



# Extension programming to address somatic cell count challenges and opportunities

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University of Kentucky



# Impacts of mastitis felt throughout the food chain

Cow



↓  
Morbidity  
Mortality  
↓ Production  
Treatment

Farm



↓ Herd efficiency  
↑ Costs  
↓ Revenues  
↑ Risk other cows

Processor



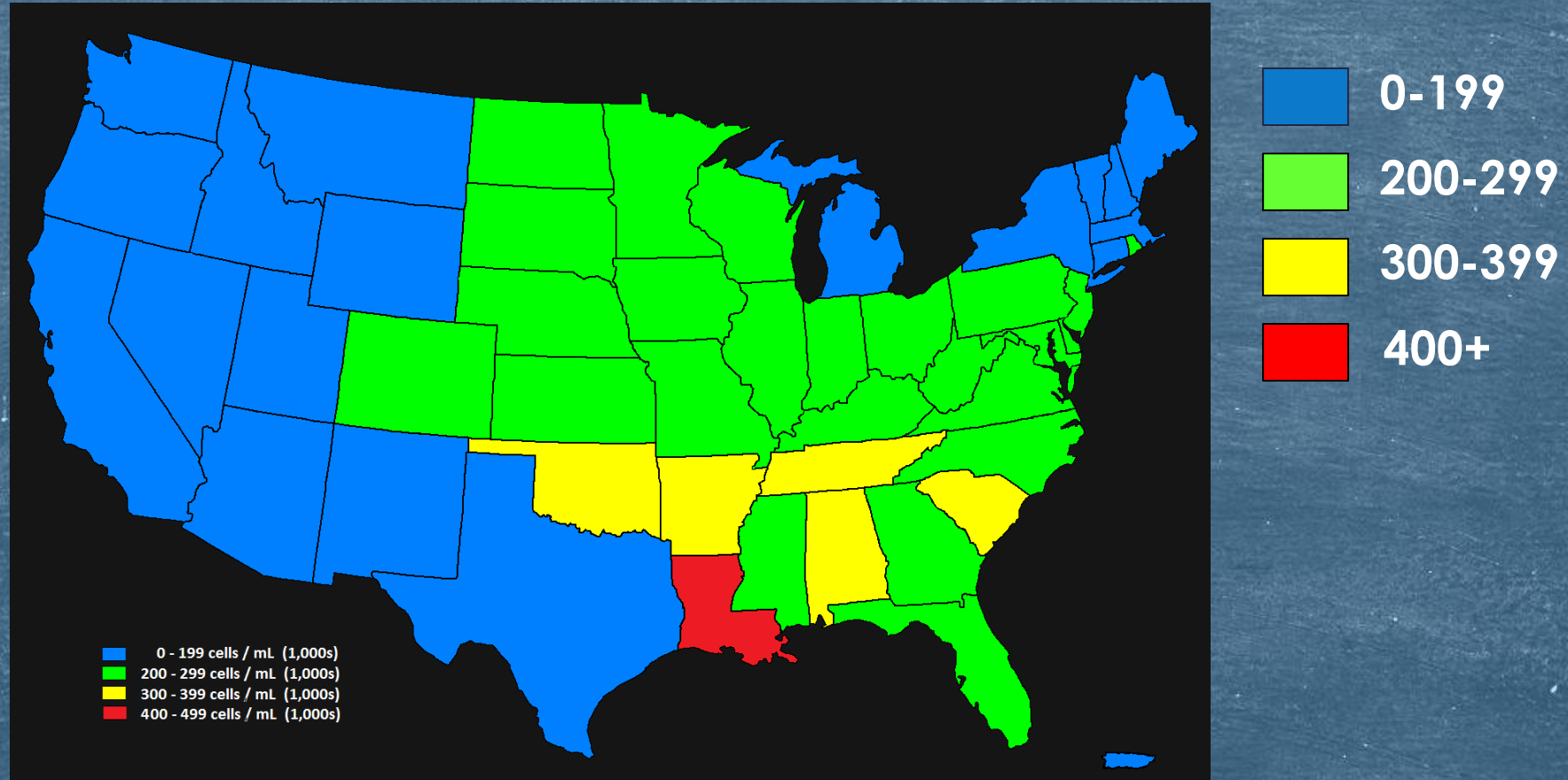
↓  
Shorter shelf life  
Decreased cheese  
making ability

