	12:08	4.3	6.5	-1	-1
7	386	1286	23	17	56	0:18	5:35	5:54	5.0	4.6	-4	-1
1	2762	2716	29	96	94	1:01	5:53	6:55	6.1	4.9	-1	0
2	3142	3090	35	89	87	1:01	6:43	7:44	6.2	6.0	-3	6
3	3623	2860	37	97	76	1:16	7:43	8:59	7.1	5.6	-2	3
4	2729	3148	30	92	106	0:52	8:41	9:33	6.5	4.7	-2	3
5	4431	3408	34	131	100	1:18	9:34	10:52	6.9	5.1	-1	4
6	2968	3297	26	116	128	0:54	10:49	11:44	5.9	4.5	-2	7
=====												
Total	22283	3145	31	710	100	7:05	5:03	12:08	6.3	5.2	-1	29

Description	Pen	8	9	7	1	2	3	4	5	6
% Units were attached	36	34	1	17	31	36	29	34	35	39
Milk / stall / hour	130	113	2	50	112	127	118	129	140	136
Cows / stall / hour	4.1	3.5	0.1	2.2	3.8	3.6	3.1	4.3	4.1	5.3

Flowrate 0 to 15 seconds	0.9	0.6	0.8	0.6	0.7	0.9	1.1	0.9	1.0	1.0
Flowrate 15 to 30 seconds	4.8	4.6	5.2	3.4	4.1	4.9	5.7	4.4	5.2	4.7
Flowrate 30 to 60 seconds	5.5	5.7	6.1	3.4	4.8	6.0	6.6	4.8	5.9	5.3
"Peak" Flowrate	7.8	7.5	7.0	6.2	7.3	8.1	8.5	7.7	8.5	7.2

Milk in the first 2 minutes	12	12	12	9	11	13	13	11	13	11
Percent milk in 2 minutes	38	36	41	39	38	35	36	38	38	44
Percent time in low flow	9	7	25	23	10	8	6	7	7	9
Seconds in low flow	28	24	100	64	30	29	20	22	23	26

Error Summary:	Pen	8	9	7	1	2	3	4	5	6
Reattach	100	15	2	5	10	18	16	6	13	15
Manual ID	1	1	0	0	0	0	0	0	0	0
No Letdown	2	0	1	0	1	0	0	0	0	0
Manual Mode	52	3	15	2	3	8	4	5	7	5
Manual Detach	77	8	3	5	7	12	13	5	13	11
No duration	1	1	0	0	0	0	0	0	0	0
=====										
Total	233	28	21	12	21	38	33	16	33	31

Stall	Cows	Dev	Milk	Time	Flow	Peak	Fall	Mode	MDet
3	33							5	
12	24			7.6					
14	32							8	

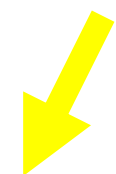
Average	30	-2	31	5.2	6.3	8	4	2	3
Tolerance	10	3	2	1.4	1.0	4	5	2	4

Side	Cows	Dev	Milk	Time	Flow	Peak	Fall	Mode	MDet
1	358	-1	32	5.0	6.5	8	42	20	34
2	348	-1	31	5.4	6.1	8	57	29	42

Average	353	-1	32	5.2	6.3	8	50	24	38

Milking report for 1/ 8/19 Milking 1 at 08:46 PM 71NE! 12 33 0

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
8	1762	2782	32	55	86	0:38	5:03	5:41	5.7	5.9	1	8
9	480	70	28	17	2	6:50	5:18	12:08	4.3	6.5	-1	-1
7	386	1286	23	17	56	0:18	5:35	5:54	5.0	4.6	-4	-1
1	2762	2716	29	96	94	1:01	5:53	6:55	6.1	4.9	-1	0
2	3142	3090	35	89	87	1:01	6:43	7:44	6.2	6.0	-3	6
3	3623	2860	37	97	76	1:16	7:43	8:59	7.1	5.6	-2	3
4	2729	3148	30	92	106	0:52	8:41	9:33	6.5	4.7	-2	3
5	4431	3408	34	131	100	1:18	9:34	10:52	6.9	5.1	-1	4
6	2968	3297	26	116	128	0:54	10:49	11:44	5.9	4.5	-2	7
Total	22283	3145	31	710	100	7:05	5:03	12:08	6.3	5.2	-1	29



Description	Pen	8	9	7	1	2	3	4	5	6
% Units were attached	36	34	1	17	31	36	29	34	35	39
Milk / stall / hour	130	113	2	50	112	127	118	129	140	136
Cows / stall / hour	4.1	3.5	0.1	2.2	3.8	3.6	3.1	4.3	4.1	5.3
Flowrate 0 to 15 seconds	0.9	0.6	0.8	0.6	0.7	0.9	1.1	0.9	1.0	1.0
Flowrate 15 to 30 seconds	4.8	4.6	5.2	3.4	4.1	4.9	5.7	4.4	5.2	4.7
Flowrate 30 to 60 seconds	5.5	5.7	6.1	3.4	4.8	6.0	6.6	4.8	5.9	5.3
"Peak" Flowrate	7.8	7.5	7.0	6.2	7.3	8.1	8.5	7.7	8.5	7.2
Milk in the first 2 minutes	12	12	12	9	11	13	13	11	13	11
Percent milk in 2 minutes	38	36	41	39	38	35	36	38	38	44
Percent time in low flow	9	7	25	23	10	8	6	7	7	9
Seconds in low flow	28	24	100	64	30	29	20	22	23	26

Error Summary:	Pen	8	9	7	1	2	3	4	5	6
Reattach	100	15	2	5	10	18	16	6	13	15
Manual ID	1	1	0	0	0	0	0	0	0	0
No Letdown	2	0	1	0	1	0	0	0	0	0
Manual Mode	52	3	15	2	3	8	4	5	7	5
Manual Detach	77	8	3	5	7	12	13	5	13	11
No duration	1	1	0	0	0	0	0	0	0	0
===== Total	233	28	21	12	21	38	33	16	33	31

