Implementing Milk Quality Programs
The Milk Money Program

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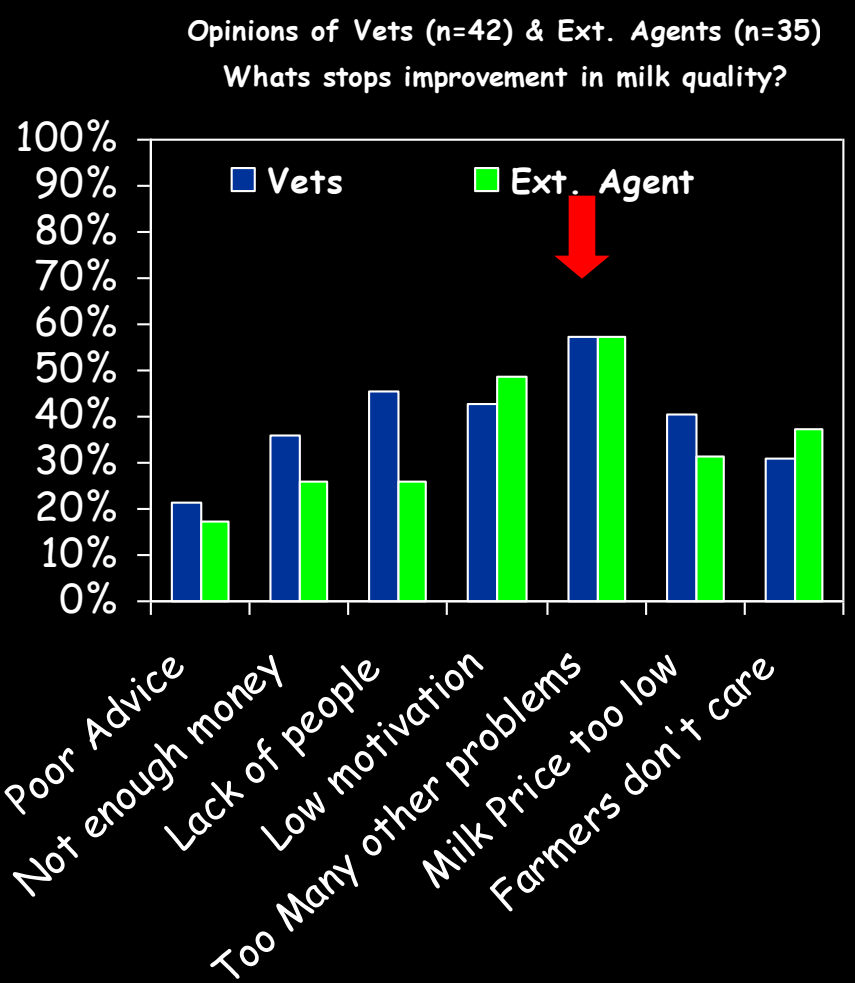
Key Contagious Mastitis Control Practices

- Effective teat dipping
  - 97% adoption
- Dry cow therapy of all quarters of all cows
  - 93% adoption
- Appropriate treatment of clinical cases
  - No data
- Culling chronically infected cows
  - 35% of all cows culled are for mastitis
- Regular milking machine maintenance
  - 43% analyze yearly

WI Parlors (n=101)
335,000 cells/ml
WI Stallbarns (n = 78)
430,000 cells/ml

Why is mastitis a problem?

- Improving milk quality is technically easy
- There is lots of knowledge about basic methods to improve milk quality
- Most farms want to improve milk quality but……
  - Too many competing issues