Consumer



↓  
Poor taste

# Where does the Southeast rank in milk quality?



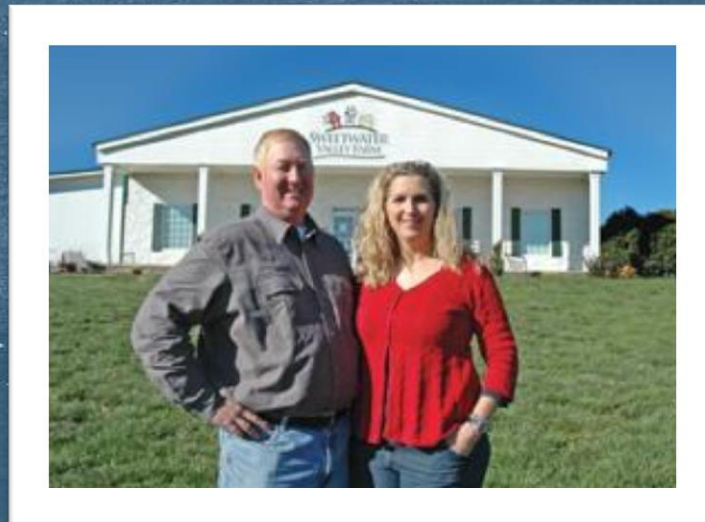
USDA-AIPL, DHI Summary 2014

# Southeast Quality Milk Initiative (SQMI)

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## Our Goal

Enable dairy farmers to move toward production systems compatible with the concept of a sustainable dairy industry in the Southeast US