2 X 12 Summary

	Milk/C	Cows	Cows/hr	Ave F	Ave D	Turns	2 min milk	Sec LF
1	31# 14k	710	100	6.3# 2.9K	5.2	4.1	12# 5.5k	28
2	29# 13.2k	711	102	5.5# 2.5k	5.5	4.2	11# 5k	47
3	27# 12.3k	712	103	5.0# 2.3k	5.0	4.3	10# 4.5k	45

0-15	15-30	30-60	Peak	Reatt	Man det
.9# .4k	4.8# 2.2K	5.5# 2.5k	7.8# 3.5K	100	77
.8# .36k	4.2# 1.9K	4.8# 2.2k	7.6# 3.5k	258	67
1.0# .45K	4.1# 1.8k	3.9# 1.8k	7.0# 3.2K	95	67

72 Stall Rotary

Milking report for 12/16/18 Milking 1 at 05:05 PM AFI_FARM 72

	Total PEN	Milk /Hr	Milk /Cow	Cows	Total /Hr	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
1	12571	12364	33	376	369	1:01	4:57	5:58	7.2	4.8	-2 18
No ID	14489	1337	38	384	35	10:50	4:57	15:48	8.2	4.8	38 0
2	12494	11713	33	376	352	1:04	5:46	6:51	8.1	4.2	-2 25
3	12923	13368	34	380	393	0:58	6:43	7:42	8.2	4.3	-2 13
4	12670	13106	33	380	393	0:58	7:36	8:35	8.4	4.1	-3 15
5	14776	14776	41	364	364	1:00	8:24	9:24	9.1	4.6	-3 26
13	4254	607	33	127	18	7:00	8:42	15:42	8.1	4.3	-5 1
6	14442	15473	40	363	388	0:56	9:21	10:17	8.9	4.6	-2 29
9	8362	2599	32	258	80	3:13	10:05	13:19	7.2	4.6	1 49
10	16416	4900	43	385	114	3:21	10:15	13:36	9.4	4.6	-3 15
7	14619	12712	41	359	312	1:09	10:46	11:56	9.5	4.4	-3 33
8	15008	15797	42	357	375	0:57	11:45	12:42	9.5	4.5	-2 34
11	15449	14044	40	389	353	1:06	13:28	14:35	8.7	4.6	-6 4
12	15218	14493	41	368	350	1:03	14:21	15:24	9.1	4.7	-4 26
24	1503	6012	21	71	284	0:15	15:36	15:52	7.2	2.9	-6 4
Total	185194	16990	38	4937	452	10:54	4:57	15:52	8.6	4.5	0 292

Description	Pen	1	0	2	3	4	5	13	6	9	10	7	8	11	12	24
% Units were attached	47	40	3	34	38	37	38	1	40	8	12	31	39	37	37	18
Milk / stall / hour	235	171	18	160	182	179	203	8	214	36	67	175	218	192	199	81
Cows / stall / hour	6.2	5.1	0.4	4.8	5.3	5.3	5.0	0.2	5.3	1.1	1.5	4.2	5.1	4.8	4.8	3.8
Flowrate 0 to 15 seconds	3.1	1.9	2.9	2.8	2.9	2.8	3.4	2.8	3.6	2.7	3.6	3.8	3.7	3.0	3.2	3.3
Flowrate 15 to 30 seconds	8.4	6.6	7.8	8.2	8.0	7.4	8.8	8.3	8.7	7.4	9.6	9.4	9.2	8.9	9.3	8.8
Flowrate 30 to 60 seconds	9.0	7.7	8.3	9.0	8.6	7.9	9.1	9.1	9.2	7.7	10.5	9.8	9.7	9.8	10.0	8.3
"Peak" Flowrate	11.0	9.2	10.3	10.3	10.4	10.9	11.6	9.8	11.4	9.3	12.3	12.5	12.3	11.2	11.5	8.6
Milk in the first 2 minutes	18	15	17	18	17	17	19	17	19	16	21	21	20	19	20	16
Percent milk in 2 minutes	49	45	46	53	51	52	47	51	48	48	49	51	49	48	47	74
Percent time in low flow	3	4	3	3	4	3	2	4	2	5	2	2	2	3	2	11
Seconds in low flow	8	12	10	10	10	9	6	10	6	16	7	5	6	8	6	19

Error Summary:	Pen	1	0	2	3	4	5	13	6	9	10	7	8	11	12	24
Reattach	177	26	14	19	14	10	6	11	9	20	8	7	5	13	13	2
No Letdown	252	6	21	8	18	23	25	17	13	11	20	20	20	26	7	17
Manual Mode	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Early Falloff	21	0	4	4	5	1	0	0	1	3	1	0	1	1	0	0
Late Rehang	285	45	23	28	45	14	5	6	17	46	28	10	4	9	5	0

Total 736 78 62 59 82 48 36 34 40 80 57 37 30 49 25 19

Stall	Cows	Dev	Milk	Time	Flow	Cond	Peak	Fall	Mode	NoID
19	67									12
37	69	8								11
Average	69	0	38	4.5	8.6	11.7	11	7	0	
Tolerance	12	6	2	1.2	1.6	2.0	6	8	2	

Rotary	Mins/Turn	Secs/Stall	Cows/Hour	Turns/Hour
Fastest	8:30	7.08	508	7.1 at 7:15 stall 51
Average	9:02	7.53	478	6.6
Effective	9:29	7.90	456	6.3
Efficiency	90			
Empty Stalls	178	244		
Stops > 30s	17			

