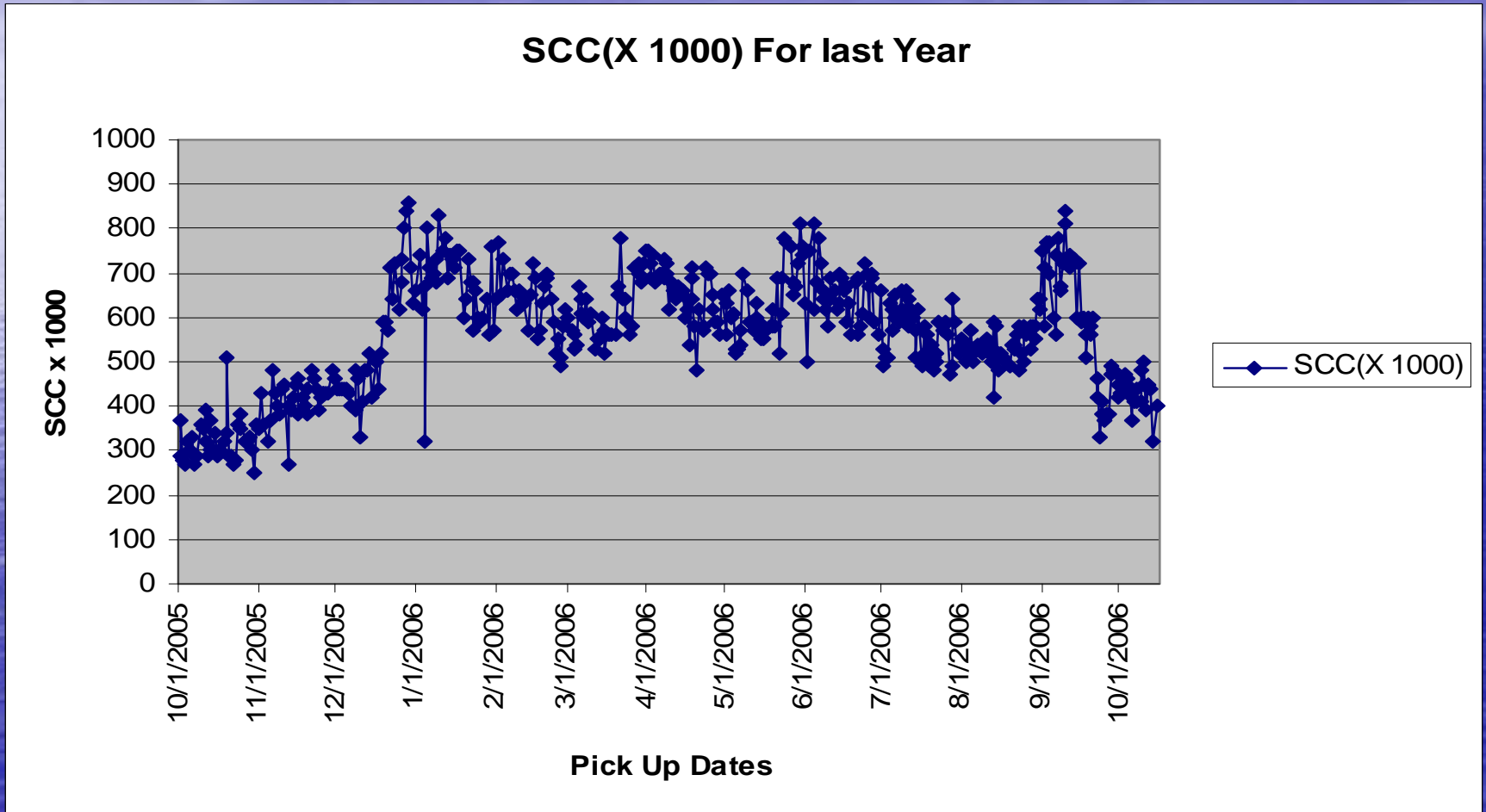


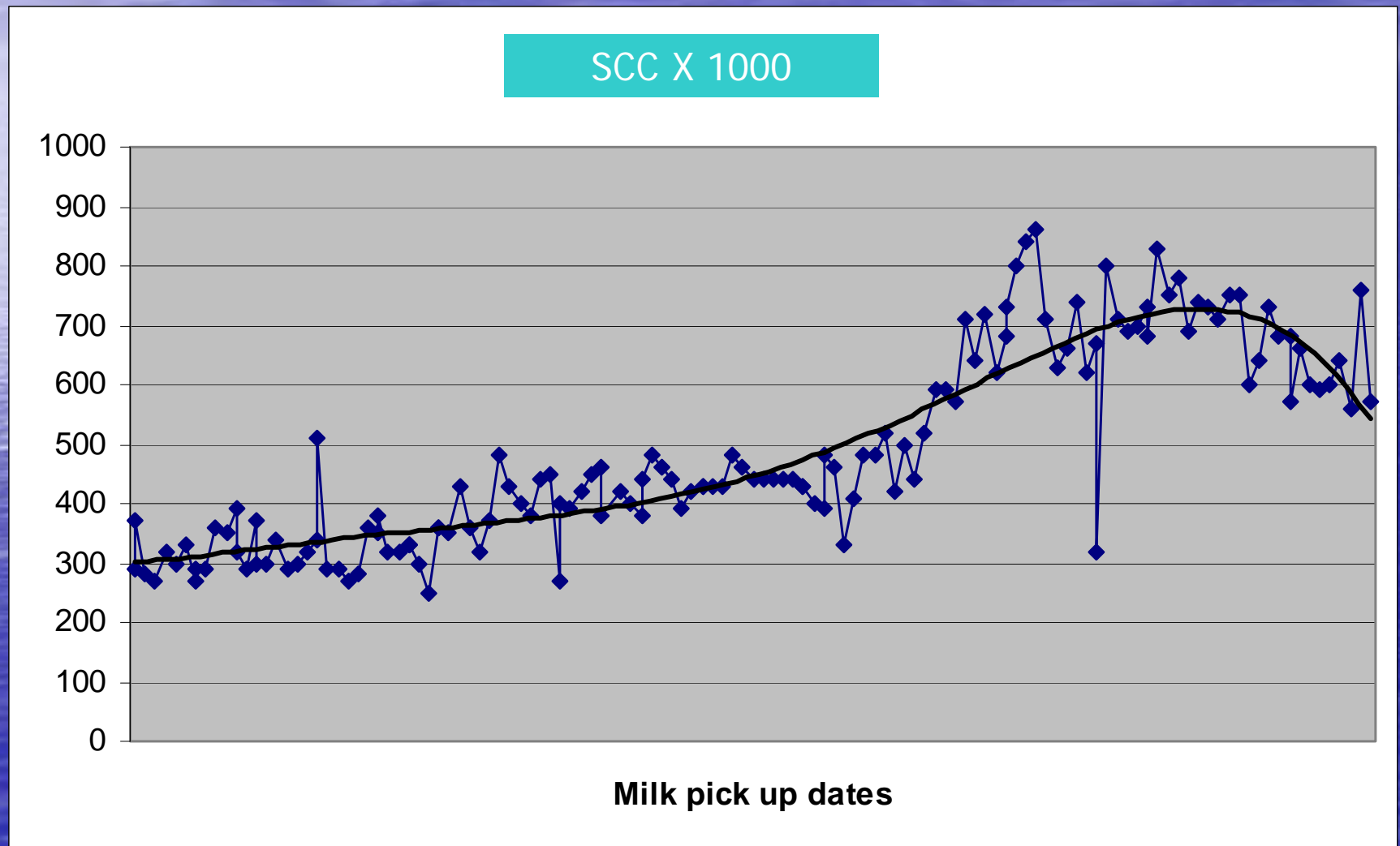
# Management area to focus on

- Bacteria load on the cows from the environment
- Contagious bacteria load
- Milking technique
- Parlor function
- Health status of the cows