Rodriques & Ruegg, 2004 Food Protection Trends 24:670-675

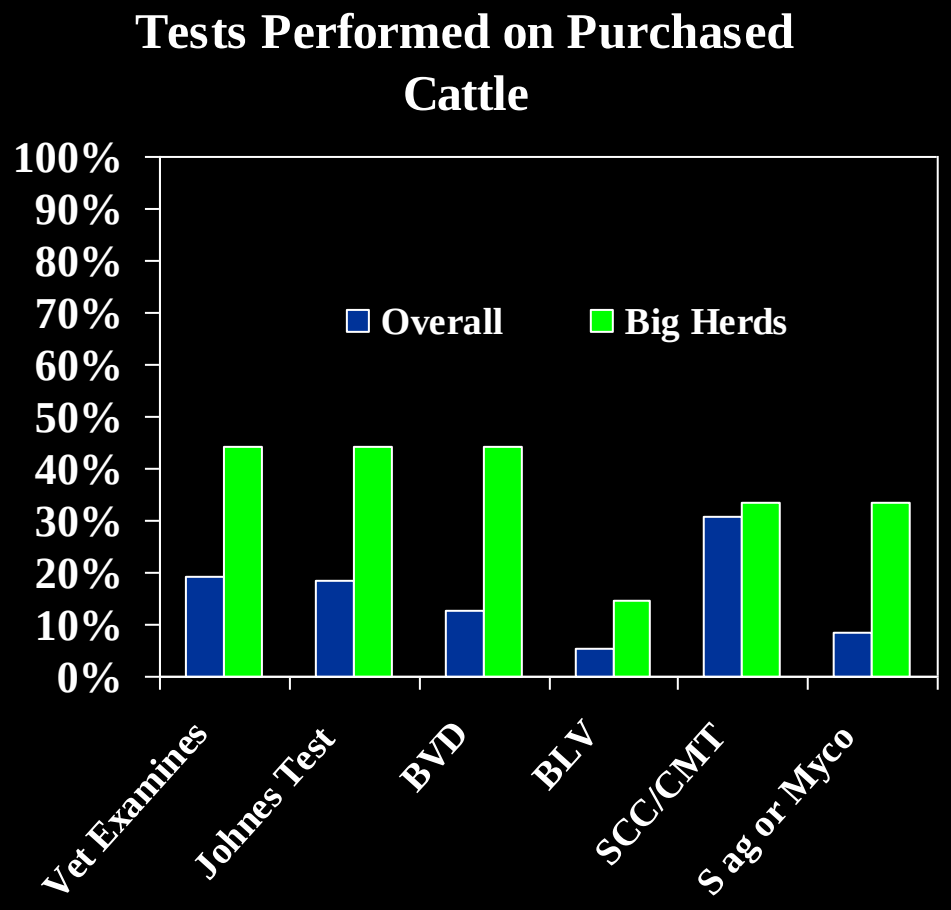
What are the real challenges?

- 2004 Survey of Wisconsin Dairy Farms
- Mailed 1000 surveys & received 584 back
- Summarized by herd size
  - Overall
  - >200 cows (n = 34 herds)