Milking report for 12/16/18 Milking 1 at 05:05 PM AFI_FARM 72

	PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
	1	12571	12364	33	376	369	1:01	4:57	5:58	7.2	4.8	-2	18
No	ID	14489	1337	38	384	35	10:50	4:57	15:48	8.2	4.8	38	0
	2	12494	11713	33	376	352	1:04	5:46	6:51	8.1	4.2	-2	25
	3	12923	13368	34	380	393	0:58	6:43	7:42	8.2	4.3	-2	13
	4	12670	13106	33	380	393	0:58	7:36	8:35	8.4	4.1	-3	15
	5	14776	14776	41	364	364	1:00	8:24	9:24	9.1	4.6	-3	26
	13	4254	607	33	127	18	7:00	8:42	15:42	8.1	4.3	-5	1
	6	14442	15473	40	363	388	0:56	9:21	10:17	8.9	4.6	-2	29
	9	8362	2599	32	258	80	3:13	10:05	13:19	7.2	4.6	1	49
	10	16416	4900	43	385	114	3:21	10:15	13:36	9.4	4.6	-3	15
	7	14619	12712	41	359	312	1:09	10:46	11:56	9.5	4.4	-3	33
	8	15008	15797	42	357	375	0:57	11:45	12:42	9.5	4.5	-2	34
	11	15449	14044	40	389	353	1:06	13:28	14:35	8.7	4.6	-6	4
	12	15218	14493	41	368	350	1:03	14:21	15:24	9.1	4.7	-4	26
	24	1503	6012	21	71	284	0:15	15:36	15:52	7.2	2.9	-6	4
====	====	====	====	====	====	====	====	====	====	====	====	====	====
Total		185194	16990	38	4937	452	10:54	4:57	15:52	8.6	4.5	0	292

Description	Pen	1	0	2	3	4	5	13	6	9	10	7	8	11	12	24
% Units were attached	47	40	3	34	38	37	38	1	40	8	12	31	39	37	37	18
Milk / stall / hour	235	171	18	160	182	179	203	8	214	36	67	175	218	192	199	81
Cows / stall / hour	6.2	5.1	0.4	4.8	5.3	5.3	5.0	0.2	5.3	1.1	1.5	4.2	5.1	4.8	4.8	3.8
Flowrate 0 to 15 seconds	3.1	1.9	2.9	2.8	2.9	2.8	3.4	2.8	3.6	2.7	3.6	3.8	3.7	3.0	3.2	3.3
Flowrate 15 to 30 seconds	8.4	6.6	7.8	8.2	8.0	7.4	8.8	8.3	8.7	7.4	9.6	9.4	9.2	8.9	9.3	8.8
Flowrate 30 to 60 seconds	9.0	7.7	8.3	9.0	8.6	7.9	9.1	9.1	9.2	7.7	10.5	9.8	9.7	9.8	10.0	8.3
"Peak" Flowrate	11.0	9.2	10.3	10.3	10.4	10.9	11.6	9.8	11.4	9.3	12.3	12.5	12.3	11.2	11.5	8.6
Milk in the first 2 minutes	18	15	17	18	17	17	19	17	19	16	21	21	20	19	20	16
Percent milk in 2 minutes	49	45	46	53	51	52	47	51	48	48	49	51	49	48	47	74
Percent time in low flow	3	4	3	3	4	3	2	4	2	5	2	2	2	3	2	11
Seconds in low flow	8	12	10	10	10	9	6	10	6	16	7	5	6	8	6	19

Error Summary:	Pen	1	0	2	3	4	5	13	6	9	10	7	8	11	12	24
Reattach	177	26	14	19	14	10	6	11	9	20	8	7	5	13	13	2
No Letdown	252	6	21	8	18	23	25	17	13	11	20	20	20	26	7	17
Manual Mode	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Early Falloff	21	0	4	4	5	1	0	0	1	3	1	0	1	1	0	0
Late Rehang	285	45	23	28	45	14	5	6	17	46	28	10	4	9	5	0
===== Total	736	78	62	59	82	48	36	34	40	80	57	37	30	49	25	19

Stall	Cows	Dev	Milk	Time	Flow	Cond	Peak	Fall	Mode	NoID
-----	-----	----	-----	-----	-----	-----	-----	-----	-----	-----
19	67									12
37	69	8								11
-----	-----	----	-----	-----	-----	-----	-----	-----	-----	-----
Average	69	0	38	4.5	8.6	11.7	11	7	0	
Tolerance	12	6	2	1.2	1.6	2.0	6	8	2	

Rotary	Mins/Turn	Secs/Stall	Cows/Hour	Turns/Hour	
Fastest	8:30	7.08	508	7.1	at 7:15 stall 51
Average	9:02	7.53	478	6.6	
Effective	9:29	7.90	456	6.3	
Efficiency	90				
Empty Stalls		178	244		
Stops > 30s		17			

Milking report for 12/15/18 Milking 2 at 04:42 AM AFI_FARM 72

	Total PEN	Milk Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
	1	12602	12602	33	377	377	1:00	17:11	18:11	7.2	4.8	-3	17
No	ID	12303	1157	39	319	30	10:38	17:11	3:50	8.3	5.0	39	0
	2	13187	9532	34	390	281	1:23	17:43	19:06	8.2	4.3	-2	11
	3	13104	9472	34	387	279	1:23	18:34	19:57	8.4	4.2	-2	6
	5	15299	8195	41	369	197	1:52	19:48	21:40	9.1	4.7	-1	21
	4	13315	14015	34	390	410	0:57	19:51	20:48	8.4	4.2	-1	5
	13	3892	557	35	112	16	6:59	20:52	3:52	8.2	4.3	-1	16
	6	14573	13248	40	368	334	1:06	21:26	22:33	8.6	4.7	-2	24
	9	8465	8756	33	256	264	0:58	22:18	23:16	7.3	4.6	-1	51
	7	14707	7740	41	362	190	1:54	22:21	0:16	9.2	4.5	-1	30
	10	15867	4760	42	378	113	3:20	22:31	1:51	9.3	4.7	-2	22
	8	14563	15329	41	355	373	0:57	0:01	0:58	9.0	4.6	-2	36
	11	15642	12188	41	379	295	1:17	1:27	2:44	8.9	4.8	-3	14
	12	14805	15055	41	361	367	0:59	2:35	3:35	8.8	4.7	-3	33
====	====	====	====	====	====	====	====	====	====	====	====	====	====
Total	182324	17092		38	4803	450	10:40	17:11	3:52	8.5	4.6	1	286