# The Plan

**1.**

**Why are  
practices  
adopted?  
(or not...)**

**2.**

**What  
practices  
are  
effective in  
the SE?**

**3.**

**Tools &  
services to  
help make  
informed  
decisions.**

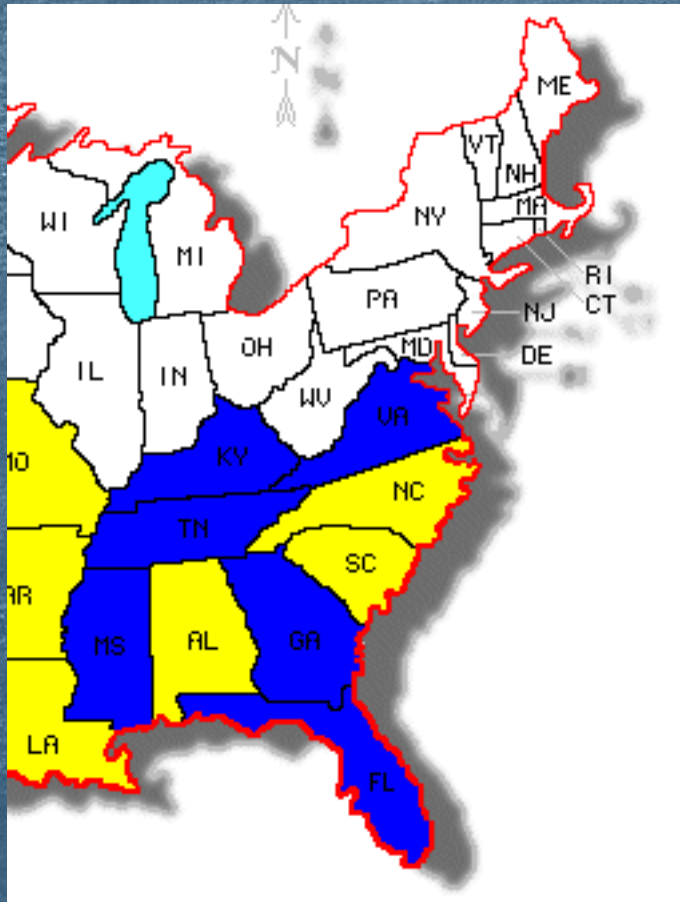
**4.**

**Education  
programs  
for current  
& next  
generation**

**Research \* Extension \* Education**

# SQMI Team

**Dairy Advisory Board:  
Producers, Industry, Universities,  
Government**



**UT: Steve Oliver, Raul Almeida,  
Gina Pighetti, Peter Krawczel,  
Mark Fly**

**VA Tech: Christina Petersson-Wolfe**

**U KY: Jeffrey Bewley, Lori  
Garkovich, Amanda Stone,  
Michelle Arnold**

**U GA: Steve Nickerson**

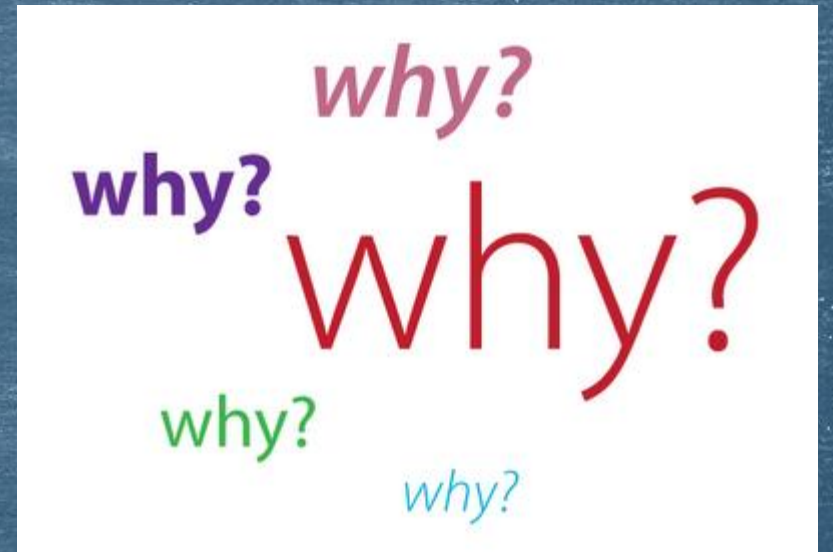
**MSU: Stephanie Hill-Ward**

**FL: Albert DeVries**

# Objective 1. Why?

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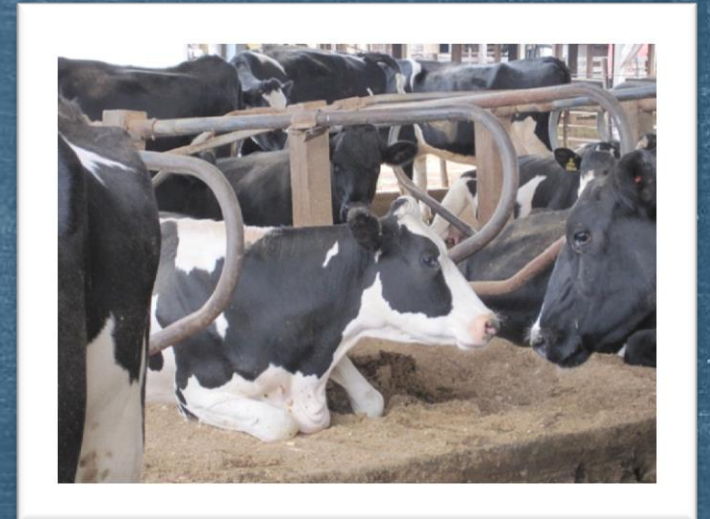
- ▶ Why (or not) are practices adopted?
  - ▶ Financial
  - ▶ Infrastructure
  - ▶ Social
  - ▶ Psychological
- ▶ Survey-based approach