Hoe & Ruegg, JDS May 2006

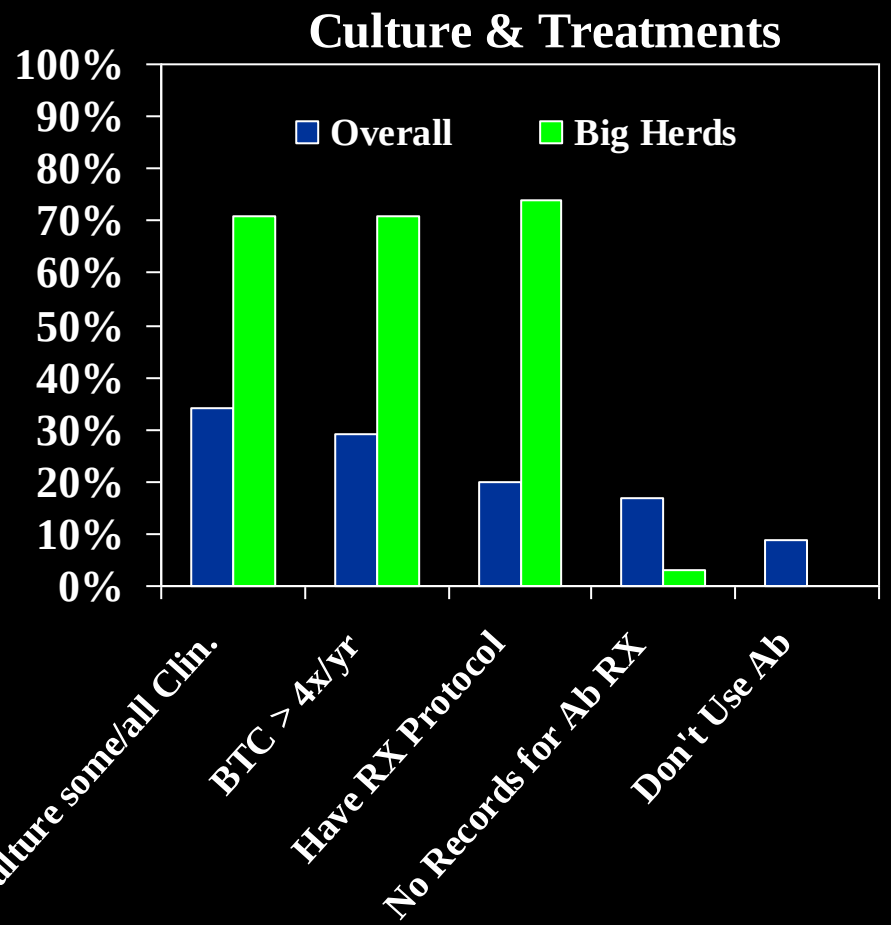
Farms are dynamic & facilities are Limited

- The calving pen is also used to house sick cows
  - 73 % Overall
  - 25 % Big herds
- Purchased Cattle in last 3 years
  - 44 % Overall
  - 33 % Big herds
- Of those purchasing, % buying lactating cows
  - 62% Overall
  - 52% big herds



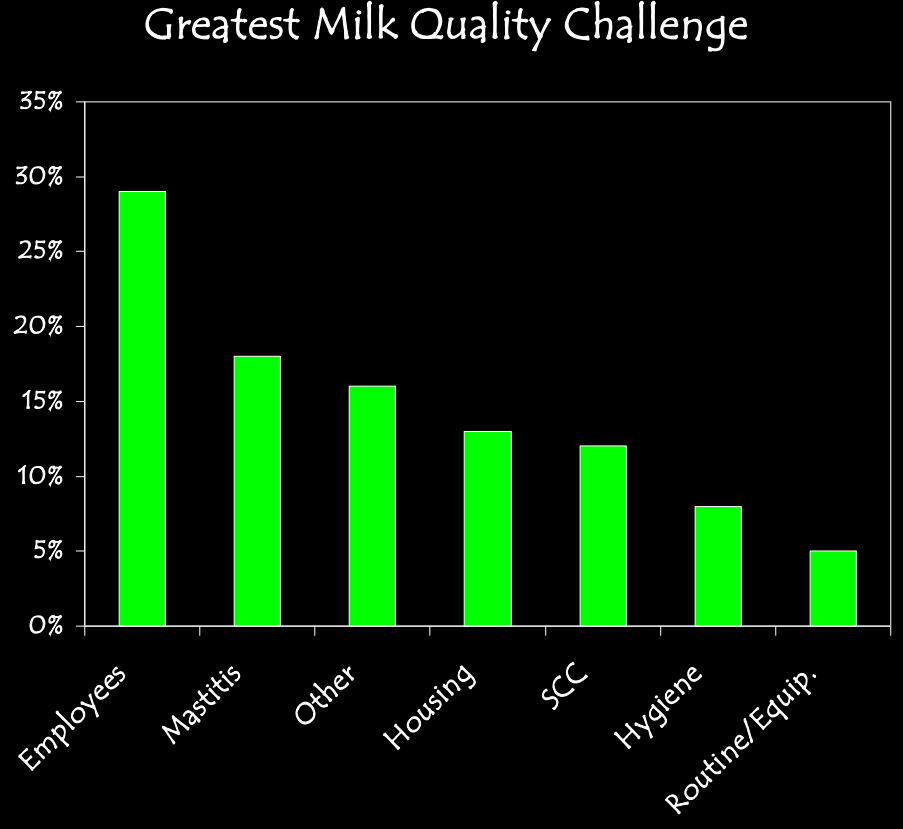
Our recommendations are hard to implement