Description	Pen	1	0	2	3	5	4	13	6	9	7	10	8	11	12
% Units were attached	47	42	3	27	27	21	39	1	36	28	19	12	39	32	40
Milk / stall / hour	237	175	16	132	130	113	193	7	182	121	106	65	211	169	207
Cows / stall / hour	6.2	5.2	0.4	3.9	3.8	2.7	5.6	0.2	4.6	3.6	2.6	1.5	5.1	4.1	5.0
Flowrate 0 to 15 seconds	3.0	1.8	2.8	2.5	2.7	3.1	3.2	2.8	2.8	2.3	3.6	3.5	3.4	3.6	3.4
Flowrate 15 to 30 seconds	8.6	6.9	8.2	8.3	8.4	9.0	8.9	8.1	8.5	7.6	9.4	9.4	9.0	8.9	8.8
Flowrate 30 to 60 seconds	9.4	8.0	8.8	9.2	9.4	10.0	10.0	9.0	9.2	8.0	10.1	10.4	9.8	9.6	9.6
"Peak" Flowrate	10.9	8.6	10.5	10.2	10.4	11.8	10.9	10.1	11.1	9.2	12.2	11.9	11.8	11.4	11.5
Milk in the first 2 minutes	18	15	18	18	18	20	19	17	19	16	21	20	20	19	19
Percent milk in 2 minutes	49	44	46	52	53	48	55	50	47	47	51	49	48	47	47
Percent time in low flow	3	4	3	3	3	2	4	3	3	5	2	2	2	2	2
Seconds in low flow	9	14	10	10	8	7	10	9	9	15	6	6	7	7	7
Error Summary:	Pen	1	0	2	3	5	4	13	6	9	7	10	8	11	12
Reattach	200	27	13	22	14	13	11	3	11	27	8	13	12	12	14
No Letdown	204	2	14	11	17	14	16	10	15	12	27	16	13	19	18
Manual Mode	4	0	1	0	0	0	0	0	0	0	0	0	1	0	2
Early Falloff	26	4	6	1	2	1	3	1	1	4	0	1	1	1	0
Late Rehang	284	42	20	27	9	12	53	6	15	30	15	10	13	10	22
Total	718	75	54	61	42	40	83	20	42	73	50	40	40	42	56

Rotary	Mins/Turn	Secs/Stall	Cows/Hour	Turns/Hour			
Fastest	8:36	7.17	502	7.0	at	2:15	stall 61
Average	9:14	7.69	468	6.5			
Effective	9:30	7.93	454	6.3			
Efficiency	90						
Empty Stalls	124	145					
Stops > 30s	15						

Consistency is Important!

	Milk	Cows/h	Ave F	Ave D	Turns/h	2min M	Sec LF
AM	38# 17.3k	452	8.6# 3.9K	4.5	6.2	18# 9 8.2k	8
PM	38# 17.3k	450	8.5# 3.8k	4.6	6.2	18# 8.2k	9

0-15	15-30	30-60	Peak MF	Reatt	No LD	Early FO	Late RH	Eff Sp
3.1	8.4# 3.8k	9.0 4.9K	11.0# 5k	177	252	21	285	7.9
3.0	8.6# 3.9K	9.4# 4.3k	10.9# 4.9k	200	204	26	284	7.93

2 X 42 GEA

	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
1	1446	7230	18	82	410	0:12	0:17	0:30	5.9	2.9	1	3
No ID	1030	144	32	32	4	7:08	0:24	7:33	8.1	3.9	0	0
14	1750	8750	26	68	340	0:12	0:29	0:41	7.8	3.3	2	8
2	9503	17278	36	261	474	0:33	0:39	1:12	8.6	4.3	-1	1
8	7001	11668	27	259	431	0:36	1:10	1:46	7.6	3.6	-1	3
9	7315	12540	28	263	450	0:35	1:43	2:19	7.8	3.6	-1	-1
10	7180	12670	27	263	464	0:34	2:17	2:51	7.6	3.7	-1	1
11	7368	11948	28	259	420	0:37	2:50	3:28	8.0	3.6	-1	3
12	7789	13745	30	261	460	0:34	4:07	4:41	7.9	3.9	0	4
3	7823	13038	31	256	426	0:36	4:39	5:15	7.8	4.0	0	5
4	10119	17346	39	258	442	0:35	5:13	5:49	9.0	4.4	-1	4
5	10140	16010	39	257	405	0:38	5:46	6:25	9.0	4.5	0	5
6	8710	14516	34	259	431	0:36	6:23	7:00	7.8	4.4	0	4
7	9374	13080	33	286	399	0:43	6:57	7:41	8.3	4.0	0	3
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	96548	13076	32	3064	414	7:23	0:17	7:41	8.1	4.0	0	43

Description	Pen	1	0	14	2	8	9	10	11	12	3	4	5
% Units were attached	31	21	0	21	38	29	30	31	28	33	32	36	33
Milk / stall / hour	148	78	1	99	196	132	139	141	132	154	148	192	179
Cows / stall / hour	4.7	4.4	0.0	3.8	5.3	4.8	5.0	5.1	4.6	5.1	4.8	4.8	4.5

Error Summary:	Pen	1	14	2	8	9	10	11	12	3	5	7
Reattach	9	1	1	1	1	0	1	2	1	1	0	0
Early Falloff	5	0	0	0	1	3	0	0	0	0	0	1
Late Rehang	2	0	0	0	1	0	0	0	0	0	1	0
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	16	1	1	1	3	3	1	2	1	1	1	1

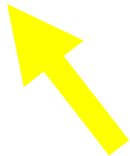
Stall	Cows	Dev	Milk	Time	Flow	Cond	NoID
10	35	7					0
18	34					2.0	20
Average	35	0	31	4.0	8.1	4.9	
Tolerance	10	3	2	0.8	1.6	1.0	

Side	Cows	Dev	Milk	Time	Flow	Cond	NoID
1	1501	0	31	4.0	8.0	4.9	29
2	1563	0	32	4.0	8.1	5.0	3
Average	1532	0	32	4.0	8.0	5.0	

Consistency!