# Objective 2. What?

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- ▶ Identify strategies effectively & efficiently employed in the southeast
  - ▶ Annual status report
  - ▶ On-farm assessments (n= 304)
  - ▶ On-farm demonstrations in final 3 years





# What is the single most important key to maintaining a low somatic cell count?

<b>Response</b>	<b>n</b>	<b>Response</b>	<b>n</b>
Keeping Cows and Facilities Clean	31	Cow Comfort	4
Dry, Clean Bedding	14	Paying Attention to Detail	2
Consistent Milking Routine	10	Dry Treating All Quarters of All Cows	2
Forestripping	7	Preventing Rather Than Curing	1
Pre- and Post-Dipping	7		

# Objective 3. Support tools & services

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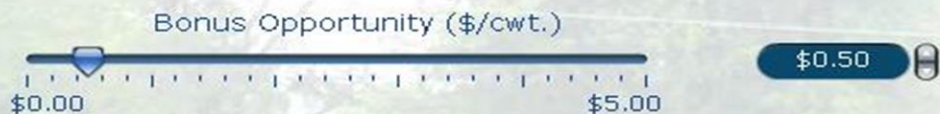
- ▶ Ability to make more informed decisions
  - ▶ Decision support tools w. economics factored in
  - ▶ Incorporate into existing software and/or hand-held devices
  - ▶ Educational material
- ▶ For producers, employees, industry professionals



### Enter Your Farm Data Here

Measurement Type

US  Metric



Monthly Missed Bonus



Yearly Missed Bonus



Milk Losses (Lbs/Cow/Day)