- Sick Cows housed with Healthy cows
  - 73 % Overall
  - 25 % Big herds
- Milk Mastitic Cows using Separate Barn or Unit
  - 27 % Overall
  - 19 % Big herds
- Use same unit to milk
  - 12% Overall
  - 8% big herds



Improving Milk Quality Requires a Whole Farm Plan

- MM Farm owners indicate that employees are the biggest threat to milk quality
  - 82% never hold performance reviews
  - Only 28% have written job descriptions for milking
  - 24% never train milkers
- 53% have Spanish speaking milkers
  - 84% understand virtually no Spanish
  - 40% never have an interpreter

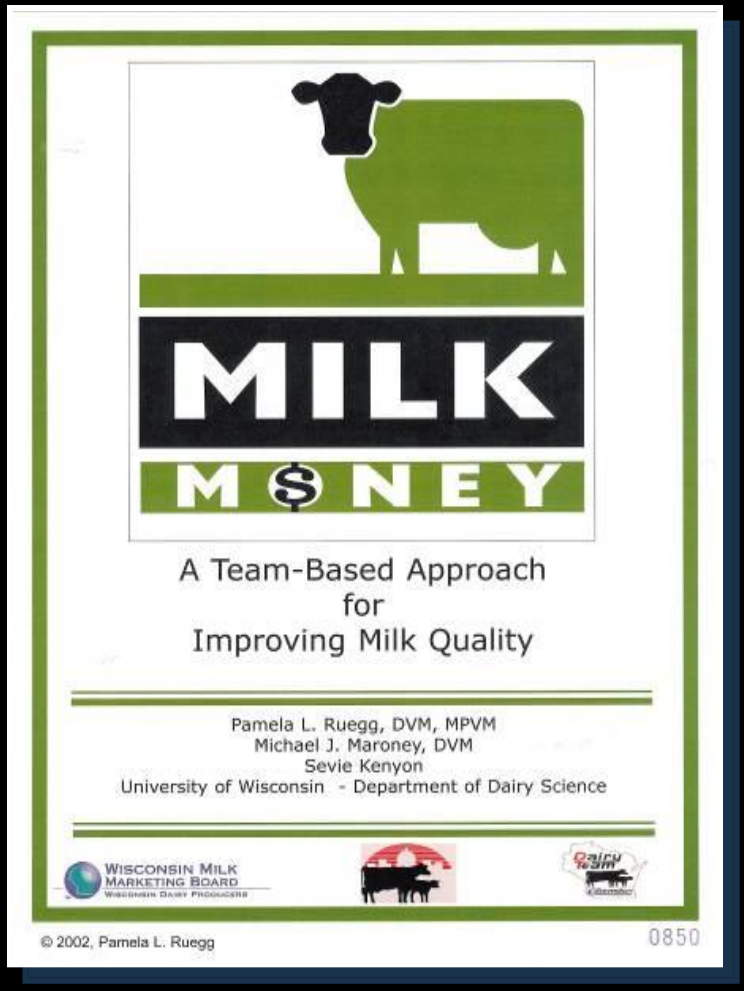


Survey of MM Farm Owners, 1 year after MM


Modern Mastitis Control programs have to include the whole farm and all workers

Improving Milk Quality Using Self-Directed Teams

- Farmer led effort to improve milk quality
- Supported in part by Wisconsin dairy producers
- Farms enroll and commit to form a milk quality team that meets monthly for 4 months
- Use Program material to help organize meetings and reach results



How Does Milk Money Work?