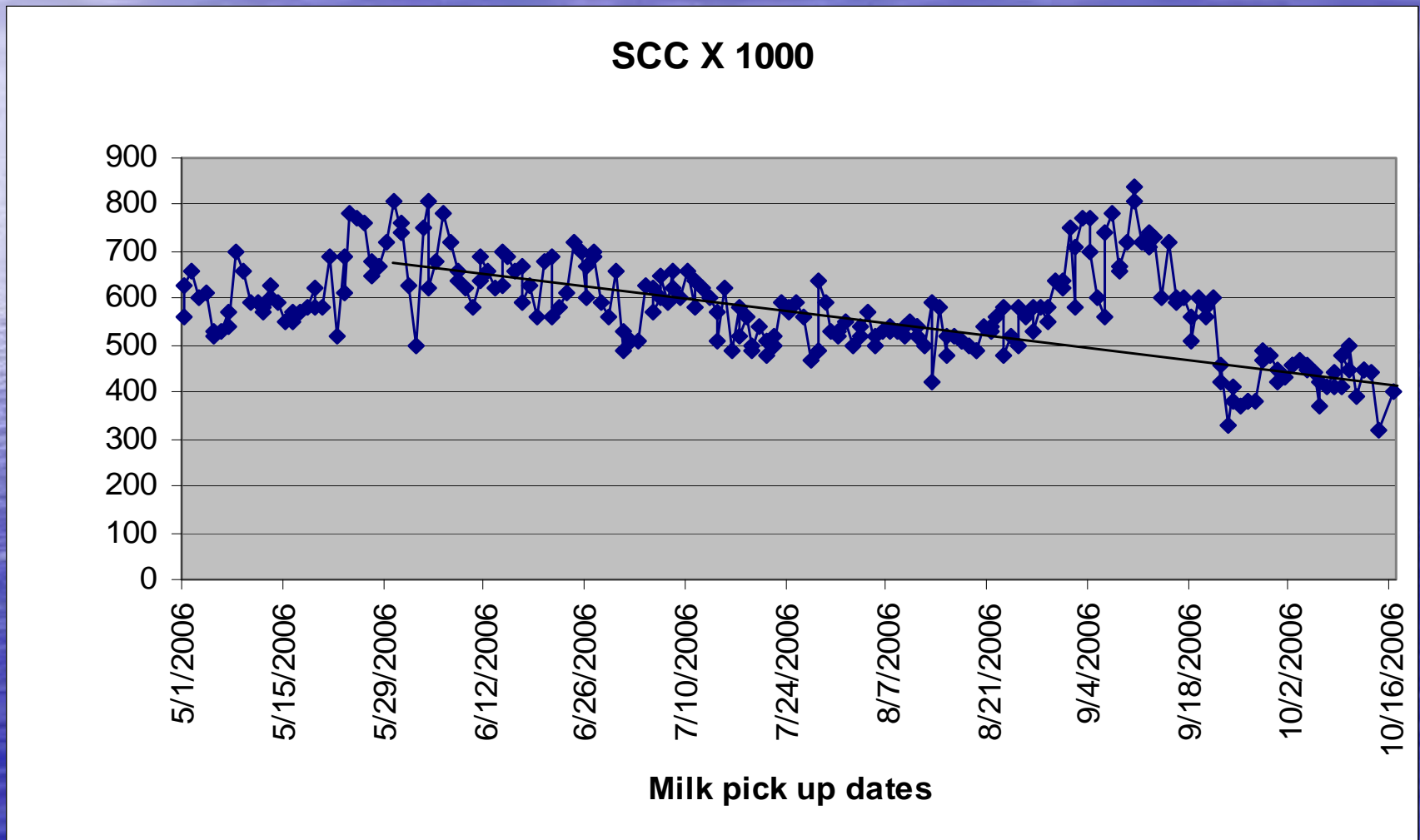
# New Herd with Mycoplasma



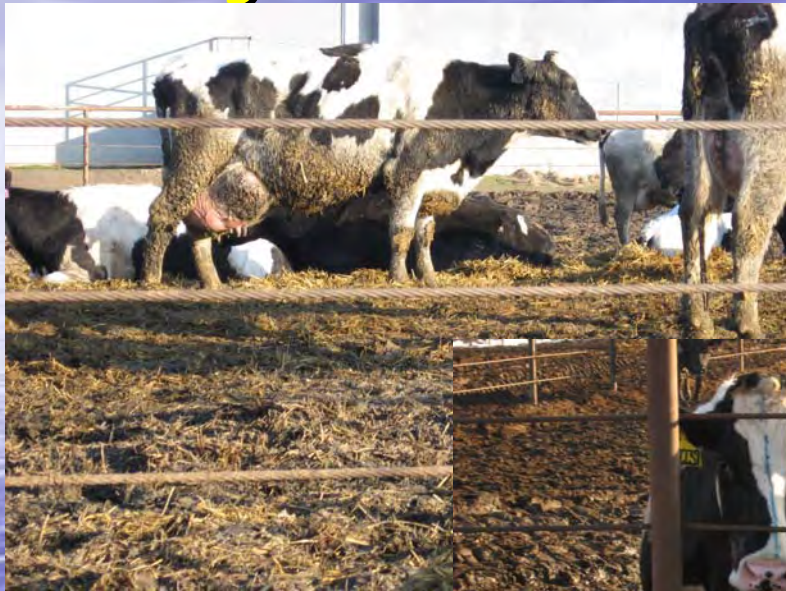
# New Herd with Mycoplasma



# Recovery from Mycoplasma



# Conditions Don't Always Go Our Way!!



# Reduce Environmental Bacterial Level that the Cow is exposed to

- Freestalls and/or open lots well maintained daily.
  - Low bacteria level bedding.
    - Sand vs composted manure solids vs wood chips
    - Cow lanes with limited manure to splash on udders.
  - Manure is flushed or scraped without the cows in the lanes- while cows are milked.
    - All cows stand up / eating after milking for an hour to allow teat end closure. **Results in less mud and manure on the udder and exposing the teat ends after milking.**