4 Milk Harvest Technicians
Treat cows only on 1st milking

Milk #	Milk	Cows	Cows /hr	Time	Ave F	Ave D	% UA	Turns	Reatt	Late rehan g
1	32# 14.5K	3064	420	7:23	8.1# 3.7k	4.0	31%	4.7	9	2
2	31# 14.1k	3061	436	7:01	8.2# 3.7k	3.8	31%	4.9	12	6
3	28# 12.7k	3068	462	6:38	8.0# 3.6k	3.6	31%	5.2	7	3



PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
1	3980	601	18	223	33	6:37	6:00	12:38	5.0	3.6	0	29
2	3456	8294	19	181	434	0:25	6:24	6:49	4.8	4.0	0	13
9	9135	2362	20	460	118	3:52	6:32	10:25	5.0	4.0	-2	37
3	11656	3394	29	397	115	3:26	6:44	10:11	6.5	4.6	-3	26
4	10187	12733	26	391	488	0:48	7:30	8:18	6.2	4.3	-2	20
5	8819	12305	22	405	565	0:43	8:13	8:57	5.8	3.8	-1	13
6	7883	10510	23	340	453	0:45	8:53	9:38	5.7	4.1	-3	41
8	10275	13117	24	421	537	0:47	10:19	11:07	5.6	4.3	-3	41
7	10386	13546	25	412	537	0:46	11:03	11:50	5.9	4.3	-2	23
10	5135	10270	20	253	506	0:30	11:45	12:16	5.2	3.9	-4	15
30	727	3115	23	31	132	0:14	12:21	12:35	5.4	4.1	-4	-10
2	13	390	13	1	30	0:02	12:23	12:26	4.6	2.8	-10	0
3	44	293	44	1	6	0:09	12:26	12:36	4.5	9.7	-20	0
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	81696	12347	23	3516	531	6:37	6:00	12:38	5.6	4.1	-2	248

Description	Pen	1	2	9	3	4	5	6	8	7	10	30
% Units were attached	50	2	40	10	12	47	49	43	53	52	44	12
Milk / stall / hour	171	8	114	32	47	176	168	145	180	185	138	42
Cows / stall / hour	7.3	0.4	6.0	1.6	1.6	6.7	7.7	6.2	7.3	7.3	6.8	1.8
Flowrate 0 to 15 seconds	3.8	4.1	3.8	3.8	4.1	3.7	3.7	4.0	3.4	3.8	3.6	3.9
Flowrate 15 to 30 seconds	5.0	4.4	2.7	4.6	6.1	5.6	5.0	5.6	5.3	4.8	4.7	5.7
Flowrate 30 to 60 seconds	5.3	5.5	4.1	4.4	6.7	6.1	5.6	5.4	4.5	5.2	5.1	7.0
"Peak" Flowrate	6.9	6.1	6.2	5.6	8.1	7.7	7.3	6.8	6.6	7.1	6.4	6.5
Milk in the first 2 minutes	12	11	10	10	14	13	12	12	11	12	11	12
Percent milk in 2 minutes	50	61	52	50	48	50	57	51	45	47	54	53
Percent time in low flow	9	9	10	11	6	8	9	8	10	8	10	11
Seconds in low flow	23	20	24	27	18	21	20	20	27	22	25	28

Error Summary:	Pen	1	2	9	3	4	5	6	8	7	10	30
Reattach	126	21	2	12	18	19	8	18	9	10	3	6
No Milk	13	1	1	1	1	1	1	1	3	2	1	0
Manual ID	58	0	5	8	13	4	3	5	11	7	2	0
Entered Twice	3	0	0	0	2	0	0	0	0	1	0	0
No Letdown	309	28	5	59	27	23	23	48	48	28	17	3
Manual Mode	249	30	6	15	20	42	13	15	68	20	10	9
Early Falloff	17	4	1	1	4	1	1	4	1	0	0	0
Late Rehang	22	3	1	3	3	2	2	1	3	3	1	0
Manual Detach	23	2	1	1	1	2	3	2	4	5	2	0
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	820	89	22	100	89	94	54	94	147	76	36	18

Effective speed 6.66 seconds/stall

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
1	4026	640	18	225	35	6:17	14:02	20:19	4.7	3.8	-1	28
9	8622	2229	19	461	119	3:52	14:26	18:18	4.9	3.8	-2	31
2	3236	566	18	181	31	5:43	14:26	20:10	4.6	4.0	0	12
3	11206	2037	29	393	71	5:30	14:49	20:19	6.3	4.6	-1	16
30	465	86	18	26	4	5:23	14:56	20:20	4.1	4.9	-7	-6
6	7935	2736	23	345	118	2:54	15:09	18:04	5.6	4.1	-2	44
4	9085	11124	23	399	488	0:49	15:30	16:20	5.7	4.0	-3	9
5	8026	2023	20	405	102	3:58	16:17	20:15	5.4	3.7	-2	1
8	9951	12979	23	427	556	0:46	18:13	19:00	5.6	4.2	-2	21
7	10235	12532	25	414	506	0:49	18:56	19:45	5.8	4.3	-2	10
10	4866	10067	19	251	519	0:29	19:38	20:07	4.9	4.0	-3	12
Total	77653	12358	22	3527	561	6:17	14:02	20:20	5.4	4.1	-2	178