Monthly Value of Lost Milk



Yearly Value of Lost Milk

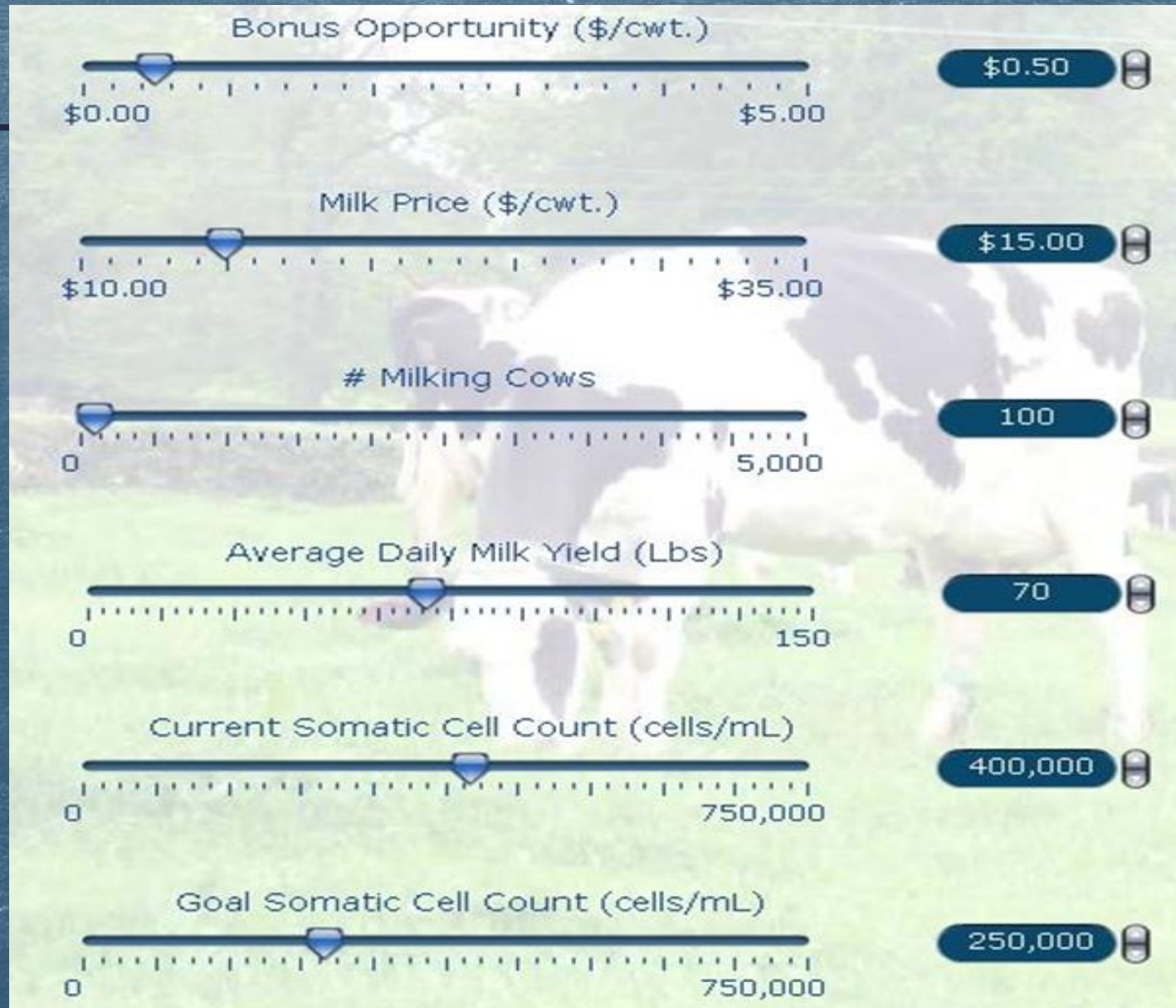


Total Yearly Economic Opportunity



Developed by Jeffrey Bewley, PhD, PAS  
and Derek Nolan  
Department of Animal and Food Sciences  
University of Kentucky College of Agriculture  
jbewley@uky.edu or 859-257-7543

# Example Inputs



# Example Outputs

Monthly Missed Bonus



Yearly Missed Bonus



Milk Losses (Lbs/Cow/Day)



Monthly Value of Lost Milk



Yearly Value of Lost Milk

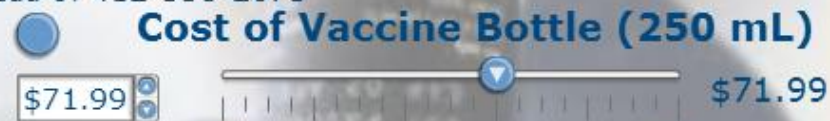


Total Yearly Economic Opportunity



# Coliform Mastitis Vaccine Economic Opportunity Dashboard

Developed by Amanda Sterrett and Dr. Jeffrey Bewley  
University of Kentucky College of Agriculture  
Animal & Food Sciences Department  
amanda.sterrett@uky.edu or 412-558-2075



*Coliform mastitis vaccines are not meant to replace good management--their purpose is to complement your current mastitis prevention strategies and to take your herd to the next level of health. There are many*

**Benefits per Cow**



**\$46.04**

**Cost per Cow**



**\$5.08**

**Annual Savings per Cow**



**\$40.95**

**Annual Herd Savings**



**\$4,095.35**

# Mastitis Cost Breakdown

<b>Cost type</b>	<b>First lactation</b>	<b>Second and later lactations</b>
Lost milk	\$ 131.41	\$ 133.46
Vet and drug	\$ 76.62	\$ 76.62
Discarded milk	\$ 64.38	\$ 81.00
Labor	\$ 12.22	\$ 12.22
Death	\$ 11.37	\$ 12.19
Culling	\$ 9.49	\$ 17.92
Days open	\$ 1.21	\$ 3.47
<b>Total</b>	<b>\$ 306.95</b>	<b>\$340.14</b>

# Objective 4. Education programs

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- ▶ Need for knowledgeable personnel
- ▶ Disseminate decision support tools & advances for improving milk quality
  - ▶ Print, in person training, online
  - ▶ Spanish translations
- ▶ Internships