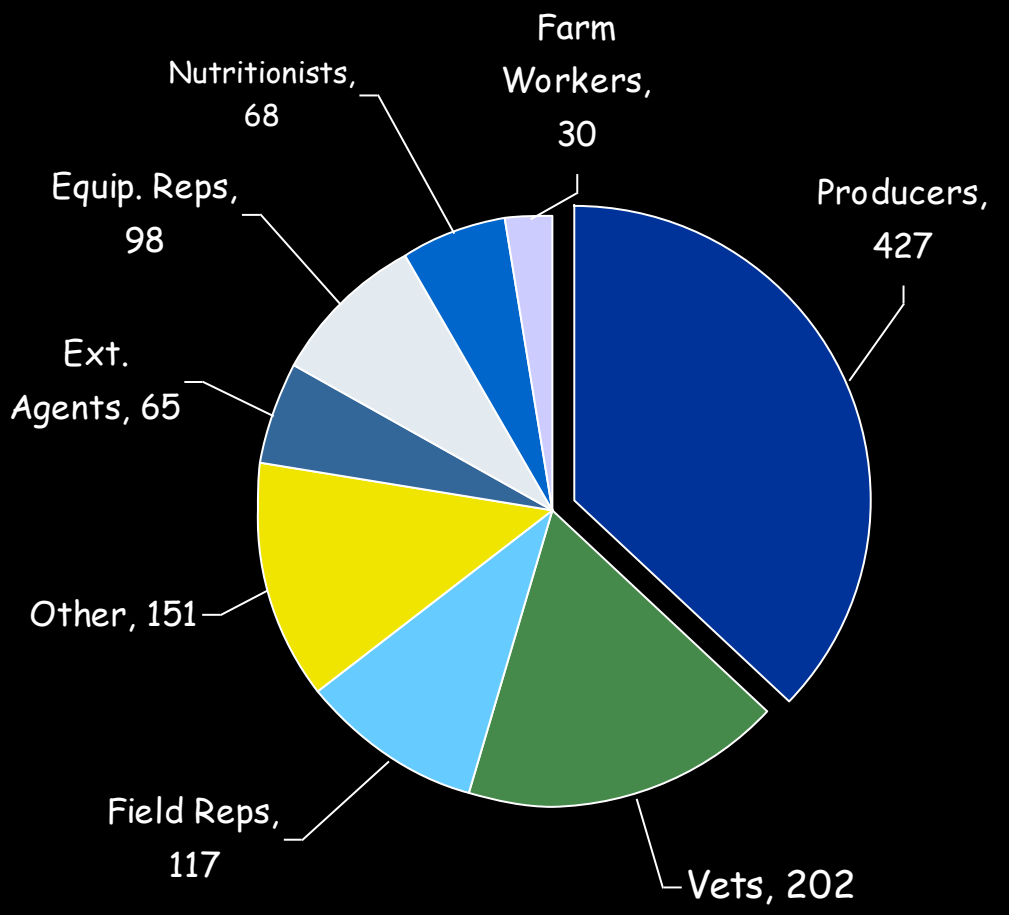
- Producers and their LOCAL experts work TOGETHER in a farmer-directed team
  - Once a month for 4 months
  - Reassess at 4th meeting
- 81% of registered farms completed at least 4 meetings
- 36% continue to meet after completing program

What happens at a team meeting?

- Use provided forms to:
  - Come to consensus on farm goals
  - Determine an action plan
  - Determine how actions will be tracked
  - Assign responsibility
  - Follow-up

Who has participated?