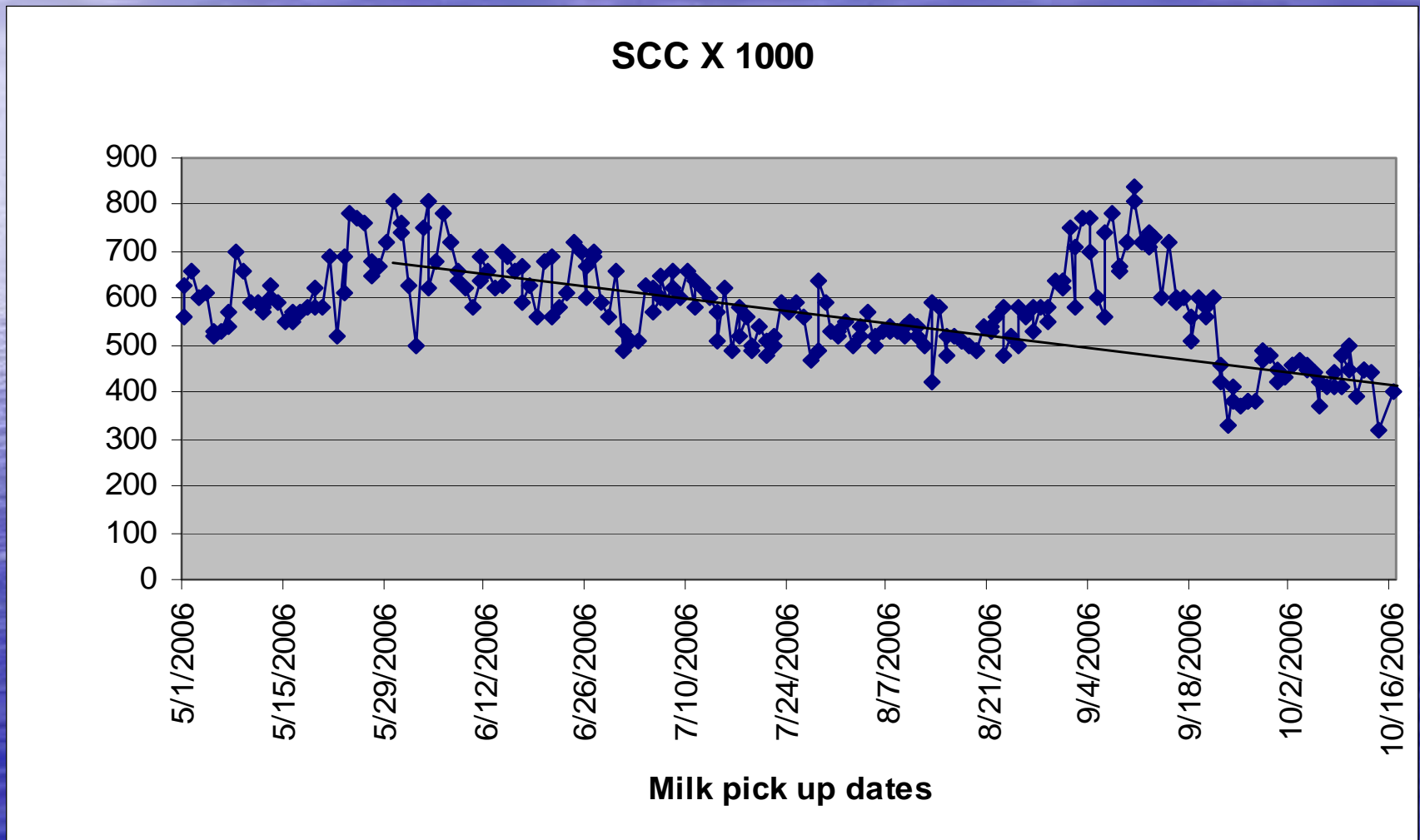
# Parlor Function

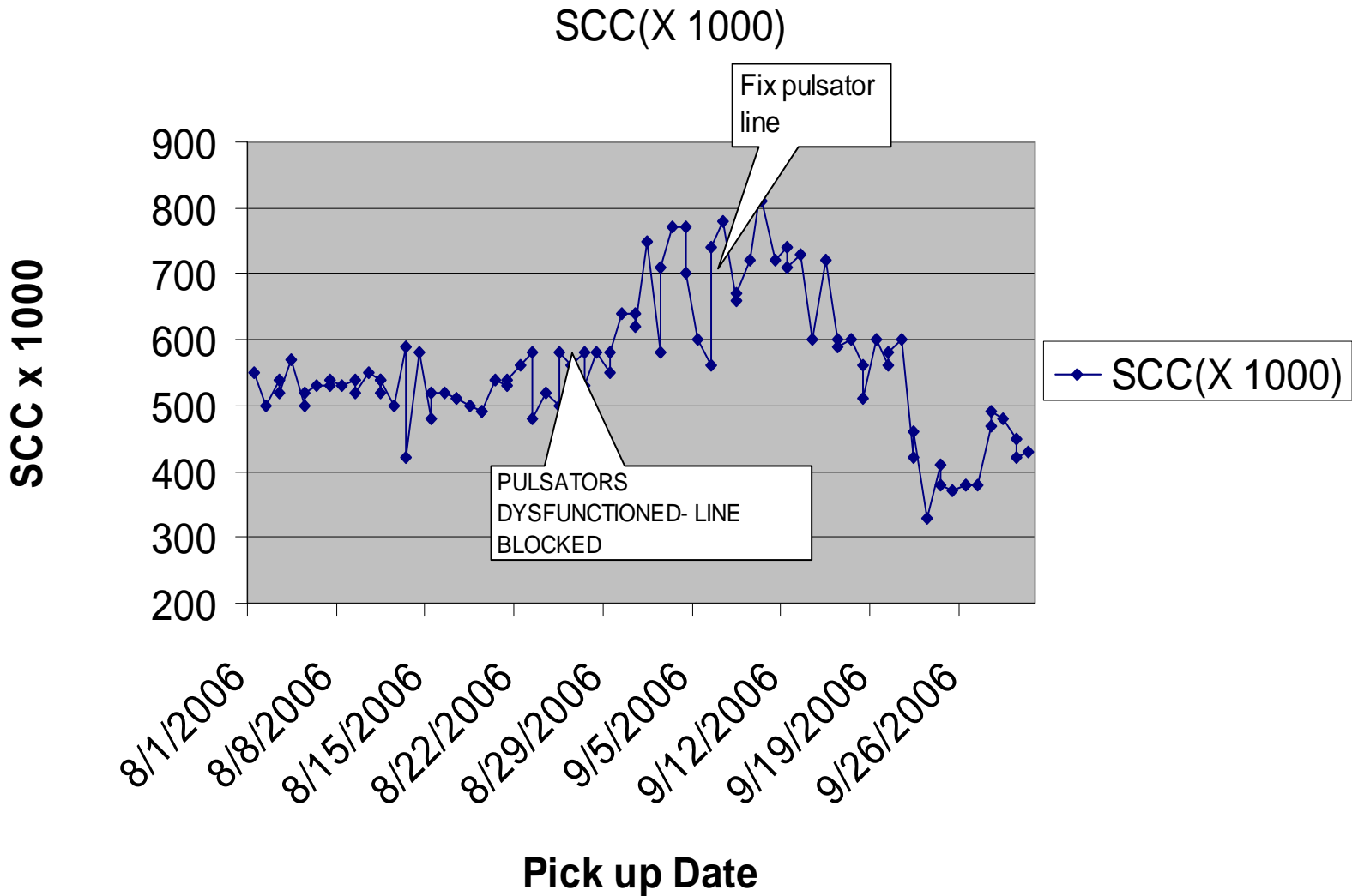
- Have a full NMC milking system protocol performed at least twice a year. [www.nmc.org](http://www.nmc.org)
- Have NMC protocol dynamic testing performed at least every 4 weeks.
  - Pulsator function tests
    - Rate +/- 3 cycles per minute
    - Ratio < 5% variation
    - B or milk phase at least 30% of cycle
    - D or rest phase at least 15 % of cycle and >150 milliseconds

# Parlor Function

- Claw Vacuum
  - Ave 10.5-12.5 inches Hg
  - Fluctuation <2-3 inches Hg
- Milk line vacuum stability <0.6 inches Hg
  - Unit falloff test able to have two units open per 32 milking
  - During operation
- Receiver vacuum stability <0.6 inches Hg

