

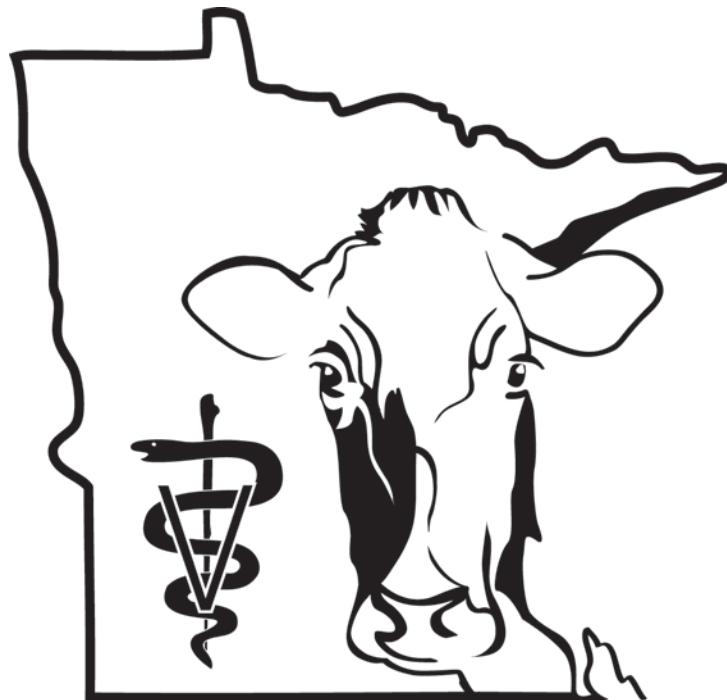
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UNIVERSITY OF MINNESOTA

College of Veterinary Medicine

VETERINARY CONTINUING EDUCATION



ST. PAUL, MINNESOTA
UNITED STATES OF MINNESOTA

Milk Quality & Udder Health: Strategies for Improving Udder Health Management

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Monsanto Dairy Business

Udder Health Seem Complicated

- Multiple Factors Involved
- Multiple Organisms
- Clinical Signs
- Environmental Changes
- Lag between Cause & Effect
- Economics & Efficiency

Udder Health Management

- Dynamics
- Records & Monitoring
- Control Strategies
- Environment
- Milking Machine
- Milking Time Management
- Clinical Management
- Biosecurity

Dynamics

- Clinical vs Subclinical
- New Infections vs Chronics
- Contagious vs Environmental

Clinical vs Subclinical Chronic vs New Contagious Mastitis

- Staph. aureus
- Strep. agalactiae
- Mycoplasma
- Strep. uberis ???

Environmental Mastitis

- Environmental Strep.
- Coliform
- Others

Control Strategies

- Type of infection
- Control Triangle

The Secret to Mastitis Control

- Control Bacterial Challenge at Teat End
- Minimize Bacterial Entry into udder

Type of infection

- Different sources
- Different treatment strategies
- Different control measures

Monitoring

- SCC
 - ◆ Bulk Tank
 - ◆ Individual Cow
- Clinicals
- Bacteria
 - ◆ Bulk Tank
 - ◆ Individual Cow
 - ◆ Non - Cow
 - ◆ LPC,PI,SPC,Coliform

Records Monitoring

- Current Status
- Change in Status
- Fresh Cows

Control Triangle

Environment

- Free stalls
- Dry Lots

Free stall Design

- proper stall sizing
- correct curb heights
- appropriate stall partitions
- placement of neck rails
- placement of brisket boards
- free stall base and bedding
- maintenance of stall surface

Stall Partitions

- suspended loops most functional
- Michigan style: lunge space
- metal tubing at least 2" (2&3/8 better)
- open in front
- proper height

Free stall maintenance

- Daily
- Bedding
- Stall bed
- Stall partition

Dysfunctional free stalls

- Design
- Poor Stall Maintenance
- Poor Bedding Maintenance

Signs of stall dysfunction

- Cow behavior
- Soil Loading

Dry Lot Design

- climate
- geology
- EPA

MUD

- Manure
- Urine
- Dirt

Dry Lot Maintenance

- Level it
- Scrape it
- Pile it
- Move it

Geotextile Fabric

WHY????

- Only 4 ways cows get mastitis
 - ◆ RF, LF, RR, LF
- Secret
 - ◆ Reduce Bacteria load on cows teats

Bedding

- Organic
- Inorganic

Organic Bedding

- Less expensive
- Readily available
- More maintenance
- Primary source of pathogens

Inorganic Bedding

- Poor bacteria growth
- Cleanliness
- Drainage
- Expense
- Equipment

Critical Control Points

- Environment
- Pre-milking Hygiene
- Post milking Hygiene
- Dry Cow Management
- Fresh / Transition Management

Cow Environment

- Direct Infection
- Bacterial Loading
- Teat Skin Health

Cow Environment

- Corral Management
- Feed Bunk Management
- Holding pen time (standing time)

Cow Environment

- Dry, Transition, & Fresh Cows !!!!!

Milking Machine

- Fomite (spreads bacteria)
- Creates infection (RPG, teat end impacts)
- Teat end callousing

Efficiency vs. Effectiveness

- Parlor efficiency

Parlor Throughput

- Condition of Cow at Entry
- Cow Entry
- Pre-milking Routine
- Unit Attachment & Adjustment
- Claw Time
- Post Milking Routine
- Cow Exit

Minimizing Claw Time

- Cow Prep!!!
- Teat End Vacuum
- End of Milk Settings
- Pulsation

Milking Time Evaluation ... Cows

- Parlor Entry
- Soil Load
 - ◆ At entry
 - ◆ At Claw Attachment
- Teat Health
- Milked Out?
- Comfortable, letdown ???

Milking Time Evaluation ... Labor

- Routine ...Consistency!!!
- Cow Entry
- Udder Prep
- Claw Attachment & Adjustment
- Post Milking Routine
- Recognize Abnormal Cows
 - ◆ Milk out
 - ◆ Infection

Milking Time Evaluation ... Machine

- Liner Slips, Drop Offs
- Claw Times
- Teat End Vacuum

Proper Milking Machine Function

- Design
- Maintenance
- Milk harvest
- Wash up

Milking Time Management ... Goals

- Milk Clean Dry Teats
- Fast, Complete Milk out
- Timely Removal of Units
- Post Milking Teat Dip
- Recognize Abnormal Cows
- Comfortable Routine for Cows and Milkers

Milking Machine Design

- Pump to Receiver
- Milk Line to Teat end
- Pulsation
- Automation

Milking Machine Maintenance

- Vacuum Regulation
- Pulsation
- Automation
- Rubber Goods

Milking Machine Maintenance... getting it done!!!

- Written Plan
- Who is Responsible?
- How often?
- What exactly should be done? (e.g. regulator)
- DOCUMENT!!!!

ATTITUDE !!!!

- Labor
- Management

Mastitis Control is a Process not an Event

- Records & monitoring
- Milker training
- Machine performance
- Environment
- Basic Control Measure
- Milk clean dry comfortable cows
- Milkability