- >450 farms have enrolled
  - About 1200 total team members
- We have to market the program to get participation
- Facilitation of the teams is the most challenging aspect
- Most veterinarians are paid but most other team members are not



Management Of Wisconsin Dairy Herds Enrolled in Milk Quality Teams

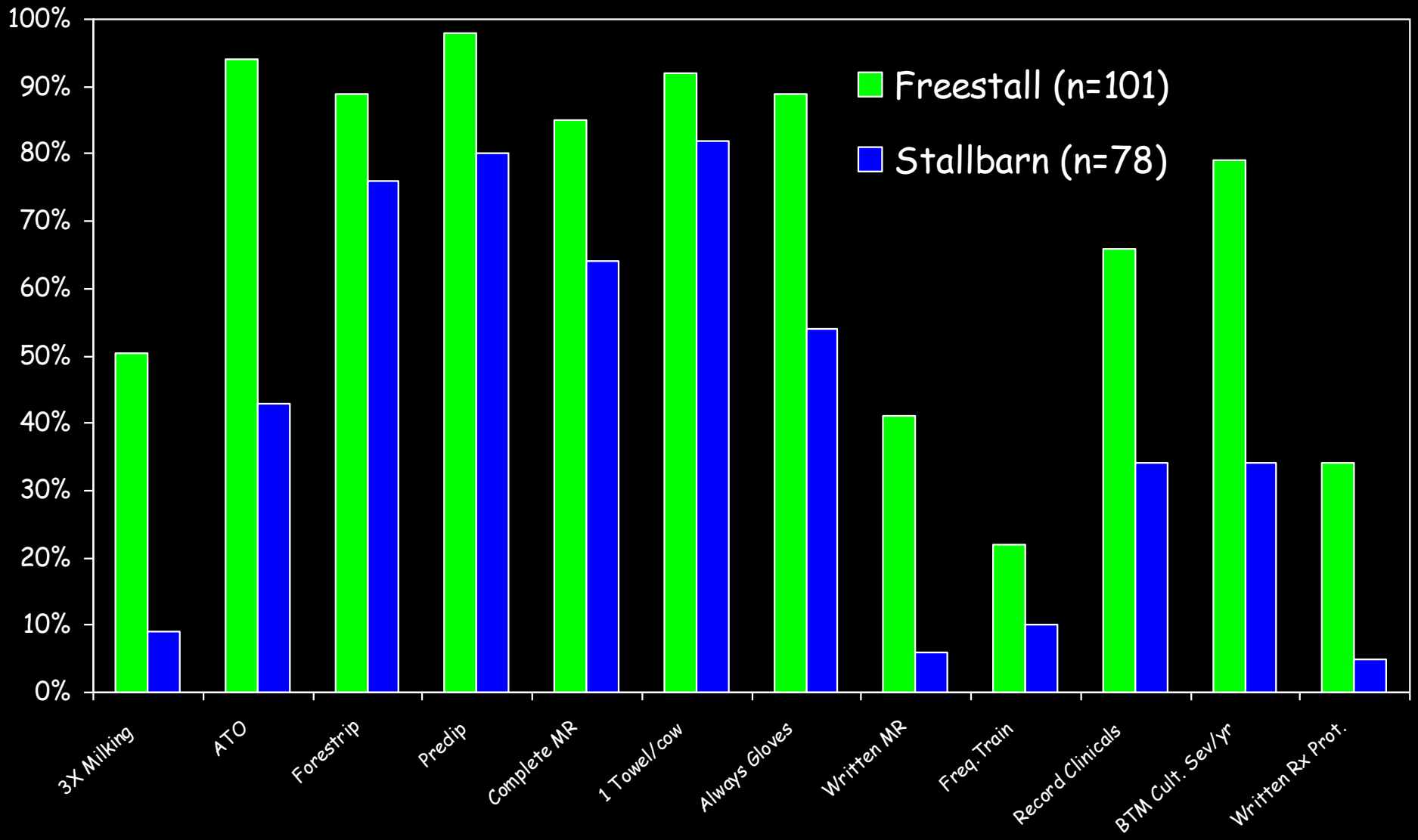
Rodrigues et al., J Dairy Science, July 2005