# Recovery from Mycoplasma



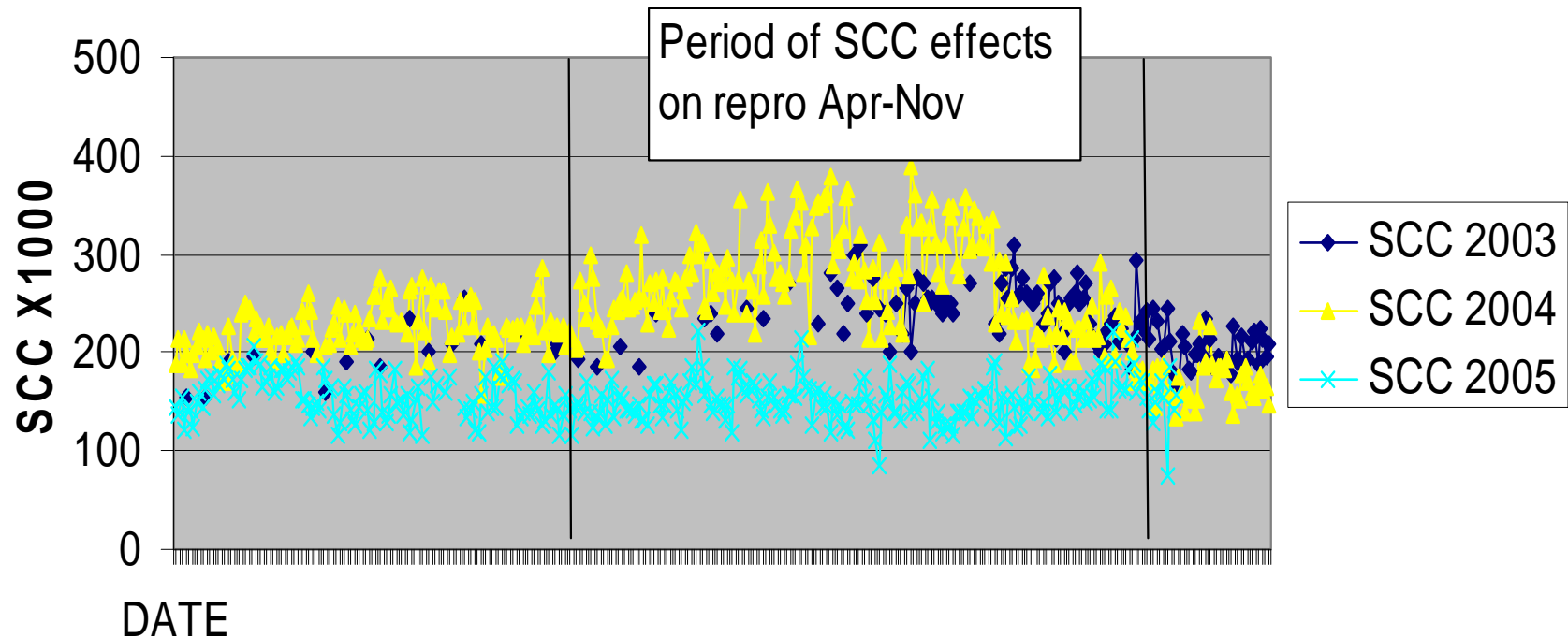


# Parlor function

- Make sure new and old parlors meet NMC Standards
- Test old parlor before and after renovations
- Be sure both complete and dynamic testing is done routinely
- Save testing results

# Effects of Low claw vacuum on Udder Health

## Daily bulk tank SCC By Calendar Year



Jan on left Dec on rt by day shipped

# Limit teat end exposure during milking

- Maintain good teat end condition.
  - Evaluate teat ends. On a 1-5 scale, 80% < 2
  - Proper teat stimulation and timely machine attachment to avoid over milking and hyperkeratosis. No squawking or inflations.
  - Use post dips with skin conditioners.
  - Milking protocol is very important and needs to be consistent.