Description	Pen	1	9	2	3	30	6	4	5	8	7	10
% Units were attached	52	3	10	2	7	0	11	44	8	53	50	46
Milk / stall / hour	171	8	30	7	28	1	37	151	28	177	171	137
Cows / stall / hour	7.7	0.4	1.6	0.4	0.9	0.0	1.6	6.6	1.4	7.6	6.9	7.1
Flowrate 0 to 15 seconds	3.7	4.0	3.7	3.8	3.9	4.2	4.2	3.5	3.6	3.5	3.7	3.4
Flowrate 15 to 30 seconds	4.4	4.2	3.8	2.2	5.4	3.2	4.7	4.7	4.4	4.5	4.8	4.3
Flowrate 30 to 60 seconds	5.1	5.2	4.3	3.7	6.5	4.0	5.1	5.4	5.1	5.2	5.5	4.8
"Peak" Flowrate	6.9	5.9	6.1	5.8	7.9	5.2	7.3	7.2	6.9	7.4	7.5	6.4
Milk in the first 2 minutes	12	11	10	9	14	9	12	12	11	12	12	11
Percent milk in 2 minutes	52	59	54	51	47	51	52	52	58	51	50	55
Percent time in low flow	10	11	14	13	7	18	8	10	9	10	8	11
Seconds in low flow	25	26	32	32	19	53	21	24	22	26	22	27

Error Summary:	Pen	1	9	2	3	30	6	4	5	8	7	10
Reattach	148	34	7	14	13	2	14	11	10	10	22	11
No Milk	7	0	1	2	1	0	0	2	1	0	0	0
Manual ID	35	0	6	1	13	1	3	1	2	4	4	0
Entered Twice	1	0	0	0	0	0	0	0	0	0	1	0
No Letdown	221	13	30	6	19	3	29	29	36	21	19	16
Manual Mode	336	45	33	18	14	10	16	63	7	47	50	33
Early Falloff	14	2	0	4	0	1	1	2	2	1	1	0
Late Rehang	27	2	2	1	2	0	6	4	2	4	2	2
Manual Detach	28	1	4	2	1	0	2	4	3	4	4	3
Total	817	97	83	48	63	17	71	116	63	91	103	65

Pen	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
No ID	1	0	1	1	0	0:00	21:58	21:58	0.0	0.1	0	0
1	3362	571	16	208	35	5:53	22:00	3:54	4.9	3.3	-1	47
2	3069	8006	17	179	466	0:23	22:21	22:45	4.9	3.5	-2	16
9	7846	2319	17	452	133	3:23	22:27	1:51	4.7	3.7	-4	45
3	10377	3347	26	392	126	3:06	22:38	1:44	6.1	4.4	-5	22
30	573	113	18	31	6	5:03	22:44	3:47	3.0	7.4	-8	-10
4	9087	13298	23	398	582	0:41	23:17	23:59	5.6	4.1	-4	10
5	7769	11098	19	401	572	0:42	23:55	0:37	5.3	3.7	-3	5
6	7253	10361	21	340	485	0:42	0:32	1:15	5.4	3.9	-4	45
8	9288	12960	22	423	590	0:43	1:48	2:31	5.5	4.1	-4	29
7	8739	12484	22	401	572	0:42	2:27	3:09	5.5	4.0	-5	28
10	4204	9008	17	248	531	0:28	3:06	3:34	4.6	3.7	-6	20
30	47	216	47	1	4	0:13	3:33	3:46	3.5	13.1	-6	0
3	38	253	38	1	6	0:09	3:34	3:43	4.2	9.0	1	0
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	71653	12110	21	3476	587	5:55	21:58	3:54	5.3	3.9	-4	257

Description	Pen	1	2	9	3	30	4	5	6	8	7	10
% Units were attached	53	2	36	11	12	1	53	48	43	55	53	45
Milk / stall / hour	168	7	107	32	46	1	180	153	142	179	172	125
Cows / stall / hour	8.1	0.4	6.2	1.8	1.7	0.0	7.9	7.9	6.6	8.1	7.9	7.3
Flowrate 0 to 15 seconds	3.4	3.8	3.4	3.1	3.7	3.6	3.4	3.5	3.5	3.3	3.5	3.5
Flowrate 15 to 30 seconds	4.5	4.6	2.8	3.9	5.4	3.4	5.0	4.4	5.2	4.7	4.4	3.9
Flowrate 30 to 60 seconds	4.6	5.3	4.1	3.9	6.3	3.9	5.1	5.0	4.5	4.1	4.1	3.8
"Peak" Flowrate	6.9	6.1	6.3	6.1	7.9	3.9	7.4	7.0	7.1	7.1	7.1	5.8
Milk in the first 2 minutes	11	11	10	10	13	8	12	11	12	11	11	10
Percent milk in 2 minutes	54	67	58	56	50	41	53	59	54	51	51	56
Percent time in low flow	11	11	12	15	8	21	10	10	10	11	12	15
Seconds in low flow	27	22	26	33	21	95	26	24	24	27	29	34

Error Summary:	Pen	1	9	3	30	4	5	6	8	7	10	
Reattach	78	9	0	6	8	5	14	4	7	16	8	1
No Milk	37	1	3	6	4	0	3	2	4	6	5	3
Manual ID	34	4	0	1	6	1	6	3	4	0	6	3
No Attach	1	0	0	0	0	0	0	1	0	0	0	0
No Letdown	285	27	9	39	15	3	24	33	40	42	32	20
Manual Mode	360	24	4	31	63	22	53	28	25	53	32	23
Early Falloff	12	3	0	0	1	2	0	0	0	3	3	0
Late Rehang	33	2	0	6	1	0	4	0	6	5	3	6
Manual Detach	32	2	1	4	4	1	4	4	3	4	3	2
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	872	72	17	93	102	34	108	75	89	129	92	58

Effective speed 5.97 seconds/stall

Milking report for 6/16/11 Milking 1 at 03:32 AM P5009 16 30 2

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not
1	1272	2725	25	50	107	0:28	19:43	20:11	8.5	3.1	-1	2
6	2539	626	34	75	18	4:03	19:43	23:46	9.8	3.5	-2	2
2	2585	1685	29	88	57	1:32	19:43	21:16	9.0	3.5	-1	!
7	2668	526	33	80	15	5:04	19:45	0:49	9.7	3.5	-3	1.
8	2906	538	35	83	15	5:24	19:47	1:12	9.7	3.6	-3	1:
9	94	43	19	5	2	2:10	19:50	22:00	8.6	2.1	0	0
3	3408	2108	32	107	66	1:37	20:20	21:57	9.2	3.6	-4	2:
4	2388	3184	28	84	112	0:45	21:44	22:29	8.7	3.5	-2	1:
5	2651	3699	33	80	111	0:43	22:22	23:06	9.8	3.4	-3	1:
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	20511	3740	31	652	118	5:29	19:43	1:12	9.3	3.5	-2	13!