Smaller Herds that Enrolled had Poorer Performance

Characteristics of WI dairy farms stratified by cow housing type

Outcome	Facility type		*P*
	Stallbarn (n = 101)	Freestall (n = 78)	
Total lactating cows (n)	86.7	377.2	< 0.001
Yield per cow per day (kg)	28.1	31.9	< 0.001
Cows milked per hour per person	25.3	40.0	< 0.001
Milk price ($/cwt)	11.25	11.70	< 0.001
Bulk milk SCC premium ($/cwt	0.00	0.13	0.014
Bulk milk SCC (cell/ml)	430,221	335,762	0.006
Monthly rate of clinical mastitis	0.08	0.06	0.058
Monthly cows culled for mastitis (%)	1.8	1.0	0.073

Smaller Herds Adopt Less BMP



Mastitis is Costing Farms Lots of Money

Financial characteristics of WI dairy farms stratified by BMSCC category

Outcome	BMSCC category			
	Low	Medium	High	*P*
Standard milk production loss per cow ($)	2.12 [a]	3.77 [b]	5.35 [c]	0.001
Milk quality premium loss per cow ($)	4.69 [a]	7.33 [b]	11.79 [c]	0.037
Estimated loss from clinical mastitis per cow ($)	7.25 [a b]	4.67 [a]	7.23 [b]	0.040

- Low SCC: $14.06 per cow per Month
- Medium SCC: $15.77 per cow per Month
- High SCC: $24.37 per cow per Month

100 cow
High SCC Herd
-$29,244 per year

Implementation is Lacking Milking Management

- Data from WI freestall farms (n = 101)
  - 377 cows per herd
  - SCC = 335,000 cell/ml
- High adoption of recc. practices
  - 89% gloves; 97% postdip; 98% predip; 89% forestrip
- 6 pp milking each month
  - Range of 2 – 16
- Training was rare
  - Frequent: 22%
  - At hiring: 49%
  - Never: 29%
- Only 41% had written milking routine
  - 6% of stall barns
- WI stall barns (n = 78)
  - 86 cows per herd
  - 3 pp milking each month
  - 54% never train milkers

Implementation Matters

Influence of Training & Routine
Monthly Rate of Clinical Mastitis

Frequent Training Results in
Fastest Milking Speeds
&
Lowest Rate of Clinical Mastitis