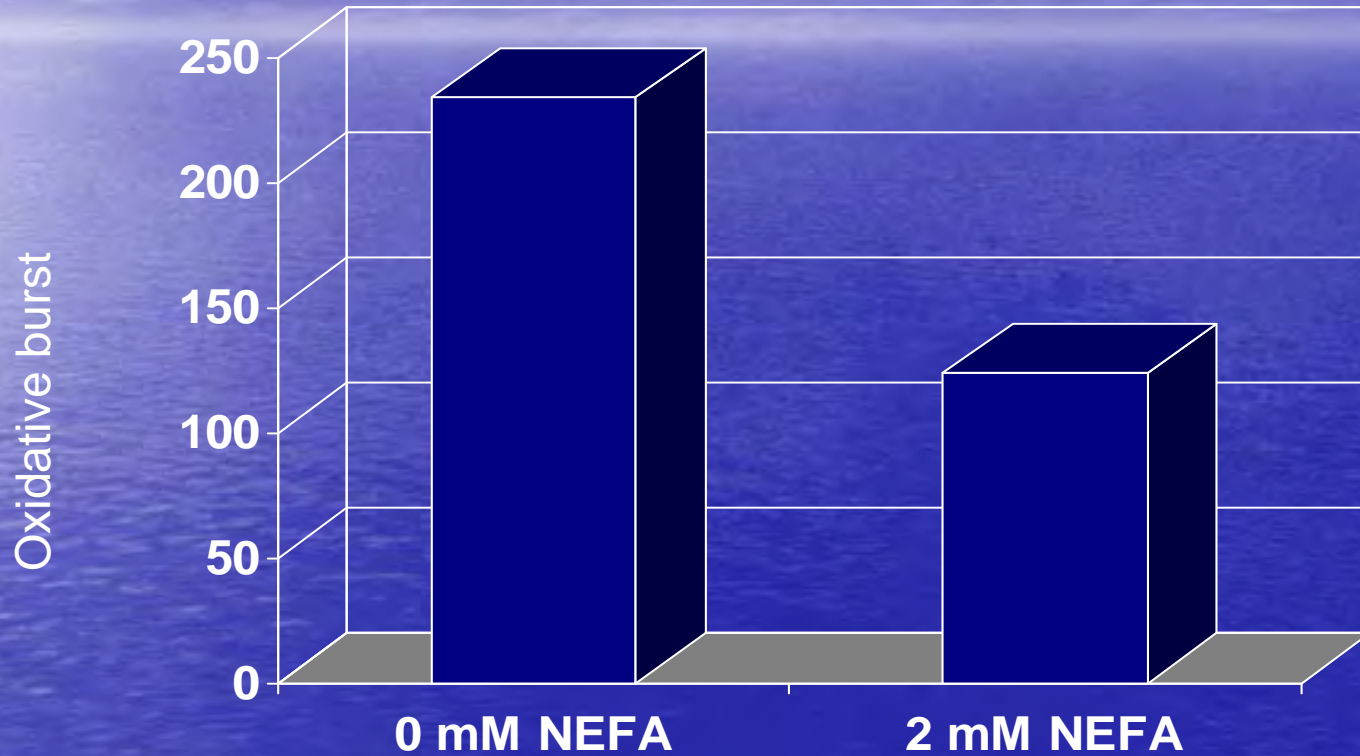
# Cow contribution to udder health

- Udder conformation
  - Genetics
- Immune system performance
  - How we manage the cows environment
  - How we feed the cow

# Immune system control of mastitis

- Use with J series vaccines at least 4 times a lactation.
- Optimum trace mineral and vitamin nutrition.
- Vitamin E, Selenium, Zinc, copper.
- Adequate energy and protein intake.
- Minimize immunosuppression
  - Manage environmental stress-cold and heat.
  - Avoid rumen acidosis.
  - Good air quality.
  - Avoid crowding/cow to cow stress.