Description	Pen	1	6	2	7	8	3	4	5
% Units were attached	21	17	3	10	2	2	12	20	19
Milk / stall / hour	116	84	19	52	16	16	65	99	114
Cows / stall / hour	3.7	3.3	0.5	1.7	0.4	0.4	2.0	3.4	3.4
Flowrate 0 to 15 seconds	3.8	3.6	3.9	3.8	4.0	4.1	3.6	3.6	4.2
Flowrate 15 to 30 seconds	11.0	9.8	11.7	9.9	12.7	12.4	9.9	9.3	12.2
Flowrate 30 to 60 seconds	11.0	10.2	11.7	10.3	12.1	11.9	10.4	9.9	11.7
"Peak" Flowrate	10.5	8.5	11.5	10.0	10.8	11.0	10.7	9.7	11.6
Milk in the first 2 minutes	20	17	21	19	21	21	19	18	22
Percent milk in 2 minutes	63	66	63	63	63	60	60	63	65
Percent time in low flow	9	8	8	9	7	8	12	8	8
Seconds in low flow	19	16	18	20	15	17	26	17	16

Error Summary:	Pen	1	6	2	7	8	3	4	5
Reattach	32	1	4	4	2	4	15	1	1
No Attach	11	1	2	8	0	0	0	0	0
No Letdown	123	11	13	13	24	21	10	9	20
Manual Mode	8	1	0	2	0	0	2	3	0
Early Falloff	3	0	0	0	1	0	0	1	1
Late Rehang	6	1	0	0	1	2	1	0	0
Manual Detach	12	9	0	0	1	1	1	0	0
====	====	====	====	====	====	====	====	====	====
Total	195	24	19	27	29	28	29	14	22

Milking report for 6/15/11 Milking 2 at 11:05 AM P5009 16 30 2

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
2	2990	2110	31	95	67	1:25	3:59	5:25	9.3	3.6	-2	2
1	1164	2252	25	47	90	0:31	4:00	4:31	8.3	3.0	-4	29
6	2426	557	39	62	14	4:21	4:00	8:21	10.6	3.8	-4	33
7	2604	447	37	70	12	5:49	4:00	9:50	10.1	3.8	-4	24
9	158	74	32	5	2	2:08	4:04	6:13	9.4	3.1	0	0
3	3361	1833	32	105	57	1:50	4:38	6:28	9.6	3.5	-3	30
4	2324	2966	31	76	97	0:47	6:09	6:57	8.8	3.7	-2	21
5	3139	3923	38	83	103	0:48	6:50	7:38	10.7	3.7	-1	10
8	3102	4136	38	81	108	0:45	9:09	9:54	10.1	3.9	-4	14
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	21268	3604	34	624	105	5:54	3:59	9:54	9.7	3.6	-3	163

Description	Pen	2	1	6	7	3	4	5	8
% Units were attached	19	12	13	2	2	10	18	19	21
Milk / stall / hour	112	65	68	17	13	57	90	122	129
Cows / stall / hour	3.3	2.0	2.7	0.4	0.3	1.7	2.9	3.2	3.3
Flowrate 0 to 15 seconds	3.7	3.5	3.0	4.1	3.8	3.8	3.5	3.9	4.0
Flowrate 15 to 30 seconds	11.3	10.1	9.3	12.3	12.7	10.1	9.4	13.4	12.5
Flowrate 30 to 60 seconds	11.3	10.3	9.2	12.5	12.5	10.5	9.8	13.3	12.3
"Peak" Flowrate	11.0	10.6	8.2	12.1	11.7	11.1	10.0	12.0	11.7
Milk in the first 2 minutes	20	19	16	22	22	20	18	23	22
Percent milk in 2 minutes	60	61	64	57	59	62	59	61	57
Percent time in low flow	8	7	15	8	6	7	9	6	7
Seconds in low flow	17	16	28	19	15	14	20	14	17

Error Summary:	Pen	2	1	6	7	3	4	5	8
Reattach	16	0	3	4	1	0	4	0	4
No Attach	52	0	5	15	9	16	7	0	0
No Letdown	104	11	12	5	18	7	7	23	19
Manual Mode	11	3	0	0	0	1	4	0	3
Early Falloff	1	0	0	0	1	0	0	0	0
Late Rehang	3	0	0	1	0	0	0	1	1
Manual Detach	11	0	10	1	0	0	0	0	0
====	====	====	====	====	====	====	====	====	====
Total	198	14	30	26	29	24	22	24	27