# YouTube: Milking Procedures Video

The image shows a screenshot of a YouTube video player. The video title is "Milking Procedures for Maximum Milk Quality" and it is from the "UK College of Agriculture" channel. The video has 2,826 views and was uploaded on July 7, 2010. The video player shows a cow in a field with two inset images showing hands milking a cow. The video player includes a progress bar, volume control, and a play button. Below the video player, there are options to "Info", "Favorite", "Share", "Playlists", and "Flag". The video description states: "This video demonstrates several dairy milking procedures to minimize mastitis and lower somatic cell counts in milk to improve milk quality." To the right of the video player, there is a sidebar with several video recommendations, including "Instructional Videos", "4-H Speeches", "Promotional", "Gardening in Kentucky", "Professors", and "Growing Kentucky".

YouTube

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UKAg UK College of Agriculture UEAgriculture Channel Subscribe All Uploads Playlists

Milking Procedures for Maximum Milk Quality

0:19 / 9:46 360p

Info Favorite Share Playlists Flag

**Milking Procedures for Maximum Milk Quality** Like

From: UKAgriculture | Jul 7, 2010 | 2,826 views

This video demonstrates several dairy milking procedures to minimize mastitis and lower somatic cell counts in milk to improve milk quality.

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Gardening in Kentucky 3 months ago more info

Professors 4 months ago more info

Growing Kentucky 7 months ago more info

# YouTube: Virtual Case Studies

UK College of Agriculture  
UKAgriculture's Channel

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Shelby Guffey  
Albany, Ky

0:46 / 7:28

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**Managing Somatic Cell Count on Guffey Farm**


From: UKAgriculture | Jan 26, 2010 | 672 views

Managing Somatic Cell Count on Shelby Guffey Dairy Farm in Albany , Ky.  
Farm tour