# Impact of Plasma NEFA Concentration on neutrophil function (dairy)



Scalia *et al.* 2006

# Ketones suppress leukocyte function-ROS

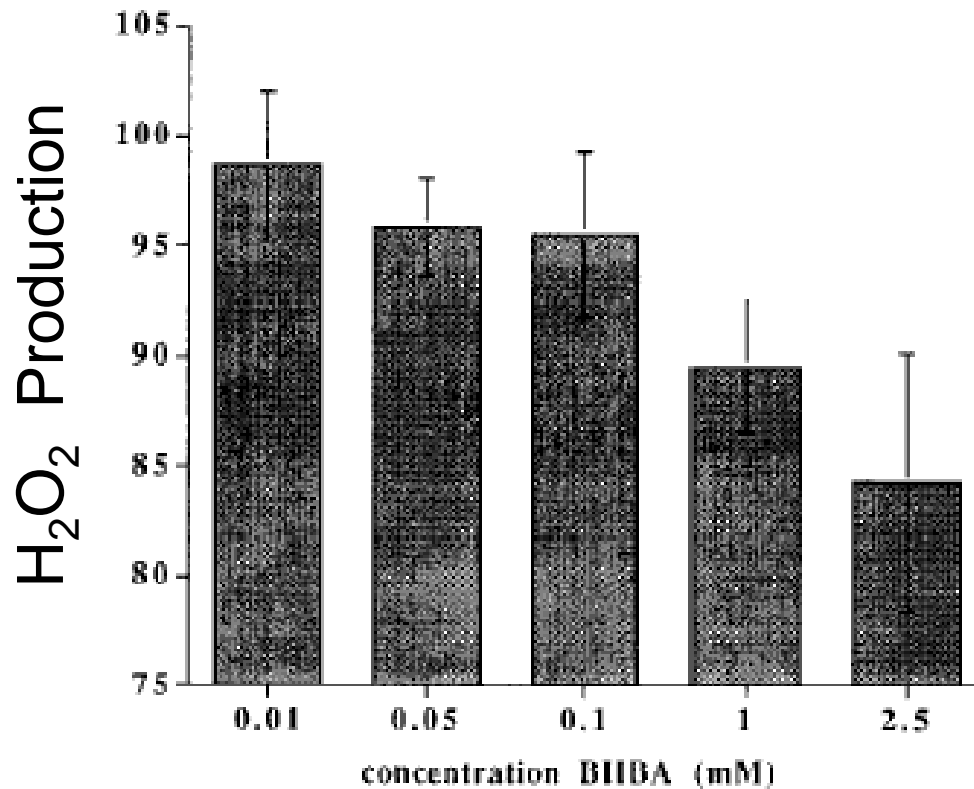
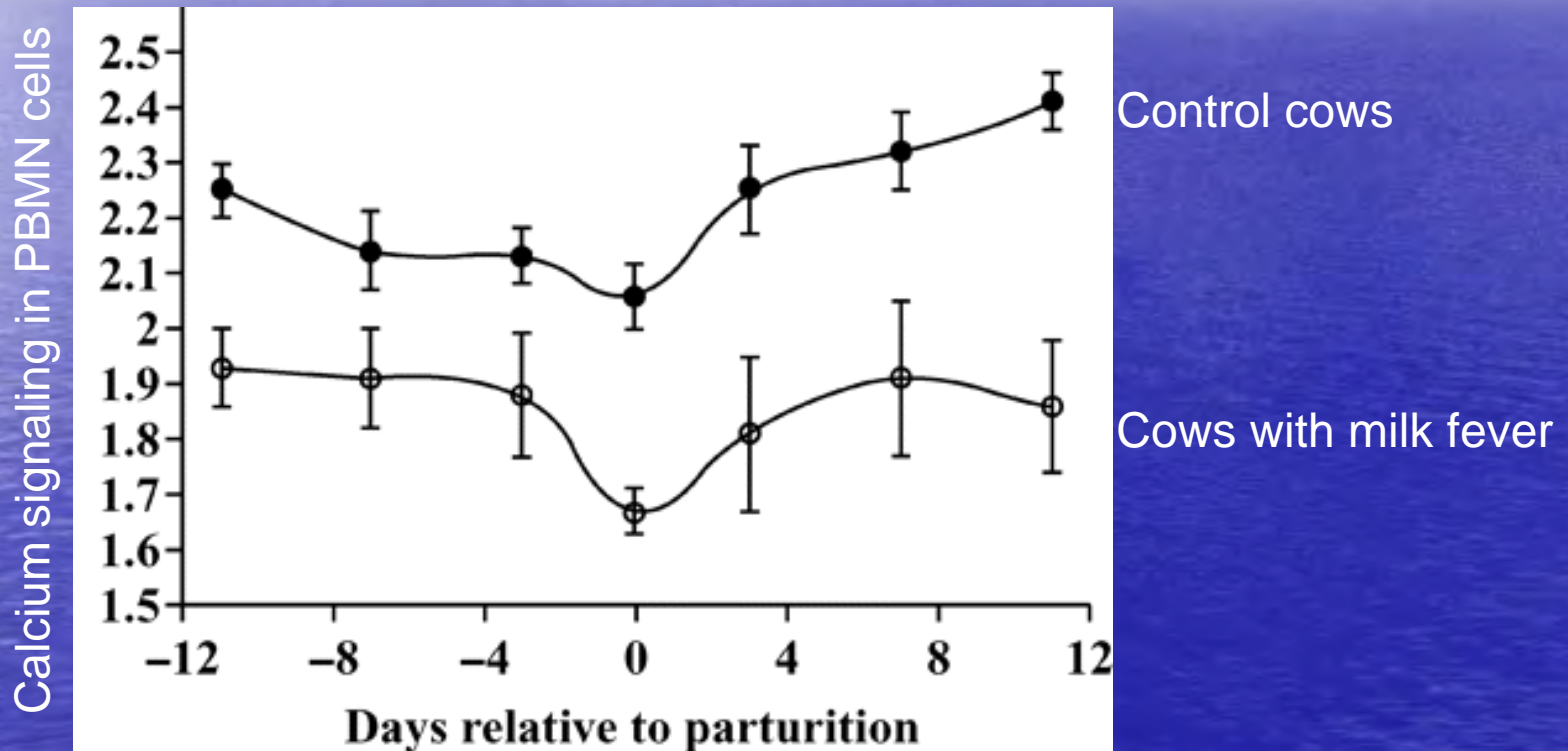


Fig. 1. Effect of BHBA on the cellular CL. Data are means of seven cows  $\pm$  sem. CL-index = (area under the curve of BHBA – incubated cells/area under the curve of sham treated cells)  $\times$  100.

# Hypocalcemia impairs immune cell function



Kimura *et al.*, 2006

Summary: Preventing udder health problems looks more promising than treatment.

- You have many tools today to measure udder health. **Use them!**
- Be sure that the parlor is operating at the NMC standard.
- Good hygiene in the parlor and cow housing conditions is critical.
- Proper and consistent milking protocols are important.

# Final thoughts: the cow can help

- Facilitate a good cow immune response.
- Remember that general nutrition is important.
- There is hope that we can boost the immune response with **OmniGen AF** as it stimulates WBC function-migration to infection and bacterial killing action.

# Conclusions: Omnigen

- This may benefit more than HBD and mastitis.
- Reduces Strep uberis, Staph aureus and E.coli. mastitis. **Another tool to manage the cows "environment".**
- **Accentuate the response to vaccines and antibiotics.**
- **More effort on prevention looks profitable.**

# Value of udder health

- 1000 cow dairy
- Change SCC from 300000 to 150000
- Value of milk, drugs, bonus, reproduction, culling
- About \$1,000,000 for year.
- INVEST IN UDDER HEALTH