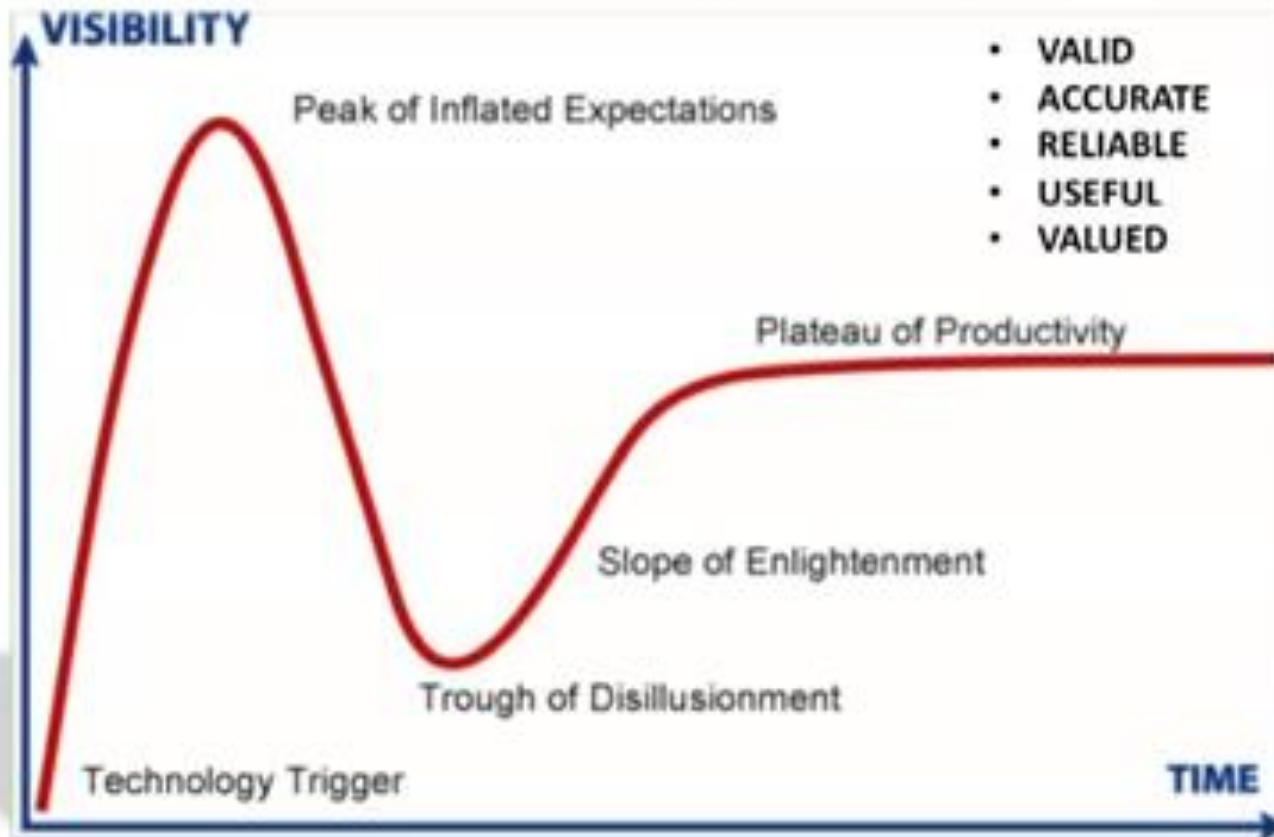
Milking report for 6/15/11 Milking 3 at 07:05 PM P5009 16 30 2

PEN	Total Milk	Milk /Hr	Milk /Cow	Cows	Cows /Hr	Total Time	Start Time	Stop Time	Avg #/m	Avg Dur	Avg Dev	Not ID
6	2505	686	32	79	21	3:39	12:08	15:47	9.5	3.3	-4	16
1	1701	600	28	61	21	2:50	12:08	14:58	8.5	3.3	-1	15
2	2830	2326	31	91	74	1:13	12:10	13:23	9.0	3.7	-1	6
9	107	49	21	5	2	2:10	12:12	14:22	7.1	3.1	0	0
8	2480	529	30	82	17	4:41	12:19	17:01	9.2	3.3	-4	13
7	2434	563	30	80	18	4:19	12:22	16:41	9.4	3.3	-5	14
3	3712	2394	31	119	76	1:33	12:41	14:15	9.4	3.5	1	16
4	1906	3267	28	67	114	0:35	14:12	14:47	9.0	3.3	-1	30
5	2520	5040	32	78	156	0:30	14:40	15:11	9.9	3.3	-3	15
====	====	====	====	====	====	====	====	====	====	====	====	====
Total	20195	4135	31	662	135	4:53	12:08	17:01	9.3	3.4	-2	125

Description	Pen	6	1	2	8	7	3	4	5
% Units were attached	23	3	3	14	2	3	13	19	26
Milk / stall / hour	129	21	18	72	16	17	74	100	153
Cows / stall / hour	4.2	0.6	0.6	2.3	0.5	0.5	2.3	3.5	4.7
Flowrate 0 to 15 seconds	3.8	4.1	3.4	3.7	4.0	4.0	3.7	3.7	4.2
Flowrate 15 to 30 seconds	10.4	11.1	8.9	9.5	11.0	11.9	10.1	8.6	12.0
Flowrate 30 to 60 seconds	10.6	11.0	10.0	10.0	11.1	11.3	10.9	9.4	11.3
"Peak" Flowrate	10.5	10.7	9.1	10.8	10.2	9.9	10.8	10.2	11.6
Milk in the first 2 minutes	19	20	17	19	19	20	20	18	21
Percent milk in 2 minutes	63	63	62	61	64	64	63	63	66
Percent time in low flow	9	8	10	9	9	8	12	8	8
Seconds in low flow	19	17	20	20	18	15	26	17	16

Robotic Milking

The Gartner “Hype” Cycle



Robotic Milking

- Is at a point of milkability evaluation where conventional milking was 25 years ago
- Remember; " We have always done it this way"

Robotic Milking

- Will become dominant in the dairy industry
 - The technology will catch up and surpass conventional milking
 - Current Issues:
 - Box time
 - Milking duration/cow
 - Teat cleanliness
 - Post milking teat disinfection application

Sometimes, even with the best of training, some individuals just don't get it!



Why was the cow lying
backwards?



"What do you See"





What did you really SEE?





What did you really SEE?







"Always do what is best for
the cow"

"What do you See"

