MA$TITI$S

- Inflammation of the mammary gland where inflammation is the reaction to tissue injury
  - Redness
  - Swelling
  - Heat
  - Pain
- **Loss of function**
- 99% of inflammation results from infection

**TYPES OF MASTITIS**

- **Clinical**: visual abnormalities (milk/udder/doe)
  - fever
  - loss of appetite
  - depression
  - death
- **Chronic**: long duration
  - variable signs
  - contagious?
  - fibrosis (nodules): udder palpation
- **Subclinical**: *No visible signs*
  - *Special tests*
  - *Loss of function*
- Mastitis types are correlated to organisms!!!
Natural Teat Sealing

20-30% cows teats don’t seal; 20-30% heifer teats open at calving

YOUR WEIGHT?
AUDIENCE AVG.

185

WEIGHING INDIVIDUAL COWS

WEIGHT = SCC X LBS. MILK
Causes: Irritation, INFECTION

PROBLEM COW ??

200 – 300,000 cells/ml
How many do you have? Today? Yesterday? Tomorrow? NEW or Old?

HERD SCC

Average of all cows # WBC/ ml milk

SURVEILLANCE / AWARENESS

- Swollen quarters
- Abnormal secretions
- DHI SCC on fresh cows
- CMT on fresh cows
- CULTURES – know your enemy!

Causes: irritation, INFECTION
Chronic 14%
New Cases 6%
Current Linear SCC vs. Prev. Linear SCC
Cures 6%

GETTING INDIVIDUAL COW WEIGHTS

MONITORING FRESH COWS
# Yearly Mastitis Summary

<table>
<thead>
<tr>
<th>Date of Test</th>
<th>% Cases by SCC Score</th>
<th>SCC Score</th>
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<tbody>
<tr>
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<td>0.1-3.3</td>
<td>4</td>
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<tr>
<td>7/2006</td>
<td>77 13 6 1 3 2.4 124</td>
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</tr>
<tr>
<td>2/5/2006</td>
<td>75 14 6 2 3 2.5 140</td>
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<tr>
<td>9/3/2006</td>
<td>75 13 5 5 2 2.6 153</td>
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<td>75 11 4 2 2.4 160</td>
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<td>8/22/2006</td>
<td>71 14 6 6 3 2.7 220</td>
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<td>11/25/2006</td>
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<td>12/22/2006</td>
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</tr>
<tr>
<td>1/1/2007</td>
<td>68 14 8 5 5 3.0 220</td>
<td></td>
</tr>
</tbody>
</table>

Average: 71 13 6 5 3 2.7 165

---

- **7/2006**: 12%
- **9/2006**: <2%
- **9/2006**: Fresh cow issues
- **1/2007**: <3%
CMT testing

- cowside
- easy
- inexpensive

- interpretation?

INTERPRETATIONS

- Calving day
  No gel – 100% accurate
  Gel: Is/was a problem!
  70% infections picked up!
  However:
  Only 20% gelling infected
  Only 10% treatable

- Day 3 post calving
  No gel – 100% accurate
  Gel: Is/was a problem!
  80% infections picked up!
  However:
  Only 40% gelling infected
  Only 20% treatable

• THE MOST ACCURATE TEST IS NO GEL!
• When you see gelling, prevent before treating!
• If used for treatment, must be based on organism!

< 10% CMT+
Fresh Animals
(< 5% quarters)
• < 2% with clinical mastitis
• Take a sample for culture

1. Minimize bacteria!!
   no bacteria - no problem

2. Maximize teat end integrity

3. Maximize immunity
Minimize moisture / bacterial load!
(stalls / ventilation)

CLEAN  DRY  COMFORTABLE

TVM Dairy 900 cows; 28,500 RHA
SCC 100 – 150,000

J Schan herd
150 cows; 28,000 RHA
SCC 100 – 150,000
6 row barn / mattresses

CLEAN  DRY  COMFORTABLE

Mattresses + Manure solids

CLEAN  DRY  COMFORTABLE

TD Dairy 700 cows; 27,500 RHA
SCC 100 – 150,000

CLEANLINESS SCORING

CLEANLINESS SCORING
CLEANLINESS SCORING

CLEAN COWS CAN GET MASTITIS!
- high organism load without filth!
- depressed immune system!

TOWEL LOOKING

DIP & DIRT

Xray of Teatseal® in place 60 days into the dry period

$ 6-8 /cow

• Persistent barrier teat dip sealants (external barrier)

• Internal barrier sealants (teat end toothpaste)

ECONOMICALLY A NO-BRAINER!!
Only if done properly!