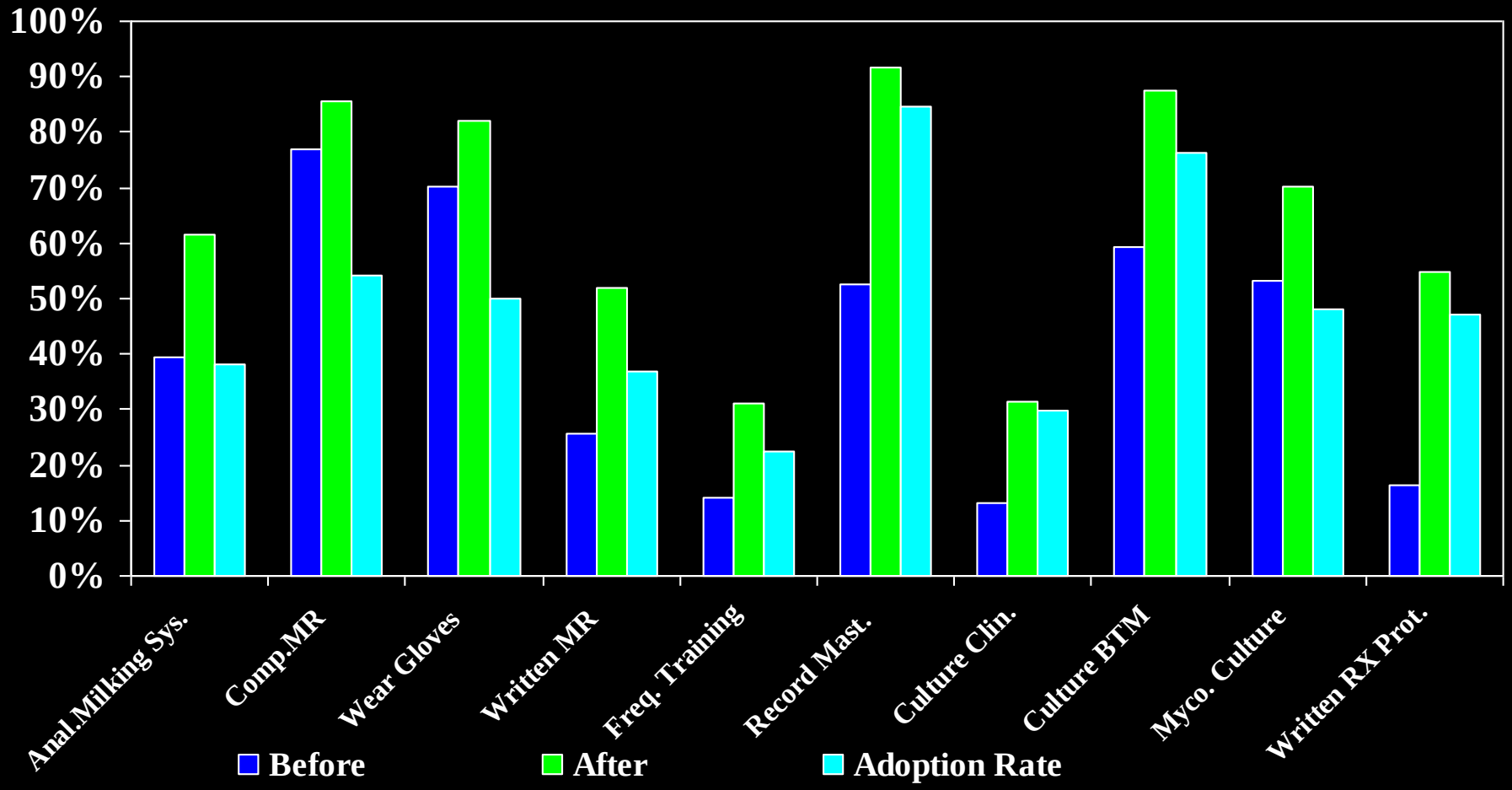
What we learned – Part 1

- Smaller herds adopt fewer best management practices and have poorer milk quality
- Training of milking personnel is infrequent and is related to milk quality
- Few veterinarians are perceived as actively working with milk quality on farms
- There is a large and real opportunity to rapidly improve financial performance based on improvements in milk quality

Actions & Outcomes of Wisconsin Farms Completing Milk Quality Teams

Rodrigues & Ruegg, J Dairy Science, 88:2672-2680 July 2005

Milk Money Farms Adopt Best Management Practices



Adoption Rate is adoption of each practice by non-users at meeting 1

MM Herds Improve Milk Quality

Outcome	Before program	After program	Difference	*P*
Bulk milk SCC (cell/ml)	**385,838**	**307,951**	**-77,887**	**< 0.001**
Standard plate count (cfu/ml)	14,564	10,433	-4,131	0.014
Yield per cow per day (kg)	29.8	30.6	0.82	0.223
Monthly rate of clinical mastitis (%)	**6.8**	**4.9**	**-1.9**	**0.016**
Monthly incidence of subclinical mastitis (%)	10.9	9.2	-1.8	0.033
Monthly prevalence of subclinical mastitis (%)	**35.8**	**30.8**	**-5.0**	**0.008**
Monthly cows culled for mastitis (%)	1.4	0.8	-0.7	0.023
Standard milk production loss per cow ($)	**3.88**	**2.75**	**-1.12**	< 0.001
Bulk milk SCC premium ($/45kg)	**0.07**	**0.27**	**0.20**	< 0.001
Milk quality premium loss per cow ($)	**9.21**	**5.97**	**-3.24**	< 0.001
Estimated loss from clinical mastitis per cow ($)	**6.48**	**4.42**	**-2.06**	0.002

Conclusion

- Improving Milk Quality is Technically Easy
- Ability to implement management practices is the most important aspect of improving milk quality
- Implementation is dependent on
  - Development of standardized procedures
  - Ability to clearly communicate value
  - Continued training of personnel
- The team based approach to improving milk quality works well