Like

UK College of Agriculture  
UKAgriculture's Channel

Subscribe All Uploads Playlists



KINSLOW  
DAIRY  
REGISTERED HOLSTEINS  
Don, Gail, Jeremy & Linda

0:28 / 9:11

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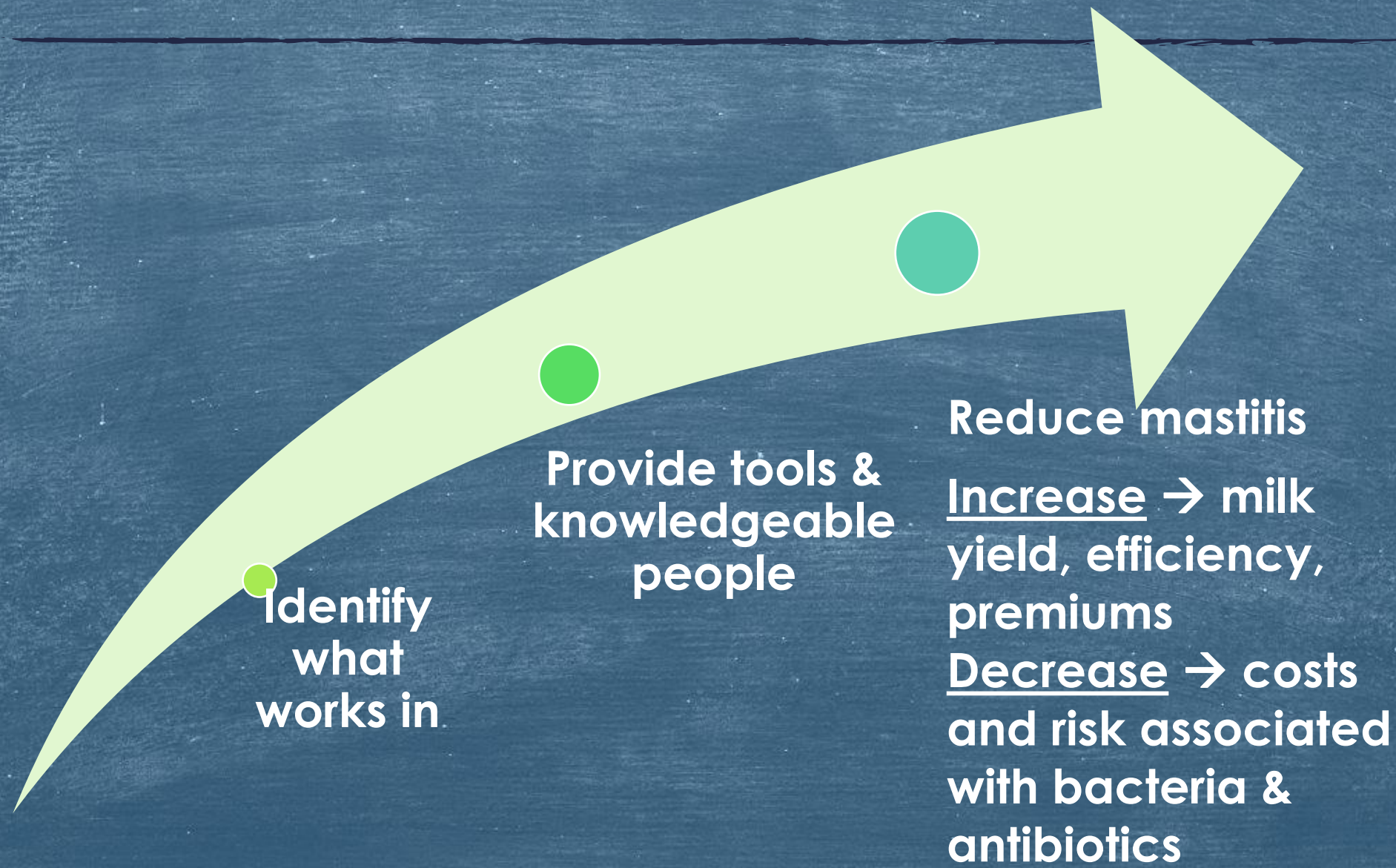
**Managing Somatic Cell Count on Kinslow Farm**

From: UKAgriculture | Feb 8, 2010 | 612 views

Procedures used on Don Kinslow Dairy Farm to minimize somatic cell counts in milk.

Like

# SQMI helping move towards a more sustainable dairy industry



# M.I.L.K. Counts

**KDDC**  
Kentucky Dairy  
Development Council

**UKAg**  
EXTENSION

- Extension of the KDDC Market Incentive Leadership for Kentucky (M.I.L.K) program
- Producers were not getting M.I.L.K bonus
- Involve KDDC consultant, extension agent, veterinarian, consultant
- ~100 participants thus far
- Milk Quality Audits
  - Records
  - Milking procedures
  - Facilities
  - Culture interpretation
  - Animal hygiene
  - Dry cow management
- Send follow-up evaluation report

# Commonalities Among Successes

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- Strong desire to change
- Motivation to maintain milk market or attain milk quality bonus
- Desire to stay in the dairy industry for a long-term
- Desire to understand why there is a problem and how to prevent it in the future
- Focus on human resources and parlor management
- In most cases, small management changes resulted in large reduction in SCC

# M.I.L.K Counts Failures

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- Producer does not want to change
- Capital/cash flow problems
- Unwillingness to cull
- Identification of wrong bottlenecks
- Too much focus on “what” rather than “why”
- Incremental changes at lower levels are more difficult

# Conclusions

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- Low SCC can be achieved anywhere in the world
- Extension programming for milk quality requires a multi-disciplinary team approach with integration of multiple learning methods
- Focus on increasing understanding or economic impact and prevention of mastitis
- A combination of on-farm consultations, written materials and electronic methods may work well
- Understanding the people factors is essential

# SQMI would not be possible without

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# Any Questions?

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