CAN REDUCE ENVIRONMENTAL INFECTIONS BY >70-80% IF DONE PROPERLY!!!
With Teatseal® aseptic infusion is essential!!!

Infuse Teatseal® and leave in teat sinus

- No massage after insertion!
- Full tip insertion!
- Don’t just push air!

Remove Teatseal® before first milking

15-20 strips/ teat

- 10% fleck for 5 days
- 5% fleck for 10 days
- 1-2% fleck for 30 days!!!

Bunk, nutrition
Balanced

- 24”: lactating cow
- 30”: Dry cow

Adequate space

Feed quantity
Feed “quality”
No restrictions

Increased feedbunk space!!

Stall and housing comfort!
Grouping / cow movement!

“A”: Air Quality

DMI differed between healthy cows and those with puerperal metritis ($P<0.001$) and clinical metritis ($P=0.003$) both pre and post partum.
Key Contagious Mastitis Control Practices (5 POINT PLAN)

1. Effective teat dipping
   1. 97% of farms dip but many do not dip effectively
2. Dry cow therapy of all quarters of all cows
   - To treat subclinical infections present at dry off
3. Appropriate treatment of clinical cases
   - Record all cases
   - Monitor outcomes
4. Culling chronically infected cows
5. Regular milking machine maintenance
   1. Stable teat end vacuum

Milking Time Goals
CONSISTENT - ROUTINE

- Produce highest quality milk
- Achieve high milk yield
- Minimize labor and time
- Maintain good udder health
- Animal/operator safety / health / attitude

Apply Machine
- Apply machine 60-120 sec. from initiation of prep (teat stimulus)
- Minimize air leakage into teat cups
- This is the guiding principle for developing milking routines!!

Premilking Goals
1. Minimize bacterial load on teat*
2. Proper stimulation for letdown**
   > Look for mastitis? Forestrip?
3. Minimize trauma to cow and milker
4. Minimize residue potentials!!
5. Maximize unit / minimize squawks
6. Get milker unit on within 1-2 minutes!
7. Be economical / cost effective!!
   * clean/dry w/ends ** 15 sec / good tactile

How Long Does It Take To Dry?
< 5 SECONDS
USUALLY GET GREAT COVERAGE!
IF YOU DON'T DRY THOROUGHLY YOU'RE IN TROUBLE!

SHOULD YOU?

Successful Dipping
Complete coverage of the teat

CONSISTENCY
COVERAGE
CLEAN DIPPER
CLEAN DIP
COST EFFECTIVE

Score | Description |
--- | --- |
N | Normal! The teat-end is smooth and shiny. This is a typical status for a teat-end.
S | Smooth or Slightly rough ring. The surface of the ring is smooth or may have slightly rough but intact or intact.
R | Rough ring. The teat-end is rougher and is spotted with raised or extended parts of old keratin extending 1-3 mm from the orifice.
V | Very Rough ring. The teat-end is rougher and is spotted with raised or extended parts of old keratin extending 5 mm from the orifice. The rim of the orifice is rough and cracked, often giving the teat-end a "flowered" appearance.

Bad genetics – teat shape!
Or you got other problems!

3. Maximize immunity
2. Maximize teat end integrity
1. Minimize bacteria!!

no bacteria- no problem

1. Minimize bacteria!!

no bacteria- no problem
Cleanliness     BCS
Appetite       Behavior
Milking        Teat health

**PREVENTION IS KEY!**
Keep SCC same or down!

LOW SCC       HIGH SCC

SCC never goes down unless problem cows are Mooo-ooved!

Options for Handling Chronic Mastitis
Treat, Segregate, Dry off Cow, Dry off quarter, Quarter milk or Cull

PROBLEM COWS

- HOW MANY PROBLEMS?
- HOW FAST TO TIP?
- PRIORITIZATION!!!

Self / spontaneous cure: Cows does it herself (TLC)

TREATMENTS
Choices of drugs? Risks?
Dry or feeding antibiotic Products / ideally extended Withdrawing Milk & Meat
Monitor outcomes!

HOW MANY?
RIGHT COWS?
RIGHT TIMES?

REPLACEMENTS
Home grown? Purchased?
Biosecurity?
Cull cow $ Heifer/cow $
Reducing BTSCC is Based on Finding Infected Cows and Making Decisions about their Futures.

- Bulk tank somatic cell count limits will be falling
- Herds can achieve improved BTSCC by adopting recommended best management practices
- Key to improved BTSCC is to
  - Know which cows are infected with subclinical mastitis
  - Prevent new infections
  - Work with a team to implement change

THANKS!

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YEA!!

YOUR GOAL